



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001
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December 20, 1999



U. S. Nuclear Regulatory Commission
Document Control Desk

ATTN: Mr. Guy S. Vissing
Project Directorate I-1
Washington, DC 20555

SUBJECT: Revised Submittal of Quality Assurance Program for
Station Operation
R. E. Ginna Nuclear Power Plant
Docket Number 50-244

Dear Mr. Vissing:

In accordance with 10 CFR 50.54(a)(3), enclosed is Revision 27 to the Quality Assurance Program for Station Operation. Revision 27 incorporates the following changes:

- Organization changes.

The above changes do not impact commitments in the Quality Assurance Program description previously approved by the Nuclear Regulatory Commission (NRC) and therefore do not require NRC prior approval. These Quality Assurance Program changes have already been incorporated into station directives and procedures.

Additionally, Revision 27 of QA Program for Station Operations incorporates the following changes:

- Revise commitment to Regulatory Guide 1.33, Rev. 0 and ANSI N18.7-1972. These changes were made to eliminate conflicting requirements and to clarify substituted requirements for excepted sections.
- Eliminate the requirement for Quality Assurance personnel to perform an in-line review of procurement documents.

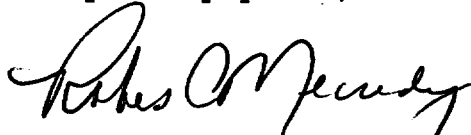
The above changes impact the commitments (Reduction in Commitment) in the Quality Assurance Program description previously approved by the NRC, and therefore require NRC approval prior to implementation.

2004/1

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All of the changes are described in the attached Synopsis of Changes (Attachment 1) and in the enclosed program revision. Attachment 1 also provides the basis for concluding that the revised program continues to satisfy the 10CFR50 Appendix B criteria. Changes made to Revision 26 of the Quality Assurance Program for Station Operation are denoted by a single revision bar in the left margin. Attachment 2 is a copy of the enclosure with changes highlighted or struck out.

Very truly yours,



Robert C. Mecredy

RCM\cjk\QAPSO.Submittal.R27.wpd

Attachments 1 and 2

Enclosure: QA Program for Station Operation Revision 27

xc: U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
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Ginna Senior Resident Inspector

ATTACHMENT 1

Organization Changes

The following position titles have been changed by the corporation are reflected throughout the text of the document and on the Figure 17.1.2-1 Organization Chart:

<u>OLD</u>	<u>NEW</u>
Plant Manager, Ginna Station	Vice President and Plant Manager, Ginna Station
Group Manager, Information Services	Vice President, Information Services
Group Manager, Support Services	Vice President, Support Services
Group Manager, Energy Delivery	Vice President, Energy Delivery

No responsibilities have been changed. The changes are in title only.

Additionally, several editorial changes were made to the Figure 17.1.2-1 Organization Chart to reflect changes to positions not discussed in Section 17.1.2 Organization.

17.1 MANAGEMENT

17.1.2 Organization

Manager, Quality Assurance

Current Commitment

The last sentence of the first paragraph requires the following "Quality Assurance is also responsible for ensuring appropriate acceptance requirements for procured materials, equipment and services are included in procurement documents."

This requirement has been implemented by RG&E through the review of Safety Related procurement documents by Quality Assurance personnel .

Requested Change

RG&E is requesting to remove this requirement to allow for the elimination of the review of procurement documents by Quality Assurance personnel.

ATTACHMENT 1

Justification

The second sentence of Paragraph 7, of Section 17.2.4, Procurement Control states the following:

"In addition, a verification of proper inclusion of the quality standards, quality assurance program requirements, method of procurement, and the applicable acceptance criteria is performed."

This requirement will be implemented by having line personnel perform reviews of procurement documents for the above criteria. These line personnel will receive the appropriate training to perform these reviews. In addition, these reviews will be conducted in accordance with approved procedures.

Quality Assurance will assess the effectiveness of this process through a program of planned and periodic independent assessments conducted in accordance with Section 17.3.2, Assessments.

Since the controls put in place provide reasonable assurance that the appropriate acceptance criteria are included in procurement documents, this change does not reduce the scope of the Quality Assurance Program.

Table 17.1.7-1 Conformance of Ginna Station Program to Quality Assurance Standards, Requirements and Guides

Regulatory-Guide 1.33, Rev. 0 - Change 1

Current Commitments

- RG&E commits to ANSI N18.7/ANS-3.2-1976 Section 4.3.1 for the offsite review function, excluding staffing.
- RG&E commits to ANSI/ANS-3.1-1987, Section 4.7 for the qualification requirements for NSARB members.

Requested Change

RG&E is requesting to eliminate the commitment to ANSI N18.7/ANS-3.2-1976 Section 4.3.1.

ATTACHMENT 1

Justification for Change

This change is being made to eliminate a conflict in our commitments. The requirements of ANSI N18.7/ANS-3.2-1976 Section 4.3.1 and ANSI/ANS-3.1-1987, Section 4.7 both discuss the personnel to be assigned responsibility for independent review, and are redundant. Additionally, the "excluding staffing" qualifier appears to take exception to the requirements ANSI N18.7/ANS-3.2-1976 Section 4.3.1.

Since no significant differences exist between these two requirements, the elimination of one of the commitments will not reduce the scope of the Quality Assurance Program.

Regulatory Guide 1.33, Rev. 0 - Change 2

Current Commitments

- Table 17.1.7-1, RG 1.33, Rev.0, Remarks, states "Ginna conforms to ANSI/ANS-3.2-1988, Section 4.3 for the requirements of the onsite review function."
- QAPSO Section 17.1.2, PORC, third paragraph states "The PORC scope of review, organization, quorum, and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3."

Requested Change

Revise Table 17.1.7-1, RG 1.33, Rev.0, Remarks to state "The on-site review organization scope of review, organization, quorum and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3. The qualification requirements for PORC members and PORC meeting frequency is described in QAPSO Section 17.1.2, PORC."

Justification

QAPSO Section 17.1.2, PORC, discusses the qualification requirements for PORC members and PORC meeting frequency. RG&E conforms to these requirements rather than to Sections 4.3.2 and 4.3.4 of ANSI/ANS-3.2-1988.

The change is requested to eliminate a potential conflict between these requirements. Since this change is a clarification of existing commitments, this change does not reduce the scope of the Quality Assurance Program.

ATTACHMENT 1

Regulatory Guide 1.33, Rev. 0 - Change 3

The Remarks section for this Standard has been reformatted to provide better clarity as to what criteria has been substituted in place of excepted sections. The changes in content are described above.

The revised program, as described above, continues to satisfy the 10CFR50, Appendix B criteria and does not reduce the scope of the Quality Assurance Program.

Attachment 2

ROCHESTER GAS AND ELECTRIC CORPORATION

R.E. GINNA NUCLEAR POWER PLANT

Quality Assurance Program for Station Operation

Revision 27

DOCKET NO. 50-244

December 20, 1999

QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

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QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

17.1 MANAGEMENT

17.1.1 Methodology

The Rochester Gas and Electric Corporation quality assurance policy is established by the Chairman of the Board, President, and Chief Executive Officer. This policy is set forth in the Rochester Gas and Electric Corporation Ginna Station Corporate Statement of Quality Assurance Policy, shown in Table 17.1.1-1, and is binding on all organizations and individuals performing Ginna Station quality affecting activities. The policy is implemented under the overall direction of the Vice President, Nuclear Operations Group through the Department Manager, Nuclear Assessment; the Vice President and Plant Manager, Ginna Station; Vice President Group Manager, Support Services; and heads of other supporting departments.

The Quality Assurance Program has been developed by the Rochester Gas and Electric Corporation to assure safe and reliable operation of the R. E. Ginna Nuclear Power Plant. The program covers all existing Seismic Category I and Class 1E structures, systems, and components (SSCs) including their foundations and supports. It applies to all activities affecting the safety related functions of these structures, systems, and components that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

These activities include designing, operating, maintaining, repairing, fabricating, handling, shipping, storing, procuring, refueling, modifying, cleaning, erecting, installing, testing, inspecting, and inservice inspection. Quality affecting activities are controlled to an extent consistent with their safety significance. In addition, the Quality Assurance Program applies to the activities associated with the packaging of licensed radioactive materials to be shipped in accordance with 10CFR Part 71, excluding design and fabrication of shipping casks.

A classification process is established to identify SSCs that are safety related (SR), safety significant (SS), or have no safety impact (NNS). Criteria are based on information contained in the Updated Final Safety Analysis Report (UFSAR), licensing commitments, guidelines contained in NRC regulatory guides, and functional guidance derived from ANSI/ANS 51.1-1983. For changes to Ginna Station, safety classification and corresponding QA program applicability are determined using approved procedures.

The Nuclear Policy Manual provides a method of applying a graded QA Program to systems, components, items, and services which are not classified as safety related (SR), but are considered necessary for reliable plant operation.

Special terms used in this document which are not found in ANSI N45.2.10 "Quality Assurance Terms and Definitions" are defined in Table 17.1.1-2, Supplementary Glossary.

17.1.2 Organization

The major organizations participating in the Quality Assurance Program fall within the Generation unit, under the leadership of the Senior Vice President, Generation. They are:

- Nuclear Operations - including Ginna Station, Nuclear Engineering Services, Nuclear Assessment, Nuclear Training, and the Plant Operations Review Committee
- Nuclear Safety Audit and Review Board (NSARB)

Under the Corporate Services Unit, the following organizations participate in the QA Program:

- Information Services
- Support Services - including Strategic Supply Management, Laboratory and Inspection Services, Physical Services, and Technical Services.

Additionally, the Energy Delivery Group provides support for the QA Program.

Figure 17.1.2-1 is an organization chart showing these organizations and their relationship to the corporate organization. Chapter 13 of the UFSAR augments the Figure with organization charts for the various departments.

Positions responsible for the principal elements of the quality assurance program are:

- Chairman of the Board, President, and Chief Executive Officer
- Senior Vice-President - Corporate Services
- Senior Vice President, Generation
- Vice President, Nuclear Operations Group
 - Vice President and Plant Manager, Ginna Station
 - Department Manager, Nuclear Engineering Services
 - Department Manager, Nuclear Assessment
 - Manager, Quality Assurance
 - Manager, Operational Review
 - Department Manager, Nuclear Training

- Vice President~~Group Manager~~, Support Services
- Vice President~~Group Manager~~, Energy Delivery
- Vice President~~Group Manager~~, Information Services

SENIOR MANAGEMENT

Chairman of the Board, President, and Chief Executive Officer

The Chairman of the Board, President, and Chief Executive Officer of the Rochester Gas and Electric Corporation directed the establishment of the Quality Assurance Program and issued the governing policy statement. He established the Nuclear Safety Audit and Review Board to review and audit plant operations. The Chairman of the NSARB is responsible to the Chairman of the Board, President, and Chief Executive Officer on all activities of the NSARB.

Senior Vice President, Generation

The Senior Vice President, Generation reports to the Chairman of the Board, President and Chief Executive Officer. He oversees all organizations involved in the operation and support of Ginna Station, including the Quality Assurance Program. He is also responsible for those items delineated in the Administrative Controls section of the Technical Specifications.

Senior Vice President, Corporate Services

The Senior Vice President, Corporate Services reports to the Chairman of the Board, President and Chief Executive Officer and oversees Support Services' and Information Services' activities supporting Ginna Station.

NUCLEAR OPERATIONS

Vice President, Nuclear Operations Group

The Vice President, Nuclear Operations Group is responsible to the Senior Vice President, Generation and has corporate responsibility for operation of Ginna Station in accordance with applicable regulatory requirements. In addition, he has overall responsibility and authority for directing the Quality Assurance Program and is responsible for the approval of the Nuclear Policy Manual. He is responsible for establishing the policies and requirements necessary to assure safe and reliable operation of Ginna Station and for oversight of Ginna Station and those support activities associated with Nuclear Engineering Services, Nuclear Assessment, and Nuclear Training.

Vice President and Plant Manager, Ginna Station

The Vice President and Plant Manager, Ginna Station is responsible to the Vice President, Nuclear Operations Group for the overall on-site safe operation of Ginna Station. He is responsible for:

- the performance of all Ginna Station quality affecting activities in accordance with the requirements of the Quality Assurance Program
- providing qualified personnel to perform quality affecting activities in accordance with approved drawings, specifications, and procedures
- implementation of those items delineated in the Administrative Controls Section of Technical Specifications
- timely referral of appropriate matters to management and the NSARB
- assuring that significant conditions adverse to quality are identified and corrected.

The Vice President and Plant Manager, Ginna Station assigns responsibility to Superintendents and designated staff members for the control of all activities involving operation, maintenance, repair, refueling, implementation of modifications, radiation protection, chemistry, inventory control, storage of materials and equipment, control and storage of portable material handling equipment, fire protection and plant security. Responsibility is delegated for the implementation of Quality Assurance Program requirements at the plant for testing, operation and test status control, and calibration and control of measuring and test equipment.

Department Manager, Nuclear Engineering Services

The Department Manager, Nuclear Engineering Services is responsible to the Vice President, Nuclear Operations Group for:

- design of modifications to the facility in accordance with applicable design bases, regulatory requirements, codes, and standards
- implementation of the licensing/compliance program
- maintenance of Ginna Station design and licensing basis
- nuclear fuel management
- technical support for Ginna corrective action
- technical support for Ginna operations
- computer support
- procurement activities

Department Manager, Nuclear Assessment

The Department Manager, Nuclear Assessment is responsible to the Vice President, Nuclear Operations Group for establishing the overall Quality Assurance Program. He is responsible for assuring that all planned and systematic actions necessary to provide adequate confidence that Ginna Station will operate safely and reliably are established and followed. He provides management with objective information concerning quality, independent of the individual or group directly responsible for performing the specific activity. He has the authority and organizational freedom to assure all necessary quality activities are performed. He is responsible for directing the activities of Quality Assurance and Operational Review.

Manager, Quality Assurance

The Manager, Quality Assurance reports to the Department Manager, Nuclear Assessment and is responsible for all Quality Assurance and Quality Control functions. He and the Quality Assurance staff are responsible for interpreting corporate quality assurance policy and for assuring its implementation. This includes assuring that the program continues to satisfy the requirements of 10CFR50, Appendix B. He is responsible for establishing and implementing an independent assessment program that encompasses all organizations and functions related to the safe operation of Ginna including the qualified suppliers of safety related materials and services. ~~Quality Assurance is also responsible for ensuring appropriate acceptance requirements for procured materials, equipment and services are included in procurement documents.~~

He and the Quality Control staff are responsible for assuring that station activities affecting quality are prescribed and carried out in accordance with approved drawings, specifications, and procedures. Quality Control is also responsible for ensuring the performance of verification inspection and receipt inspection activities and assuring that inspection requirements are included in approved procedures and work packages.

Manager, Operational Review

The Manager, Operational Review reports to the Department Manager - Nuclear Assessment and has responsibility for supporting root cause investigations and corrective action for significant conditions adverse to quality. He is responsible for evaluating and disseminating industry experience information, and for ensuring that relevant and timely recommended actions are provided to management that will eliminate precursors of similar problems at Ginna Station. In addition, Operational Review is responsible for trending and analysis of corrective action program data.

Additionally, he is responsible for the control and maintenance of documents and records that have been transmitted to Records Management using approved processes.

Department Manager, Nuclear Training

The Department Manager, Nuclear Training is responsible to the Vice President, Nuclear Operations Group for maintaining and implementing a National Academy for Nuclear Training accredited training program. In addition, he is responsible for Nuclear Emergency Preparedness.

CORPORATE SERVICES

Vice President Group Manager, Support Services

The Vice President Group Manager, Support Services is responsible to the Senior Vice President, Corporate Services for directing certain activities in support of Ginna Station. These activities include:

- purchasing of materials, services, and components from qualified suppliers, in accordance with applicable commercial, technical, and quality requirements.
- special processes
- inservice inspection
- maintenance of lifting and handling equipment
- training and qualification of welders and NDE personnel
- provision of personnel support for Ginna Station maintenance activities
- chemistry services
- laboratory testing and calibration of electrical M&TE reference standards.

Vice President Group Manager, Information Services

The Vice President Group Manager, Information Services reports to the Senior Vice President, Corporate Services and is responsible for calibrating installed electric meters used at Ginna Station.

ENERGY DELIVERY

Vice President Group Manager, Energy Delivery

The Vice President Group Manager, Energy Delivery reports to the Chairman of the Board, President and Chief Executive Officer and is responsible for providing a staff to perform relay engineering services and conduct routine maintenance and testing of Ginna Station meters and relays. He is responsible for design, modification, and construction activities at Station 13A and for supporting Nuclear Engineering Services design and construction activities at Ginna.

REVIEW AND AUDIT ORGANIZATIONS

Three separate organizational units are established for the purpose of review and audit of plant operations and safety-related matters. They are:

- Plant Operations Review Committee (PORC), the on-site operations review group responsible for reviewing those activities that affect nuclear safety.
- Quality Assurance, the group responsible for the audit of safety related activities associated with plant operations.
- Nuclear Safety Audit and Review Board (NSARB), the independent audit and review group responsible for the periodic review of the activities of the Plant Operations Review Committee, for directing audits and evaluating their results, and for the management evaluation of the status and adequacy of the Quality Assurance Program.

PORC

Review activities of the PORC provide, as part of the normal duties of plant supervisory personnel, timely and continuing monitoring of operating activities to assist the Plant Manager in keeping abreast of general plant conditions and to verify that the day-to-day operating activities are conducted safely and in accordance with applicable administrative controls. PORC also reviews facility operations to detect potential safety hazards. These continuing monitoring activities are considered to be an integral part of the routine supervisory function and are important to the safety of plant operation.

The PORC performs reviews, periodically and as situations demand, to evaluate plant operations and to plan future activities. The

important elements of the reviews are documented.

The PORC scope of review, organization, quorum, and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3. PORC is comprised of personnel who collectively have the experience and competence in the following areas:

- Nuclear Operations
- Mechanical Maintenance
- Electrical Maintenance
- Plant Engineering
- Reactor Engineering
- Radiation Safety
- Chemistry
- Quality Assurance/Quality Control

The PORC chairman meets the qualifications of ANSI Standard N18.1-1971, Section 4.2.2, and holds, or has held, a Senior Reactor Operating License or SRO certification. PORC members meet the qualifications of section 4.3.1 or 4.4 as applicable. The PORC is comprised of a minimum of five (5) and maximum of nine (9) regular members, as designated by the Plant Manager. Alternates are designated in writing by the chairman. The number of attending alternates will not exceed a minority of the number representing a quorum. The PORC meets at least once per calendar month and as convened by the PORC Chairman.

The PORC reviews proposed tests and experiments and changes to procedures that may affect nuclear safety.

The PORC recommends in writing to the Plant Manager approval of items submitted for review, documents whether any change constitutes an unreviewed safety question under 10CFR50.59, and provides immediate notification to the Vice President, Nuclear Operations Group and the Chairman, NSARB of disagreement between the PORC and the Plant Manager.

NSARB

The NSARB scope of review meets the requirements of ANSI Standard N18.7-1976, Section 4.3.4. The NSARB composition, meeting frequency, quorum, and record requirements meet ANSI Standard N18.7-1976, Section 4.3.2. Qualifications of members are commensurate with their functional responsibilities as defined in ANSI/ANS-3.1-1987, Section 4.7, with the exception that the functional areas of nuclear power plant operations and nuclear engineering have over eight (8) years experience in their field with over four (4) years responsible engineering management. The Chairman and Vice-Chairman of the NSARB are appointed by the Chairman of the Board, President and Chief Executive Officer. The members of the NSARB are appointed by the Chairman of the NSARB.

DELEGATION OF WORK

Quality affecting activities may be delegated to contractor organizations and equipment vendors. Delegated activities are subject to Quality Assurance Program requirements through conformance with the external organization's QA Program as approved by RG&E, through conformance with RG&E's Quality Assurance Program, or an approved combination of the two. RG&E retains overall responsibility for the Quality Assurance Program and management oversight of delegated activities. The scope of delegated activities and applicable Quality Assurance Program requirements are defined in procurement documents.

17.1.3 Responsibility

All employees of Rochester Gas and Electric involved in the operation of Ginna Station and associated support activities have full personal and corporate responsibility to assure that the plant is operated, maintained, tested, inspected, and modified in a safe and reliable manner. This responsibility includes assuring that an effective Quality Assurance Program is implemented.

The operation of Ginna Station is governed by the Nuclear Policy Manual, a portion of which governs the Quality Assurance Program. It contains the requirements and assignment of responsibilities for implementation of the program. The manual is prepared, reviewed, and maintained by Ginna Station and approved by the Vice President, Nuclear Operations Group.

The Nuclear Safety Audit and Review Board is directed by the Chairman of the Board, President, and Chief Executive Officer to review the status and adequacy of the Quality Assurance Program at least once every two years to assure that it is meaningful and effectively complies with corporate policy and 10CFR50, Appendix B. This review consists of an audit, or a review equivalent to an audit, performed by company personnel or outside organizations.

The Quality Assurance Program is implemented through procedures prepared and maintained by the responsible organization and approved for use by their designated manager. Quality affecting activities are performed in accordance with these procedures, utilizing sufficient trained personnel and necessary resources to accomplish the work.

17.1.4 Authority

Persons or organizations who are delegated responsibility for planning, establishing, or implementing any part of the RG&E Quality Assurance Program also have the authority to carry out those responsibilities.

Nuclear Operations and nuclear support organization personnel are empowered to take stop work action on their own activities if they determine that continuing the activity would preclude identifying and correcting a condition adverse to quality or lead to an unsafe condition. Designated independent QA/QC personnel have the authority to stop work within the Nuclear Operations Group, nuclear support organizations, and at supplier locations. The ~~Plant Manager, Ginna Station~~ has stop work authority for all activities performed in operating the station.

17.1.5 Personnel Training and Qualification

RG&E is committed to maintaining National Academy for Nuclear Training accredited training programs that produce qualified, competent personnel to operate and maintain Ginna Station. Nuclear Training is assigned the responsibility for supporting Nuclear Operations Group line management with the development, monitoring, and evaluation of an adequate staff of experienced, trained, and qualified personnel to ensure the safe and efficient operation, modification, and maintenance of the plant.

Supervisory personnel are indoctrinated in quality assurance policies, instructions, and procedures to assure they understand that these must be implemented and enforced. Personnel responsible for performing activities affecting quality are trained and indoctrinated in the requirements, purpose, scope, and implementation of applicable quality related program instructions and procedures. Refresher sessions are held periodically. Training of personnel is the responsibility of each department performing an activity affecting quality.

The Vice President, Nuclear Operations Group is responsible for the formal training, qualification, licensing, and re-qualification of operators, as necessary. As appropriate, personnel granted unescorted access to Ginna Station are trained in radiation protection, plant safety, and security.

Training and qualification records are maintained for each employee when required. Documentation of formal training includes objectives, content of the program, attendees, and date of attendance.

17.1.6 Corrective Action

Rochester Gas and Electric has established a corrective action process whereby all personnel are responsible for assuring that conditions adverse to quality are promptly identified, reported, controlled, and corrected. The process is focused on correcting the problem and its root cause rather than assigning blame or fault. Adverse trends in performance are identified, monitored, and reported to management. Corrective action and nonconformance control processes are discussed in Section 17.2.13.

17.1.7 Regulatory Commitments

The Quality Assurance Program is designed to meet the requirements of 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants." A listing of Regulatory Guides, requirements, and standards with the conformance status of each is contained in Table 17.1.7-1.

A grace period of 90 days is applied to several activities specifically defined on Table 17.1.7-1. The grace period will not allow the "clock" for a particular activity to be reset forward. For example, if an annual activity is due on June 15th of a particular year, but is not performed until August 13th, the next due date for that activity will be June 15th of the following year. However, the clock for an activity is reset backwards by performing the activity early.

TABLE 17.1.1-1

**Rochester Gas and Electric Corporation
Ginna Station
Corporate Statement of Quality Assurance Policy**

The Rochester Gas and Electric Corporation has always and continues to be an advocate of quality performance in our daily activities. The Quality Assurance Program described in the Nuclear Policy Manual has been developed to assure that activities, as defined within the program scope, are being performed correctly and in conformance with applicable requirements. This program is designed to assure the safe operation of Ginna Station and to meet the requirements of Title 10, Code of Federal Regulations, Part 50 (10CFR50), Appendix B, "Quality Assurance Criteria for Nuclear Power Plants."

The Quality Assurance Program applies to all activities affecting the safety related functions of those Seismic Category 1 or Class 1E structures, systems, and components that prevent or mitigate the consequences of or monitor the course of postulated accidents, events, or phenomena that could cause undue risk to the health and safety of the public. These activities include operating, maintaining, modifying, refueling, testing, and inspecting. In addition, this program applies to 10CFR50 concerns associated with:

- a. maintaining the high degree of integrity of primary and secondary barriers of systems or structures containing radioactive materials
- b. providing fire detection, suppression, and consequence mitigation items utilized both to protect the safety related structures, systems, and components and to assure safe operation in the event of postulated fire
- c. providing assurance that instrumentation and controls which monitor accidents, or provide a secondary role in accident monitoring, function correctly and accurately.

This program also applies to the shipping of licensed radioactive material under 10CFR71, except for design and fabrication of shipping casks.

The Department Manager, Nuclear Assessment is responsible for coordinating the formulation of the Quality Assurance Program. The Manager, Quality Assurance is responsible for assuring that the program is implemented. Ginna Station, Nuclear Engineering Services, Nuclear Assessment, Nuclear Training, Support Services, Information Services, and Energy Delivery are responsible for implementing the Quality Assurance Program in accordance with the requirements of the Nuclear Policy Manual.

**Thomas S. Richards
Chairman of the Board, President
and
Chief Executive Officer**

Date _____

TABLE 17.1.1-2

Supplementary Glossary

Terms with special meanings used in this document that are not defined in ANSI N45.2.10, "Quality Assurance Terms and Definitions," are defined below.

- Adopted** - RG&E has endorsed, wholly or in part, an industry code, standard, or NRC Regulatory Guide for which no formal commitment has been made.
- Alternative** - Relates to existing and proposed industry code, standard, or NRC Regulatory Guide for which RG&E provides other means to assure quality.
- Approval** - The formal act of endorsing or adding positive authorization, or both, to an action or document. Approval may be given only by an authorized individual.
- As-built drawings** - Drawings such as flow prints, electrical elementary diagrams, instrumentation and control schematics, and piping layout drawings that reflect the actual current plant field configuration.
- Audit** - A documented activity to determine, through investigation, the adequacy of and adherence to established procedures, instructions, specifications, codes and standards, or other applicable contractual and licensing requirements and the effectiveness of implementation.
- Audit (internal)** - Audit of those portions of the RG&E Corporation's Quality Assurance Program retained under its direct control and within its organizational structure.

- Certification** - The action, by an authorized person, of determining, verifying, and attesting, in writing, to the qualifications of personnel or material.
- Commitment** - A documented explicit statement, made either by RG&E or through uncontested imposition by the NRC or other regulatory agencies, that requires actions to be performed.
- Conforms** - RG&E has committed fully to the requirements without exception.
- Deviation** - A departure of a characteristic from specified requirements.
- Handling** - An act of physically moving items by hand or by mechanical means, but not including transport on a conveyance, such as motor vehicles, ships, railroad cars, or aircraft.
- Heavy load** - Any load, carried in a given area after a plant becomes operational, that weighs more than the combined weight of a single spent fuel assembly and its associated handling tool ($\geq 1500\#$).
- Inservice Inspection** - A planned, periodic evaluation of the continued structural integrity of installed plant systems and components by nondestructive methods, conducted in accordance with the rules of Section XI of the ASME Boiler & Pressure Vessel Code.
- Inspector** - An individual who has been qualified to perform quality verification inspections.

**Measuring and test
equipment**

- Devices or systems used to calibrate, measure, gage, test, inspect, or control in order to control data or to acquire data to verify conformance to specified requirements. Measuring and test equipment does not include permanently installed plant instrumentation or test equipment used for preliminary checks where data obtained will not be used to determine acceptability or be the basis for design or engineering evaluation.

**Nonconformance
disposition**

- Designated resolution to a nonconforming item by cognizant personnel (e.g., rework, repair, use-as-is or reject).

Performance-based

- An approach that focuses on the end results that directly contribute to safe and reliable plant operation. Meeting a predetermined set of goals, limits, or performance criteria based upon the design basis safety function and the past performance of structures, systems, components, and organizations, allowing the licensee flexibility to determine how the results will be achieved and adjust quality practices, as necessary.

Procedure

- A document that specifies or describes how an activity is to be performed. It may include methods to be employed, a description of equipment or materials to be used, and sequence of operations.

- Procurement document** - Purchase requisitions, purchase orders, drawings, contracts, specifications, documents referenced by purchase orders, bills of material, or other instructions used to define requirements for purchase.
- QA surveillance** - A technique which uses observation or monitoring to provide confidence that ongoing processes and activities are adequately and effectively performed (Per NQA-1 App. 2A-X).
- Qualified procedure** - A procedure which incorporates all applicable codes and standards, manufacturer's parameters, and engineering specifications and has been proven adequate for its intended purpose. Section IX of the ASME Code defines procedure qualifications for welding activities.
- Quality affecting activities** - Activities for which the Quality Assurance Program applies.
- Safety related structures, systems, and components** - Equipment that is relied upon to remain functional during and following design basis events to ensure (1) the integrity of the reactor coolant boundary, (2) the capability to shutdown the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10CFR100 guidelines.
- Safety significant structures, systems, and components** - Subset of equipment not required to perform a safety related function but which are subject to additional controls established by RG&E.
- Supplier surveillance** - A review, observation, or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material

procurement or manufacture.

Traceability

- A characteristic given to material, a document, a group of documents, or material and its related documents which permits the retrieval or reassociation of the items, if necessary, at a later time. The term is also used to denote a document which records a chronological history of all processes or operations which have been performed on an item.

**Verification
inspection**

- A phase of quality control which by means of examination, observation, or measurement determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes, or structures to predetermined quality requirements.

TABLE 17.1.7-1

Conformance of Ginna Station Program to Quality Assurance Standards, Requirements, and Guides

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.8 Rev.(1)-Personnel Selection and Training	Conforms	RG 1.8 Rev.(1) incorporates ANSI N18.1.
Regulatory Guide 1.26 Rev.(3)-Quality Group Classifications & Standards for Water, Steam, and Radioactive-Waste Containing Components of Nuclear Power Plants	Alternative	A classification process is established to identify SSCs that are safety related (SR), safety significant (SS), or have no safety impact (NNS). Criteria are based on information contained in the Updated Final Safety Analysis Report (UFSAR), licensing commitments, guidelines contained in NRC regulatory guides, and functional guidance derived from ANSI/ANS 51.1-1983.
Regulatory Guide 1.28 Rev.(2)-Quality Assurance Program Requirements (Design and Construction)	Conforms	RG 1.28 Rev.(2) incorporates ANSI N45.2-1977.
Regulatory Guide 1.29 Rev.(3)-Seismic Design Classification	Alternative	<p>Seismic design requirements for existing structures, systems, and components performing functions listed in positions C.1 and C.3 of the Regulatory Guide are specified in the UFSAR. New structures, systems, and components, and configuration changes meet the seismic design requirements of this regulatory guide or the UFSAR. The pertinent quality assurance requirements of 10CFR50, Appendix B are applied as required by positions C.1 and C.4 of this Regulatory Guide, irrespective of an item's seismic design.</p> <p>Portions of existing structures, systems, and components with failure consequences described in position C.2 of this guide are designed and constructed to seismic requirements specified in the UFSAR. New structures, systems, and components, and configuration changes meet the design and construction seismic requirements of the UFSAR or this Regulatory Guide. A quality assurance program similar to 10CFR50, Appendix B is applied to the SSE failure prevention function of these items. These items are not considered basic components pursuant to 10CFR21.</p>
Regulatory Guide 1.30 Rev.(0)-Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment	Conforms	RG 1.30 Rev.(0) ANSI N.45.2.4-1972.

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.33 Rev.(0) Quality Assurance Program Requirements (Operations)	Alternative	Regulatory Guide 1.33 Rev.(0) incorporates ANSI N18.7-1972. Ginna conforms to Regulatory Guide 1.33 Rev.(0) except for Appendix A and conforms to ANSI N18.7-1972 except for Sections 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.3, and 4.5. In place of these excepted sections the following requirements are substituted. Ginna conforms to Regulatory Guide 1.33 Rev.(2) Regulatory Positions 1 (including its Appendix A) and 3 (which invokes and modifies ANSI N18.7-1976/ANS 3.2 Section 4.3.4) and conforms to <u>ANSI N18.7-1976/ANS 3.2 Section 4.3.1</u> , 4.3.2 and 4.3.4 (as modified) for the offsite review function, excluding staffing. Ginna conforms to ANSI N18.7-1972 Section 4.4 with the exception that a 90 day grace period may be applied to the 24 month frequency for performance of internal audits. Ginna conforms to ANSI/ANS 3.2-1988 Section 4.3 for the requirements of the onsite review function. Ginna also conforms to regulatory staff comments and supplementary guidance in "Guidelines on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants," Revision 0, October 1973 (Orange Book-Revision 0).

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>	
<p>Regulatory Guide 1.33 Rev.(0)-Quality Assurance Program Requirements (Operations)</p>	<p>Alternative</p>	<p><u>Requirement</u></p> <p>Regulatory Guide 1.33 Rev.(0) except for Appendix A.</p> <p>ANSI N18.7-1972 except for Sections:</p> <ul style="list-style-type: none"> • 4.2.2 • 4.2.3, 4.2.4, & 4.2.5 • 4.3 • 4.4 • 4.5 <p>Ginna also conforms to regulatory staff comments and supplementary guidance in "Guidelines on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants," Revision 0, October 1973 (Orange Book-Revision 0).</p>	<p><u>Substituted Criteria</u></p> <p>Regulatory Guide 1.33 Rev.(2) Regulatory Position 1 (including its Appendix A)</p> <p>ANSI/ANS-3.1-1987 Section 4.7</p> <p>ANSI N18.7-1976/ANS-3.2 Section 4.3.2</p> <p>ANSI N18.7-1976/ANS-3.2 Section 4.3.4 as invoked and modified by Regulatory Guide 1.33 Rev.(2) Regulatory Position 3.</p> <p>Ginna conforms to ANSI N18.7-1972 Section 4.4 with the exception that a 90 day grace period may be applied to the 24 month frequency for performance of internal audits.</p> <p>The on-site review organization scope of review, organization, quorum and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3. The qualification requirements for PORC members and PORC meeting frequency is described in QAPSO Section 17.1.2, PORC.</p>

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.36 Rev.(0)-Nonmetallic Thermal Insulation for Austentic Stainless Steel	Adopted	This Regulatory Guide is adopted for the testing of insulating materials installed on or near safety related stainless steel piping. Insulating materials are not considered basic components pursuant to 10CFR21 and thus the supplier is not required to have a quality assurance program to cover the testing, lot control, and contamination control provisions of this Regulatory Guide. A quality assurance program similar to 10CFR50, Appendix B is applied to the handling, storage, and installation of insulating materials on or near Ginna Station safety related stainless steel piping and components.
Regulatory Guide 1.37 Rev.(0)-Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants	Conforms	RG 1.37 Rev.(0) incorporates ANSI N45.2.1-1973.
Regulatory Guide 1.38 Rev.(2)-Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants	Conforms	RG 1.38 Rev.(2) incorporates ANSI N45.2.2-1972.
Regulatory Guide 1.39 Rev.(2)-Housekeeping Requirements for Water-Cooled Nuclear Power Plants	Conforms	RG 1.39 Rev.(2) incorporates ANSI N45.2.3-1973.
Regulatory Guide 1.54 Rev.(0)-Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants	Alternative	<p>Quality assurance requirements apply only when a coating performs a safety related function instead of the provisions stated in this Regulatory Guide and its referenced standard, ANSI N101.4-1972.</p> <p>See the UFSAR for quality assurance requirements used for existing coatings. For new coatings and configuration changes to existing coatings, either the quality assurance requirements of the UFSAR or the quality assurance requirements of 10CFR50, Appendix B are used instead of the detailed requirements included in this Regulatory Guide.</p>

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.58 Rev.(1)-Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel	Alternate	<p>RG 1.58 Rev.(1) incorporates ANSI N45.2.6-1978. Ginna conforms to Reg. Guide 1.58 Rev.(1) and ANSI N45.2.6-1978 with the following exceptions:</p> <ul style="list-style-type: none"> • A 90 day grace period may be applied to the performance of annual evaluations of inspection, examination and testing personnel qualifications defined in Section 2.3 of ANSI N45.2.6-1978. • RG&E's ISI Plan endorses ASME Code Section XI. The version of the ASME code endorsed is updated periodically. ASME Code Section XI references standards for the qualification and certification of nondestructive testing personnel. Section XI of the ASME Code contains specific requirements for nondestructive examination and also references the use of other supplementary standards for the qualification and certification of personnel performing nondestructive examinations. The applicable versions of the standards referenced in Section XI of the ASME code, as permitted for use by 10 CFR Part 50.55a, may be used for the qualification and certification of personnel performing nondestructive examinations required by Section III and Section XI of the ASME Code in lieu of the standard identified in Reg. Guide 1.58, Rev. 1, (SNT-TC-1A-1975) provided that other applicable rules contained in Section XI of the ASME Code are met.
Regulatory Guide 1.64 Rev.(1)-Quality Assurance Requirements for Design of Nuclear Power Plants	Conforms	RG 1.64 Rev.(1) incorporates ANSI N45.2.11-1974.
Regulatory Guide 1.74 Rev.(0)-Quality Assurance Terms and Definitions	Conforms	RG 1.74 Rev.(0) incorporates ANSI N45.2.10-1973. Some definitions used by Ginna are worded differently than those in this standard; however, the general meanings are the same.
Regulatory Guide 1.88 Rev.(2)-Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records	Alternative	<p>RG 1.88 Rev.(2) incorporates ANSI N45.2.9-1974. Ginna conforms to ANSI N45.2.9-1974 as supplemented by the following alternatives to the requirements in Section 5.6 (Facility).</p> <ul style="list-style-type: none"> • Records may be stored in a 2 hour rated facility meeting the requirements described in QAPSO Section 17.2.15. • Records may be stored temporarily in 1 hour fire rated cabinets provided that the requirements of QAPSO Section 17.2.15 are met.

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.94 Rev. (1)-Quality Assurance Installation, Inspections, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants	Not applicable	RG 1.94 Rev.(1) incorporates ANSI N45.2.5-1974. Regulatory Guide applies to plants in the construction phase and was issued after Ginna was built.
Regulatory Guide 1.116 Rev.(0-R)-Quality Assurance Requirements for Installation, Inspections, and Testing of Mechanical Equipment and Systems	Conforms	RG 1.116 Rev.(0-R) incorporates ANSI N45.2.8-1975.
Regulatory Guide 1.123 Rev.(1)-Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Plants	Conforms	RG 1.123 Rev.(1) incorporates ANSI N45.2.13-1976.
Regulatory Guide 1.143 Rev.(1)-Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants	Alternative	See the UFSAR for design and quality assurance provisions applied to existing radioactive waste management systems, structures, and components. New systems, structures, and components and configuration changes to existing items meet the design and quality assurance provisions described in the UFSAR or those specified by this Regulatory Guide.
Regulatory Guide 1.144 Rev.(1)-Auditing of Quality Assurance Programs for Nuclear Power Plants	Alternate	<p>RG 1.144 Rev.(1) incorporates ANSI N45.2.12-1977. Ginna conforms to RG 1.144 Rev.(1) and ANSI N45.2.12-1977 with the following exceptions:</p> <ul style="list-style-type: none"> • a grace period of 90 days may be applied to the performance of triennial supplier audits and annual supplier evaluations described in Section C.3.b.(2). • In lieu of the 30 day requirement of Section 4.5.1 of ANSI N45.2.12-1977 the following is used: Corrective action response due dates and priority shall be based on safety significance. For audit findings that are determined to be significant conditions adverse to quality, the audited organization's response shall be provided within 30 days. In the event that the corrective action for an audit finding cannot be completed by the response due date, the audited organization's response shall include a scheduled date for corrective action.

TABLE 17.1.7-1 (cont'd)

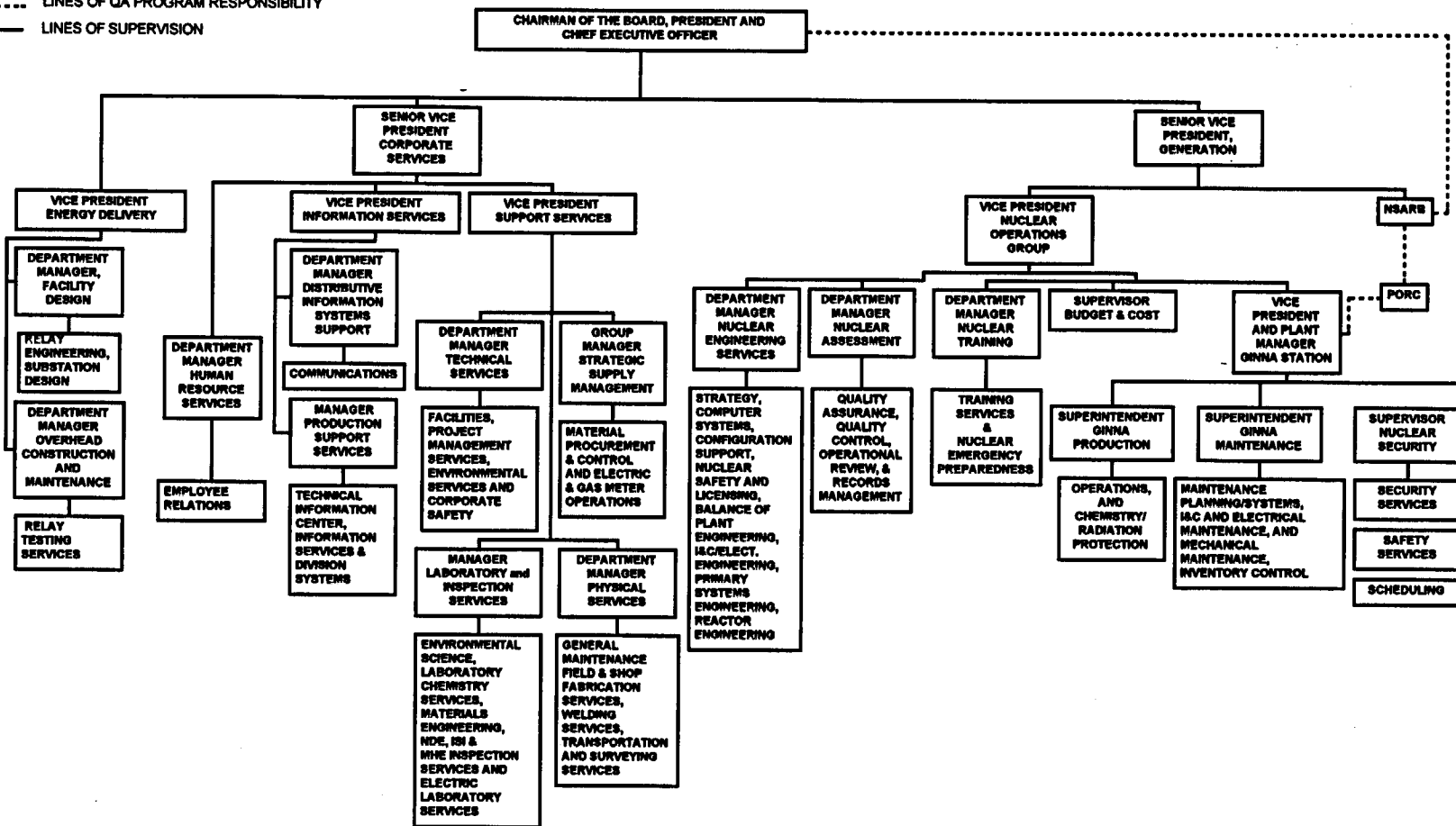
<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.146 Rev.(0)-Qualification of QA Program Audit Personnel for Nuclear Power Plants	Alternate	<p>RG 1.146 Rev.(0) incorporates ANSI N45.2.23-1978. Ginna conforms to RG 1.146 Rev.(0) and ANSI N45.2.23-1978 with the following exceptions:</p> <ul style="list-style-type: none"> • a grace period of 90 days may be applied to the performance of annual lead auditor recertifications described in Sections 3.2 and 5.3 of ANSI N45.2.23-1978. • In lieu of the requirements of 2.3.4 of ANSI N45.2.23-1978 the following is used: Prospective lead auditors shall demonstrate their ability to effectively implement the audit process and effectively lead an audit team. RG&E will describe this demonstration process in written procedures and shall evaluate and document the results of the demonstration. Regardless of the methods used for the demonstration, the prospective lead auditor shall have participated in <u>at least one</u> nuclear quality assurance audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met the other provisions of Section 2.3 of ANSI N45.2.23-1978, the individual may be certified as being qualified to lead audits.
Regulatory Guide 1.152 Rev.(0)-Criteria for Programmable Digital Computer System Software in Safety-Related Systems of Nuclear Power Plants	Alternative	Ginna conforms to Generic Letter 95-02, and its endorsement of NUMARC/EPRI Report TR-102348 "Guidelines on Licensing Digital Upgrades".
Regulatory Guide 4.15 Rev.(1)-Quality Assurance for Radiological Monitoring Program (Normal Operations)-Effluent Streams and the Environment	Adopted	Ginna conforms to the intent of this Regulatory Guide as addressed in the Process Control Program and applicable to Ginna effluent and environmental radioactivity measurements.
Regulatory Guide 7.10 Rev.(1)-Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material	Adopted	Ginna conforms to the intent of this Regulatory Guide as addressed in the Process Control Program.
10CFR21	Conforms	
10CFR50, Appendix A-General Design Criteria	Alternative	These criteria were in draft form or not written at the time Ginna was designed and built. For existing systems, see UFSAR for criteria applied. New systems, structures, and components, and configuration changes to existing items meet the criteria as described in the UFSAR or 10CFR50, Appendix A.
10CFR50, Appendix B-Quality Assurance Criteria for Nuclear Power Plants	Conforms	

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
10CFR50.55a-Licensing of Production and Utilization Facilities (ASME Boiler and Pressure Vessel Code, Section XI-Rules for Inservice Inspection of Nuclear Reactor Coolant Systems)	Conforms	10CFR50.55 Specifies ASME Section XI code dates. The Ginna program conforms to 10CFR50.55a with the specific editions and addenda of Section XI specified in the Inservice Inspection Plan.
10CFR50.55(e)-Conditions of Construction Permits	Not applicable	Regulatory Guide applies to plants in the construction phase.
10CFR55-Operators Licenses	Conforms	
10CFR55, Appendix A-Requalification Programs for Licensed Operators of Production and Utilization Facilities	Conforms	
Regulatory Positions 2 and 4 of Branch Technical Position CMEB 9.5-1	Alternative	Fire protection controls are in accordance with APCSB 9.5-1, regulatory position IV b.6 and IV b.7.
Generic Letter 89-02, and its endorsement of EPRI NP5652 "Guideline for the Utilization of Commercial Grade Items in Safety-Related Applications (NCIG-07)".	Conforms	
ANSI/ANS 3.1-1987, Selection, Qualification and Training of Personnel for Nuclear Power Plants, section 4.7.	Conforms	Qualification requirements apply to NSARB members only as addressed by this standard.

FIGURE 17.1.2-1
Organization Chart

----- LINES OF QA PROGRAM RESPONSIBILITY
 ——— LINES OF SUPERVISION



17.2 PERFORMANCE/VERIFICATION

17.2.1 Methodology

All personnel performing activities affecting quality involved in the operation and support of Ginna Station are directly responsible for quality. Employees are empowered to make decisions in their areas of responsibility and are held accountable for the quality of their own work. Verification of work is performed by each organization to assure that quality objectives are achieved and established performance standards are met.

The Nuclear Operations Group and supporting organizations involved in Ginna quality related activities accomplish and verify their work using instructions and procedures. For quality affecting activities within their area of responsibility, each organization develops, reviews, approves, and implements such documents. The activities covered include operation, maintenance, repair, inservice inspection, refueling, procurement, modification, special processes, inspection and testing, document control and records management, training of personnel, and audit and surveillance. In addition, RG&E suppliers and contractors are required to have appropriate instructions and procedures as specified in procurement documents.

Persons preparing, reviewing, and approving instructions and procedures are responsible for assuring that they include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. In addition, they assure that these documents are kept current.

17.2.2 Design Control

Plant configuration changes, including temporary changes, are implemented utilizing design control measures at least commensurate with those applied to the original design.

Nuclear Engineering Services is the design authority for Ginna Station. Other organizations are authorized to perform design activities as designated in the Nuclear Policy Manual and supported by approved procedures and instructions.

Design control measures are defined and implemented by trained and qualified personnel through approved procedures and instructions. These procedures and instructions assure that:

- Design inputs are appropriately specified on a timely basis and correctly translated into design documents.
- Design interfaces are identified and controlled.
- The design is suitable for its intended application.
- Design adequacy is verified by personnel other than those who performed the design.
- Design changes, including field changes, are governed by control measures.
- Deviations and nonconformances are controlled.
- Design records are identified, controlled, and retrievable.

Design inputs (such as design bases, performance requirements, regulatory requirements, codes, and standards) and changes to design inputs are identified, documented, reviewed and approved, and controlled.

Design documents, including drawings and specifications, are prepared and technically reviewed by qualified personnel. The technical reviewer ensures that the design document is in accordance with the design concept, incorporates appropriate design inputs, and conforms to approved procedures and instructions. Design change packages are approved by appropriate management or supervision prior to release for implementation.

Design interfaces, both internal and external, are formally identified, and design activities are coordinated among the participating organizations to ensure that design inputs and outputs are properly developed, reviewed, approved, and distributed. Multi-discipline changes are reviewed to ensure integration of design outputs.

Design changes are reviewed to determine whether the change results in a change to plant Technical Specifications or an unreviewed safety question, under the provisions of 10CFR50.59.

Design data bases, documents, and procedures are revised to reflect changes installed in the plant. Design records are identified, indexed, and controlled to allow for retrievability of design basis information and to provide evidence of appropriate design controls.

17.2.3 Design Verification

Design verification is the process of reviewing, confirming, or substantiating the design to assure:

- the acceptability of the design inputs
- adherence to the design process
- that the design inputs are reflected in the design outputs
- that design changes are implemented under controls commensurate with those applied to the initial design.

Procedures define acceptable verification methods and controls, design parameters subject to verification, acceptance criteria, and verification documentation and records requirements.

A design change is verified prior to release of the change to perform its design function. A design may be released for prefabrication or installation prior to completion of the design verification only if controls are established. The scope of work that can be completed must be defined and controls implemented to ensure that design verification is completed prior to use of the change.

Verification methods include:

- performance of design reviews
- use of alternate calculations
- performance of qualification tests.

If used, qualification tests shall verify the adequacy of the specific design or design feature under the most adverse design conditions, unless those conditions cannot be generated without initiating a plant transient. In those cases, simulated or extrapolated conditions are used.

Design verification is performed by technically qualified individuals other than those who developed the design. Design verification by the designer's immediate supervisor is allowable if other qualified individuals are not readily available. The designer's supervisor documents independence from the design development when required to perform a verification.

The design organization determines the extent of verification required, based upon safety significance, the degree of standardization, and the state-of-the-art of the change.

17.2.4 Procurement Control

Purchased material, equipment, and services are controlled using five major means:

- planning
- procurement document requirements
- supplier selection
- control of supplier performance
- acceptance of items and services.

All procurement is conducted in accordance with procurement documents and governing procedures. In unusual circumstances, (e.g. replacement parts are needed to preclude the development of some unsafe or undesirable condition), an item, which is relatively simple and standard in design and manufacture, may be purchased under a commercial (non-safety related) purchase order and subsequently upgraded to safety-related using the commercial grade dedication process.

All reviews, inspections, surveillances, and audits are conducted by personnel who are competent to determine whether a supplier is capable of providing acceptable quality products.

Planning

Procurement planning by procuring organizations consists of determining the supplier of choice, methods to be used for acceptance of the item or service, and requirements for control of supplier performance. Source inspection (surveillance), certificate of conformance, receipt inspection, and pre- or post-installation testing are methods which are considered for item acceptance. The extent of the acceptance methods and associated verification activities will vary depending upon the relative importance and complexity of the purchased item or service and the supplier's past performance.

Procurement Document Requirements

Procurement document control for the procurement of materials, parts, components, and services is initiated by department staff personnel. Procurement procedures require that organizations preparing procurement documents consider and include, as appropriate:

- scope of work
- technical requirements
- Quality Assurance Program requirements
- right of access
- documentation requirements
- reporting requirements (nonconformance and 10CFR Part 21).

Changes or revisions to procurement documents are subject to the same review and approval requirements as the original documents.

Originating department review of procurement documents includes verification of applicable regulatory, code, and design requirements and suitability for intended service. In addition, a verification of proper inclusion of the quality standards, quality assurance program requirements, method of procurement, and the applicable acceptance criteria is performed. For spare or replacement parts, procurement documents are reviewed to determine similarity to, compatibility with, and acceptance criteria commensurate with the original design.

Supplier Selection

Selection of a supplier is based on the evaluation of their capability to provide the items or services in accordance with procurement document requirements. The evaluation, which is accomplished during procurement planning, determines the necessity for the supplier selection to be made from the approved suppliers list. For items and services procured from suppliers required to have a quality assurance program, supplier selection is made from the approved suppliers list or from those who are in the process of being added to the list. Addition of a supplier to the approved suppliers list is based on satisfactory evaluation of the supplier's quality assurance program. The evaluation guidelines for source selection considers the complexity of the item, method(s) of acceptance, and, for a replacement item, whether the source is to be restricted to the original supplier.

Items or services which meet industry standards and are typically utilized in applications other than nuclear may be purchased from suppliers not listed on the approved suppliers list, provided that item acceptance through receipt inspection can be based on acceptance of standard commercial quality. This is supplemented, as necessary, with source surveillance, pre- or post-installation tests, receipt tests, commercial supplier surveys, supplier test reports, or commercial supplier certificates. For commercial grade items and services, an evaluation of intended use is completed to determine critical characteristics which must be verified prior to acceptance for use.

Control of Supplier Performance

Control of supplier performance shall include:

- Monitoring supplier activities through audits and surveillances.
- Evaluation by requesting submittal of supplier documents for review.
- Identifying under what conditions suppliers are to report nonconformances.

Acceptance of Items and Services

The verification methods for the acceptance of items and services are specified during procurement planning and purchase requisition preparation. Receipt inspection is a verification method common for the acceptance of items.

17.2.5 Procurement Verification

The supplier's overall quality assurance organization and program is evaluated in accordance with applicable parts of 10CFR50, Appendix B; codes and standards; and RG&E requirements. Suppliers on the approved suppliers list are reviewed annually for performance and program changes, and audited on a triennial basis.

The degree of supplier surveillance (including review, inspection, or audit) required during design, fabrication, inspection, testing, and shipping shall be determined and documented. The objectives of supplier surveillance are to provide a sampling review of the supplier's quality assurance program implementation and to verify product conformance with respect to the purchase order requirements. The extent of supplier surveillance will be consistent with the safety significance, complexity, quantity, and frequency of procurement of the item or service. As necessary, this may require verification of the activities of suppliers below the first tier.

The verification responsibilities for evaluation and surveillance of supplier activities are assigned to Quality Assurance.

Department supervision is responsible for receipt and control of items pending their acceptance.

Receipt inspection is performed for items and associated services for maintenance, repair, modification, and refueling. Inspections are performed to verify acceptability. To be acceptable, the items and services must conform to procurement documents, have satisfied required inspection and test requirements, and have documentary evidence of conformance available at the plant prior to acceptance for use. Personnel performing receipt inspection and test activities are trained and qualified.

17.2.6 Identification and Control of Items

The identification and control of materials, parts, and components (including consumable materials and items with limited shelf life) is accomplished in accordance with written requirements and applies in any stage of fabrication, storage, or installation. Identification and control requirements are

established either by an existing procedure or by requirement documents prepared during the planning stages of a project. The identification and control requirements cover:

- Traceability to associated documents (such as drawings, specifications, purchase orders, manufacturing test data and inspection documents, and physical and chemical mill test reports).
- Specification of the degree of identification to preclude a degradation of the item's functional capability or quality.
- Proper identification of materials, parts, and components prior to release for manufacturing, shipping, construction, and installation.

Nuclear Engineering Services is responsible for assuring that drawings and specifications contain appropriate requirements for the identification and control of materials, parts, or components. Suppliers are required to assure that all required documentation for an item is properly identified and related to the item.

17.2.7 Handling, Storage, and Shipping

The Nuclear Operations Group and support organizations are responsible for developing and implementing procedures for the handling, storage, shipping, preservation, and cleaning of quality related material and equipment. These procedures provide guidelines to protect items from damage, loss, and deterioration. Also, items are marked or labeled during packaging, shipping, handling, and storage to identify and maintain the items' integrity and to indicate need for special controls.

Under normal circumstances, manufacturer's specific written instructions and recommendations and purchase specification requirements are invoked for cleanliness, preservation, special handling, and environmental requirements for storage. In the absence of, or in addition to, specific manufacturer requirements, management may invoke requirements in accordance with department procedures. Examples of such requirements include desiccants, shelf life, endcaps, and special packaging requirements.

Procurement documents and engineering specifications define requirements for the handling, shipping, storage, cleaning, and preservation of new fuel and fuel assemblies, materials, and equipment. When necessary to maintain acceptable quality, special protective measures (such as containers, shock absorbers, etc.) are specified and provided.

Procedures are established for the routine maintenance and inspection of lifting and handling equipment and for the handling

of heavy loads and safe load paths.

17.2.8 Test Control

The Ginna Station test program includes the surveillance test program required by Technical Specifications, inservice pump and valve testing, and testing following modification and maintenance.

The test program requires the identification, control, and documentation of all tests and the preparation of written procedures required for satisfactory accomplishment of the testing. Written procedures and checklists for the testing program include: instructions and prerequisites to perform the test, use of proper test equipment, inspection hold points, and acceptance criteria.

Testing is utilized as follows:

- To determine continued operability of installed structures, systems, and components consistent with the surveillance requirements of Technical Specifications and the inservice pump and valve program.
- To demonstrate the ability and to support the qualification of safety related equipment to function in harsh environmental conditions.
- To demonstrate the acceptability of replacement and purchased items.
- To support trouble shooting and investigation of degraded conditions.
- To demonstrate the acceptability of items involved in maintenance, repair, and modifications.

Contractors who perform testing are required to do so in accordance with RG&E's procurement document requirements.

All test results are required to be documented, reviewed, and approved by those responsible for performing the test. Unacceptable test results and test anomalies are evaluated in accordance with established procedures to determine the cause of the problem and the need for retest or for increasing test frequency.

The design organization is responsible for assuring that required tests for modifications are included in design documents.

17.2.9 Measuring and Test Equipment Control

Programs are established which assure that test instruments, tools, gauges, shop and reference standards, and other measuring and testing devices used in activities affecting quality are properly controlled and calibrated. Elements of control include calibration procedures, establishment of calibration frequencies, and maintenance requirements for measuring and test equipment.

Calibration procedures include step-by-step calibration methods and requirements for instrument accuracy. Calibration frequency is based on required accuracy, degree of usage, stability characteristics, manufacturer's recommendations, experience, and other conditions affecting measurement capability.

The program for control of measuring and test equipment includes:

- Assuring timely calibration of equipment.
- Providing unique identification of the next calibration date on the equipment calibration tags or stickers and traceability to calibration test data.
- Providing traceability of shop standards to nationally recognized standards and periodic revalidation of shop standards. Where national standards do not exist, procedures contain instructions to document the basis for calibration. Except where standards with the same accuracy as the instruments being calibrated are shown to be adequate for the requirements, calibration standards are to have a greater accuracy than the standards being calibrated.
- Assuring that calibrating equipment is calibrated against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, if not possible, have an accuracy that ensures the equipment being calibrated will be within the required tolerance.
- Providing for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates.
- Controlling the purchase requirements of new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions.

In the event a measuring instrument (i.e., shop or field standard) is found out of calibration, an investigation is conducted to determine the validity of previous measurements.

Responsibilities and requirements for the selection and use of calibrated measuring and test equipment are described in the Nuclear Policy Manual and related procedures.

Installed plant instrumentation is subject to calibration and control requirements of Technical Specifications and is not subject to calibration and control requirements for measuring and test equipment. The Nuclear Policy Manual amplifies responsibilities and requirements for installed plant instruments.

17.2.10 Inspection, Test, and Operating Status

Equipment or systems not ready for normal service are clearly identified by use of tags, control logs, and other suitable means to indicate the status of the items being isolated in order to prevent their inadvertent use.

Ginna Station is responsible for indicating the status of operating equipment or systems to be removed from service for maintenance, repair, or modification in accordance with the approved Electric System Operating Rules.

System status is indicated through the use of hold tags, block tags, and corresponding control logs. Equipment or system inspection and test status are indicated by use of test tags, labels, or status sheets.

Written procedures control the use of hold tags, test tags, and labels. Personnel who have station holding authority, as designated by the Plant Manager, are responsible for directing the status change of equipment and systems in accordance with the approved station holding procedures.

Job control documents are used to indicate status of the work, inspections or tests, and corresponding acceptance or rejection criteria. These job control documents preclude the inadvertent bypassing of inspections and tests. They are maintained at a designated control location to indicate the status and the completion of required inspections and tests.

Measures are established to monitor the completion status of inservice inspection.

17.2.11 Special Process Control

Written procedures are established to control special processes, such as welding, brazing, heat treating, and nondestructive examination to assure compliance with applicable codes, standards, and design specifications. Qualification of personnel and special process procedures comply with the requirements of applicable codes and standards. When special process qualification requirements are not included in existing codes and standards, they are described in procedures which give details of the special process, personnel qualification requirements, equipment necessary, and special process qualification requirements.

The Nuclear Policy Manual describes the criteria that define which processes are special. These criteria include processes which are highly dependent on the skill of the worker or the control of the process or both, and in which the desired quality cannot be readily determined by inspection or test.

Procuring organizations are responsible for requiring suppliers, in procurement documents, to control special processes in accordance with the above requirements. Special process procedures submitted by suppliers and contractors are reviewed for adequacy by RG&E.

Nuclear Assurance and the Ginna Station Maintenance organization are responsible for assuring that personnel performing special processes under their cognizance are qualified and are using qualified procedures. Support Services is responsible for the qualification of special process personnel and procedures. Qualification of personnel and procedures is documented.

17.2.12 Inspection

Procedures prepared for the control of activities include inspection requirements and hold points as required by drawings, instructions, requirement documents, specifications, codes, standards, or regulatory requirements. For clarification, and to distinguish from preventive maintenance inspections, the following controls are associated with the quality assurance function inspections and referred to as *verification inspections*.

Verification inspection planning is used to determine the optimum method for performing hold point or final inspections. Planning considerations include: hold point execution by witness or inspection, the need for calibrated measuring tools and equipment, use of sample plans for multiple quantities, and the need for other verification options (e.g., non-destructive examination).

Hold points are used as necessary to ensure that inspections are accomplished at the correct points in the sequence of work activities.

Verification inspection procedures include:

- identification of quality characteristics to be inspected
- a description of the method of inspection to be used
- acceptance and rejection criteria
- requirements for recording the inspection results
- the need to provide evidence of inspection activity completion.

Verification inspections are performed by inspection personnel who are appropriately qualified and independent. They are performed in accordance with approved procedures, instructions, or plans to support preplanned hold points, final acceptance verification, or receipt acceptance activities. Inspection results are required to be documented. When items are reworked, the rework is reinspected to the original or equivalent requirements.

Outside contractors are required by procurement documents to have and to follow similar procedures and to use independent inspectors.

17.2.13 Corrective Action

Conditions adverse to quality are those conditions which reduce confidence that a structure, system, or component at Ginna Station will perform satisfactorily in service.

Significant conditions adverse to quality are those conditions which, if uncorrected, could affect the health and safety of the public, seriously affect the ability to operate the plant in a safe manner, represent a serious breakdown in activity controls, or will require a major effort to restore capability to perform specified functions.

Conditions adverse to quality are promptly identified, reported to supervision, corrected, and evaluated to determine if a significant condition adverse to quality exists.

When a significant condition adverse to quality is identified, an evaluation of the effect of continuing the activity is performed. If continuing the activity would obscure or preclude identification and correction of the deficiency, or if continuing the activity would increase the extent of the deficiency or lead to an unsafe condition, stop work action is taken.

Nuclear Assessment has authority to stop work on all activities at or in support of Ginna Station, with the exception of operating deficiencies. For operating deficiencies, Nuclear Assessment may recommend stop work action to station management.

For significant conditions adverse to quality, RG&E management reviews initiated reports to determine causes, develops corrective action plans to resolve the condition, and takes action to preclude recurrence.

Procedures are established for the control, evaluation, and disposition of deficient material, parts, and components to prevent their inadvertent test, installation, or use. Items which do not conform to the drawing or specification requirements are identified, controlled, and reported.

Nonconformances identified at a supplier's facility and reported to RG&E, for which the supplier has recommended a disposition of use-as-is or repair, are normally reviewed and the disposition approved by the procuring organization.

Items are repaired and reworked in accordance with approved procedures and drawings. The repair or rework must be verified as acceptable by an inspection of the affected item or process which is at least equal to the original inspection method.

Items which are accepted "use-as-is" are fully documented with the drawing or specification requirement and technical justification for acceptance, and are screened under the requirements of 10CFR50.59.

Nonconformance status information is compiled and analyzed for adverse trends and provided to management.

17.2.14 Document Control

Document control requirements contained in the Nuclear Policy Manual control the issuance of procedures, instructions, drawings, and specifications. These document control requirements are delineated in approved procedures which define the responsibilities for the control of each type of controlled document.

Each organization responsible for an activity is also responsible for providing the necessary review and approval of instructions, procedures, or drawings. Such review is to assure that documents are adequate, include appropriate qualitative and quantitative requirements, and include quality assurance requirements.

Changes to procedures specified in the Administrative Controls Section of the Technical Specifications receive a technical review in accordance with ANSI/ANS 3.2-1988, Section 4.2. The portion of the technical review associated with the safety significance of the change is performed by a reviewer who has not been involved with formulating the change. Reviewers shall be designated by the PORC Chairman or Plant Manager and shall have qualifications equivalent to those of regular PORC members and meet ANSI Standard N18.1-1971, Section 4.3.1 or 4.4 as applicable. Changes that may affect nuclear safety are referred to and subsequently reviewed by PORC. The change is subsequently approved by the Plant Manager or designee. All procedure changes have a minimum of two individuals involved.

Temporary changes to procedures, in addition to the review and approval process described above, are also approved by the Shift Supervisor. Requirements for the pre-approval review of Ginna Station procedures and the temporary change process are consistent with the guidelines of ANSI N18.7-1972, Sections 5.4 and 5.5.

The Nuclear Policy Manual requires that documents be controlled as appropriate, considering the type of document, safety significance, and intended use.

Types of documents which are controlled include Technical Specifications, UFSAR, Nuclear Directives, procedures, drawings, and specifications.

Suppliers of materials, equipment, and services having an approved quality assurance program are required in procurement documents to provide for control of documents.

The Nuclear Policy Manual requires that each organization provide in its procedures for measures to:

- Assure that documents are available when required.
- Properly review and approve documents such as procedures and instructions.
- Provide the same reviews and approvals for changes to documents as was required of the original document.
- Require that organizations which review and approve documents have access to pertinent information and adequate knowledge of the original document intent.
- Assure that approved changes are promptly transmitted for incorporation into documents.
- Assure that obsolete or superseded documents are eliminated from the system and not used.

17.2.15 Records

The Nuclear Policy Manual defines responsibility and establishes the basic requirements for quality assurance record retention and maintenance. Organizations performing quality affecting activities are responsible for forwarding the records they initiate to Records Management. Each organization generating records is responsible for preparation, review, approval, and implementation of specific quality assurance record procedures for their area of responsibility.

Records to be controlled are delineated in ANSI N45.2.9-1974. Sufficient records of items and activities are generated and maintained to document completed work. Items and activities requiring records include:

- design
- engineering
- procurement
- manufacturing
- construction
- inspection and test (e.g., manufacturer's proof and receipt)
- installation
- operations
- maintenance
- modification
- audits

Requirements and responsibilities for preparation, inspection, identification, indexing, review, storage, retrieval, maintenance, safekeeping, retention, and disposition of quality assurance records are in accordance with applicable records procedures, codes, standards, and procurement documents.

Non-duplicated records shall be stored in facilities which meet one of the following requirements:

The first option is a NFPA Class A, four hour minimum rated facility. In addition, this facility shall consider the nine features described in ANSI N45.2.9-1974 Section 5.6 in its construction.

The second option a two hour rated facility designed to meet the requirements of NFPA-232 "Standard for the Protection of Records." These requirements may be met by any one of the following three ways: (1) a 2-hour vault meeting NFPA 232; (2) 2-hour rated file containers meeting NFPA 232 (Class B); or (3) a 2-hour rated fire resistant file room meeting NFPA 232. A fire resistant file room must meet the following additional provisions:

- a. Early warning fire detection and automatic fire suppression should be provided, with electronic supervision at a constantly attended central station.
- b. Records should be stored in fully enclosed metal cabinets. Records should not be permitted on open steel shelving. No storage of records should be permitted on the floor of the facility. Adequate access and aisle ways should be maintained at all times throughout the facility.
- c. Work not directly associated with records storage or retrieval should be prohibited within the records storage facility. Examples of such prohibited activities include but are not limited to: records reproduction, film developing, and fabrication of microfiche cards.
- d. Smoking and eating/drinking should be prohibited throughout the records storage facility.
- e. Ventilation, temperature, and humidity control equipment should be protected inside with standard fire-door dampers where they penetrate fire barriers bounding the storage facility.

The third option is used when temporary storage of records (such as for processing, review, or use) is required. In this case, records shall be stored in a 1 hour fire rated container. The container shall bear a UL label (or equivalent) certifying 1 hour fire protection or be certified by a person competent in the technical field of fire protection. Additionally, sprinkler protection shall be provided in the area in which the containers are stored. The maximum allowable time limit for temporary storage is described in procedures.

The requirements and responsibilities for record accessibility and transmittal are described in the Nuclear Policy Manual. Removal of records from storage is documented and accountability is maintained by the responsible record control organization.

17.3 ASSESSMENT

17.3.1 Methodology

A comprehensive program of planned and periodic self and independent assessments is established to keep management apprised of the overall performance of Ginna Station.

Managers and supervisors assess the activities and results within their organizations' areas of responsibility to assure that they meet quality requirements and performance standards. Through observation and routine monitoring, they detect adverse operational events, declining performance trends, and precursors of potential problems. They take action to correct these problems as well as those identified by external sources.

Independent assessment of the effectiveness of quality program implementation and overall Ginna Station performance is the primary role of the QA organization. Independent assessments are conducted through internal audits and QA surveillances on behalf of the NSARB; the Vice President, Nuclear Operations Group; and as requested by line management. This is accomplished by monitoring performance, reporting findings to line management in a timely manner, and verifying satisfactory resolution of problems. Operational assessment is the evaluation of anomalous performance and potential problem precursors from external sources.

The NSARB conducts independent assessment through periodic review of plant activities and by directing biennial audits and evaluating their results. The responsibilities of the NSARB are discussed in sections 17.1.2 and 17.1.3.

Independent assessment activities are performed in accordance with instructions and procedures by organizations independent of the areas being assessed. Organizations performing independent assessment are technically and performance oriented, with their primary focus on the quality of the end product and secondary focus on processes.

17.3.2 Assessment

Self-assessment

Self-assessment is established in the Nuclear Policy Manual as the responsibility of all organizations with involvement in the operation and support of Ginna Station. Individuals and work groups are accountable for achieving acceptable quality by adhering to procedures and verifying that their work meets quality requirements and performance standards.

Independent Assessment

A program of planned and periodic independent assessments is established and implemented to confirm that activities affecting quality comply with the Quality Assurance Program and that the program has been implemented effectively. Assessments provide comprehensive independent evaluation of activities, results, and procedures.

The independent assessment program includes internal audits, external audits, and QA surveillances. These assessments are both *performance-based* and *compliance-based*, with the focus on activities and functions which often cut across organizational lines. Strengths and weaknesses of an organization's performance are determined in these assessments, allowing QA to identify areas of weaknesses for more frequent scrutiny. In areas of strength, assessment efforts can be reduced, freeing resources for examination of activities that could benefit most from independent assessment.

Internal audits of selected aspects of quality affecting activities are performed at a frequency commensurate with safety significance and management concerns. The audits are regularly scheduled on a formal, preplanned audit schedule in a manner which assures that audits of safety related activities are completed once every twenty-four (24) months. The audit schedule is dynamic, reviewed and revised periodically to assure appropriate coverage of current and planned activities.

Table 17.3.2-1 is a list of audits. Supplementing this list are audits of the Nuclear Emergency Response Plan to satisfy the requirements of 10CFR50.54 (t), and Station Security Plan to satisfy the requirements of 10CFR50.54 (p)(3), 73.56 (g)(1) and (g)(2) and 10CFR73.55 (g)(4). Audit frequency and further discussion of these audits are described in their respective plans.

QA surveillances augment scheduled audits and, by their nature, require less planning and are more responsive to management requests. They are also better suited to event driven activities, such as drills, corrective maintenance, and surveillance tests.

Additional audits and QA surveillances are conducted as necessitated by situations or evaluations including:

- special conditions which preclude deferral
- management concerns resulting from previous assessment results and corrective action

- information from external sources (e.g., generic experience of the nuclear industry, ASME, peer organizations, and regulatory bodies).

Each audit requires the development of an audit plan to provide information about the audit, such as characteristics and activities to be assessed, acceptance criteria, names of those who will perform the audit, scheduling arrangements, and the method of reporting findings and recommendations. Audit planning and performance utilize performance-based techniques that facilitate achievement of assessment objectives.

Audit and QA surveillance assessments are performed in accordance with written procedures or checklists by personnel who do not have direct responsibility in the areas being assessed. Independent assessments may be conducted by Quality Assurance engineers or other qualified personnel, such as technical specialists from other company departments, outside consultants, and individuals from other utilities.

Assessment results are documented and reported to the assessor's management, the supervisor and group head having responsibility in the area assessed, and, for audits, to the Nuclear Safety Audit and Review Board. Within a specified time period, the person having supervisory responsibility in the area assessed is required to review the results, take necessary action to correct the deficiencies identified by the report, and document and report the corrective action.

External audits of major contractors, subcontractors, and suppliers are conducted during the early stages of design and procurement to evaluate their quality assurance program for compliance with all procurement document requirements. Audits are conducted, as necessary, to assure that major contractors, subcontractors, and suppliers are auditing their suppliers' quality assurance programs in accordance with procurement documents. During the project or procurement process, additional audits are performed, as required, to assure all quality assurance program requirements are properly implemented in accordance with procurement documents.

Nuclear Assessment performs regular analyses of assessment results to evaluate quality and performance trends. Results of these analyses, including strengths and weaknesses, are provided to management for their regular review. Management concerns due to assessment results may necessitate a follow-up assessment, either by audit or by QA surveillance. The Nuclear Policy Manual provides guidelines for conducting unscheduled audits including the need for reaudits.

Operational Assessment

The Operational Review section receives and evaluates information from other utilities and vendors. The Nuclear Safety and Licensing section of Nuclear Engineering Services receives and evaluates information from INPO and the NRC. They ensure that relevant and timely recommended actions are provided to management that will eliminate precursors of similar problems at Ginna. This is accomplished through:

- coordinating feedback program to measure and improve the internalization of lessons learned from Operating Experience
- reviewing INPO SOERs and SERs
- reviewing vendor 10CFR Part 21 report of defects
- reviewing NRC information notices.

Table 17.3.2-1

Audit List

Audit Topic Areas (24 months)

- a. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.
- b. Performance, training, and qualifications of the operating and technical staff.
- c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, or methods of operation that affect nuclear safety.
- d. The performance of activities required by the Quality Assurance Program to meet the criteria of 10CFR50, Appendix B.
- e. Facility Fire Protection Program and implementing procedures.
- f. Inspection and audit of the fire protection and loss prevention program performed by non-licensee personnel. The personnel may be representatives of ANI, an insurance brokerage firm, or other qualified individuals.
- g. The radiological environmental monitoring program and the results thereof.
- h. The Offsite Dose Calculation Manual and implementing procedures.
- i. The Process Control Program and implementing procedures.

Enclosure 1

ROCHESTER GAS AND ELECTRIC CORPORATION

R.E. GINNA NUCLEAR POWER PLANT

Quality Assurance Program for Station Operation

Revision 27

DOCKET NO. 50-244

December 20, 1999

QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

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QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

17.1 MANAGEMENT

17.1.1 Methodology

The Rochester Gas and Electric Corporation quality assurance policy is established by the Chairman of the Board, President, and Chief Executive Officer. This policy is set forth in the Rochester Gas and Electric Corporation Ginna Station Corporate Statement of Quality Assurance Policy, shown in Table 17.1.1-1, and is binding on all organizations and individuals performing Ginna Station quality affecting activities. The policy is implemented under the overall direction of the Vice President, Nuclear Operations Group through the Department Manager, Nuclear Assessment; the Vice President and Plant Manager, Ginna Station; Vice President, Support Services; and heads of other supporting departments.

The Quality Assurance Program has been developed by the Rochester Gas and Electric Corporation to assure safe and reliable operation of the R. E. Ginna Nuclear Power Plant. The program covers all existing Seismic Category I and Class 1E structures, systems, and components (SSCs) including their foundations and supports. It applies to all activities affecting the safety related functions of these structures, systems, and components that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

These activities include designing, operating, maintaining, repairing, fabricating, handling, shipping, storing, procuring, refueling, modifying, cleaning, erecting, installing, testing, inspecting, and inservice inspection. Quality affecting activities are controlled to an extent consistent with their safety significance. In addition, the Quality Assurance Program applies to the activities associated with the packaging of licensed radioactive materials to be shipped in accordance with 10CFR Part 71, excluding design and fabrication of shipping casks.

A classification process is established to identify SSCs that are safety related (SR), safety significant (SS), or have no safety impact (NNS). Criteria are based on information contained in the Updated Final Safety Analysis Report (UFSAR), licensing commitments, guidelines contained in NRC regulatory guides, and functional guidance derived from ANSI/ANS 51.1-1983. For changes to Ginna Station, safety classification and corresponding QA program applicability are determined using approved procedures.

The Nuclear Policy Manual provides a method of applying a graded QA Program to systems, components, items, and services which are not classified as safety related (SR), but are considered necessary for reliable plant operation.

Special terms used in this document which are not found in ANSI N45.2.10 "Quality Assurance Terms and Definitions" are defined in Table 17.1.1-2, Supplementary Glossary.

17.1.2 Organization

The major organizations participating in the Quality Assurance Program fall within the Generation unit, under the leadership of the Senior Vice President, Generation. They are:

- Nuclear Operations - including Ginna Station, Nuclear Engineering Services, Nuclear Assessment, Nuclear Training, and the Plant Operations Review Committee
- Nuclear Safety Audit and Review Board (NSARB)

Under the Corporate Services Unit, the following organizations participate in the QA Program:

- Information Services
- Support Services - including Strategic Supply Management, Laboratory and Inspection Services, Physical Services, and Technical Services.

Additionally, the Energy Delivery Group provides support for the QA Program.

Figure 17.1.2-1 is an organization chart showing these organizations and their relationship to the corporate organization. Chapter 13 of the UFSAR augments the Figure with organization charts for the various departments.

Positions responsible for the principal elements of the quality assurance program are:

- Chairman of the Board, President, and Chief Executive Officer
- Senior Vice-President - Corporate Services
- Senior Vice President, Generation
- Vice President, Nuclear Operations Group
 - Vice President and Plant Manager, Ginna Station
 - Department Manager, Nuclear Engineering Services
 - Department Manager, Nuclear Assessment
 - Manager, Quality Assurance
 - Manager, Operational Review
 - Department Manager, Nuclear Training

- Vice President, Support Services
- Vice President, Energy Delivery
- Vice President, Information Services

SENIOR MANAGEMENT

Chairman of the Board, President, and Chief Executive Officer

The Chairman of the Board, President, and Chief Executive Officer of the Rochester Gas and Electric Corporation directed the establishment of the Quality Assurance Program and issued the governing policy statement. He established the Nuclear Safety Audit and Review Board to review and audit plant operations. The Chairman of the NSARB is responsible to the Chairman of the Board, President, and Chief Executive Officer on all activities of the NSARB.

Senior Vice President, Generation

The Senior Vice President, Generation reports to the Chairman of the Board, President and Chief Executive Officer. He oversees all organizations involved in the operation and support of Ginna Station, including the Quality Assurance Program. He is also responsible for those items delineated in the Administrative Controls section of the Technical Specifications.

Senior Vice President, Corporate Services

The Senior Vice President, Corporate Services reports to the Chairman of the Board, President and Chief Executive Officer and oversees Support Services' and Information Services' activities supporting Ginna Station.

NUCLEAR OPERATIONS

Vice President, Nuclear Operations Group

The Vice President, Nuclear Operations Group is responsible to the Senior Vice President, Generation and has corporate responsibility for operation of Ginna Station in accordance with applicable regulatory requirements. In addition, he has overall responsibility and authority for directing the Quality Assurance Program and is responsible for the approval of the Nuclear Policy Manual. He is responsible for establishing the policies and requirements necessary to assure safe and reliable operation of Ginna Station and for oversight of Ginna Station and those support activities associated with Nuclear Engineering Services, Nuclear Assessment, and Nuclear Training.

Vice President and Plant Manager, Ginna Station

The Vice President and Plant Manager, Ginna Station is responsible to the Vice President, Nuclear Operations Group for the overall on-site safe operation of Ginna Station. He is responsible for:

- the performance of all Ginna Station quality affecting activities in accordance with the requirements of the Quality Assurance Program
- providing qualified personnel to perform quality affecting activities in accordance with approved drawings, specifications, and procedures
- implementation of those items delineated in the Administrative Controls Section of Technical Specifications
- timely referral of appropriate matters to management and the NSARB
- assuring that significant conditions adverse to quality are identified and corrected.

The Vice President and Plant Manager, Ginna Station assigns responsibility to Superintendents and designated staff members for the control of all activities involving operation, maintenance, repair, refueling, implementation of modifications, radiation protection, chemistry, inventory control, storage of materials and equipment, control and storage of portable material handling equipment, fire protection and plant security. Responsibility is delegated for the implementation of Quality Assurance Program requirements at the plant for testing, operation and test status control, and calibration and control of measuring and test equipment.

Department Manager, Nuclear Engineering Services

The Department Manager, Nuclear Engineering Services is responsible to the Vice President, Nuclear Operations Group for:

- design of modifications to the facility in accordance with applicable design bases, regulatory requirements, codes, and standards
- implementation of the licensing/compliance program
- maintenance of Ginna Station design and licensing basis
- nuclear fuel management
- technical support for Ginna corrective action
- technical support for Ginna operations
- computer support
- procurement activities

Department Manager, Nuclear Assessment

The Department Manager, Nuclear Assessment is responsible to the Vice President, Nuclear Operations Group for establishing the overall Quality Assurance Program. He is responsible for assuring that all planned and systematic actions necessary to provide adequate confidence that Ginna Station will operate safely and reliably are established and followed. He provides management with objective information concerning quality, independent of the individual or group directly responsible for performing the specific activity. He has the authority and organizational freedom to assure all necessary quality activities are performed. He is responsible for directing the activities of Quality Assurance and Operational Review.

Manager, Quality Assurance

The Manager, Quality Assurance reports to the Department Manager, Nuclear Assessment and is responsible for all Quality Assurance and Quality Control functions. He and the Quality Assurance staff are responsible for interpreting corporate quality assurance policy and for assuring its implementation. This includes assuring that the program continues to satisfy the requirements of 10CFR50, Appendix B. He is responsible for establishing and implementing an independent assessment program that encompasses all organizations and functions related to the safe operation of Ginna including the qualified suppliers of safety related materials and services.

He and the Quality Control staff are responsible for assuring that station activities affecting quality are prescribed and carried out in accordance with approved drawings, specifications, and procedures. Quality Control is also responsible for ensuring the performance of verification inspection and receipt inspection activities and assuring that inspection requirements are included in approved procedures and work packages.

Manager, Operational Review

The Manager, Operational Review reports to the Department Manager - Nuclear Assessment and has responsibility for supporting root cause investigations and corrective action for significant conditions adverse to quality. He is responsible for evaluating and disseminating industry experience information, and for ensuring that relevant and timely recommended actions are provided to management that will eliminate precursors of similar problems at Ginna Station. In addition, Operational Review is responsible for trending and analysis of corrective action program data.

Additionally, he is responsible for the control and maintenance of documents and records that have been transmitted to Records Management using approved processes.

Department Manager, Nuclear Training

The Department Manager, Nuclear Training is responsible to the Vice President, Nuclear Operations Group for maintaining and implementing a National Academy for Nuclear Training accredited training program. In addition, he is responsible for Nuclear Emergency Preparedness.

CORPORATE SERVICES

Vice President, Support Services

The Vice President, Support Services is responsible to the Senior Vice President, Corporate Services for directing certain activities in support of Ginna Station. These activities include:

- purchasing of materials, services, and components from qualified suppliers, in accordance with applicable commercial, technical, and quality requirements.
- special processes
- inservice inspection
- maintenance of lifting and handling equipment
- training and qualification of welders and NDE personnel
- provision of personnel support for Ginna Station maintenance activities
- chemistry services
- laboratory testing and calibration of electrical M&TE reference standards.

| Vice President, Information Services

| The Vice President, Information Services reports to the Senior Vice President, Corporate Services and is responsible for calibrating installed electric meters used at Ginna Station.

ENERGY DELIVERY

| Vice President, Energy Delivery

| The Vice President, Energy Delivery reports to the Chairman of the Board, President and Chief Executive Officer and is responsible for providing a staff to perform relay engineering services and conduct routine maintenance and testing of Ginna Station meters and relays. He is responsible for design, modification, and construction activities at Station 13A and for supporting Nuclear Engineering Services design and construction activities at Ginna.

REVIEW AND AUDIT ORGANIZATIONS

Three separate organizational units are established for the purpose of review and audit of plant operations and safety-related matters. They are:

- Plant Operations Review Committee (PORC), the on-site operations review group responsible for reviewing those activities that affect nuclear safety.
- Quality Assurance, the group responsible for the audit of safety related activities associated with plant operations.
- Nuclear Safety Audit and Review Board (NSARB), the independent audit and review group responsible for the periodic review of the activities of the Plant Operations Review Committee, for directing audits and evaluating their results, and for the management evaluation of the status and adequacy of the Quality Assurance Program.

PORC

Review activities of the PORC provide, as part of the normal duties of plant supervisory personnel, timely and continuing monitoring of operating activities to assist the Plant Manager in keeping abreast of general plant conditions and to verify that the day-to-day operating activities are conducted safely and in accordance with applicable administrative controls. PORC also reviews facility operations to detect potential safety hazards. These continuing monitoring activities are considered to be an integral part of the routine supervisory function and are important to the safety of plant operation.

The PORC performs reviews, periodically and as situations demand, to evaluate plant operations and to plan future activities. The

important elements of the reviews are documented.

The PORC scope of review, organization, quorum, and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3. PORC is comprised of personnel who collectively have the experience and competence in the following areas:

- Nuclear Operations
- Mechanical Maintenance
- Electrical Maintenance
- Plant Engineering
- Reactor Engineering
- Radiation Safety
- Chemistry
- Quality Assurance/Quality Control

The PORC chairman meets the qualifications of ANSI Standard N18.1-1971, Section 4.2.2, and holds, or has held, a Senior Reactor Operating License or SRO certification. PORC members meet the qualifications of section 4.3.1 or 4.4 as applicable. The PORC is comprised of a minimum of five (5) and maximum of nine (9) regular members, as designated by the Plant Manager. Alternates are designated in writing by the chairman. The number of attending alternates will not exceed a minority of the number representing a quorum. The PORC meets at least once per calendar month and as convened by the PORC Chairman.

The PORC reviews proposed tests and experiments and changes to procedures that may affect nuclear safety.

The PORC recommends in writing to the Plant Manager approval of items submitted for review, documents whether any change constitutes an unreviewed safety question under 10CFR50.59, and provides immediate notification to the Vice President, Nuclear Operations Group and the Chairman, NSARB of disagreement between the PORC and the Plant Manager.

NSARB

The NSARB scope of review meets the requirements of ANSI Standard N18.7-1976, Section 4.3.4. The NSARB composition, meeting frequency, quorum, and record requirements meet ANSI Standard N18.7-1976, Section 4.3.2. Qualifications of members are commensurate with their functional responsibilities as defined in ANSI/ANS-3.1-1987, Section 4.7, with the exception that the functional areas of nuclear power plant operations and nuclear engineering have over eight (8) years experience in their field with over four (4) years responsible engineering management. The Chairman and Vice-Chairman of the NSARB are appointed by the Chairman of the Board, President and Chief Executive Officer. The members of the NSARB are appointed by the Chairman of the NSARB.

DELEGATION OF WORK

Quality affecting activities may be delegated to contractor organizations and equipment vendors. Delegated activities are subject to Quality Assurance Program requirements through conformance with the external organization's QA Program as approved by RG&E, through conformance with RG&E's Quality Assurance Program, or an approved combination of the two. RG&E retains overall responsibility for the Quality Assurance Program and management oversight of delegated activities. The scope of delegated activities and applicable Quality Assurance Program requirements are defined in procurement documents.

17.1.3 Responsibility

All employees of Rochester Gas and Electric involved in the operation of Ginna Station and associated support activities have full personal and corporate responsibility to assure that the plant is operated, maintained, tested, inspected, and modified in a safe and reliable manner. This responsibility includes assuring that an effective Quality Assurance Program is implemented.

The operation of Ginna Station is governed by the Nuclear Policy Manual, a portion of which governs the Quality Assurance Program. It contains the requirements and assignment of responsibilities for implementation of the program. The manual is prepared, reviewed, and maintained by Ginna Station and approved by the Vice President, Nuclear Operations Group.

The Nuclear Safety Audit and Review Board is directed by the Chairman of the Board, President, and Chief Executive Officer to review the status and adequacy of the Quality Assurance Program at least once every two years to assure that it is meaningful and effectively complies with corporate policy and 10CFR50, Appendix B. This review consists of an audit, or a review equivalent to an audit, performed by company personnel or outside organizations.

The Quality Assurance Program is implemented through procedures prepared and maintained by the responsible organization and approved for use by their designated manager. Quality affecting activities are performed in accordance with these procedures, utilizing sufficient trained personnel and necessary resources to accomplish the work.

17.1.4 Authority

Persons or organizations who are delegated responsibility for planning, establishing, or implementing any part of the RG&E Quality Assurance Program also have the authority to carry out those responsibilities.

Nuclear Operations and nuclear support organization personnel are empowered to take stop work action on their own activities if they determine that continuing the activity would preclude identifying and correcting a condition adverse to quality or lead to an unsafe condition. Designated independent QA/QC personnel have the authority to stop work within the Nuclear Operations Group, nuclear support organizations, and at supplier locations. The Plant Manager has stop work authority for all activities performed in operating the station.

17.1.5 Personnel Training and Qualification

RG&E is committed to maintaining National Academy for Nuclear Training accredited training programs that produce qualified, competent personnel to operate and maintain Ginna Station. Nuclear Training is assigned the responsibility for supporting Nuclear Operations Group line management with the development, monitoring, and evaluation of an adequate staff of experienced, trained, and qualified personnel to ensure the safe and efficient operation, modification, and maintenance of the plant.

Supervisory personnel are indoctrinated in quality assurance policies, instructions, and procedures to assure they understand that these must be implemented and enforced. Personnel responsible for performing activities affecting quality are trained and indoctrinated in the requirements, purpose, scope, and implementation of applicable quality related program instructions and procedures. Refresher sessions are held periodically. Training of personnel is the responsibility of each department performing an activity affecting quality.

The Vice President, Nuclear Operations Group is responsible for the formal training, qualification, licensing, and re-qualification of operators, as necessary. As appropriate, personnel granted unescorted access to Ginna Station are trained in radiation protection, plant safety, and security.

Training and qualification records are maintained for each employee when required. Documentation of formal training includes objectives, content of the program, attendees, and date of attendance.

17.1.6 Corrective Action

Rochester Gas and Electric has established a corrective action process whereby all personnel are responsible for assuring that conditions adverse to quality are promptly identified, reported, controlled, and corrected. The process is focused on correcting the problem and its root cause rather than assigning blame or fault. Adverse trends in performance are identified, monitored, and reported to management. Corrective action and nonconformance control processes are discussed in Section 17.2.13.

17.1.7 Regulatory Commitments

The Quality Assurance Program is designed to meet the requirements of 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants." A listing of Regulatory Guides, requirements, and standards with the conformance status of each is contained in Table 17.1.7-1.

A grace period of 90 days is applied to several activities specifically defined on Table 17.1.7-1. The grace period will not allow the "clock" for a particular activity to be reset forward. For example, if an annual activity is due on June 15th of a particular year, but is not performed until August 13th, the next due date for that activity will be June 15th of the following year. However, the clock for an activity is reset backwards by performing the activity early.

TABLE 17.1.1-1

Rochester Gas and Electric Corporation
Ginna Station
Corporate Statement of Quality Assurance Policy


The Rochester Gas and Electric Corporation has always and continues to be an advocate of quality performance in our daily activities. The Quality Assurance Program described in the Nuclear Policy Manual has been developed to assure that activities, as defined within the program scope, are being performed correctly and in conformance with applicable requirements. This program is designed to assure the safe operation of Ginna Station and to meet the requirements of Title 10, Code of Federal Regulations, Part 50 (10CFR50), Appendix B, "Quality Assurance Criteria for Nuclear Power Plants."

The Quality Assurance Program applies to all activities affecting the safety related functions of those Seismic Category 1 or Class 1E structures, systems, and components that prevent or mitigate the consequences of or monitor the course of postulated accidents, events, or phenomena that could cause undue risk to the health and safety of the public. These activities include operating, maintaining, modifying, refueling, testing, and inspecting. In addition, this program applies to 10CFR50 concerns associated with:

- a. maintaining the high degree of integrity of primary and secondary barriers of systems or structures containing radioactive materials
- b. providing fire detection, suppression, and consequence mitigation items utilized both to protect the safety related structures, systems, and components and to assure safe operation in the event of postulated fire
- c. providing assurance that instrumentation and controls which monitor accidents, or provide a secondary role in accident monitoring, function correctly and accurately.

This program also applies to the shipping of licensed radioactive material under 10CFR71, except for design and fabrication of shipping casks.

The Department Manager, Nuclear Assessment is responsible for coordinating the formulation of the Quality Assurance Program. The Manager, Quality Assurance is responsible for assuring that the program is implemented. Ginna Station, Nuclear Engineering Services, Nuclear Assessment, Nuclear Training, Support Services, Information Services, and Energy Delivery are responsible for implementing the Quality Assurance Program in accordance with the requirements of the Nuclear Policy Manual.



Thomas S. Richards
Chairman of the Board, President
and
Chief Executive Officer
Date 12/20/99

TABLE 17.1.1-2

Supplementary Glossary

Terms with special meanings used in this document that are not defined in ANSI N45.2.10, "Quality Assurance Terms and Definitions," are defined below.

- Adopted** - RG&E has endorsed, wholly or in part, an industry code, standard, or NRC Regulatory Guide for which no formal commitment has been made.
- Alternative** - Relates to existing and proposed industry code, standard, or NRC Regulatory Guide for which RG&E provides other means to assure quality.
- Approval** - The formal act of endorsing or adding positive authorization, or both, to an action or document. Approval may be given only by an authorized individual.
- As-built drawings** - Drawings such as flow prints, electrical elementary diagrams, instrumentation and control schematics, and piping layout drawings that reflect the actual current plant field configuration.
- Audit** - A documented activity to determine, through investigation, the adequacy of and adherence to established procedures, instructions, specifications, codes and standards, or other applicable contractual and licensing requirements and the effectiveness of implementation.
- Audit (internal)** - Audit of those portions of the RG&E Corporation's Quality Assurance Program retained under its direct control and within its organizational structure.

- Certification** - The action, by an authorized person, of determining, verifying, and attesting, in writing, to the qualifications of personnel or material.
- Commitment** - A documented explicit statement, made either by RG&E or through uncontested imposition by the NRC or other regulatory agencies, that requires actions to be performed.
- Conforms** - RG&E has committed fully to the requirements without exception.
- Deviation** - A departure of a characteristic from specified requirements.
- Handling** - An act of physically moving items by hand or by mechanical means, but not including transport on a conveyance, such as motor vehicles, ships, railroad cars, or aircraft.
- Heavy load** - Any load, carried in a given area after a plant becomes operational, that weighs more than the combined weight of a single spent fuel assembly and its associated handling tool ($\geq 1500\#$).
- Inservice Inspection** - A planned, periodic evaluation of the continued structural integrity of installed plant systems and components by nondestructive methods, conducted in accordance with the rules of Section XI of the ASME Boiler & Pressure Vessel Code.
- Inspector** - An individual who has been qualified to perform quality verification inspections.

**Measuring and test
equipment**

- Devices or systems used to calibrate, measure, gage, test, inspect, or control in order to control data or to acquire data to verify conformance to specified requirements. Measuring and test equipment does not include permanently installed plant instrumentation or test equipment used for preliminary checks where data obtained will not be used to determine acceptability or be the basis for design or engineering evaluation.

**Nonconformance
disposition**

- Designated resolution to a nonconforming item by cognizant personnel (e.g., rework, repair, use-as-is or reject).

Performance-based

- An approach that focuses on the end results that directly contribute to safe and reliable plant operation. Meeting a predetermined set of goals, limits, or performance criteria based upon the design basis safety function and the past performance of structures, systems, components, and organizations, allowing the licensee flexibility to determine how the results will be achieved and adjust quality practices, as necessary.

Procedure

- A document that specifies or describes how an activity is to be performed. It may include methods to be employed, a description of equipment or materials to be used, and sequence of operations.

- Procurement document** - Purchase requisitions, purchase orders, drawings, contracts, specifications, documents referenced by purchase orders, bills of material, or other instructions used to define requirements for purchase.
- QA surveillance** - A technique which uses observation or monitoring to provide confidence that ongoing processes and activities are adequately and effectively performed (Per NQA-1 App. 2A-X).
- Qualified procedure** - A procedure which incorporates all applicable codes and standards, manufacturer's parameters, and engineering specifications and has been proven adequate for its intended purpose. Section IX of the ASME Code defines procedure qualifications for welding activities.
- Quality affecting activities** - Activities for which the Quality Assurance Program applies.
- Safety related structures, systems, and components** - Equipment that is relied upon to remain functional during and following design basis events to ensure (1) the integrity of the reactor coolant boundary, (2) the capability to shutdown the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the 10CFR100 guidelines.
- Safety significant structures, systems, and components** - Subset of equipment not required to perform a safety related function but which are subject to additional controls established by RG&E.
- Supplier surveillance** - A review, observation, or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material

procurement or manufacture.

Traceability

- A characteristic given to material, a document, a group of documents, or material and its related documents which permits the retrieval or reassociation of the items, if necessary, at a later time. The term is also used to denote a document which records a chronological history of all processes or operations which have been performed on an item.

**Verification
inspection**

- A phase of quality control which by means of examination, observation, or measurement determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes, or structures to predetermined quality requirements.

TABLE 17.1.7-1

Conformance of Ginna Station Program to Quality Assurance Standards, Requirements, and Guides

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.8 Rev.(1)-Personnel Selection and Training	Conforms	RG 1.8 Rev.(1) incorporates ANSI N18.1.
Regulatory Guide 1.26 Rev.(3)-Quality Group Classifications & Standards for Water, Steam, and Radioactive-Waste Containing Components of Nuclear Power Plants	Alternative	A classification process is established to identify SSCs that are safety related (SR), safety significant (SS), or have no safety impact (NNS). Criteria are based on information contained in the Updated Final Safety Analysis Report (UFSAR), licensing commitments, guidelines contained in NRC regulatory guides, and functional guidance derived from ANSI/ANS 51.1-1983.
Regulatory Guide 1.28 Rev.(2)-Quality Assurance Program Requirements (Design and Construction)	Conforms	RG 1.28 Rev.(2) incorporates ANSI N45.2-1977.
Regulatory Guide 1.29 Rev.(3)-Seismic Design Classification	Alternative	<p>Seismic design requirements for existing structures, systems, and components performing functions listed in positions C.1 and C.3 of the Regulatory Guide are specified in the UFSAR. New structures, systems, and components, and configuration changes meet the seismic design requirements of this regulatory guide or the UFSAR. The pertinent quality assurance requirements of 10CFR50, Appendix B are applied as required by positions C.1 and C.4 of this Regulatory Guide, irrespective of an item's seismic design.</p> <p>Portions of existing structures, systems, and components with failure consequences described in position C.2 of this guide are designed and constructed to seismic requirements specified in the UFSAR. New structures, systems, and components, and configuration changes meet the design and construction seismic requirements of the UFSAR or this Regulatory Guide. A quality assurance program similar to 10CFR50, Appendix B is applied to the SSE failure prevention function of these items. These items are not considered basic components pursuant to 10CFR21.</p>
Regulatory Guide 1.30 Rev.(0)-Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment	Conforms	RG 1.30 Rev.(0) ANSI N.45.2.4-1972.

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>	
<p>Regulatory Guide 1.33 Rev.(0)-Quality Assurance Program Requirements (Operations)</p>	<p>Alternative</p>	<p><u>Requirement</u></p> <p>Regulatory Guide 1.33 Rev.(0) except for Appendix A.</p> <p>ANSI N18.7-1972 except for Sections:</p> <ul style="list-style-type: none"> • 4.2.2 • 4.2.3,4.2.4, & 4.2.5 • 4.3 • 4.4 • 4.5 <p>Ginna also conforms to regulatory staff comments and supplementary guidance in "Guidelines on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants," Revision 0, October 1973 (Orange Book-Revision 0).</p>	<p><u>Substituted Criteria</u></p> <p>Regulatory Guide 1.33 Rev.(2) Regulatory Position 1 (including its Appendix A)</p> <p>ANSI/ANS-3.1-1987 Section 4.7</p> <p>ANSI N18.7-1976/ANS-3.2 Section 4.3.2</p> <p>ANSI N18.7-1976/ANS-3.2 Section 4.3.4 as invoked and modified by Regulatory Guide 1.33 Rev.(2) Regulatory Position 3.</p> <p>Ginna conforms to ANSI N18.7-1972 Section 4.4 with the exception that a 90 day grace period may be applied to the 24 month frequency for performance of internal audits.</p> <p>The PORC scope of review, organization, quorum and records meet the requirements of ANSI/ANS-3.2-1988, Section 4.3.</p>

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.36 Rev.(0)-Nonmetallic Thermal Insulation for Austenitic Stainless Steel	Adopted	This Regulatory Guide is adopted for the testing of insulating materials installed on or near safety related stainless steel piping. Insulating materials are not considered basic components pursuant to 10CFR21 and thus the supplier is not required to have a quality assurance program to cover the testing, lot control, and contamination control provisions of this Regulatory Guide. A quality assurance program similar to 10CFR50, Appendix B is applied to the handling, storage, and installation of insulating materials on or near Ginna Station safety related stainless steel piping and components.
Regulatory Guide 1.37 Rev.(0)-Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants	Conforms	RG 1.37 Rev.(0) incorporates ANSI N45.2.1-1973.
Regulatory Guide 1.38 Rev.(2)-Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants	Conforms	RG 1.38 Rev.(2) incorporates ANSI N45.2.2-1972.
Regulatory Guide 1.39 Rev.(2)-Housekeeping Requirements for Water-Cooled Nuclear Power Plants	Conforms	RG 1.39 Rev.(2) incorporates ANSI N45.2.3-1973.
Regulatory Guide 1.54 Rev.(0)-Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants	Alternative	<p>Quality assurance requirements apply only when a coating performs a safety related function instead of the provisions stated in this Regulatory Guide and its referenced standard, ANSI N101.4-1972.</p> <p>See the UFSAR for quality assurance requirements used for existing coatings. For new coatings and configuration changes to existing coatings, either the quality assurance requirements of the UFSAR or the quality assurance requirements of 10CFR50, Appendix B are used instead of the detailed requirements included in this Regulatory Guide.</p>

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.58 Rev.(1)-Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel	Alternate	<p>RG 1.58 Rev.(1) incorporates ANSI N45.2.6-1978. Ginna conforms to Reg. Guide 1.58 Rev.(1) and ANSI N45.2.6-1978 with the following exceptions:</p> <ul style="list-style-type: none"> • A 90 day grace period may be applied to the performance of annual evaluations of inspection, examination and testing personnel qualifications defined in Section 2.3 of ANSI N45.2.6-1978. • RG&E's ISI Plan endorses ASME Code Section XI. The version of the ASME code endorsed is updated periodically. ASME Code Section XI references standards for the qualification and certification of nondestructive testing personnel. Section XI of the ASME Code contains specific requirements for nondestructive examination and also references the use of other supplementary standards for the qualification and certification of personnel performing nondestructive examinations. The applicable versions of the standards referenced in Section XI of the ASME code, as permitted for use by 10 CFR Part 50.55a, may be used for the qualification and certification of personnel performing nondestructive examinations required by Section III and Section XI of the ASME Code in lieu of the standard identified in Reg. Guide 1.58, Rev. 1, (SNT-TC-1A-1975) provided that other applicable rules contained in Section XI of the ASME Code are met.
Regulatory Guide 1.64 Rev.(1)-Quality Assurance Requirements for Design of Nuclear Power Plants	Conforms	RG 1.64 Rev.(1) incorporates ANSI N45.2.11-1974.
Regulatory Guide 1.74 Rev.(0)-Quality Assurance Terms and Definitions	Conforms	RG 1.74 Rev.(0) incorporates ANSI N45.2.10-1973. Some definitions used by Ginna are worded differently than those in this standard; however, the general meanings are the same.
Regulatory Guide 1.88 Rev.(2)-Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records	Alternative	<p>RG 1.88 Rev.(2) incorporates ANSI N45.2.9-1974. Ginna conforms to ANSI N45.2.9-1974 as supplemented by the following alternatives to the requirements in Section 5.6 (Facility).</p> <ul style="list-style-type: none"> • Records may be stored in a 2 hour rated facility meeting the requirements described in QAPSO Section 17.2.15. • Records may be stored temporarily in 1 hour fire rated cabinets provided that the requirements of QAPSO Section 17.2.15 are met.

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.94 Rev. (1)-Quality Assurance Installation, Inspections, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants	Not applicable	RG 1.94 Rev.(1) incorporates ANSI N45.2.5-1974. Regulatory Guide applies to plants in the construction phase and was issued after Ginna was built.
Regulatory Guide 1.116 Rev.(0-R)-Quality Assurance Requirements for Installation, Inspections, and Testing of Mechanical Equipment and Systems	Conforms	RG 1.116 Rev.(0-R) incorporates ANSI N45.2.8-1975.
Regulatory Guide 1.123 Rev.(1)-Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Plants	Conforms	RG 1.123 Rev.(1) incorporates ANSI N45.2.13-1976.
Regulatory Guide 1.143 Rev.(1)-Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants	Alternative	See the UFSAR for design and quality assurance provisions applied to existing radioactive waste management systems, structures, and components. New systems, structures, and components and configuration changes to existing items meet the design and quality assurance provisions described in the UFSAR or those specified by this Regulatory Guide.
Regulatory Guide 1.144 Rev.(1)-Auditing of Quality Assurance Programs for Nuclear Power Plants	Alternate	<p>RG 1.144 Rev.(1) incorporates ANSI N45.2.12-1977. Ginna conforms to RG 1.144 Rev.(1) and ANSI N45.2.12-1977 with the following exceptions:</p> <ul style="list-style-type: none"> • a grace period of 90 days may be applied to the performance of triennial supplier audits and annual supplier evaluations described in Section C.3.b.(2). • In lieu of the 30 day requirement of Section 4.5.1 of ANSI N45.2.12-1977 the following is used: Corrective action response due dates and priority shall be based on safety significance. For audit findings that are determined to be significant conditions adverse to quality, the audited organization's response shall be provided within 30 days. In the event that the corrective action for an audit finding cannot be completed by the response due date, the audited organization's response shall include a scheduled date for corrective action.

TABLE 17.1.7-1 (cont'd)

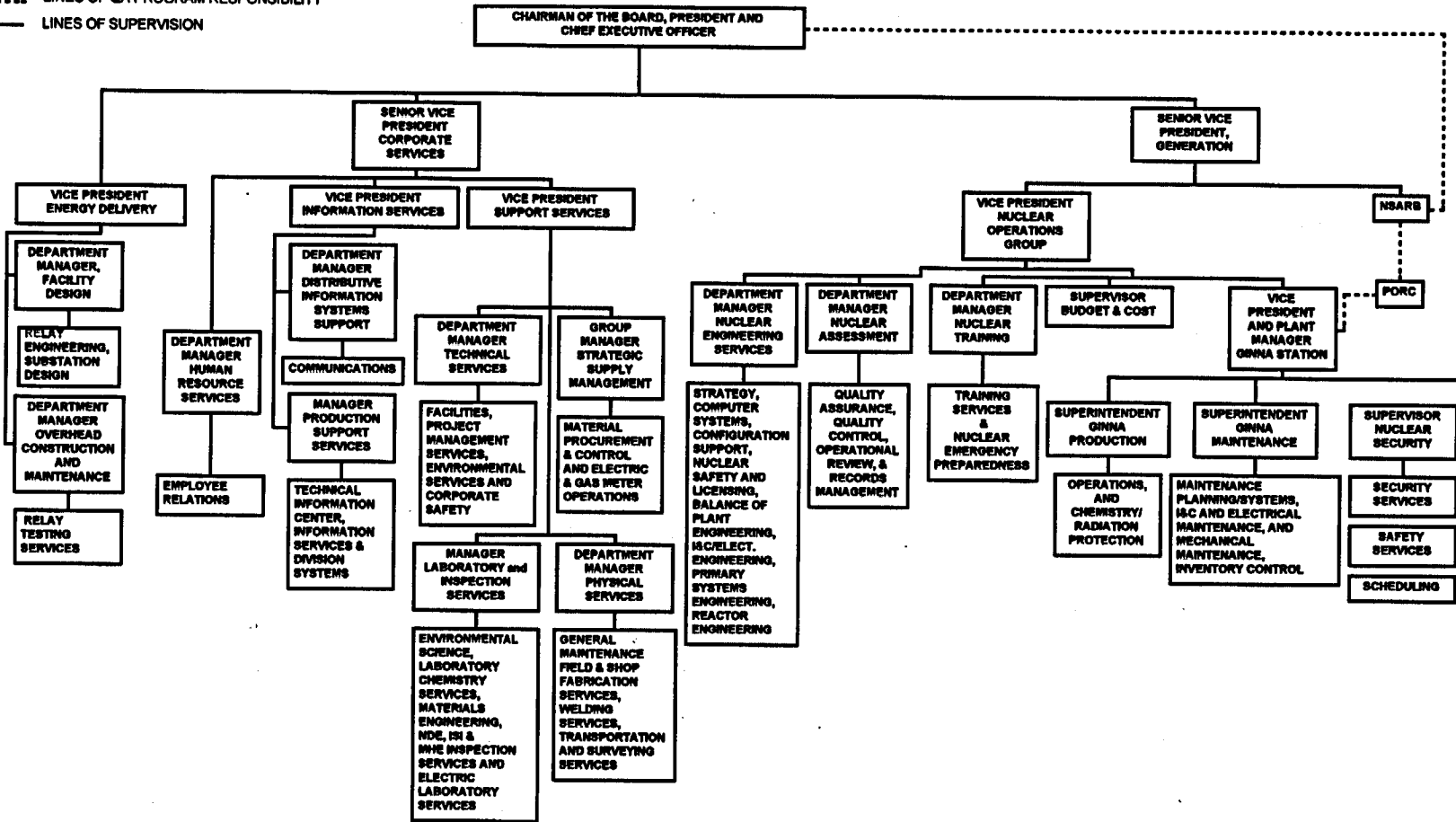
<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
Regulatory Guide 1.146 Rev.(0)-Qualification of QA Program Audit Personnel for Nuclear Power Plants	Alternate	<p>RG 1.146 Rev.(0) incorporates ANSI N45.2.23-1978. Ginna conforms to RG 1.146 Rev.(0) and ANSI N45.2.23-1978 with the following exceptions:</p> <ul style="list-style-type: none"> • a grace period of 90 days may be applied to the performance of annual lead auditor recertifications described in Sections 3.2 and 5.3 of ANSI N45.2.23-1978. • In lieu of the requirements of 2.3.4 of ANSI N45.2.23-1978 the following is used: Prospective lead auditors shall demonstrate their ability to effectively implement the audit process and effectively lead an audit team. RG&E will describe this demonstration process in written procedures and shall evaluate and document the results of the demonstration. Regardless of the methods used for the demonstration, the prospective lead auditor shall have participated in <u>at least one</u> nuclear quality assurance audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met the other provisions of Section 2.3 of ANSI N45.2.23-1978, the individual may be certified as being qualified to lead audits.
Regulatory Guide 1.152 Rev.(0)-Criteria for Programmable Digital Computer System Software in Safety-Related Systems of Nuclear Power Plants	Alternative	Ginna conforms to Generic Letter 95-02, and its endorsement of NUMARC/EPRI Report TR-102348 "Guidelines on Licensing Digital Upgrades".
Regulatory Guide 4.15 Rev.(1)-Quality Assurance for Radiological Monitoring Program (Normal Operations)-Effluent Streams and the Environment	Adopted	Ginna conforms to the intent of this Regulatory Guide as addressed in the Process Control Program and applicable to Ginna effluent and environmental radioactivity measurements.
Regulatory Guide 7.10 Rev.(1)-Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material	Adopted	Ginna conforms to the intent of this Regulatory Guide as addressed in the Process Control Program.
10CFR21	Conforms	
10CFR50, Appendix A-General Design Criteria	Alternative	These criteria were in draft form or not written at the time Ginna was designed and built. For existing systems, see UFSAR for criteria applied. New systems, structures, and components, and configuration changes to existing items meet the criteria as described in the UFSAR or 10CFR50, Appendix A.
10CFR50, Appendix B-Quality Assurance Criteria for Nuclear Power Plants	Conforms	

TABLE 17.1.7-1 (cont'd)

<u>Standard, Requirement, or Guide</u>	<u>Conformance Status</u>	<u>Remarks</u>
10CFR50.55a-Licensing of Production and Utilization Facilities (ASME Boiler and Pressure Vessel Code, Section XI-Rules for Inservice Inspection of Nuclear Reactor Coolant Systems)	Conforms	10CFR50.55 Specifies ASME Section XI code dates. The Ginna program conforms to 10CFR50.55a with the specific editions and addenda of Section XI specified in the Inservice Inspection Plan.
10CFR50.55(e)-Conditions of Construction Permits	Not applicable	Regulatory Guide applies to plants in the construction phase.
10CFR55-Operators Licenses	Conforms	
10CFR55, Appendix A-Requalification Programs for Licensed Operators of Production and Utilization Facilities	Conforms	
Regulatory Positions 2 and 4 of Branch Technical Position CMEB 9.5-1	Alternative	Fire protection controls are in accordance with APCSB 9.5-1, regulatory position IV b.6 and IV b.7.
Generic Letter 89-02, and its endorsement of EPRI NP5652 "Guideline for the Utilization of Commercial Grade Items in Safety-Related Applications (NCIG-07)".	Conforms	
ANSI/ANS 3.1-1987, Selection, Qualification and Training of Personnel for Nuclear Power Plants, section 4.7.	Conforms	Qualification requirements apply to NSARB members only as addressed by this standard.

FIGURE 17.1.2-1
Organization Chart

----- LINES OF QA PROGRAM RESPONSIBILITY
 ——— LINES OF SUPERVISION



17.2 PERFORMANCE/VERIFICATION

17.2.1 Methodology

All personnel performing activities affecting quality involved in the operation and support of Ginna Station are directly responsible for quality. Employees are empowered to make decisions in their areas of responsibility and are held accountable for the quality of their own work. Verification of work is performed by each organization to assure that quality objectives are achieved and established performance standards are met.

The Nuclear Operations Group and supporting organizations involved in Ginna quality related activities accomplish and verify their work using instructions and procedures. For quality affecting activities within their area of responsibility, each organization develops, reviews, approves, and implements such documents. The activities covered include operation, maintenance, repair, inservice inspection, refueling, procurement, modification, special processes, inspection and testing, document control and records management, training of personnel, and audit and surveillance. In addition, RG&E suppliers and contractors are required to have appropriate instructions and procedures as specified in procurement documents.

Persons preparing, reviewing, and approving instructions and procedures are responsible for assuring that they include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. In addition, they assure that these documents are kept current.

17.2.2 Design Control

Plant configuration changes, including temporary changes, are implemented utilizing design control measures at least commensurate with those applied to the original design.

Nuclear Engineering Services is the design authority for Ginna Station. Other organizations are authorized to perform design activities as designated in the Nuclear Policy Manual and supported by approved procedures and instructions.

Design control measures are defined and implemented by trained and qualified personnel through approved procedures and instructions. These procedures and instructions assure that:

- Design inputs are appropriately specified on a timely basis and correctly translated into design documents.
- Design interfaces are identified and controlled.
- The design is suitable for its intended application.
- Design adequacy is verified by personnel other than those who performed the design.
- Design changes, including field changes, are governed by control measures.
- Deviations and nonconformances are controlled.
- Design records are identified, controlled, and retrievable.

Design inputs (such as design bases, performance requirements, regulatory requirements, codes, and standards) and changes to design inputs are identified, documented, reviewed and approved, and controlled.

Design documents, including drawings and specifications, are prepared and technically reviewed by qualified personnel. The technical reviewer ensures that the design document is in accordance with the design concept, incorporates appropriate design inputs, and conforms to approved procedures and instructions. Design change packages are approved by appropriate management or supervision prior to release for implementation.

Design interfaces, both internal and external, are formally identified, and design activities are coordinated among the participating organizations to ensure that design inputs and outputs are properly developed, reviewed, approved, and distributed. Multi-discipline changes are reviewed to ensure integration of design outputs.

Design changes are reviewed to determine whether the change results in a change to plant Technical Specifications or an unreviewed safety question, under the provisions of 10CFR50.59.

Design data bases, documents, and procedures are revised to reflect changes installed in the plant. Design records are identified, indexed, and controlled to allow for retrievability of design basis information and to provide evidence of appropriate design controls.

17.2.3 Design Verification

Design verification is the process of reviewing, confirming, or substantiating the design to assure:

- the acceptability of the design inputs
- adherence to the design process
- that the design inputs are reflected in the design outputs
- that design changes are implemented under controls commensurate with those applied to the initial design.

Procedures define acceptable verification methods and controls, design parameters subject to verification, acceptance criteria, and verification documentation and records requirements.

A design change is verified prior to release of the change to perform its design function. A design may be released for prefabrication or installation prior to completion of the design verification only if controls are established. The scope of work that can be completed must be defined and controls implemented to ensure that design verification is completed prior to use of the change.

Verification methods include:

- performance of design reviews
- use of alternate calculations
- performance of qualification tests.

If used, qualification tests shall verify the adequacy of the specific design or design feature under the most adverse design conditions, unless those conditions cannot be generated without initiating a plant transient. In those cases, simulated or extrapolated conditions are used.

Design verification is performed by technically qualified individuals other than those who developed the design. Design verification by the designer's immediate supervisor is allowable if other qualified individuals are not readily available. The designer's supervisor documents independence from the design development when required to perform a verification.

The design organization determines the extent of verification required, based upon safety significance, the degree of standardization, and the state-of-the-art of the change.

17.2.4 Procurement Control

Purchased material, equipment, and services are controlled using five major means:

- planning
- procurement document requirements
- supplier selection
- control of supplier performance
- acceptance of items and services.

All procurement is conducted in accordance with procurement documents and governing procedures. In unusual circumstances, (e.g. replacement parts are needed to preclude the development of some unsafe or undesirable condition), an item, which is relatively simple and standard in design and manufacture, may be purchased under a commercial (non-safety related) purchase order and subsequently upgraded to safety-related using the commercial grade dedication process.

All reviews, inspections, surveillances, and audits are conducted by personnel who are competent to determine whether a supplier is capable of providing acceptable quality products.

Planning

Procurement planning by procuring organizations consists of determining the supplier of choice, methods to be used for acceptance of the item or service, and requirements for control of supplier performance. Source inspection (surveillance), certificate of conformance, receipt inspection, and pre- or post-installation testing are methods which are considered for item acceptance. The extent of the acceptance methods and associated verification activities will vary depending upon the relative importance and complexity of the purchased item or service and the supplier's past performance.

Procurement Document Requirements

Procurement document control for the procurement of materials, parts, components, and services is initiated by department staff personnel. Procurement procedures require that organizations preparing procurement documents consider and include, as appropriate:

- scope of work
- technical requirements
- Quality Assurance Program requirements
- right of access
- documentation requirements
- reporting requirements (nonconformance and 10CFR Part 21).

Changes or revisions to procurement documents are subject to the same review and approval requirements as the original documents.

Originating department review of procurement documents includes verification of applicable regulatory, code, and design requirements and suitability for intended service. In addition, a verification of proper inclusion of the quality standards, quality assurance program requirements, method of procurement, and the applicable acceptance criteria is performed. For spare or replacement parts, procurement documents are reviewed to determine similarity to, compatibility with, and acceptance criteria commensurate with the original design.

Supplier Selection

Selection of a supplier is based on the evaluation of their capability to provide the items or services in accordance with procurement document requirements. The evaluation, which is accomplished during procurement planning, determines the necessity for the supplier selection to be made from the approved suppliers list. For items and services procured from suppliers required to have a quality assurance program, supplier selection is made from the approved suppliers list or from those who are in the process of being added to the list. Addition of a supplier to the approved suppliers list is based on satisfactory evaluation of the supplier's quality assurance program. The evaluation guidelines for source selection considers the complexity of the item, method(s) of acceptance, and, for a replacement item, whether the source is to be restricted to the original supplier.

Items or services which meet industry standards and are typically utilized in applications other than nuclear may be purchased from suppliers not listed on the approved suppliers list, provided that item acceptance through receipt inspection can be based on acceptance of standard commercial quality. This is supplemented, as necessary, with source surveillance, pre- or post-installation tests, receipt tests, commercial supplier surveys, supplier test reports, or commercial supplier certificates. For commercial grade items and services, an evaluation of intended use is completed to determine critical characteristics which must be verified prior to acceptance for use.

Control of Supplier Performance

Control of supplier performance shall include:

- Monitoring supplier activities through audits and surveillances.
- Evaluation by requesting submittal of supplier documents for review.
- Identifying under what conditions suppliers are to report nonconformances.

Acceptance of Items and Services

The verification methods for the acceptance of items and services are specified during procurement planning and purchase requisition preparation. Receipt inspection is a verification method common for the acceptance of items.

17.2.5 Procurement Verification

The supplier's overall quality assurance organization and program is evaluated in accordance with applicable parts of 10CFR50, Appendix B; codes and standards; and RG&E requirements. Suppliers on the approved suppliers list are reviewed annually for performance and program changes, and audited on a triennial basis.

The degree of supplier surveillance (including review, inspection, or audit) required during design, fabrication, inspection, testing, and shipping shall be determined and documented. The objectives of supplier surveillance are to provide a sampling review of the supplier's quality assurance program implementation and to verify product conformance with respect to the purchase order requirements. The extent of supplier surveillance will be consistent with the safety significance, complexity, quantity, and frequency of procurement of the item or service. As necessary, this may require verification of the activities of suppliers below the first tier.

The verification responsibilities for evaluation and surveillance of supplier activities are assigned to Quality Assurance.

Department supervision is responsible for receipt and control of items pending their acceptance.

Receipt inspection is performed for items and associated services for maintenance, repair, modification, and refueling. Inspections are performed to verify acceptability. To be acceptable, the items and services must conform to procurement documents, have satisfied required inspection and test requirements, and have documentary evidence of conformance available at the plant prior to acceptance for use. Personnel performing receipt inspection and test activities are trained and qualified.

17.2.6 Identification and Control of Items

The identification and control of materials, parts, and components (including consumable materials and items with limited shelf life) is accomplished in accordance with written requirements and applies in any stage of fabrication, storage, or installation. Identification and control requirements are

established either by an existing procedure or by requirement documents prepared during the planning stages of a project. The identification and control requirements cover:

- Traceability to associated documents (such as drawings, specifications, purchase orders, manufacturing test data and inspection documents, and physical and chemical mill test reports).
- Specification of the degree of identification to preclude a degradation of the item's functional capability or quality.
- Proper identification of materials, parts, and components prior to release for manufacturing, shipping, construction, and installation.

Nuclear Engineering Services is responsible for assuring that drawings and specifications contain appropriate requirements for the identification and control of materials, parts, or components. Suppliers are required to assure that all required documentation for an item is properly identified and related to the item.

17.2.7 Handling, Storage, and Shipping

The Nuclear Operations Group and support organizations are responsible for developing and implementing procedures for the handling, storage, shipping, preservation, and cleaning of quality related material and equipment. These procedures provide guidelines to protect items from damage, loss, and deterioration. Also, items are marked or labeled during packaging, shipping, handling, and storage to identify and maintain the items' integrity and to indicate need for special controls.

Under normal circumstances, manufacturer's specific written instructions and recommendations and purchase specification requirements are invoked for cleanliness, preservation, special handling, and environmental requirements for storage. In the absence of, or in addition to, specific manufacturer requirements, management may invoke requirements in accordance with department procedures. Examples of such requirements include desiccants, shelf life, endcaps, and special packaging requirements.

Procurement documents and engineering specifications define requirements for the handling, shipping, storage, cleaning, and preservation of new fuel and fuel assemblies, materials, and equipment. When necessary to maintain acceptable quality, special protective measures (such as containers, shock absorbers, etc.) are specified and provided.

Procedures are established for the routine maintenance and inspection of lifting and handling equipment and for the handling

of heavy loads and safe load paths.

17.2.8 Test Control

The Ginna Station test program includes the surveillance test program required by Technical Specifications, inservice pump and valve testing, and testing following modification and maintenance.

The test program requires the identification, control, and documentation of all tests and the preparation of written procedures required for satisfactory accomplishment of the testing. Written procedures and checklists for the testing program include: instructions and prerequisites to perform the test, use of proper test equipment, inspection hold points, and acceptance criteria.

Testing is utilized as follows:

- To determine continued operability of installed structures, systems, and components consistent with the surveillance requirements of Technical Specifications and the inservice pump and valve program.
- To demonstrate the ability and to support the qualification of safety related equipment to function in harsh environmental conditions.
- To demonstrate the acceptability of replacement and purchased items.
- To support trouble shooting and investigation of degraded conditions.
- To demonstrate the acceptability of items involved in maintenance, repair, and modifications.

Contractors who perform testing are required to do so in accordance with RG&E's procurement document requirements.

All test results are required to be documented, reviewed, and approved by those responsible for performing the test. Unacceptable test results and test anomalies are evaluated in accordance with established procedures to determine the cause of the problem and the need for retest or for increasing test frequency.

The design organization is responsible for assuring that required tests for modifications are included in design documents.

17.2.9 Measuring and Test Equipment Control

Programs are established which assure that test instruments, tools, gauges, shop and reference standards, and other measuring and testing devices used in activities affecting quality are properly controlled and calibrated. Elements of control include calibration procedures, establishment of calibration frequencies, and maintenance requirements for measuring and test equipment.

Calibration procedures include step-by-step calibration methods and requirements for instrument accuracy. Calibration frequency is based on required accuracy, degree of usage, stability characteristics, manufacturer's recommendations, experience, and other conditions affecting measurement capability.

The program for control of measuring and test equipment includes:

- Assuring timely calibration of equipment.
- Providing unique identification of the next calibration date on the equipment calibration tags or stickers and traceability to calibration test data.
- Providing traceability of shop standards to nationally recognized standards and periodic revalidation of shop standards. Where national standards do not exist, procedures contain instructions to document the basis for calibration. Except where standards with the same accuracy as the instruments being calibrated are shown to be adequate for the requirements, calibration standards are to have a greater accuracy than the standards being calibrated.
- Assuring that calibrating equipment is calibrated against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, if not possible, have an accuracy that ensures the equipment being calibrated will be within the required tolerance.
- Providing for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates.
- Controlling the purchase requirements of new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions.

In the event a measuring instrument (i.e., shop or field standard) is found out of calibration, an investigation is conducted to determine the validity of previous measurements.

Responsibilities and requirements for the selection and use of calibrated measuring and test equipment are described in the Nuclear Policy Manual and related procedures.

Installed plant instrumentation is subject to calibration and control requirements of Technical Specifications and is not subject to calibration and control requirements for measuring and test equipment. The Nuclear Policy Manual amplifies responsibilities and requirements for installed plant instruments.

17.2.10 Inspection, Test, and Operating Status

Equipment or systems not ready for normal service are clearly identified by use of tags, control logs, and other suitable means to indicate the status of the items being isolated in order to prevent their inadvertent use.

Ginna Station is responsible for indicating the status of operating equipment or systems to be removed from service for maintenance, repair, or modification in accordance with the approved Electric System Operating Rules.

System status is indicated through the use of hold tags, block tags, and corresponding control logs. Equipment or system inspection and test status are indicated by use of test tags, labels, or status sheets.

Written procedures control the use of hold tags, test tags, and labels. Personnel who have station holding authority, as designated by the Plant Manager, are responsible for directing the status change of equipment and systems in accordance with the approved station holding procedures.

Job control documents are used to indicate status of the work, inspections or tests, and corresponding acceptance or rejection criteria. These job control documents preclude the inadvertent bypassing of inspections and tests. They are maintained at a designated control location to indicate the status and the completion of required inspections and tests.

Measures are established to monitor the completion status of inservice inspection.

17.2.11 Special Process Control

Written procedures are established to control special processes, such as welding, brazing, heat treating, and nondestructive examination to assure compliance with applicable codes, standards, and design specifications. Qualification of personnel and special process procedures comply with the requirements of applicable codes and standards. When special process qualification requirements are not included in existing codes and standards, they are described in procedures which give details of the special process, personnel qualification requirements, equipment necessary, and special process qualification requirements.

The Nuclear Policy Manual describes the criteria that define which processes are special. These criteria include processes which are highly dependent on the skill of the worker or the control of the process or both, and in which the desired quality cannot be readily determined by inspection or test.

Procuring organizations are responsible for requiring suppliers, in procurement documents, to control special processes in accordance with the above requirements. Special process procedures submitted by suppliers and contractors are reviewed for adequacy by RG&E.

Nuclear Assurance and the Ginna Station Maintenance organization are responsible for assuring that personnel performing special processes under their cognizance are qualified and are using qualified procedures. Support Services is responsible for the qualification of special process personnel and procedures. Qualification of personnel and procedures is documented.

17.2.12 Inspection

Procedures prepared for the control of activities include inspection requirements and hold points as required by drawings, instructions, requirement documents, specifications, codes, standards, or regulatory requirements. For clarification, and to distinguish from preventive maintenance inspections, the following controls are associated with the quality assurance function inspections and referred to as *verification inspections*.

Verification inspection planning is used to determine the optimum method for performing hold point or final inspections. Planning considerations include: hold point execution by witness or inspection, the need for calibrated measuring tools and equipment, use of sample plans for multiple quantities, and the need for other verification options (e.g., non-destructive examination).

Hold points are used as necessary to ensure that inspections are accomplished at the correct points in the sequence of work activities.

Verification inspection procedures include:

- identification of quality characteristics to be inspected
- a description of the method of inspection to be used
- acceptance and rejection criteria
- requirements for recording the inspection results
- the need to provide evidence of inspection activity completion.

Verification inspections are performed by inspection personnel who are appropriately qualified and independent. They are performed in accordance with approved procedures, instructions, or plans to support preplanned hold points, final acceptance verification, or receipt acceptance activities. Inspection results are required to be documented. When items are reworked, the rework is reinspected to the original or equivalent requirements.

Outside contractors are required by procurement documents to have and to follow similar procedures and to use independent inspectors.

17.2.13 Corrective Action

Conditions adverse to quality are those conditions which reduce confidence that a structure, system, or component at Ginna Station will perform satisfactorily in service.

Significant conditions adverse to quality are those conditions which, if uncorrected, could affect the health and safety of the public, seriously affect the ability to operate the plant in a safe manner, represent a serious breakdown in activity controls, or will require a major effort to restore capability to perform specified functions.

Conditions adverse to quality are promptly identified, reported to supervision, corrected, and evaluated to determine if a significant condition adverse to quality exists.

When a significant condition adverse to quality is identified, an evaluation of the effect of continuing the activity is performed. If continuing the activity would obscure or preclude identification and correction of the deficiency, or if continuing the activity would increase the extent of the deficiency or lead to an unsafe condition, stop work action is taken.

Nuclear Assessment has authority to stop work on all activities at or in support of Ginna Station, with the exception of operating deficiencies. For operating deficiencies, Nuclear Assessment may recommend stop work action to station management.

For significant conditions adverse to quality, RG&E management reviews initiated reports to determine causes, develops corrective action plans to resolve the condition, and takes action to preclude recurrence.

Procedures are established for the control, evaluation, and disposition of deficient material, parts, and components to prevent their inadvertent test, installation, or use. Items which do not conform to the drawing or specification requirements are identified, controlled, and reported.

Nonconformances identified at a supplier's facility and reported to RG&E, for which the supplier has recommended a disposition of use-as-is or repair, are normally reviewed and the disposition approved by the procuring organization.

Items are repaired and reworked in accordance with approved procedures and drawings. The repair or rework must be verified as acceptable by an inspection of the affected item or process which is at least equal to the original inspection method.

Items which are accepted "use-as-is" are fully documented with the drawing or specification requirement and technical justification for acceptance, and are screened under the requirements of 10CFR50.59.

Nonconformance status information is compiled and analyzed for adverse trends and provided to management.

17.2.14 Document Control

Document control requirements contained in the Nuclear Policy Manual control the issuance of procedures, instructions, drawings, and specifications. These document control requirements are delineated in approved procedures which define the responsibilities for the control of each type of controlled document.

Each organization responsible for an activity is also responsible for providing the necessary review and approval of instructions, procedures, or drawings. Such review is to assure that documents are adequate, include appropriate qualitative and quantitative requirements, and include quality assurance requirements.

Changes to procedures specified in the Administrative Controls Section of the Technical Specifications receive a technical review in accordance with ANSI/ANS 3.2-1988, Section 4.2. The portion of the technical review associated with the safety significance of the change is performed by a reviewer who has not been involved with formulating the change. Reviewers shall be designated by the PORC Chairman or Plant Manager and shall have qualifications equivalent to those of regular PORC members and meet ANSI Standard N18.1-1971, Section 4.3.1 or 4.4 as applicable. Changes that may affect nuclear safety are referred to and subsequently reviewed by PORC. The change is subsequently approved by the Plant Manager or designee. All procedure changes have a minimum of two individuals involved.

Temporary changes to procedures, in addition to the review and approval process described above, are also approved by the Shift Supervisor. Requirements for the pre-approval review of Ginna Station procedures and the temporary change process are consistent with the guidelines of ANSI N18.7-1972, Sections 5.4 and 5.5.

The Nuclear Policy Manual requires that documents be controlled as appropriate, considering the type of document, safety significance, and intended use.

Types of documents which are controlled include Technical Specifications, UFSAR, Nuclear Directives, procedures, drawings, and specifications.

Suppliers of materials, equipment, and services having an approved quality assurance program are required in procurement documents to provide for control of documents.

The Nuclear Policy Manual requires that each organization provide in its procedures for measures to:

- Assure that documents are available when required.
- Properly review and approve documents such as procedures and instructions.
- Provide the same reviews and approvals for changes to documents as was required of the original document.
- Require that organizations which review and approve documents have access to pertinent information and adequate knowledge of the original document intent.
- Assure that approved changes are promptly transmitted for incorporation into documents.
- Assure that obsolete or superseded documents are eliminated from the system and not used.

17.2.15 Records

The Nuclear Policy Manual defines responsibility and establishes the basic requirements for quality assurance record retention and maintenance. Organizations performing quality affecting activities are responsible for forwarding the records they initiate to Records Management. Each organization generating records is responsible for preparation, review, approval, and implementation of specific quality assurance record procedures for their area of responsibility.

Records to be controlled are delineated in ANSI N45.2.9-1974. Sufficient records of items and activities are generated and maintained to document completed work. Items and activities requiring records include:

- design
- engineering
- procurement
- manufacturing
- construction
- inspection and test (e.g., manufacturer's proof and receipt)
- installation
- operations
- maintenance
- modification
- audits

Requirements and responsibilities for preparation, inspection, identification, indexing, review, storage, retrieval, maintenance, safekeeping, retention, and disposition of quality assurance records are in accordance with applicable records procedures, codes, standards, and procurement documents.

Non-duplicated records shall be stored in facilities which meet one of the following requirements:

The first option is a NFPA Class A, four hour minimum rated facility. In addition, this facility shall consider the nine features described in ANSI N45.2.9-1974 Section 5.6 in its construction.

The second option a two hour rated facility designed to meet the requirements of NFPA-232 "Standard for the Protection of Records." These requirements may be met by any one of the following three ways: (1) a 2-hour vault meeting NFPA 232; (2) 2-hour rated file containers meeting NFPA 232 (Class B); or (3) a 2-hour rated fire resistant file room meeting NFPA 232. A fire resistant file room must meet the following additional provisions:

- a. Early warning fire detection and automatic fire suppression should be provided, with electronic supervision at a constantly attended central station.
- b. Records should be stored in fully enclosed metal cabinets. Records should not be permitted on open steel shelving. No storage of records should be permitted on the floor of the facility. Adequate access and aisle ways should be maintained at all times throughout the facility.
- c. Work not directly associated with records storage or retrieval should be prohibited within the records storage facility. Examples of such prohibited activities include but are not limited to: records reproduction, film developing, and fabrication of microfiche cards.
- d. Smoking and eating/drinking should be prohibited throughout the records storage facility.
- e. Ventilation, temperature, and humidity control equipment should be protected inside with standard fire-door dampers where they penetrate fire barriers bounding the storage facility.

The third option is used when temporary storage of records (such as for processing, review, or use) is required. In this case, records shall be stored in a 1 hour fire rated container. The container shall bear a UL label (or equivalent) certifying 1 hour fire protection or be certified by a person competent in the technical field of fire protection. Additionally, sprinkler protection shall be provided in the area in which the containers are stored. The maximum allowable time limit for temporary storage is described in procedures.

The requirements and responsibilities for record accessibility and transmittal are described in the Nuclear Policy Manual. Removal of records from storage is documented and accountability is maintained by the responsible record control organization.

17.3 ASSESSMENT

17.3.1 Methodology

A comprehensive program of planned and periodic self and independent assessments is established to keep management apprised of the overall performance of Ginna Station.

Managers and supervisors assess the activities and results within their organizations' areas of responsibility to assure that they meet quality requirements and performance standards. Through observation and routine monitoring, they detect adverse operational events, declining performance trends, and precursors of potential problems. They take action to correct these problems as well as those identified by external sources.

Independent assessment of the effectiveness of quality program implementation and overall Ginna Station performance is the primary role of the QA organization. Independent assessments are conducted through internal audits and QA surveillances on behalf of the NSARB; the Vice President, Nuclear Operations Group; and as requested by line management. This is accomplished by monitoring performance, reporting findings to line management in a timely manner, and verifying satisfactory resolution of problems. Operational assessment is the evaluation of anomalous performance and potential problem precursors from external sources.

The NSARB conducts independent assessment through periodic review of plant activities and by directing biennial audits and evaluating their results. The responsibilities of the NSARB are discussed in sections 17.1.2 and 17.1.3.

Independent assessment activities are performed in accordance with instructions and procedures by organizations independent of the areas being assessed. Organizations performing independent assessment are technically and performance oriented, with their primary focus on the quality of the end product and secondary focus on processes.

17.3.2 Assessment

Self-assessment

Self-assessment is established in the Nuclear Policy Manual as the responsibility of all organizations with involvement in the operation and support of Ginna Station. Individuals and work groups are accountable for achieving acceptable quality by adhering to procedures and verifying that their work meets quality requirements and performance standards.

Independent Assessment

A program of planned and periodic independent assessments is established and implemented to confirm that activities affecting quality comply with the Quality Assurance Program and that the program has been implemented effectively. Assessments provide comprehensive independent evaluation of activities, results, and procedures.

The independent assessment program includes internal audits, external audits, and QA surveillances. These assessments are both *performance-based* and *compliance-based*, with the focus on activities and functions which often cut across organizational lines. Strengths and weaknesses of an organization's performance are determined in these assessments, allowing QA to identify areas of weaknesses for more frequent scrutiny. In areas of strength, assessment efforts can be reduced, freeing resources for examination of activities that could benefit most from independent assessment.

Internal audits of selected aspects of quality affecting activities are performed at a frequency commensurate with safety significance and management concerns. The audits are regularly scheduled on a formal, preplanned audit schedule in a manner which assures that audits of safety related activities are completed once every twenty-four (24) months. The audit schedule is dynamic, reviewed and revised periodically to assure appropriate coverage of current and planned activities.

Table 17.3.2-1 is a list of audits. Supplementing this list are audits of the Nuclear Emergency Response Plan to satisfy the requirements of 10CFR50.54 (t), and Station Security Plan to satisfy the requirements of 10CFR50.54 (p) (3), 73.56 (g) (1) and (g) (2) and 10CFR73.55 (g) (4). Audit frequency and further discussion of these audits are described in their respective plans.

QA surveillances augment scheduled audits and, by their nature, require less planning and are more responsive to management requests. They are also better suited to event driven activities, such as drills, corrective maintenance, and surveillance tests.

Additional audits and QA surveillances are conducted as necessitated by situations or evaluations including:

- special conditions which preclude deferral
- management concerns resulting from previous assessment results and corrective action

- information from external sources (e.g., generic experience of the nuclear industry, ASME, peer organizations, and regulatory bodies).

Each audit requires the development of an audit plan to provide information about the audit, such as characteristics and activities to be assessed, acceptance criteria, names of those who will perform the audit, scheduling arrangements, and the method of reporting findings and recommendations. Audit planning and performance utilize performance-based techniques that facilitate achievement of assessment objectives.

Audit and QA surveillance assessments are performed in accordance with written procedures or checklists by personnel who do not have direct responsibility in the areas being assessed. Independent assessments may be conducted by Quality Assurance engineers or other qualified personnel, such as technical specialists from other company departments, outside consultants, and individuals from other utilities.

Assessment results are documented and reported to the assessor's management, the supervisor and group head having responsibility in the area assessed, and, for audits, to the Nuclear Safety Audit and Review Board. Within a specified time period, the person having supervisory responsibility in the area assessed is required to review the results, take necessary action to correct the deficiencies identified by the report, and document and report the corrective action.

External audits of major contractors, subcontractors, and suppliers are conducted during the early stages of design and procurement to evaluate their quality assurance program for compliance with all procurement document requirements. Audits are conducted, as necessary, to assure that major contractors, subcontractors, and suppliers are auditing their suppliers' quality assurance programs in accordance with procurement documents. During the project or procurement process, additional audits are performed, as required, to assure all quality assurance program requirements are properly implemented in accordance with procurement documents.

Nuclear Assessment performs regular analyses of assessment results to evaluate quality and performance trends. Results of these analyses, including strengths and weaknesses, are provided to management for their regular review. Management concerns due to assessment results may necessitate a follow-up assessment, either by audit or by QA surveillance. The Nuclear Policy Manual provides guidelines for conducting unscheduled audits including the need for reaudits.

Operational Assessment

The Operational Review section receives and evaluates information from other utilities and vendors. The Nuclear Safety and Licensing section of Nuclear Engineering Services receives and evaluates information from INPO and the NRC. They ensure that relevant and timely recommended actions are provided to management that will eliminate precursors of similar problems at Ginna. This is accomplished through:

- coordinating feedback program to measure and improve the internalization of lessons learned from Operating Experience
- reviewing INPO SOERs and SERs
- reviewing vendor 10CFR Part 21 report of defects
- reviewing NRC information notices.

Table 17.3.2-1

Audit List

Audit Topic Areas (24 months)

- a. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.
- b. Performance, training, and qualifications of the operating and technical staff.
- c. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems, or methods of operation that affect nuclear safety.
- d. The performance of activities required by the Quality Assurance Program to meet the criteria of 10CFR50, Appendix B.
- e. Facility Fire Protection Program and implementing procedures.
- f. Inspection and audit of the fire protection and loss prevention program performed by non-licensee personnel. The personnel may be representatives of ANI, an insurance brokerage firm, or other qualified individuals.
- g. The radiological environmental monitoring program and the results thereof.
- h. The Offsite Dose Calculation Manual and implementing procedures.
- i. The Process Control Program and implementing procedures.