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DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards application for amend to License DPR-18, revising Tech Specs to incorporate radiological effluent Tech Specs. Change supersedes 790214 proposal. Revised 08/20/82 ON SHELF

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ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

JOHN E. MAIER
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August 12, 1982

Mr. Harold R. Denton
Director
Office of Nuclear Reactor
Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Rochester Gas and Electric Corporation,
R. E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Dear Mr. Denton:

Enclosed are:

1. Three (3) originals and nineteen (19) copies of an Application for Amendment to Operating License to amend Appendix A of that license to revise Technical Specifications to incorporate radiological effluent specifications.

2. Also enclosed are forty (40) copies of documents designated Attachments A and B, which set forth the revised Table and further describe the purposes of the changes made.

This change supersedes our previous proposal, dated February 14, 1979, on this subject. Thus, no fee is required.

Sincerely,

John E. Maier

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3/A0 on shelf

Superseded Pages Per Rev. To LICENSE DPR-1/8, TECH Specs. 50-244 LTR DTD 08/12/82 #8208170214

Rev. 08/20/82 Q.E.A.

Attachment A

Revise the Technical Specifications as follows:

Remove	Insert
Table of Contents	Table of Contents
p 1-2	p 1-2
	p 1-2a
p 1-5	p 1-5
p 3.5-1 through 3.5-3	p 3.5-1 through 3.5-3
	p 3.5-7 through 3.5-9
p 3.9-1 through 3.9-7	p 3.9-1 through 3.9-12
	p 3.15-1 through 3.15-8
p 4.1-1	p 4.1-1
p 4.1-5 through 4.1-7	p 4.1-5 through 4.1-7
	p 4.1-11
	p 4.1-12
p 4.10-1 through 4.10-5	p 4.10-1 through 4.10-5
p 4.12-1 through 4.12-5	p 4.12-1 through 4.12-9
	p 5.5-1
p 6.5-10	p 6.5-10
	p 6.5-10a
p 6.8-1	p 6.8-1
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	p 6.14-1
	p 6.15-1
	p 6.15-2

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1.5 Operating

Performing all intended functions in the intended manner.

1.6 Degree of Redundancy (Instrument Channels)

The difference between the number of operable channels and the number of channels which, when tripped, will cause an automatic system trip.

1.7 Instrument Surveillance

1.7.1 Channel Calibration

The adjustment, as necessary, of the channel output so that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The Channel Calibration shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the Channel Functional Test. The Channel Calibration may be performed by any series of sequential, overlapping or total channel steps so that the entire channel is calibrated.

1.7.2 Channel Check

The qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrumentation channels measuring the same parameter.

1.7.3 Channel Functional Test

a. Analog channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify operability including alarm and/or trip functions.

b. Bistable channels - the injection of a simulated signal into the sensor to verify operability including alarm and/or trip function.

1.7.4 Source Check

The qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

1.12 Frequency Notation

The frequency notation specified for the performance of surveillance requirements shall correspond to the intervals defined below.

Notation	Frequency
S, Each Shift	At least once per 12 hours
D, Daily	At least once per 24 hours
Twice per week	At least once per 4 days and at least twice per 7 days
W, Weekly	At least once per 7 days
B/W, Biweekly	At least once per 14 days
M, Monthly	At least once per 31 days
B/M, Bimonthly	At least once per 62 days
Q, Quarterly	At least once per 92 days
SA, Semiannually	At least once per 6 months
A, Annually	At least once per 12 months
R, Refueling	At least once per 18 months
S/U	Prior to each startup
N.A.	Not Applicable
P	Within 12 hours prior to each release

1.13 Offsite Dose Calculation Manual (ODCM)

The ODCM is a manual containing the methodology and parameters to be used for calculating the offsite doses due to liquid and gaseous effluents and in calculation of liquid and gaseous effluent monitoring instrumentation alarm/trip setpoints.

3.5 Instrumentation System

Operational Safety Instrumentation

Applicability:

Applies to plant instrumentation systems.

Objective:

To delineate the conditions of the plant instrumentation and safety circuits necessary to assure reactor safety and to limit the release of radioactive materials.

Specification:

3.5.1 For on-line testing or in the event of a sub-system instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-1 through 3.5-3.

3.5.2 In the event the number of channels of a particular sub-system in service falls below the limit given by the columns entitled Minimum Operable Channels and/or Minimum Degree of Redundancy cannot be achieved, operation shall be limited according to the requirement shown in Column 6 of Tables 3.5-1 through 3.5-3.

3.5.3 The radioactive effluent monitoring instrumentation shown in Table 3.5-4 shall be operable with alarm/trip setpoints set to ensure that the limits of Specifications 3.9.1.1 and 3.9.2.1 are not exceeded.

3.5.3.1 If a radioactive effluent monitoring instrumentation alarm/trip setpoint is less conservative than required, immediately suspend the release of effluents monitored by the affected channel or declare the channel inoperable.

3.5.3.2 If, during a release, the number of channels which are operable is less than required, take the action shown in Table 3.5-4.

Basis:

During plant operations, the complete instrumentation systems will normally be in service. Reactor safety is provided by the Reactor Protection System, which automatically initiates appropriate action to prevent exceeding established limits. Safety is not compromised, however, by continuing operation with certain instrumentation channels out of service since provisions were made for this in the plant design. This specification outlines limiting conditions for operation necessary to preserve the effectiveness of the reactor control and protection system when any one or more of the channels is out of service.

Almost all reactor protection channels are supplied with sufficient redundancy to provide the capability for channel calibration and test at power. Exceptions are backup channels such as reactor coolant pump breakers. The removal of one trip channel is accomplished by placing that channel bistable in a tripped mode; e.g., a two-out-of-three circuit becomes a one-out-of-two circuit. Testing does not trip the system unless a trip condition exists in a concurrent channel.

3.9 Plant Effluents

Applicability

Applies to the release of radioactive liquids and gases from the plant.

Objective

To define the conditions for release of radioactive liquid and gaseous wastes.

Specifications

3.9.1 Liquid Effluents

3.9.1.1 Concentration

3.9.1.1.a The release of radioactive liquid effluents shall be such that the concentration of gross beta activity above background in the circulating water discharge does not exceed the limits stated below unless the discharge is controlled on a radionuclide basis in accordance with Appendix B, Table II, Column 2 and Note 1 thereto of 10CFR20.

Maximum concentration (excluding tritium and dissolved or entrained noble gases)

1×10^{-7} uCi/ml

Maximum tritium concentration

3×10^{-3} uCi/ml

Maximum dissolved or entrained noble gas concentration

2×10^{-4} uCi/ml

3.9.1.1.b During release of liquid radioactive wastes, at least one condenser circulating water pump shall be in operation.

3.9.1.1.c If the limits of 3.9.1.1.a and 3.9.1.1.b are not met, restore the concentration to within the limits or initiate normal orderly shutdown of the liquid waste discharge within one hour.

3.9.1.2 Dose

3.9.1.2.a The dose or dose commitment to an individual from radioactive materials in liquid effluents released to unrestricted areas shall be limited:

(i) During any calendar quarter to $\leq$ 1.5 mrem to the total body and to $\leq$5 mrem to any organ, and

(ii) During any calendar year to $\leq$ 3 mrem to the total body and to $\leq$ 10 mrem to any organ.

3.9.1.2.b Whenever the calculated dose resulting from the release of radioactive materials in liquid effluents exceeds the limits of 3.9.1.2.a(i), a report shall be submitted to the Commission within thirty days which identifies the cause for exceeding the dose limit and defines corrective actions to be taken to reduce the releases of radioactive material in liquid effluents.

3.9.1.3 Liquid Waste Treatment

3.9.1.3.a The system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected dose due to projected liquid effluent releases when averaged over 31 days would otherwise exceed 0.25 mrem to the total body or 0.8 mrem to any organ.

3.9.1.3.b If radioactive liquid waste is being discharged without treatment when required by Specification 3.9.1.3.a, prepare and submit a report to the Commission within 30 days which includes the following information:

(i) Identification of equipment or subsystems not operated and the reasons.

(ii) Action(s) taken to restore the inoperable equipment to operable status.

(iii) Summary description of action(s) taken to prevent a recurrence.

3.9.2 Gaseous Wastes

3.9.2.1 Release Rate

3.9.2.1.a The dose rate, at any time, due to radioactive materials released in gaseous effluents from the site shall be limited to the following values:

(i) The dose rate for noble gases shall be $\leq$ 500 mrem/yr to the total body and $\leq$ 3000 mrem/yr to the skin, and

(ii) The dose rate for all radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half lives greater than 8 days shall be $\leq$ 1500 mrem/yr to any organ.

3.9.2.1.b For unplanned release of gaseous wastes, compliance with 3.9.2.1.a may be determined by averaging over a 24-hour period.

3.9.2.1.c During planned release of gaseous waste from Gas Decay Tanks to the Auxiliary Building Vent, at least one auxiliary building exhaust fan shall be in operation.

3.9.2.1.d If the limits of 3.9.2.1 above are not met for containment purge or Gas Decay Tank release, decrease the release rate from that system to comply with the limits, or initiate normal orderly shutdown of that gaseous release within one hour.

3.9.2.2 Dose (10 CFR Part 50, Appendix I)

3.9.2.2.a The air dose due to noble gases released in gaseous effluents from the site shall be limited to the following:

(i) During any calendar quarter to 5 mrad for gamma radiation and to 10 mrad for beta radiation.

(ii) During any calendar year 10 mrad for gamma radiation and 20 mrad for beta radiation.

3.9.2.2.b The dose to an individual from radioiodine, radioactive materials in particulate form and radionuclides other than noble gases with half-lives greater than eight days released with gaseous effluents from the site shall be limited to the following:

(i) During any calendar quarter to 7.5 mrem to any quarter.

(ii) During any calendar year to 15 mrem to any quarter.

3.9.2.2.c Whenever the calculated dose to an individual resulting from noble gases or from radionuclides other than noble gases exceeds the limits of 3.9.2.2.a(i) or 3.9.2.2.b(i), a report shall be submitted to the Commission within 30 days which identifies the cause for exceeding the dose limit and defines corrective actions to be taken to reduce the releases of radioactive material in gaseous effluents.

3.9.2.3 Gaseous Waste Treatment

3.9.2.3.a The gaseous radwaste treatment system shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected air doses due to gaseous effluent releases to unrestricted areas when averaged over 31 days would otherwise exceed 0.8 mrad for gamma radiation and 1.7 mrad for beta radiation.

3.9.2.3.b The ventilation exhaust system shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases from the site when averaged over 31 days would otherwise exceed 1.25 mrem to any organ.

3.9.2.3.c If gaseous waste is being discharged without treatment when required by Specifications 3.9.2.3.a or 3.9.2.3.b, prepare and submit a report to the Commission within

30 days which includes the following information:

(i) Identification of equipment or subsystems not operated and the reasons.

(ii) Action(s) taken to restore the inoperable equipment to operable status.

(iii) Summary description of action(s) taken to prevent a recurrence.

3.9.2.4 Dose (40 CFR Part 190)

3.9.2.4.a If the calculated dose from the release of radioactive materials from the plant in liquid or gaseous effluents exceeds twice the limits of Specifications 3.9.1.2.a, 3.9.2.2.a, or 3.9.2.2.b, prepare and submit a report to the Commission and limit the subsequent releases such that the dose or dose commitment to a real individual is limited to $\leq$ 25 mrem to the total body or any organ (except thyroid, which is limited to $\leq$ 75 mrem) over the quarter in which the limits were exceeded plus the subsequent three quarters. This report shall include an analysis which demonstrates that radiation exposures to all real individuals from the plant are less than the 40 CFR Part 190 limits. Otherwise, obtain a variance from the Commission to permit releases to exceed 40 CFR Part 190.

3.9.2.5 Explosive Gas Mixture

3.9.2.5.a The concentration of oxygen in each gas decay tank shall be limited to $\leq$ 2% by volume.

3.9.2.5.b If the concentration of oxygen in a gas decay tank is > 2% by volume but $\leq$ 4% by volume, restore the concentration of oxygen to within the limit within 48 hours.

3.9.2.5.c If the concentration of oxygen in a gas decay tank is > 4% by volume, immediately suspend all additions of waste gases to that gas decay tank and reduce the concentration of oxygen to $\leq$ 2% within 48 hours.

Basis

Liquid wastes from the Radioactive Waste Disposal System are diluted in the Circulating Water System discharge prior to release to the lake.(1) With two pumps operating, the capacity of the Circulating Water System is 400,000 gpm. Operation of a single circulating water pump reduces the nominal flow rate by about 50%. The circulating water flow under various operating conditions has been calculated from the head differential across the pumps and the manufacturer's head-capacity curves. Because of the low radioactivity levels in the circulating water discharge, the concentration of liquid radioactive effluents at this point will not be measured directly. The concentration in the circulating water discharge will be calculated from the measured concentration in the Waste Condensate Tank, the flow

rate of the Waste Condensate Pumps, and the flow in the Circulating Water System. Radioactive effluents released to unrestricted areas on the basis of gross beta analysis are based on the assumption that I-129 and radium are not present. Accordingly, Appendix B, Table II, Column 2 of 10CFR20 will permit a concentration up to 1×10^{-7} uCi/ml in the circulating water discharge. If the concentration of liquid wastes in the circulating water discharge equals MPC as specified, the average concentration at the intake of the nearest public water supply at Ontario, New York, would be well below MPC.(2) Thus, discharge of liquid wastes at the specified maximum concentrations will not result in significant exposure to members of the public as a result of consumption of drinking water from the lake, even if the effects of potable water treatment systems on reducing radioactive concentration of the water supply are neglected.

The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air was converted to an equivalent concentration in water using ICRP Publication 2 methodology.

Specification 3.9.1.2 is provided to implement the requirements of Sections II.A, III.A and IV.A of Appendix I. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix I. The

Specifications provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I. The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of a real individual through appropriate pathways is unlikely to be substantially underestimated. The requirements that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid effluents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50 and design objective Section II.D of Appendix I. The limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the guide set forth in Section II.A of Appendix I for liquid effluents. A dose projection which exceeds the stated limit does not necessarily imply that all portions of the liquid radwaste treatment system be used because certain subsystems may have minimal effects on reducing doses.

Specification 3.9.2.1 is provided to ensure that the dose rate at any time at the site boundary from gaseous effluents will be within the annual dose limits of 10

CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the site boundary, these occupancy times will be sufficiently small to compensate for any increase in the atmospheric diffusion factor above that for the site boundary.

Specification 3.9.2.2 is provided to implement the requirements of Sections II.B, II.C, III.A and IV.A of Appendix I. The Limiting Condition for Operation implements the guides set forth in Sections II.B and II.C of Appendix I. The Specifications provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I.

The requirement that the appropriate portions of the gaseous radwaste treatment system and the ventilation exhaust treatment system be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." This specification implements

the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section II.D of Appendix I. The limits governing the use of appropriate portions of the systems were specified as a suitable fraction of the guide set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.

A dose projection which exceeds the stated limit does not necessarily imply that all portions of the gaseous and ventilation exhaust treatment systems be used because certain subsystems may have minimal effect on reducing doses.

Specification 3.9.2.4 is provided to meet the reporting requirements of 40 CFR 190. Since the plant is well removed from other fuel cycle facilities, it is sufficient to apply the Specification only to the plant.

Specification 3.9.2.5 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the gas decay tanks are maintained below the flammability limit of oxygen. Maintaining the concentration of oxygen below its flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

References

(1) FSAR, Section 10.2

(2) FSAR, Section 2, Appendix 2A

(3) FSAR, Sections 2.6 and 2.7

3.15 Radiological Environmental Monitoring

Applicability

Applies to routine testing of the plant environs.

Objective

To establish a program which will assure recognition of changes in radioactivity or exposure pathways in the environs.

Specification

3.15.1 Monitoring Program

3.15.1.a The radiological environmental monitoring program shall be conducted as specified in Table 3.15-1.

3.15.1.b If the radiological environmental monitoring program is not conducted as specified in Table 3.15-1, prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence. (Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, or to malfunction of automatic sampling equipment. If the latter, every effort shall be made to complete corrective action prior to the end of the next sampling period.)

3.15.1.c If the level of radioactivity in an environmental sampling medium at one or more of the locations specified in the ODCM exceeds the reporting levels of Table 6.9-2 when averaged over any calendar quarter, a report

shall be submitted to the Commission within 30 days pursuant to Specification 6.9.2.b(5) which includes an evaluation of any release conditions, environmental factors or other aspects which caused the reporting levels of Table 6.9-2 to be exceeded. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

3.15.1.d If milk or fresh leafy vegetable samples are unavailable for more than one sample period from one or more of the sampling locations required by the ODCM, prepare and submit to the Commission within 30 days a report which identifies the cause of the unavailability of samples and identifies locations for obtaining replacement samples. If a milk or leafy vegetable sample location becomes unavailable, alternate sample locations within 5 miles of the plant will be reviewed. The locations from which samples were unavailable may then be deleted from the ODCM provided that the alternate locations are added to the environmental monitoring program.

3.15.2 Land Use Census

3.15.2.a A land use census shall be conducted and shall identify the location of the nearest milk animal and the nearest residence in each of the 16 meteorological sectors within a distance of five miles.

3.15.2.b If a land use census identifies a location(s) which yields a calculated dose or dose commitment greater than that of the maximally exposed individual currently being calculated in Specification 4.12.2.2, prepare and submit a report to the Commission within 30 days which identifies the new location(s).

3.15.2.c If a land use census identifies a milk location(s) which yields a calculated dose or dose commitment greater than that at a location from which samples are currently being obtained in accordance with Specification 3.15.1, prepare and submit a report to the Commission within 30 days which identifies the new location. The new location shall be added to the radiological environmental monitoring program within 30 days, if possible. The milk location having the lowest calculated dose or dose commitment may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.

3.15.3 Interlaboratory Comparison Program

3.15.3.a Analyses shall be performed on applicable radioactive materials supplied as part of an interlaboratory comparison program which has been approved by NRC, if such a program exists.

3.15.3.b If analyses are not performed as required above, report the corrective actions taken to prevent a recurrence in the Annual Radiological Environmental Operating Report.

Basis

The radiological monitoring program required by this specification provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of individuals resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The initially specified monitoring program will be effective for at least three years. Following this period, program changes may be initiated based on operational experience.

Specification 3.15.2 is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring program are made if required by the results of this census. A garden census is not required since an onsite garden will be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50.

The requirement for participation in an interlaboratory comparison program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices

are performed as part of a quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid. Only samples with radioactivity levels comparable to levels in environmental samples need be analyzed.

TABLE 3.15-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
1. AIRBORNE			
a. Radioiodine	3 on site	Continuous operation of sampler with sample collection at least once per 7 days.	Radioiodine canister. Analyze at least once per 7 days for I-131.
b. Particulates	5 on site 2 off site		Particulate sampler. Analyze for gross beta radioactivity > 24 hours following filter change. Perform gamma isotopic analysis on each sample for which gross beta activity is > 10 times the mean of offsite samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
2. DIRECT RADIATION	8	Film at least once per month. or TLD's at least quarterly.	Gamma dose monthly. or Gamma dose quarterly.

TABLE 3.15-1 (CONTINUED)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
3. WATERBORNE			
a. Surface	1 Inlet Condenser Water	Composite sample collected daily over a period of ≤ 31 days	Gamma isotopic analysis of each sample. Tritium analysis of sample at least once per 92 days.
b. Drinking	1 Ontario Water District Intake	Composite sample collected daily over a period of ≤ 31 days.	Gross beta and gamma isotopic analysis of each composite sample. Tritium analysis of one composite sample at least once per 92 days

TABLE 3.15-1 (CONTINUED)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
4. INGESTION			
a. Milk	3 June through October each of 3 farms	At least once per 15 days	Gamma isotopic and I-131 analysis of each sample.
	1 November thru May one of the farms	At least once per 31 days.	Gamma isotopic and I-131 analysis of each sample.
b. Fish	8 Off shore at Ginna	Twice during fishing season including at least four species	Gamma isotopic analysis on edible portions of each sample.
c. Food Products	2 On site	Annual at time of harvest. One sample of: 1. apples 2. cherries	Gamma isotopic analysis on edible portion of sample.
	2 On site garden	At time of harvest. One sample of: 1. broad leaf vegetation 2. squash	I-131 analysis

4.0 SURVEILLANCE REQUIREMENTS

Specified intervals may be adjusted plus or minus 25% to accommodate normal test schedules.

4.1 Operational Safety Review

Applicability:

Applies to items directly related to safety limits and limiting conditions for operation.

Objective:

To specify the minimum frequency and type of surveillance to be applied to plant equipment and conditions.

Specification:

4.1.1 Calibration, testing, and checking of analog channel and testing of logic channel shall be performed as specified in Table 4.1-1.

4.1.2 Equipment and sampling tests shall be conducted as specified in Table 4.1-2.

4.1.3 Each radioactive effluent monitoring instrumentation channel shall be demonstrated operable by performing the channel check, source check, channel functional test, and channel calibration at the frequency shown in Table 4.1-3.

Basis:

Check

Failure such as blown instrument fuses, defective indicators, faulted amplifiers which result in "upscale" or "downscale" indication can be easily recognized by simple observation of the functioning of an instrument or system. Furthermore, such failures are, in many cases, revealed

TABLE 4.1-1 (CONTINUED)

Channel Description	Check	Calibrate	Test	Remarks
10. Rod Position Bank Counters	S(1,2)	N.A.	N.A.	1) Each six inches of rod motion when data logger is out of service 2) With analog rod position
11. Steam Generator Level	S	R	M	
12. Charging Flow	N.A.	R	N.A.	
13. Residual Heat Removal Pump Flow	N.A.	R	N.A.	
14. Boric Acid Tank Level	D	R	N.A.	Bubbler tube rodded weekly
15. Refueling Water Storage Tank Level	N.A.	R	N.A.	
16. Volume Control Tank Level	N.A.	R	N.A.	
17. Reactor Containment Pressure	D	R	M(1)	1) Isolation Valve signal
18. Radiation Monitoring System	D	R	M	Area Monitors R1 to R9 System Monitors R16, R17, and R20
19. Boric Acid Control	N.A.	R	N.A.	
20. Containment Drain Sump Level	N.A.	R	N.A.	
21. Valve Temperature Interlocks	N.A.	N.A.	R	
22. Pump-Valve Interlock	R	N.A.	N.A.	
23. Turbine Trip Set-Point	N.A.	R	M(1)	1) Block trip
24. Accumulator Level and Pressure	S	R	N.A.	

4.10 Radiological Environmental Monitoring

Applicability - Applies to routine testing of plant environs.

Objective - To establish a sampling and analysis program which will assure recognition of changes in radioactivity in the environs.

Specification

4.10.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.15-1. Acceptable locations are shown in the ODCM. Samples shall be analyzed pursuant to the requirements of Tables 3.15-1 and 4.10-1.

4.10.2 A land use census shall be conducted annually (between June 1 and October 1).

Basis

The environmental survey has been designed to utilize the knowledge about dilution in the atmosphere and in the lake which has been gained during the pre-operational and operational period of study.

The radiological monitoring program provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of individuals resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by verifying that the

measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways.

The detection capabilities required by Table 4.10-1 are state-of-the-art for routine environmental measurements in industrial laboratories. The specified lower limits of detection for I-131 in water, milk, and other food products correspond to approximately one-quarter of the Appendix I to 10 CFR Part 50 design objective dose-equivalent of 15 mrem/year for atmospheric releases and 10 mrem/year for liquid releases to the maximally exposed organ and individual.

Reference:

FSAR - Section 2.10

TABLE 4.10-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)[a]

To be achieved on 98% of analyses

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)
gross beta	4[b]	1×10^{-2}			
^{3}H	2000 (1000[b])				
^{54}Mn	15		130		
^{59}Fe	30		260		
$^{58,60}Co$	15		130		
^{95}Zr-Nb	15[c]				
^{131}I	1	7×10^{-2}		1	60
$^{134,137}Cs$	15(10[b]),18	1×10^{-2}	130	15	60
^{140}Ba-La	15[c]			15[c]	

TABLE 4.10-1 (CONTINUED)

TABLE NOTATION

a - The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with only 5% probability of falsely concluding its presence.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E\ .\ V\ .\ 2.22\ .\ Y\ .\ \exp(-\lambda\Delta t)}$$

where

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume)

S_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute).

E is the counting efficiency (as counts per transformation)

V is the sample size (in units of mass or volume)

2.22 is the number of transformations per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between sample collection and analysis

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and Δt should be used in the calculations.

Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors will be identified and described in the Annual Radiological Environmental Operating Report.

TABLE 4.10-1 (CONTINUED)

TABLE NOTATION

The LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.

b - LLD for drinking water.

c - Total for parent and daughter.

4.12 Effluent Surveillance

Applicability

Applies to the periodic test and record requirements of the plant effluents.

Objective

To ascertain that radioactive liquid and gaseous releases from the plant are within allowable limits.

Specifications

4.12.1 Liquid Effluents

4.12.1.1 Concentration

4.12.1.1.a The concentration of radioactive material at any time in liquid effluents released from the site shall be continuously monitored in accordance with Table 3.5-4.

4.12.1.1.b The liquid effluent continuous monitors listed in Table 3.5-4 having provisions for automatic termination of liquid releases shall be used to limit the concentration of radioactive material released at any time from the site to the values given in Specification 3.9.1.1.a.

4.12.1.1.c The radioactivity content of each batch of radioactive liquid waste to be discharged shall be determined prior to release by sampling and analysis in accordance with Table 4.12-1. The results of pre-release analyses shall be used with the calculational methods in the ODCM to assure that the concentration at the point of release is limited to the values in Specification 3.9.1.1.a.

4.12.1.1.d Post-release analyses of samples composited from batch releases shall be performed in accordance with Table 4.12-1. The results of the post-release analyses shall be used with the calculational methods in the ODCM to assure that the dose commitments from liquids were limited to the values in Specification 3.9.1.2.a.

4.12.1.2 Dose

4.12.1.2.a Cumulative dose contributions from liquid effluents shall be determined in accordance with the Offsite Dose Calculational Manual (ODCM) at least once per 31 days.

4.12.1.3 Liquid Waste Treatment

4.12.1.3.a Doses due to liquid releases to unrestricted areas shall be projected at least once per 31 days.

4.12.2 Gaseous Wastes

4.12.2.1 Release Rate

4.12.2.1.a The release rate, at any time, of noble gases in gaseous effluents shall be controlled as established in Specification 3.9.2.1.

4.12.2.1.b The gas effluent continuous monitors as listed in Table 3.5-4 having provisions for the automatic termination of gaseous releases, shall be used to limit releases within the values established in Specification 3.9.2.1 when monitor setpoint values are exceeded.

4.12.2.1.c The release rate of radioactive materials, other than noble gases, in gaseous effluents shall be determined by obtaining representative samples and performing analyses in accordance with the sampling and analysis program, specified in Table 4.12-2.

4.12.2.2 Dose (10 CFR Part 50, Appendix I)

4.12.2.2.a Cumulative dose contributions for the total time period shall be determined in accordance with the Offsite Dose Calculation Manual (ODCM) at least once every 31 days.

4.12.2.3 Gaseous Waste Treatment

4.12.2.3.a Doses due to gaseous releases to unrestricted areas shall be projected at least once per 31 days.

4.12.2.4 Dose (40 CFR Part 190)

4.12.2.4.a If required by Specification 3.9.2.4 cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with the Offsite Dose Calculational Manual.

4.12.2.5 Explosive Gas Mixture

4.12.2.5.a The concentration of oxygen in waste gas system shall be monitored as required by Table 3.5-4.

Basis:

Sufficient tests will be made to be certain that radioactive materials are not released to the environment in quantities greater than allowable. Installed radiation monitoring equipment in the plant will be used in conjunction with laboratory analyses to maintain surveillance of normal effluents.

Sufficient records will be maintained to determine the concentration of radioactive materials in unrestricted areas. Isotopic analysis of representative samples will serve to verify the accuracy of routine samples by identification of significant energy peaks.

TABLE 4.12-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/ml)[a]
Batch Waste Release Tanks	P Each Batch	P Each Batch	1. Principal Gamma Emitters[d] and I-131	5×10^{-7} [b] 1×10^{-6}
			or	
			2. Gross Beta*	
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
	P Each Batch	M Composite[c]	H-3	1×10^{-5}
			Gross alpha	1×10^{-7}
			P-32	1×10^{-6}
	P Each Batch	Q Composite[c]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}

*If gross beta is performed for batch releases, then a weekly composite shall also be analyzed for Principal Gamma Emitters and I-131.

TABLE 4.12-1 (CONTINUED)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation representa a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

where

LLD is the lower limit of detection as defined above (as uCi per unit mass or volume)

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per transformation)

V is the sample size (in units of mass or volume)

2.22×10^6 is the number of transformations per minute per microcurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples. Typical values of E, V, Y and Δt should be used in the calculation.

The background count rate is calculated from the background counts that are determined to be within ± one FWHM energy band about the energy of the gamma ray peak used for the quantitative analysis for this radionuclide.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.

Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidably small sample sizes, the presence of interferring nuclides, or other uncontrollable circumstances may render these LLDs unachievable. When circumstances result in LLDs higher than required, the reasons shall be documented in the Semiannual Radioactive Effluent Report.

b. For certain radionuclides with low gamma yield or low energies, or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the LLD. Under these circumstances, the LLD may be increased inversely proportionally to the magnitude of the gamma yield (i.e., $5 \times 10^{-7}/I$, where I is the photon abundance expressed as a decimal fraction), but in no case shall the LLD, as calculated in this manner for a specific radionuclide, be greater than 10% of the MPC value specified in 10 CFR 20, Appendix B, Table II, Column II.

c. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

d. The principal gamma emitters for which the LLD specification will apply are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Cs-134, Cs-137, and Ce-141. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should be reported as less than the LLD and should not be reported as being present at the LLD level. The less than values should not be used in the required dose calculations. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the semiannual Radioactive Effluent Release Report.

TABLE 4.12-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/ml)[a]
A. Gas Decay Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters[f]	1×10^{-4}[b]
B. Containment Purge	P Each Purge[c,d] Grab Sample	P Each Purge[c]	Principal Gamma Emitters[f]	1×10^{-4}[b]
			H-3	1×10^{-6}
C. Auxiliary Building Ventilation	M[c] Grab Sample	M[c]	Principal Gamma Emitters[f]	1×10^{-4}[b]
			H-3	1×10^{-6}
D. Air Ejector	M[c,g] Grab Sample	M[c]	Principle Gamma Emitters[f]	1×10^{-4}[b]
			H-3[h]	1×10^{-6}
E. All Releases Types as listed in B and C above	Continuous[e]	W[c] Charcoal Sample	I-131	1×10^{-12}
			I-133	1×10^{-10}
	Continuous[e]	W[c] Particulate Sample	P Principal Gamma Emitters[f] (I-131, Others)	1 x 10-11
	Continuous[e]	M Composite Particulate Sample	Gross alpha	1×10^{-11}
	Continuous[e]	Q Composite Particulate Sample	Sr-89, Sr-90	1×10^{-11}

5.5 Waste Treatment Systems

5.5.1 Radioactive Liquid Waste Treatment

The liquid waste treatment system consists of a Waste Holdup Tank, a Waste Evaporator, a mixed bed demineralizer and the Reverse Osmosis unit. Portions of the system may be bypassed and still meet the release limits.

5.5.2 Gaseous Radwaste Treatment

The gaseous radwaste treatment system consists of four (4) Gas Decay Tanks and two (2) gas compressors. Only one compressor and three Gas Decay Tanks are necessary to the system.

5.5.3 Ventilation Exhaust System

The ventilation exhaust is treated to reduce gaseous radioiodine and material in particulate form by passing through charcoal adsorbers and/or HEPA filters. This system has no effect on noble gas effluents. The components of the ventilation exhaust system are:

Auxiliary Building HEPA filters

Auxiliary Building "G" Charcoal & HEPA filters

Auxiliary Building "A" Charcoal Adsorbers

Containment Purge Charcoal & HEPA filters

AUDITS (Continued)

g. The Facility Fire Protection Program and implementing procedures at least once per two years.

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

i. An inspection and audit of the fire protection and loss prevention program performed by non-licensee personnel at least once per 36 months. The personnel may be representatives of ANI, an insurance brokerage firm, or other qualified individuals.

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

k. The Offsite Dose Calculation Manual and implementing procedures at least once per 24 months.

l. Any other area of facility operation considered appropriate by the NSARB or the Vice President, Electric and Steam Production.

AUTHORITY

6.5.2.9 a. The chairman of the Nuclear Safety Audit and Review Board is responsible to the Executive Vice President on all activities for which the review board is responsible.

b. The NSARB shall report to and advise the Vice President, Electric and Steam Production, on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of NSARB activities shall be prepared, approved, and distributed as indicated below:

6.8 PROCEDURES

6.8.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, November 1972.

b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

g. The radiological environmental monitoring program.

h. Offsite releases of gaseous and liquid effluents containing radioactive materials.

i. Offsite Dose Calculation Manual implementation.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the PORC and approved by the Station Superintendent prior to implementation and reviewed periodically as set forth in the applicable procedures.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

a. The intent of the original procedure is not altered.

b. The change is approved by two members of the plant management staff, at least one of whom is the Shift Foreman who holds a Senior Reactor Operator's License.

c. The change is documented, reviewed by the PORC, and approved by the Station Superintendent within 10 days of implementation.

6.9 Reporting Requirements

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following identified reports shall be submitted to the Director of the appropriate Regional Office of Inspection and Enforcement unless otherwise noted.

6.9.1 Routine Reports

6.9.1.1 Startup Report. A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant. The report shall address each of the tests performed and shall in general include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

Startup reports shall be submitted within (1) 90 days following completion of the startup test program, or (2) 90 days following resumption of commercial power operation, whichever is earliest. If the Startup Report does not cover both events (i.e., completion of startup test program, and resumption of commercial power operation), supplementary reports shall be submitted at least every three months until both events have been completed.

6.9.1.2 Monthly Operating Report. Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management Information and Program Control, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 by the fifteenth of each month following the calendar month covered by the report. The monthly report shall include a narrative summary of operating experience describing the operation of the facility, including major safety related maintenance for the monthly period, except that safety related maintenance performed during the refueling outage may be reported in the monthly report for the month following the end of the outage rather than each month during the outage.

6.9.1.3 Annual Radiological Environmental Operating Report Routine radiological environmental reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year.

The annual radiological environmental reports shall include summaries, interpretations, and analysis of trends of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses as required.

The annual radiological environmental reports shall include summarized and tabulated results in the format of Table 6.9-1 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the radiological environmental monitoring program including a map of all sampling locations keyed to a table giving distances and directions from the reactor, and the results of the participation in an interlaboratory comparison program.

Note: Routine surveillance testing, instrument calibration, or preventative maintenance which require system configurations as described in items 2.b(1) and 2.b(2) need not be reported except where test results themselves reveal a degraded mode as described above.

(3) Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems.

(4) Abnormal degradation of systems other than those specified in items 2.a(3) above designed to contain radioactive material resulting from the fission process.

Note: Sealed sources or calibration sources are not included under this item. Leakage of valve packing or gaskets within the limits for identified leakage set forth in technical specifications need not be reported under this item.

(5) Measured levels of radioactivity in an environmental sampling medium determined to exceed the reporting level values of Table 6.9-2 when averaged over any calendar quarter sampling period. When more than one of the radionuclides

in Table 6.9-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{limit level (1)}} + \frac{\text{concentration (2)}}{\text{limit level (2)}} + \ldots. \geq 1.0$$

When radionuclides other than those in Table 6.9-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar year limit of Specifications 3.9.1.2.a or 3.9.2.2.a. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Monitoring Report.

6.9.3 Unique Reporting Requirements

6.9.3.1 Annually: Results of required leak tests performed on sources if the tests reveal the presence of 0.005 microcurie or more of removable contamination.

6.9.3.2 Annually: A tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions, e.g., reactor operations and surveillance, in-service inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosi-

TABLE 6.9-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Analysis	Reporting Levels				
	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Fish (pCi/Kg, wet)	Milk (pCi/l)	Broad Leaf Vegetables (pCi/Kg, wet)
H-3	3×10^4				
Mn-54	1000		3×10^4		
Fe-59	400		1×10^4		
Co-58	1000		3×10^4		
Co-60	300		1×10^4		
Zr-Nb-95	400(a)				
I-131	2	0.9		3	1×10^2
Cs-134	30	10	1×10^3	60	1×10^3
Cs-137	50	20	2×10^3	70	2×10^3
Ba-La-140	200(a)			300	

(a) Total for parent and daughter

meter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions. (NOTE: This tabulation supplements the requirements of Section 20.407 of 10 CFR Part 20.)

6.15 Major Changes to Radioactive Waste Treatment Systems (Liquid and Gaseous)

FUNCTION

6.15.1 The radioactive waste treatment systems (liquid and gaseous) are those systems defined in Technical Specification 5.5.

6.15.2 Major changes to the radioactive waste systems (liquid and gaseous) shall be reported by the following method. For the purpose of this specification, 'major changes' is defined in Specification 6.16.3 below.

6.15.2.1 The Commission shall be informed of all major changes by the inclusion of a suitable discussion or by reference to a suitable discussion of each change in the Semiannual Radioactive Effluent Release Report for the period in which the changes were made. The discussion of each change shall contain:

a) a summary of the evaluation that led to the determination that the change could be made (in accordance with 10 CFR 50.59):

b) sufficient detailed information to support the reason for the change;

c) a detailed description of the equipment, components and processes involved and the interfaces with other plant systems;

Attachment B

The proposed Technical Specifications for radiological effluents have been developed based upon NRC guidance provided in the October 1978 version of NUREG 0472, Draft, Radiological Effluent Technical Specifications for PWRs. The NRC guidance has been adapted to a format suitable for inclusion in the Ginna Technical Specifications and changes have been made to account for the Ginna facility design. The proposal includes requirements to ensure compliance with 10 CFR Part 20, Appendix I to 10 CFR Part 50 and 40 CFR 190.

Effluent monitors are provided to aid in ensuring that the limits of 10 CFR Part 20 are met. The allowance for inoperability is generally consistent with the NRC guidance and requires that sampling of effluents be performed in case a monitor is required but inoperable. Instead of shutting down the plant if the oxygen monitor is inoperable, samples will be taken at short intervals. This is preferred since a plant shutdown would result in a significant amount of waste gas which would have to be handled during a time at which it may be desirable to minimize gas handling.

Limiting conditions for operation to implement 10 CFR Parts 20 and 50 have been developed following NRC guidance. For unplanned gaseous releases, a 24 hour averaging is permitted in determining compliance with 10 CFR Part 20. This is acceptable based on the definitions within Part 20 and based upon effluent surveillance instrumentation analysis schedules. Radwaste treatment equipment will be operated, as appropriate, to limit potential doses due to plant effluents. Portions or all of the radwaste treatment systems are required to be operated should the projected doses otherwise exceed preestablished values.

No limits have been proposed for contents of the gas decay tanks. This due to the fact that any credible quantity of waste gas in any single tank will be well below the quantity which would have to be released to yield a site boundary dose of 0.5 Rem, even with accident meteorology. Specifically, FSAR Section 14.2.3 reports a reactor coolant system inventory of equivalent xenon assuming no release over a full core cycle and one percent failed fuel as 46,000 Curies. Using the equations presented in NUREG-0133, one finds that a release of approximately 100,000 Curies is necessary to yield a site boundary dose of 0.5 Rem. This assumes that accident meteorology is used instead of annual average meteorology, which seems more appropriate and would provide even greater margins.

An environmental monitoring program is reestablished based on NRC guidance. Samples are collected and analyzed at intervals throughout the year with sampling being conducted at a reduced level during the winter. This reduction is acceptable based on the fact that food pathways are either absent or of reduced consequences in the winter.

Radiation monitoring instrumentation used for effluent surveillance has been removed from Table 4.1-1 and placed in Table 4.1-3. In Table 4.1-1, the emergency plan instruments will be calibrated annually instead of at refueling intervals. This will allow calibration to be performed at times other than the refueling outage.

In Table 4.1-3, channel calibration is to be performed annually instead of at refueling intervals. This is to avoid the necessity to calibrate during refueling outages. If the NRC intends the interval "R" to imply every 18 months independent of the refueling outage, we request that that be the calibration interval listed as refueling.

Environmental surveillance requirements are consistent with NRC guidance.

Effluent surveillance is presented in Section 4.12. Batch releases are sampled as shown in Table 4.12-1. Since compliance with 10 CFR Part 20 may be shown through a gross beta analysis, this is permitted.

A composite sample analyzed for principal gamma emitters and I-131 will provide the information required for dose calculations. For the purposes of this Specification, release of the neutralizing tank to the retention tank is considered a batch release. No additional sampling is required of the retention tank since its major input is the neutralizing tank. (Small sources, in terms of radioactivity, include floor drains in non contaminated areas.) The retention tank discharge is activated on high level in the tank and is through a radiation monitor.

Waste treatment systems considered in the evaluation which was performed pursuant to Appendix I are listed in Section 5.5.

Under audits, the change in the insurance brokerage firm from NELPIA to ANI is reflected. This is purely an administrative change.

The Offsite Dose Calculation Manual is presently in draft form. Revisions to the draft are being considered based upon revised guidance provided by the NRC letter dated January 18, 1979, which was received February 2, 1979.

Specifications for solid radwaste have not been proposed since they are unrelated to Appendix I or to Part 20. In addition, they appear to be based on Standards which are still in draft form. Also, although solid wastes generated by Ginna Station comply with current regulations, they do not meet the Specifications suggested by the NRC. Finally, an industry task force is being established under the auspices of AIF to develop requirements appropriate for currently operating plants and equipment and consistent with the regulations. Pending the outcome of the study, it does not seem appropriate to propose Specifications.

- Superseded Page Per Revision 8 to Suppl. 4 to Technical Suppl. accompanying Application for Full-time OL. Ltr. dtd. 6/6/83
Revised 8/30/83 50-244
gjn

Introduction

In a May 28, 1974 letter from Mr. Robert A. Purple, the United States Atomic Energy Commission asked several questions on the R. E. Ginna Quality Assurance Program for Station Operation. The information requested and further clarification of the program are provided in Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. Supplement IV is a revised description of the R. E. Ginna Quality Assurance Program for Station Operation and supersedes Supplement II in its entirety. The following revisions have been made to the description of the program:

Section IV.2

Additions

That all Quality Assurance, Quality Control, Engineering, and Purchasing procedures are reviewed for adequacy at least once every two years.

That the list of structures, systems, and components covered by the quality assurance program are based on the list in Section 1.2.1 of the FSAR.

That management review of the quality assurance program may be in a form other than an audit.

That the Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years.

That the Chairman of the Nuclear Safety Audit and Review Board reports to the Chairman of the Board of Rochester Gas and Electric Corporation on NSARB activities.

Section IV.3

Additions

That spare or replacement parts meet, at least, the requirements of the original design.

That for plant modification, the design engineer selects and reviews materials, parts, and equipment for suitability of application.

That design deficiencies are documented and controlled in accordance with Section IV.16.

That design documents are collected, stored, and maintained in accordance with Section II.17 and a listing of which design documents are maintained.

Clarification

Clarified which design documents are reviewed by Quality Assurance.

Section IV.4

Additions

That procurement documents for spare or replacement parts are processed in the same manner as other procurement documents.

That the review and approval of procurement documents is reflected on the document or on a control form which is attached to the procurement document.

That the documents are available for verification in Purchasing and plant records.

That Quality Control reviews procurement documents for spare and replacement parts for similarity to the original requirements, and adequacy of quality requirements.

Section IV.5

Clarification

Clarifies which documents are reviewed by Quality Assurance.

Section IV.6

Addition

Made procurement document review requirements consistent with Section IV.4.

That suppliers of materials, equipment, and services are required by procurement documents to provide control of manufacturing inspection and testing instructions.

Section IV.9

Additions

Made procurement document review requirements consistent with Section IV.4.

Added Quality Control responsibilities for surveillance and inspection of special process activities.

Section IV.10

Additions

That all documentation necessary to perform an inspection is available to the inspector prior to the performance of the activity.

That Quality Control inspection procedures include the identification of quality characteristics to be inspected and a description of the method of inspection to be used, the identification of the organization responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity.

That inspection equipment is calibrated in accordance with Section IV.12 and that calibration status is verified prior to performing the inspection activity.

Section IV.11

Addition

That test procedures include test methods and test instrumentation definition.

Section IV.12

Addition

That shop standards calibration is traceable to national standards or, where national standards are not available, the basis of calibration is documented.

Section IV.14

Addition

That written procedures control the use of hold tags, test tags and labels and that the procedures require the recording of the name of the person placing and removing the tag.

Section IV.15

Addition

That Quality Control issues monthly material deficiency report summaries, that these summaries are reviewed and analyzed by Quality Assurance, and that when unsatisfactory trends are noted, they are reported to management, using the corrective action report in accordance with Section IV.16.

Section IV.17

Additions

That plant records include operating logs, drawings, specifications, calibration procedures and reports, nonconformance reports, and the results of inspections, tests, audits and the monitoring of plant activities and material analyses.

That quality assurance records of special process activities are maintained by Engineering and that they include the qualification records of personnel, procedures, and equipment.

That inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

Section IV.18

Addition

That Quality Assurance is responsible for conducting the audits listed in Table IV.18-1.

In July 1974, the United States Atomic Energy Commission requested information on the conformance of the R. E. Ginna Quality Assurance Program for Station Operation to the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0). The information requested is provided in Revision 1 to Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. The following changes have been made to Supplement IV:

Section IV.1

Additions

A description of the extent to which the quality assurance program conforms to the document entitled "Guidance on Quality Assurance Requirements During The Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0).

2 On October 1, 1974, Rochester Gas and Electric Corporation revised its corporate structure. This organization change has not affected the functional interrelationships between the organizations responsible for implementing the quality assurance program. In addition, the RG&E commitment to the "Orange Book" in August has necessitated some shifting of responsibilities. The changes RG&E has made are reflected in Revision 2 to Supplement IV to the Technical Supplement accompanying Application for a Full Term Operating License. The changes affect every section of the supplement except sections 12 & 14. Change pages are listed in Instructions - 2 and each revised page is marked with revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by an arabic numeral next to each vertical line.

Tables and figures which have been completely revised are shown by revision level at the bottom of the page and by reference in the index, page IV-vii. Unrevised pages with a vertical solid
2 black line in the margin reflect changes to the document between Supplement II and Supplement IV. Some editorial corrections have been made, and these are also marked.

Effective February 1, 1976, three additional organizations in the Rochester Gas and Electric Corporation have been assigned responsibilities for control of quality related activities. The changes are reflected in Revision 3 to Supplement IV to the Technical Supplement Accompanying Application for a Full Term Operating License. Revision 3 also reflects some reclarification of terms and responsibilities which do not lesson our program commitments. Reclarification changes are concentrated in sections IV-3, IV-4, IV-5, IV-6 and IV-15. Change pages are listed in Instructions-3
3 and each revised page is marked with revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by an arabic numeral next to each vertical line.

Tables and figures which have been completely revised are shown by revision level at the bottom of the page and by reference in the index, page IV-vii. Unrevised pages with a vertical solid black line in the margin reflect changes to the document between Supplement II and Supplement IV.

During July, 1978, Rochester Gas and Electric Corporation revised its corporate structure. This organization change has not affected the functional interrelationships between the organizations responsible for implementing the quality assurance program. Revision 4 also reflects some reclarification of terms and responsibilities which do not lessen Rochester Gas and Electric Corporation program commitments. Reclarification changes are concentrated in sections IV-1, IV-2, IV-3, IV-7, IV-10 and IV-15.
4 Change pages are listed in Instructions-4 and each revised page is marked with revision level. Since single spacing of each page has reduced the number of pages, each page beginning with IV-1 is numbered consecutively resulting in the Revision 4 notation at the bottom for that page containing different information than the corresponding page number of previous revisions.

Tables and figures which have been completely revised are shown by revision level at the bottom of the page and by reference in the index, page IV-vii.

In a February 8, 1979 letter from Mr. Dennis L. Ziemann, the Nuclear Regulatory Commission requested additional information associated with their review of Revision 4. Revision 5 provides the additional information and better clarification of the program consistent with that which was forwarded in Rochester Gas and Electric letter dated March 9, 1979. Change pages are listed in Instructions - 5, and each revised page is marked with a revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by an arabic numeral next to each vertical line. Tables which have been revised are shown by revision level at the bottom of the page.

5

In a June 5, 1979 letter from Mr. Dennis L. Ziemann, the Nuclear Regulatory Commission requested additional information associated with their review of Revision 5. Revision 6 provides the additional information consistent with that which was forwarded in Rochester Gas and Electric letter dated June 25, 1979. Change pages are listed in Instruction - 6, and each revised page is marked with a revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by arabic numeral next to each vertical line.

6

Revision 7 was prepared to indicate recent organization changes in the corporate structure, Quality Assurance and General Maintenance. Change pages are listed in Instructions - 7, and each revised page is marked with a revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by an arabic numeral next to each vertical line.

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*All tables and figures except Figure IV.2-5 have been revised in Revision 3.

QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

IV.1 Quality Assurance Program

The quality assurance program described in this Supplement has been developed by the Rochester Gas and Electric Corporation to assure safe and reliable operation of the R. E. Ginna Nuclear Power Plant. This program applies to all activities affecting the safety related functions of the 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 quality affecting activities include operation, maintenance, repair, inservice inspection, refueling, modification, test and inspection. In addition, the quality assurance program applies to the activities associated with the packaging of licensed radioactive materials to be shipped in accordance with 10 CFR Part 71.

The basic Rochester Gas and Electric Corporation quality assurance policy is established by the Chairman of the Board and Chief Executive Officer in his Corporate Statement of Quality Assurance Policy. This policy is implemented by the Vice President, Electric and Steam Production, through the Manager, Quality Assurance, and the Ginna Station Superintendent.

The program is governed by a Ginna Station Quality Assurance Manual which contains the requirements and assignment of responsibilities for implementation of the program. The manual is prepared, reviewed, and maintained by Quality Assurance and approved by the Vice President, Electric and Steam Production.

The program is implemented through Quality Assurance, Ginna Station, Engineering, General Maintenance, Electric Meter and Laboratory and Purchasing Procedures. These procedures are prepared and approved by the responsible organization and reviewed and concurred with by Quality Assurance. The procedures are contained in separate manuals maintained by the responsible organization. All these procedures are reviewed for adequacy at least once every two years by the responsible organization. Table IV.1-1 provides a listing of the subjects and a short description of the subject matter which is contained in the procedures.

Organizational interfaces are defined and controlled by sections of the Quality Assurance Manual. Organizational responsibilities are described in Section IV.2.

The quality assurance program covers all existing Seismic Category I structures, systems, and components, including their foundations and supports. Activities affecting the quality of these structures, systems, and components are

controlled to an extent consistent with their importance to safety. A detailed listing of the structures, systems, and components covered by the quality assurance program, based on Section 1.2.1 of the Final Facility Description and Safety Analysis Report, is contained in the Quality Assurance Manual.

Details of the system boundaries and the quality classification of water-and-steam-containing components are contained on system flow drawings. The listing of structures, systems, and components covered by the quality assurance program and the system flow drawings are prepared and maintained by Engineering and reviewed and concurred with by Quality Assurance.

Modifications or additions to existing structures, systems, and components are designated the same seismic classification as the existing system. New structures, systems, and components are designated a seismic classification in accordance with the guidelines in USNRC Regulatory Guide 1.29.

Supervisory personnel are indoctrinated in quality assurance policies, manuals, and procedures to assure they understand that these are mandatory requirements which must be implemented and enforced. Personnel responsible for performing activities affecting quality are trained and indoctrinated in the requirements, purpose, scope, and implementation of quality related manuals and procedures. Refresher sessions are held periodically and retraining is required whenever a new procedure is issued or a major revision is made to an existing procedure. Training of personnel not in the quality assurance organization is the responsibility of each department performing an activity affecting quality. Quality Assurance assists in establishing training requirements and assures that personnel are trained by auditing training records.

In addition to training in quality assurance, each department conducts on-the-job training to the extent necessary to assure that personnel are qualified for their primary work assignments.

The Ginna Station Superintendent is responsible for the formal training, qualification, licensing, and requalification of operators, as necessary. Where necessary, personnel are trained in radiation protection, plant safety and security.

The Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years to assure that it is meaningful and is effectively complying with corporate policy and 10CFR50, Appendix B. This review consists of audits or a review equivalent to an audit performed by

company personnel or outside organizations. Reviews will be conducted every six months during the first two years that the program is implemented.

The quality assurance program is designed to meet the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants." The program conforms to the following NRC Regulatory Guides and ANSI Standards:

a. NRC Regulatory Guide 1.8, Revision 1, "Personnel Selection and Training."

b. NRC Regulatory Guide 1.28, Revision 2, "Quality Assurance Program Requirements (Design and Construction)."

c. AEC Regulatory Guide 1.30, Revision 0, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment."

d. AEC Regulatory Guide 1.33, Revision 0, "Quality Assurance Program Requirements (Operation)," and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants," Revision 0 dated October 1973 (Orange Book - Revision 0)

e. AEC Regulatory Guide 1.37, Revision 0, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants."

f. AEC Regulatory Guide 1.38, Revision 2, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants."

g. AEC Regulatory Guide 1.39, Revision 2, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants."

h. AEC Regulatory Guide 1.58, Revision 0, "Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel."

i. AEC Regulatory Guide 1.64, Revision 1, "Quality Assurance Requirements for the Design of Nuclear Power Plants."

j. AEC Regulatory Guide 1.74, Revision 0, "Quality Assurance Terms and Definitions."

k. AEC Regulatory Guide 1.88, Revision 2, "Collections, Storage and Maintenance of Nuclear Power Plant Records."

Note: When record storage facilities are not designed in accordance with the requirements of Regulatory Guide 1.88, duplicate records are kept in two separate stroage locations in separate buildings which are physically isolated from each other.

l. NRC Regulatory Guide 1.116, Revision 0-R, "Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems."

m. NRC Regulatory Guide 1.123, Revision 1, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants."

n. ANSI N45.2.12, D3, R4, 2/74 "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants."

IV.2 Organization

The major organizations participating in the quality assurance program are the Purchasing, Engineering, Ginna Station, General Maintenance, Electric Meter and Laboratory Department; Quality Assurance and Quality Control Groups; the Plant Operations Review Committee; and the Nuclear Safety Audit and Review Board. Figure IV.2-1 is an organizational chart showing these organizations and their relationship to the corporate organization.

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

Chairman of the Board
Vice President, Electric and Steam Production
Vice President and Chief Engineer
Manager, Quality Assurance
Purchasing Agent
Ginna Station Superintendent
Ginna Station Quality Control Engineer
Superintendent, Electric Meter and Laboratory
Superintendent, General Maintenance
General Maintenance Quality Control Coordinator
Director, Strategic and Fuel Planning
Supervisor, Materials Engineering

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In addition to the above individuals, two advisory groups are utilized to review and audit plant operations. These groups are the Plant Operations Review Committee and the Nuclear Safety Audit and Review Board. The Plant Operations Review Committee acts in an advisory capacity to the Ginna Station Superintendent and the Nuclear Safety Audit and Review Board advises the Vice President, Electric and Steam Production. The qualifications of members and the responsibilities of these organizations are described in Appendix A to Provisional Operating Licensed No. DPR-18, Section 6.0, Technical Specifications.

The Chairman of the Board of the Rochester Gas and Electric Corporation directed the establishment of the quality assurance program and issued the governing policy statement. He has established the Nuclear Safety Audit and Review Board to review and audit plant operations. The Chairman of the Nuclear Safety Audit and Review Board is responsible to the Executive Vice President on all activities of the Nuclear Safety Audit and Review Board.

The Vice President, Electric and Steam Production has corporate responsibility for operation of Ginna Station in accordance with applicable regulatory requirements. He is responsible for establishing the policies and requirements necessary to assure safe and reliable operations of Ginna Station. He is also responsible for those items delineated in Section 6.0, Technical Specifications. He has overall responsibility for and authority to direct quality affecting activities. He has assigned the responsibility for the detailed development and overall coordination of the quality assurance program to the Manager, Quality Assurance.

The responsibility for proper implementation of the quality assurance program requirements at Ginna Station has been assigned to the Ginna Station Superintendent.

The Vice President and Chief Engineer has corporate responsibility for the design and construction of nuclear power plants and related major modifications. In this capacity, the Vice President and Chief Engineer is responsible for directing and supervising the Engineering Department as shown in Figure IV.2-5.

The Vice President and Chief Engineer has the responsibility for preparing drawings and specifications for the procurement of materials and components for plant maintenance and modification as required. He is responsible for reviewing operating and fuel handling procedures referred to him by the Ginna Station Superintendent and for reviewing unique maintenance and repair procedures for major equipment.

The Manager, Quality Assurance, is responsible for establishing and executing the overall quality assurance program. He is responsible for assuring that the program satisfies

the requirements of 10CFR50, Appendix B, and for keeping the total program updated. He is responsible for assuring that all the 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 affecting activities are performed. He is responsible for maintaining a quality assurance staff, Figure IV.2-1, for the conduct of staff training, for directing its activities and for establishing and implementing a comprehensive audit program.

The Manager, Quality Assurance is a graduate engineer with at least six years of responsible experience, of which two years is in quality assurance and three years in the design or operation of nuclear or fossil fuel power plants.

The Manager, Quality Assurance and the Quality Assurance Staff are responsible for supervising both the on-site and off-site Quality Assurance program. This includes writing Quality Assurance policies and procedures, and reviewing the procedures of the organizations participating in the Quality Assurance program. They are also responsible for auditing all aspects of the Quality Assurance Program and for ensuring significant conditions adverse to quality are corrected. They are responsible for assuring that proper codes, standards, and quality requirements are specified in design, procurement, and installation documents. They are responsible for assuring that the suppliers of safety-related material, equipment and services are properly qualified, and they are responsible for conducting audits and surveillances at these supplier's facilities. In addition, the staff assists the Manager, Quality Assurance, in the preparation of the audit schedule, audit status reports, corrective action report summaries and in the preparation and maintenance of the Quality Assurance Procedures Manual.

The Purchasing Agent is responsible for the procurement of materials, services, and components, from qualified suppliers, in accordance with applicable commercial, technical, and quality requirements. He maintains a listing of qualified suppliers determined through an evaluation made by Purchasing, Engineering, Quality Assurance and the other involved departments as appropriate.

The Ginna Station Superintendent is responsible to the Superintendent, Nuclear Production for safe operation of Ginna Station. He is responsible for the performance of the Ginna Station operation, maintenance, repair, refueling, inservice inspection, modification, test and inspection quality affecting activities in accordance with the requirements of the quality assurance program. He is responsible for providing qualified personnel to perform these activities in accordance with approved drawings, specifications, and procedures. He is also responsible for those items delineated in Section 6.0, Technical Specifications.

The Ginna Station Assistant Superintendent supports the Ginna Station Superintendent in discharging his responsibilities. He is responsible for the day-to-day operation of the station and implementing the policies, procedures, and directions of the Ginna Station Superintendent.

The Ginna Station Quality Control Engineer is responsible to the Station Superintendent for supervising the station Quality Control Organization, which is responsible for assuring that activities affecting quality are prescribed and carried out in accordance with approved drawings, specifications, and procedures. In his day-to-day activities, the Quality Control Engineer reports to the Ginna Station Assistant Superintendent and is a member of the Plant Operations Review Committee. He also reviews procurement documents initiated at the station. He is responsible for the coordination of inspection activities and for assuring that inspection requirements are included in approved procedures. He is also responsible for the receipt inspection of incoming materials, parts, and components and the processing of nonconformance reports. He coordinates the processing of corrective action reports, and assures that corrective action is taken. He is responsible for routine surveillance of other groups involved in quality affecting activities and provides the Ginna Station Superintendent with objective information concerning the quality of these activities.

The Ginna Station Quality Control Engineer is assisted in the performance of his duties by a staff which reviews documents and which performs inspection and surveillance activities. Additional inspectors are assigned to this group as required by the level of work activities.

In addition to the Ginna Station Quality Control Engineer, the Ginna Station Superintendent is assisted by other designated staff members, Figure IV.2-3, in the implementation of certain quality assurance program requirements at the plant. These staff members are assigned responsibility for testing, storage of material and equipment, operating and test status control, calibration and control of measuring and test equipment not used by Quality Control, maintenance of material handling equipment, operator training, and control of all activities involving operation, maintenance, repair, refueling and modification.

The Director, Strategic and Fuel Planning is responsible for coordinating all activities related to the procurement of nuclear fuel. These duties include the coordination, preparation and execution of the contracts and their supporting documents used to control the procurement. Fuel Planning also coordinates bid evaluation and recommends selection of the successful bidder.

The Superintendent, General Maintenance, is responsible for supervising and directing a staff, Figure IV.2-4, which supervises the performance and verification of safety related maintenance, repair and modification activities performed at the General Maintenance facility. He is also responsible for the routine maintenance of material handling equipment, control of special processes and establishment of the inservice inspection program.

The General Maintenance Quality Control Coordinator is responsible to the Superintendent, General Maintenance, for performing or directing the performance of verification activities for which General Maintenance Quality Control is responsible. In this capacity he is responsible for assuring that activities, affecting quality, are carried out in accordance with approved drawings, specifications and procedures. He is also responsible for the preparation of Quality Maintenance procedures and for the training of General Maintenance personnel in the implementation of these procedures. He also reviews procurement documents initiated by General Maintenance, coordinates receipt inspection of incoming materials, parts and components, performs routine surveillance of General Maintenance activities and coordinates the processing of nonconformance reports, corrective action reports and the replies to audit reports.

The Supervisor, Materials Engineering is responsible to the Superintendent, General Maintenance for the development and qualification of procedures utilized for special processes.

He is also responsible for assuring that personnel are trained and qualified for activities involving nondestructive examination and for providing functional guidance and direction in those methods for which he is a qualified Level III. He is also responsible for establishing the inservice inspection program. 7

The Superintendent, Electric Meter and Laboratory is responsible for providing routine maintenance and testing services for Ginna Station safety related protective relays as requested. 3

IV.3 Design Control

Design activities are performed by Rochester Gas and Electric Corporation personnel or are subcontracted to organizations providing services to Rochester Gas and Electric.

Engineering is responsible for the design and control of design activities (including design interfaces) for major modifications of structures, systems or components.

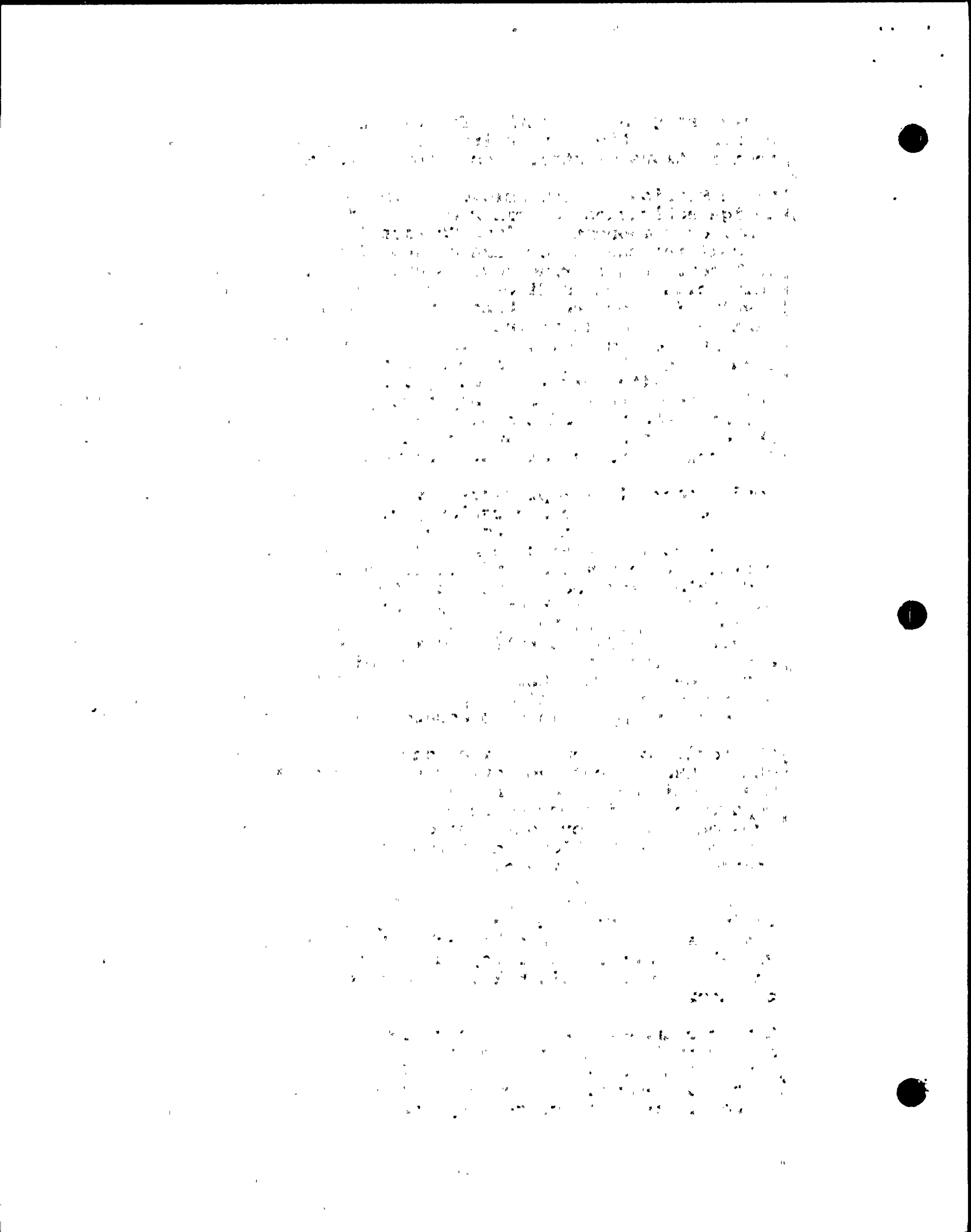
Ginna Station is responsible for the design and control of design activities for minor modifications of structures, systems, or components. Ginna Station is also responsible for classifying station originated modifications as either Major or Minor. Engineering reviews and concurs with modifications being classified as Minor. Minor modifications typically involve (1) component changes which involve vendor design and limited to the extent that the change does not impact existing performance requirements. (2) Additions within Seismic Category I buildings which perform no safety functions and which either interface with Seismic Category I items or whose failure could reduce the functioning of any safety related component required for safe shutdown of the plant to an unacceptable level. (3) Changes to a safety related system determined not to be major (i.e.vents, drains, alarms, indicating lights, etc.).

Design control is implemented by means of procedures which include: design considerations, design review requirements; internal and external interface control considerations; design document review, approval, distribution, control, and revision requirements; and corrective action. Design considerations include, as appropriate: physics, stress, materials, thermal, hydraulic, radiation and accident analysis; appropriate design bases, codes, standards and regulations; acceptability for operation, maintenance and repair; acceptance and rejection criteria; quality standards and other quality assurance requirements. Design verification utilizes various methods such as formal design reviews, alternate calculations, or tests as appropriate to assure the adequacy of the design.

The design of plant modifications is verified by an engineer other than the one who performed the original design. For Major modification design, this may be done by Engineering department design engineers or consulting engineers as requested. For Minor modification station design, this may be done by Ginna Station and or Engineering department design engineers as appropriate.

Spare or replacement parts must at least meet the original equipment technical and quality requirements. For plant modifications, standard "off-the-shelf" commercial or previously approved materials, parts, and equipment are selected and reviewed for suitability of application by the design engineer.

Design changes, are normally reviewed and approved in accordance with the same procedures as the original design. Supplemental procedures are established for the review and approval of field changes. In general, design changes including field changes, are reviewed and approved by the organizations or



individuals that performed the original design, review and approval. Where this is not practical, other responsible design organizations or individuals designated, provided they have access to pertinent background information and are competent in the specific design area.

5 4 Design verification and field change systems are methods utilized to detect, document and correct design process errors and deficiencies. In addition, the corrective action system, described in section IV.16, is utilized to control and document corrective action to preclude recurrence of those design process errors and deficiencies which are considered to be a significant condition adverse to quality.

3 Quality Assurance is responsible for assuring that design control procedures, whether the work is done by Rochester Gas and Electric or by other organizations, are prepared and implemented and incorporate appropriate design control practices, checks, and reviews. Design control procedures are reviewed to assure that an independent verification is performed.

Engineering and Ginna Station are responsible for establishing measures for the proper control of design documents and revisions there-to, to assure that distribution is to responsible individuals and in a timely manner to prevent inadvertent use of superseded design information. The measures include the use of document revision levels, document transmittals, release stamps, field change request forms and distribution lists.

Design documents are collected, stored, and maintained in accordance with Section IV.6 and IV.17, as appropriate. Design documents include design criteria, analyses, specifications, drawings, design review records, and changes thereto.

Quality Assurance and Station Quality Control through preparation assistance and/or review assure the proper inclusion of quality standards in the design of major and minor modifications, respectively. Quality Assurance is also responsible for assuring that adequate inspection requirements are included in specifications. The Manager, Quality Assurance reviews and approves any deviations from quality standards when they occur.

Plant modifications are controlled by means of applicable Ginna Station, Engineering and Quality Assurance procedures. These procedures provide for the preparation, review, and approval of design documents, safety analyses, and plant modification procedures. Proposed plant modifications are reviewed by the Plant Operations Review Committee and Nuclear Safety Audit and Review Board as required by Section 6.0, Technical Specifications.

IV.4 Procurement Document Control

Procurement document control applies to the control of procurement documents for materials, parts, components, and services required to perform quality affecting activities. Such documents may be prepared by Rochester Gas and Electric or by a contractor and include purchase requisitions, purchase orders, service agreements, contracts, specifications, and drawings.

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, the items listed in Table IV.4-1.

Procurement documents, including those requesting spare or replacement parts, initiated at Ginna Station and General Maintenance are reviewed by Quality Control and approved by the department superintendent or his designated representative. Procurement documents initiated in Engineering and Quality Assurance are reviewed by Quality Assurance and approved by the Chief Engineer, or designees. Procurement documents for nuclear fuel are initiated by the fuel management staff, reviewed by Quality Assurance and approved by the Director, Strategic and Fuel Planning.

Procurement documents initiated at Electric Meter and Laboratory are reviewed by Quality Assurance and approved by the department superintendent or designated alternate.

Evidence of review and approval of procurement documents is recorded on the documents or on the attached control form. The attached control form identifies to Purchasing a procurement method which will ensure that the selected supplier is capable of providing the item or service in accordance with the requirements of the procurement documents. Considerations used in selecting a supplier and for determining the corresponding procurement method are described in Section IV.7

After purchase requistions, service agreements, contracts, specifications, and drawings have received the required reviews and approvals, a purchase order is issued by Purchasing to the selected supplier and controlled as described in Section IV.7. These documents are maintained by Purchasing, by the originating department, and/or by the receiving locations, as appropriate, until procurement is completed.

Under no circumstances are purchasing requirements altered (except for quantity or pricing) during order placement unless review and concurrence is obtained from those who were required to review, concur with, and approve the original documents as described above. Changes or revisions to procurement documents are subject to the same review and approval requirements as the original documents.

Originating department technical review of procurement documents includes verification of applicable regulatory, code and design requirements. Quality Assurance/ Quality Control review of the above includes checks to verify proper inclusion of quality standard, quality assurance program requirements, method or procurement and the applicable acceptance criteria. Quality Control also reviews procurement documents for spare or replacement parts for adequacy of quality requirements and to determine similarity, compatibility, and the inclusion of the quality requirements and acceptance criteria of the original design.

IV.5 Instructions, Procedures, and Drawings

Each Rochester Gas and Electric company organization is responsible for developing, reviewing, approving, and implementing procedures as required to implement the quality assurance program. These procedures cover activities such as document control, training of personnel, and responsibilities and duties of personnel. Quality Assurance reviews and concurs with these procedures. Table IV.1-1 provides a summary of the subject matter contained in the procedures which are used to implement the quality assurance program. Procurement documents require suppliers and contractors to have appropriate instructions, procedures, specifications, and drawings.

Ginna Station is responsible for providing and implementing instructions and procedures associated with operation, maintenance, repair, in-service inspection, refueling, modification, testing and inspection. This includes instructions and procedures listed in USAEC Regulatory Guide 1.33 for administrative control; general plant operation; startup, operation, and shutdown of safety related systems; correction of abnormal, offnormal, or alarm conditions, combat of emergencies and other significant events; radioactivity control; control of measuring and test equipment; chemical and radiochemical control; and fuel handling and refueling. Ginna Station is responsible for the preparation and implementation of quality control inspection procedures utilized for detailed station inspection activities. Ginna Station is responsible for appropriate changes to such documents upon receipt of regulatory directives, instructions from Rochester Gas and Electric management, or the completion of plant modifications. Ginna Station is also responsible for the preparation and issuance of those minor modification design documents not provided by Engineering or the equipment supplier.

General Maintenance is responsible for providing and for implementing instructions and procedures associated with special processes, the routine maintenance and inspection of cranes and handling equipment, as well as shop work required to support Ginna Station maintenance, repair and modification activities. General Maintenance is also responsible for the preparation and for the implementation of quality control inspection procedures utilized for detailed inspection activities at their facilities.

Electric Meter and Laboratory is responsible for the preparation and implementation of relay inspection and testing procedures as required to direct detailed inspections and testing activities for which they are responsible. Electric Meter and Laboratory also assists in the preparation of routine relay maintenance and testing procedures used by their personnel in the annual Ginna Station protective relay surveillance program.

Engineering is responsible for providing approved specifications, and drawings associated with major modifications and when minor modifications necessitate drawings or specifications. These documents require those performing the work to obtain, understand, and comply with appropriate procedures, specifications and drawings. Engineering has established procedures for revising drawings and specifications. These procedures cover updating of as-built drawings after plant modifications and the revision, approval, distribution, and control of all drawings and specifications.

Persons preparing and approving documents are responsible for assuring that specifications, instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished and assuring that the documents are kept current.

Indoctrination and training of personnel is provided by the responsible organizations to ensure that quality affecting activities are conducted in accordance with established documents. In addition, surveillance by Quality Control personnel, as described in Section IV.10 and audits by Quality Assurance as described in Section IV.18 are used to verify that quality affecting activities are being performed in accordance with approved instructions, procedures and drawings.

IV.6 Document Control

Procedures are established to control the issuance of procedures, instructions, drawings, and specifications. Standard document control requirements are contained in the Quality Assurance Manual. The Ginna Station Superintendent is responsible for the control of all documents issued at Ginna Station. General Maintenance and Electric Meter and Laboratory are responsible for the control of documents issued by their respective organizations. Engineering controls all documents issued by Engineering, Quality Assurance and Purchasing. Each organization controlling documents has a separate procedure to control documents in accordance with the requirements of the Quality Assurance Manual.

The Quality Assurance Manual designates responsibilities and defines requirements for the preparation, review and approval of documents. Each department responsible for an activity is responsible for providing the necessary review and approval of instructions, procedures or drawings to assure that they are adequte, and include appropriate qualitative and quantitative requirements. Departmental Quality Control representatives review departmental maintenance, repair, refueling and modification procedures, prior to use, to assure quality assurance requirements are included. The Plant Operations Review Committee has the responsibility for reviewing Ginna Station procedures prior to their approval as required by Section 6.0 Technical Specifications. Detailed inspection, test and examination procedures used by qualified personnel require the review and concurrence of the responsible technical person associated with that activity. Ginna Station, General Maintenance, Engineering, Purchasing, and Electric Meter and Laboratory quality assurance implementing procedures require the review and concurrence of Quality Assurance and the approval of the appropriate department supervisor.

3 Quality Assurance procedures are approved by the Manager, Quality Assurance.

The Quality Assurance Manual requires that documents be controlled as appropriate, considering the type of document involved, its importance to safety, and the intended use of the document. It specifies the types of documents which must be controlled; identifies the difference between controlled and uncontrolled copies of the same document; includes the method for identifying holders of controlled copies; requires that only controlled copies of a document be used for official purposes; requires that lists of effective revisions be issued periodically; requires lists of document holders to be maintained by the distributors; and requires that distributors transmit controlled documents using approved forms internally and externally.

Types of documents which are controlled include Technical Specifications, FSAR, Technical Supplements, Quality Assurance Manual, procedures (such as quality assurance,
2 engineering, purchasing, repair, maintenance, test, calibration, fuel handling, modification, and administrative), specifications and drawings. Suppliers of materials, equipment, and services are required in procurement documents to provide for control of documents, including manufacturing, inspection and testing instructions.

The Quality Assurance Manual further requires that each organization provide in its procedures for measures: to assure that documents are available when required; to properly review and approve documents such as procedures, instructions, specifications, and drawings; to provide the same reviews and approvals for changes to documents as was required of the original document; to require that organizations which review and approve documents have access to pertinent information and adequate knowledge of the original document intent; to assure that approved changes are promptly transmitted for incorporation into documents; and to assure that obsolete or superseded documents are eliminated from the system and not used.

3 Quality Assurance and the Quality Control organizations, in the responsible departments, are responsible for review and concurrence of procurement documents and, therefore, procurement document control requirements.

3 Quality Assurance and the Quality Control organizations are further responsible for review, inspection, surveillance, and audit, as appropriate, of document control systems to assure adequate systems are implemented.

IV.7 Control of Purchased Material, Equipment, and Services

Procurement documents, supplier selection, planning for item or service acceptance control of supplier performance and acceptance of items and services are five major means used in controlling purchased material, equipment and services. All procurement is conducted in accordance with procurement documents as stated in Section IV-4. All reviews, inspections, surveillances, and audits are conducted by personnel who are competent in establishing whether or not a supplier is capable of providing acceptable, quality products.

Procurement planning is utilized by the procuring organizations for determining the methods to be used for acceptance of the item or service as well as requirements for the control of the supplier performance. Source inspection (surveillance) certificate of conformance, receipt inspection and post installation test are methods which are considered for item acceptance with receipt inspection utilized in the acceptance of all items. In lieu of these methods, acceptance of services is based on either or a combination of: (1) surveillance of the activity and (2) review of objective evidence for conformance to the procurement document requirements (i.e. certifications, stress reports etc.). The extent of the acceptance methods and associated verification activities will vary and be a function of the relative importance and complexity of the purchased item or service and the suppliers past performance.

Consideration for the control of supplier performance includes the necessity for document submittals or surveillance, and under what situation the supplier is to report nonconformances.

Results of the planning are incorporated in the procurement documents and or on the attached procurement control form as described in Section IV.4.

Selection of a supplier is based on the evaluation of its capability to provide the item or services in accordance with the requirements of the procurement documents. The evaluation which is accomplished during the procurement planning, determines the necessity for the supplier selection to be from the approved suppliers list maintained by Purchasing. Purchasing utilizes the approved suppliers list for the selection source of those suppliers required to have a satisfactory quality assurance program. The evaluation guidelines for source selection considers the item complexity, method(s) of acceptance and for a replacement item, if the source is to be restricted to the original supplier. For engineered and off-the-shelf items, procured from suppliers required to have a quality assurance program and for which item acceptance is based other than on receipt inspection, supplier selection is from the approved suppliers list or one who is in the process of being added to the list, after having had its capability evaluated

to purchaser satisfaction. Other off-the-shelf items, that are manufactured to industry standards, that are typically utilized in applications other than nuclear, and for which item acceptance is based exclusively on receipt inspection may be purchased from sources other than the approved suppliers list. These other sources may include the manufacturer of the replacement part, authorized distributor for the manufacturer's replacement parts and distributor of catalog items which satisfy the guidelines of not requiring status on the approved suppliers list. Departmental procedures establish guidelines for source selection evaluations and for documenting the results on the procurement control form through indication of the corresponding procurement method. The purchase requisition will also identify the source when replacement parts are to be procured from the original equipment supplier.

Addition of a supplier to the approved suppliers list is based on satisfactory evaluation of the supplier's capability by Quality Assurance, Purchasing and other departments, as appropriate.

For Engineered items, Engineering is responsible for evaluating the overall design or manufacturing capability of the supplier including his particular technical ability to produce the design, service, item, or component delineated in the procurement documents. As part of this review, the supplier's design capabilities, machinery capabilities, handling capabilities, testing facilities, service capabilities, and experience are reviewed.

Quality Assurance is responsible for evaluating the supplier's overall quality assurance organization and program in accordance with applicable codes, standards, applicable parts of 10CFR50 Appendix B, and Rochester Gas and Electric requirements. The review includes consideration of: company organization, quality assurance personnel qualifications, review and control of design documents, manufacturing procedures, quality assurance procedures, calibration practices, acceptance criteria, required quality assurance records and their retention, and quality assurance requirements and controls imposed by the supplier on his subcontractors. Supplier evaluation is conducted by means of procedures or checklists which identify applicable regulatory or code quality assurance requirements.

Ginna Station, General Maintenance, Quality Assurance and Electric Meter and Laboratory evaluate the suppliers of inspection, test, and calibration services which they intend to use.

The departments responsible for performing supplier evaluations shall document their results in reports which discuss areas investigated, findings, and conclusions. As applicable, concurrence of Purchasing, Engineering, Quality Assurance,

Ginna Station, General Maintenance, Electric Meter and Laboratory and Fuel Planning is required to place a supplier on the qualified suppliers' list. One organization can remove a supplier from the list without concurrence of the others.

Measures are established by Engineering and Quality Assurance to control supplier performance for engineered items. These measures typically include the processing of change information, surveillance of supplier activities and the control of documents exchanged with the supplier. In addition, each department procuring off-the-shelf items or services establishes similar measures for the control of supplier performance. With the exception of processing change information, the need for and applicable extent of purchaser controls of the supplier are determined during procurement planning.

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

The results of the surveillance trip are documented by means of inspection sheets or trip reports which are distributed to the Manager, Quality Assurance, and the department which initiated the procurement. When a deviation from purchase order requirements is noted, the Quality Assurance representative has the authority to inform the vendor that a particular item is unacceptable, to issue a nonconformance report, or to stop work, if necessary.

Ginna Station Quality Control is responsible for surveillance of site contractors to assure that they meet all technical and quality requirements. The reporting and documenting of contractor surveillance is managed in a manner similar to supplier surveillance.

The verification methods for the acceptance of items and services are specified on the attached procurement control form during procurement planning and the purchase requisition preparation.

Department superintendents are responsible for receiving and storing items pending their acceptance. Upon receipt, the

department stockkeeper logs the item, places a "hold" tag on the item, and notifies Quality Control that the item has arrived.

Quality Control is responsible for receipt inspection upon delivery of items and associated services for maintenance, repair, modification, and refueling. This inspection includes the use of written procedures or checklists to verify that the items and services conform to the procurement documents (if this has not been performed by source inspections) and that documentary evidence of conformance is available at the plant prior to installation or use. Documentary evidence sufficient to identify the codes, standards or specifications met by the purchased material, equipment, and services is retained. In the event a final source inspection for the acceptance is conducted prior to receipt by RG&E, Quality Control performs an inspection for shipping damage or lost parts and a document check to assure that the required documentation has been reviewed and is complete. A receiving inspection checklist is completed for all items received to document the extent of the inspection performed, including the documents checked, and the inspection results.

If the item and documentation are adequate, Quality Control labels the item as "Accepted," files the documentation and receipt inspection results, and releases the item for storage or use. If the item is nonconforming or the documentation is unsatisfactory, Quality Control initiates a nonconformance report which is controlled in accordance with Section IV.15.

All items issued must bear an acceptance tag and have documentation to support the acceptability of the item. In the event the traceability is lost or the documentation review is unsatisfactory, the item becomes nonconforming and may not be released for use.

IV.8 Identification and Control of Materials, Parts, and Components

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

or quality; and the proper identification of materials, parts, and components prior to release for manufacturing, shipping, construction, and installation.

4.2 Engineering and Quality Assurance are responsible for assuring that drawings and specifications contain appropriate requirements for the identification and control of materials, parts, or components, as appropriate. Suppliers are required to assure that all required documentation for an item is properly identified and related to the item. Each item is required to be physically identified, either by marking on the item or by tags. Physical identification by purchase order number is used to the maximum extent possible for

relating an item at any time to applicable documentation. Identification is either on the item or records traceable to the item. Where physical identification is impractical, physical separation, procedural control, or other appropriate means are employed.

The Ginna Station Superintendent is responsible for maintaining identification and control of materials, parts, or components received, stored, installed, and used at the plant. Procedures covering the identification and control of materials, parts, and components at the plant are approved by the Ginna Station Superintendent. The superintendents of other departments which receive material which is to be stored away from the plant are responsible for establishing procedures for identification and control and for maintaining identification and control of material, parts, or components, stored or used in their area of responsibility. 3

In the event that traceability is lost for a specific item, it is handled as nonconforming material and deviations and waivers are controlled and documented in accordance with Section IV.15.

IV.9 Control of Special Processes

Written procedures are established to control special processes, such as welding, heat treating, and nondestructive examination to assure compliance with applicable codes, standards, and design specifications. Qualification of personnel and procedures complies 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, the personnel qualification requirements, the equipment necessary, and the special process qualification requirements.

4 3 Initiators of procurement activities are responsible for requiring suppliers, in procurement documents, to control special processes in accordance with the above requirements.

3 Quality Assurance and Quality Control personnel are responsible for reviewing procurement documents to ensure that requirements for control of special processes are included.

7 3 Rochester Gas and Electric procedures for special processes are prepared, reviewed, and approved by Materials Engineering. Special process procedures submitted by suppliers and contractors are reviewed and concurred with by Materials Engineering.

7 The Ginna Station Maintenance Engineer and Quality Control Engineer are responsible for assuring that personnel performing special processes under their cognizance are qualified and are using qualified procedures in accordance with

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applicable codes, specifications, and standards. The Supervisor, Materials Engineering is responsible for the qualification of NDE personnel and procedures. The Supervisor, Materials Engineering is responsible for the qualification of welding procedures and the training and qualification of welders. Engineering maintains records for personnel and procedures to demonstrate that required qualifications have been obtained and are kept current.

Quality Assurance and Quality Control perform surveillance inspections, and audits of special processes performed by Rochester Gas and Electric or contractors to assure compliance with procedures.

IV.10 Inspection

Procedures prepared for the control of activities include inspection requirements and hold points as required by drawings, instructions, requirements documents, specifications, codes, standards, or regulatory requirements. For clarification and to distinguish from preventative maintenance inspections the following controls are associated with the quality assurance function inspections and referred to as verification inspections. Instructions for conducting detailed verification inspections are contained in inspection procedures. These inspection procedures and all supporting specifications and drawings are provided to inspection personnel for use prior to performing the inspection. Inspection requirements and hold points are utilized to verify conformance of activities to the documented instructions, specifications, and drawings for accomplishing the activity. Inspection procedures include the identification of quality characteristics to be inspected, a description of the method of inspection to be used, the identification of the group responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity. Verification inspections are performed by qualified inspection personnel who are independent of the personnel performing the work. Outside contractors are required by procurement documents to have and follow similar procedures and to use independent inspectors. Inspectors are sufficiently trained to adequately evaluate the activity they are inspecting.

Quality Control personnel are responsible for performing verification inspections, as required, during plant operation, maintenance, repair, in-service inspection, refueling, modification, and testing when the work is performed by Rochester Gas and Electric personnel. When the work is performed by outside contractors, Quality Control is responsible for surveillance of the subcontractor's inspection activities. All inspection equipment is calibrated and controlled in accordance with Section IV.12. Calibration status is verified by inspection personnel prior to performing an inspection operation.

In the event an inspection of processed material or products is impossible or impractical, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are required when control is inadequate without both.

5 4 3 2 7 Quality Assurance is responsible for the adequate inclusion of inspection requirements in specifications.

The Ginna Station Quality Control Engineer is responsible for assuring that adequate inspection requirements and hold points are included in maintenance, repair, refueling, modification and testing procedures. He is also responsible for the assignment of qualified inspection personnel required for inspection of quality affecting activities and for coordinating the performance of and conducting the surveillance of inservice inspection.

4 3

The General Maintenance Quality Control Coordinator is responsible for assuring that adequate inspection requirements are included in procedures, instructions and/or checklists controlling maintenance, modification and repair activities and related fabrication processes at the General Maintenance facility.

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With the exception of that which pertains to Pump and Valve Testing, the Supervisor, Materials Engineering is responsible for establishing the requirements for the Inservice Inspection Program. Quality Assurance is responsible for establishing the requirements for the Inservice Pump and Valve Testing Program. The program for inservice inspection of the reactor coolant system and other safety related systems is contained in Section 4.2, Technical Specifications.

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IV.11 Test Control

Whenever testing is required to demonstrate that a material, part, component, or system will perform satisfactorily in service, a test program is instituted employing written and approved procedures which are in accordance with basic requirements established in Technical Specifications, drawings, instructions, procurement documents, specifications, codes, standards, and regulatory requirements. 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 test procedures and checklists include: necessary test equipment and calibration requirements; material requirements; test personnel requirements; prerequisite plant and equipment conditions; limiting conditions; detailed performance instructions for the testing method and test equipment instrumentation; acceptance and rejection criteria; instructions for disposition of deviations; data collection requirements; and test result approval.

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The Ginna Station Superintendent is responsible for the station test program, which includes the surveillance test program required by Section 4.0, Technical Specifications and testing associated with modifications.

Test procedures are prepared by the plant staff, reviewed by the Plant Operations Review Committee and Quality Control, and approved by the Ginna Station Superintendent. The Ginna Station Superintendent is responsible for the performance of the required tests in a correct and timely manner utilizing written and approved procedures. When contractors are employed for tests, the contractor is requried to perform testing in accordance with his quality assurance program requirements. All test results are required to be documented, reviewed, and approved by those responsible for performing the test.

When requested by Ginna Station, Electric Meter and Laboratory performs test activities to determine the cause of protective relay malfunctions. These test activities are performed in accordance with approved procedures by qualified personnel.

Engineering and Quality Assurance are responsible for assuring that required tests for major modifications are included in specifications. Engineering assistance in the preparation of modification-related test procedures may be provided to the Ginna Station staff. The Ginna Station Technical Engineer is responsible for the adequate inclusion of test requirements in minor modification design documents and for reviewing modification-related test results for acceptability to design requirements. Reviews of minor modification design by Station Quality Control verifies adequate inclusion of test requirements.

IV.12 Control of Measuring and Test Equipment

The calibration and control system for measuring and test equipment includes calibration procedures, establishment of calibration frequencies, and maintenance and control requirements of measuring and test instruments, tools, gauges, shop standards, and nondestructive test equipment which are to be used in the measurement, inspection, and monitoring of components, systems, and structures. Calibration procedures include step-by-step methods for calibration 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.

Control of measuring and test equipment requires: a recall system assuring timely calibration of equipment; a system providing unique identification of equipment, traceability to calibration test data, and identification of the next calibration date on the equipment; a system providing traceability of shop standards to nationally recognized standards (where national standards do not exist, procedures contain instructions to document the basis for calibration) and periodic revalidation of shop standards; a system providing

for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates; and a system controlling the purchase requirements of new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions. In the event a measuring instrument is found out of calibration, an investigation is conducted to determine the validity of previous measurements.

The Ginna Station Superintendent is resonsible for the procedures and program required to assure control and calibration of measuring and test equipment at Ginna Station in accordance with the above requirements. Instruments specified in Section 4.1, Technical Specifications, are included in the program. Tools, gauges, and instruments necessary for maintenance, inspection, and test are calibrated and controlled in accordance with station procedures. Measuring, test or inspection equipment used by Quality Control is included in the program.

3 The Superintendent, General Maintenance, and Superintendent, Electric Meter and Laboratory, are responsible for establishing a program and the preparation of procedures for the control and calibration of measuring and test equipment used by their respective departments.

IV.13 Handling, Storage, and Shipping

The Ginna Station Superintendent is responsible for developing and implementing procedures for the handling, storage, shipping, preservation, and cleaning of material and equipment delivered to or located at Ginna Station. The Superintendent, General Maintenance, and the Superintendent, Electric Meter and Laboratory, are responsible for preparing and implementing
3 procedures for the handling, storage, shipping, preservation, and cleaning of material and equipment delivered to or located in their work areas. In addition, the Superintendent, General Maintenance, is responsible for preparing and implement-
4 ing procedures for the routine maintenance and inspection of lifting and handling equipment. Under normal circumstances, manufacturer's specific written instructions and recommendations and purchase specification requirements are invoked for cleanliness, preservation, special handling, and storage with respect to environmental requirements. In the absence of, or in addition to, specific manufacturer requirements, the department superintendent may invoke additional require-
3 ments in accordance with department procedures.

The Chief Engineer is responsible for specifying in procurement documents and in engineering specifications that written procedures be used, as appropriate, for the handling, shipping, storage, cleaning, and preservation of materials and equipment

procured for modifications. These procedures are prepared by contractors, by the station staff, or by staff members of General Maintenance or Electric Meter and Laboratory, as appropriate. Rochester Gas and Electric procedures are reviewed and approved as described in Section IV.6. 3

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

Quality Assurance is responsible for review of engineering specifications to assure that proper handling, storing, and shipping requirements have been specified. Quality Control is responsible for surveillance of handling, storage, and shipping activities by suppliers, Rochester Gas and Electric personnel, and contractors. 2

IV.14 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 in a positive manner. The identification is sufficient to positively indicate the status of the particular equipment or system being isolated.

The Ginna Station Superintendent 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 Rochester Gas and Electric Intra-Station Holding Rules. The Ginna Station Superintendent designates personnel who have station holding authority.

Personnel who have station holding authority are responsible for directing the status change of equipment and systems in accordance with the approved company Intra-Station Holding Rules. System status is indicated through the use of hold tags and control logs.

Equipment or system inspection and test status are indicated by use of test tags, labels, or work inspection and test status sheets. Written procedures control the use of hold tags, test tags, and labels. The procedures require the recording of the name of the person placing and removing the tag.

Systems, components, and equipment which are found to be unacceptable during or after testing are clearly identified.

Fuel handling operations involving fuel assemblies or other radioactive sources are identified and controlled by the use of tags, stamps, or other suitable means.

3 Maintenance, repair, or modification of components, systems, or structures utilizes procedures, travelers, data sheets and checklists to indicate status of the work, inspections and 5 3 tests and corresponding acceptance or rejection for a particular component, system, or structure. These job control forms are prepared jointly by the job supervisor and Quality Control and maintained at a designated control location to indicate the status and the completion of required inspections and tests.

Quality Control monitors the status change activities for their compliance to approved procedures and assures that inspection results are properly logged. Quality Control also establishes the procedures for implementing the 5 4 3 inspection status sheets utilized during inservice inspection.

IV.15 Nonconforming Materials, Parts, and Components

Procedures are established for the control, evaluation and disposition of deficient material, parts, and components. Materials, parts, or components which do not conform to the drawing or specification requirements are identified with a hold tag and reported on a nonconformance report. Quality 3 Control is responsible for issuing nonconformance reports, recommending disposition, initiating repair or rework, and inspecting and approving repaired or reworked items. Prior to installation or use, nonconforming items generally remain in a Quality Control receiving inspection area until approved. disposition has been received. Nonconforming items which 3 are released for installation to meet critical fabrication schedules are controlled by Quality Control to prevent inadvertant use prior to clearance of the nonconformance. After installation or use, nonconforming items are identi- 4 fied and controlled until approved disposition has been received.

3 Nonconformances identified at a supplier's facility and 3 reported to RG&E, which have supplier recommended diposi- tions of use-as-is, or repair, are normally processed by the department originating the procurement. Organizations which specify the requirement being dispositioned are responsible 3 for reviewing and approving the supplier recommended disposition. 4 This also applies to nonconformances discovered after receipt inspection, during handling or after installation or use.

4 Items are repaired and reworked only in accordance with 3 approved procedures and current drawings. Quality Control assures that approved procedures and/or drawings are avail-

able for use prior to the repair or rework and reinspects all repaired or reworked items. The repair or rework must be verified as acceptable by an inspection of the affected item which is at least equal to the original inspection method.

4 Items which are accepted "use-as-is" are fully documented with the drawing or specification requirement and technical justification for acceptance. All such items are approved prior to use by the cognizant organization having responsi-
4 bility for the requirement. In addition, those "use-as-is" nonconformances which also deviate from a Design Criteria requirement shall require additional approval of the Vice
2 President, Electric and Steam Production.

3 Quality Control issues monthly nonconformance report summaries which are reviewed and analyzed by Quality Assurance. Unsatisfactory trends are reported to management by means of the corrective action report in accordance with Section IV.16.

IV.16 Corrective Action

Quality Assurance establishes the requirements for identification, review and correction of significant conditions
4 adverse to quality. Significant conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are reported on a corrective action report. Significant conditions adverse to quality include conditions affecting safety, conditions which could result in plant shutdown, high maintenance items, and operating procedure deficiencies. The corrective action report identifies the condition, the cause of the condition, and the corrective action taken.

4 Corrective action reports may be initiated by Quality Assurance, Engineering, Ginna Station, Fuel Planning, General Maintenance, Electric Meter and Laboratory or Purchasing staff personnel. Corrective action reports initiated at Ginna Station and General Maintenance are submitted to
3 Quality Control for review and subsequent processing. Corrective action reports initiated by departments other than at Ginna Station or General Maintenance are reviewed and processed by Quality Assurance.

When a significant condition adverse to quality at Ginna Station is identified, Quality Control evaluates the affect
2 of continuing the activity. If continuing the activity would cover up or preclude identification and correction of the deficiency, continuing the activity would increase the extent of the deficiency or lead to an unsafe condition,
3 stop work action is taken. The Ginna Station Quality Control Engineer has authority to stop work on maintenance, repair, inservice inspection, refueling, modification, testing or inspection deficiencies, at Ginna Station. The Ginna Station Quality Control Engineer may recommend stop work action to the Ginna Station Superintendent on operating deficiencies.

The Plant Operations Review Committee reviews all corrective action reports initiated at Ginna Station and recommends interim corrective action if the action does not represent a change in configuration of the deficient item. The Committee recommends permanent corrective action for all conditions adverse to quality which involve operating procedures.

3 Significant conditions adverse to quality identfied in General Maintenance are processed by the Quality Control Coordinator. The General Maintenance Quality Control Coordinator has the authority to stop or limit work activities within his department.

5 4 Conditions adverse to quality which involve design deficiencies or a recommended corrective action which involves a design change are reviewed by Ginna Station or Engineering as applicable. The cognizant organization determines the cause of the condition and recommends corrective action to preclude repetition.

3 Quality Assurance reviews all corrective action reports to assure that the cause of the condition has been determined and that corrective action has been taken to preclude repetition. Quality Assurance also reviews nonconformance report summaries for unsatisfactory trends and initiates a corrective action report if such a trend occurs.

2 Completed corrective action reports are submitted to the Vice President, Electric and Steam Production to keep him aware of significant conditions adverse to quality.

IV.17 Quality Assurance Records

Quality Assurance is resonsible for establishing the basic requirements for quality assurance record retention and maintenance. The Ginna Station Superintendent is responsible for the retention and maintenance of plant records. Engineering is responsible for the retention and maintenance of

4 Engineering records. Quality Assurance, Purchasing, Fuel Planning, General Maintenance and Electric Meter and Laboratory departments are responsible for assuring the maintenance

3 and retention of records which they originate. This may be accomplished either by retaining the records in their department or by forwarding them to Ginna Station or Engineering, as appropriate. Each organization retaining records is responsible for preparation, review, approval, and implementation of specific quality assurance record procedures for their areas of responsibility in accordance with these requirements. The records which fall within quality assurance record requirements include those records required by

4 3 2 Section 6.10 of the Technical Specifications and the quality assurance program. All records associated with the operation, maintenance, repair, inservice

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inspection, refueling, modification, inspection and testing of structures, systems, and components covered by the quality assurance program are included.

Ginna Station records include operating logs; the results of inspections, tests, and the monitoring of plant activities; drawings, procurement documents and material analyses; calibration procedures and reports; and nonconforming and corrective action reports. Records of the qualification of personnel, procedures, and equipment for special processes and the results of reviews are maintained by Engineering.

Inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

The requirements and responsibilities for record accessibility and transmittal are described in the Quality Assurance Manual sections as appropriate. Requirements and responsibilities for preparation, inspection, identification, review, storage, retrieval, maintenance, and the retention of quality assurance records are in accordance with applicable quality assurance record procedures, codes, standards, and procurement documents. Records are available to authorized personnel. Removal from record storage is documented on sign-out cards and accountability is maintained by the responsible record control activity.

Records are either stored in record storage facilities which are designed to prevent destruction of records through fire, flooding, theft, and deterioration by temperature or humidity conditions; or, duplicate records are kept in two separate storage locations in separate buildings which are physically isolated from each other.

Record keeping procedures provide for receiving, classifying, indexing, labeling, and preparing records for storage. The procedures establish retention requirements, accessibility, control of obsolete record destruction, and control for issuance and return of all records.

The Ginna Station Superintendent is responsible for maintaining plant operating records as required in Section 6.10, Technical Specifications.

Engineering is responsible for maintaining design records, such as specifications, drawings, design review reports, and design control documentation; quality assurance records, such as audit reports and supplier surveillance reports; purchasing records, such as supplier qualifications, bid evaluatons, and purchase orders.

IV.18 Audits

Compliance with all aspects of the quality assurance program and the effectiveness of the program is determined by audits of all organizations performing quality affecting activities. Quality Assurance is responsible for conducting audits of each organization involved in the quality assurance program on a planned, periodic basis. Audit intervals are based on the status and safety important of activities being performed.

3 Audits of Ginna Station, Engineering, General Maintenance, Electric Meter and Laboratory and Purchasing organizations are performed annually. Table IV.18-1 is a list of the activities to be audited in each of the organizations. Audit frequencies are based on the level of activity in each area. Audit schedules are established to assure that each of the 4 activities are audited at the frequency specified in Technical 5 Specifications 6.0 which includes annually for those activities required to meet the criteria of Appendix B, 10CFR. Additional audits are conducted as required by special conditions or circumstances.

Each audit requires the development of an audit plan to provide information about the audit, such as the functional areas to be audited, the names and assignments of those who will perform the audit, the scheduling arrangements, and the method of reporting findings and recommendations. The audits are performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited.

Audit results are documented and reported to the person having supervisory responsibility in the area audited, the Vice President, Electric and Steam Production, and the 2 Nuclear Safety Audit and Review Board. Within a specified period of time, the person having supervisory responsibility in the area audited is required to review the audit results, take necessary action to correct the deficiencies revealed by the audit, and document and report the corrective action.

2. Quality Assurance is responsible for developing audit plans and audit checklists, designating and training audit personnel, and conducting audits.

Audits may be conducted by Quality Assurance engineers or other qualified personnel, such as technical specialists from other company departments and outside consultants.

Audits of major contractors, subcontractors, and suppliers are conducted during the early stages of design and procurement, as required, to evaluate their quality assurance program for compliance with all aspects of the procurement documents. Audits are conducted, as required, to assure that major contractors, subcontractors, and suppliers are auditing their suppliers' quality assurance programs in accordance with procurement documents. During the project,

additional audits are performed, as required, to assure all quality assurance program requirements are properly implemented in accordance with procurement documents.

2 Quality Assurance performs regular analyses of audit results to evaluate quality trends. Results of these analyses will be provided to management for their regular review.

Table IV.1-1
Quality Assurance Program Procedures
Subject Listing

Quality Assurance Procedures	Appendix B Criteria
Indoctrination of Quality Assurance and Supervisory Personnel	I
Training of Quality Assurance Personnel	I
Management Review of the Quality Assurance Program	I
Periodic Review of Quality Assurance Procedures	I
Quality Assurance Group Organization and Responsibilities	II
Quality Assurance Review of Rochester Gas and Electric Design Criteria	III
Quality Assurance Review of Rochester Gas and Electric Engineering Specifications	III
Quality Assurance Review of Architect/Engineer's Design Documents	III
Requisitioning Quality Assurance Services	IV
Quality Assurance Review of Rochester Gas and Electric Procurement Documents	IV
Preparation, Review and Approval of Rochester Gas and Electric Q.A. Specifications	IV
Preparation, Review and Approval of Ginna Station Quality Assurance Manual	V
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5 Preparation, Review and Approval of Design Documents	III
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Ginna Procedures	Appendix B Criteria
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	Preparation, Review and Approval of Purchase Requisitions and Related Procurement Documents	IV
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	Quality Maintenance Procedure Deviation Request	V
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4	Welding Procedure Qualification	IX
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TABLE IV.4-1
Procurement Document Requirements

Items to be considered for inclusion in procurement documents include:

1. Scope of Work - Detailed statement of the work to be performed.

*2. Technical Requirements - by reference to specific drawings, specifications, codes, regulations, procedures or instructions including revisions, therto that describe the items or services to be furnished. Also identified shall be test, inspection and acceptance requirements, and any special requirements for such activities as designing, identification, fabrication, cleaning, erecting, packaging, handling, shpping and extended storage.

*3. Quality Assurance Program Requirements - which require the supplier to have a documented quality assurance program that implements portions or all of 10CFR50 Appendix B as well as applicable quality assurance program requirements of other nationally recognized codes and standards. Also included shall be the requirement that the supplier incorporate appropriate quality assurance program requirements in subtier procurement documents.

*4. Right of Access - to include the facilities and records of the supplier for source inspection and audit by the Purchaser or parties designated by the purchaser. Also included shall be provisions for the identification of witness and hold points and the minimum time of advance notice.

*5. Documentation Requirements - Submittal approval and retention requirements for documents such as quality assurance manuals, special process and test procedures, materials records, calculations and analyses.

*6. Nonconformances - Requirements for reporting and disposition of nonconformances to procurement requirements.

* - Included in the review by Quality Assurance/Quality Control.

TABLE IV.18-1
Audit List

Functional Organization	Activities Audited
Engineering	Indoctrination and Training Design Control Procurement Document Control Document Control Records Procurement Control
Purchasing	Indoctrination and Training Procurement Document Control Procurement Control
Ginna Station	QA Indoctrination and Training Ginna Staff Training, Retraining-Qualification and Performance Modification Maintenance and Repair Procurement Control Document Control and Records Inservice Inspection Surveillance Testing Handling, Storage and Shipping Facility Operation Conformance to all provisions contained in Technical Specifications and applicable license conditions Refueling Control of Measuring and Test Equipment Health Physics & Chemistry Security Plan and Procedures Emergency Plan and Procedures Inspection & Surveillance Fire Protection Corrective Action associated with deficiencies occurring in facility equipment, structures, system or method of operation

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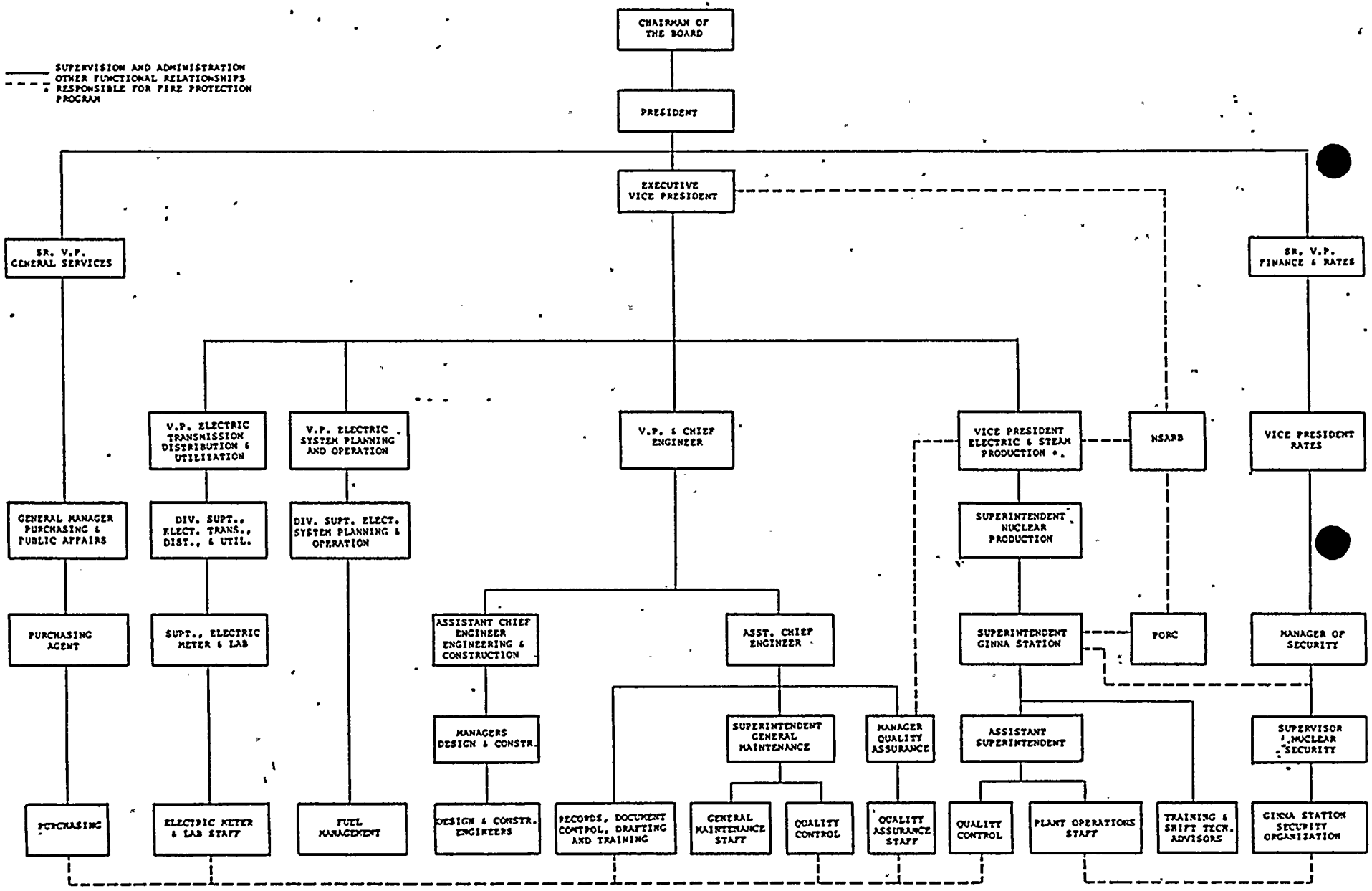
TABLE IV.18-1 (cont'd.)
Audit List

Functional Organization	Activities Audited
General Maintenance	Indoctrination and Training Maintenance and Repair Procurement Control Document Control Fabrication/ Inspection Control Control of Measuring and Test Equipment Special Processes Handling, Storage and Shipping
Electric Meter and Lab	Indoctrination and Training Procurement Control Document Control Handling and Shipping Control of Measuring and Test Equipment Test Control

R.E. GINNA NUCLEAR POWER PLANT
MANAGEMENT ORGANIZATION CHART



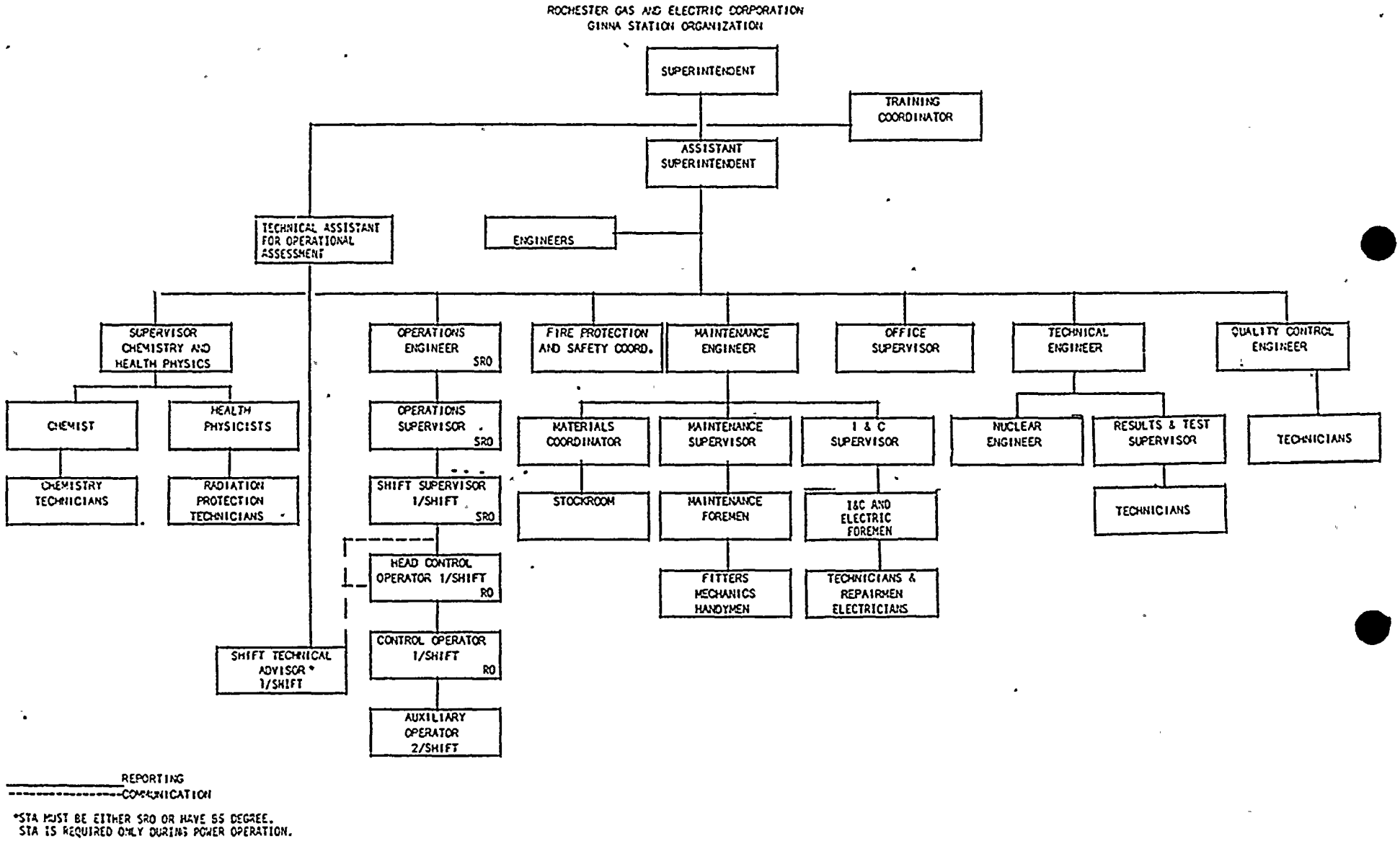


Figure IV.2-3
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ROCHESTER GAS & ELECTRIC CORPORATION

GENERAL MAINTENANCE STAFF ORGANIZATION CHART

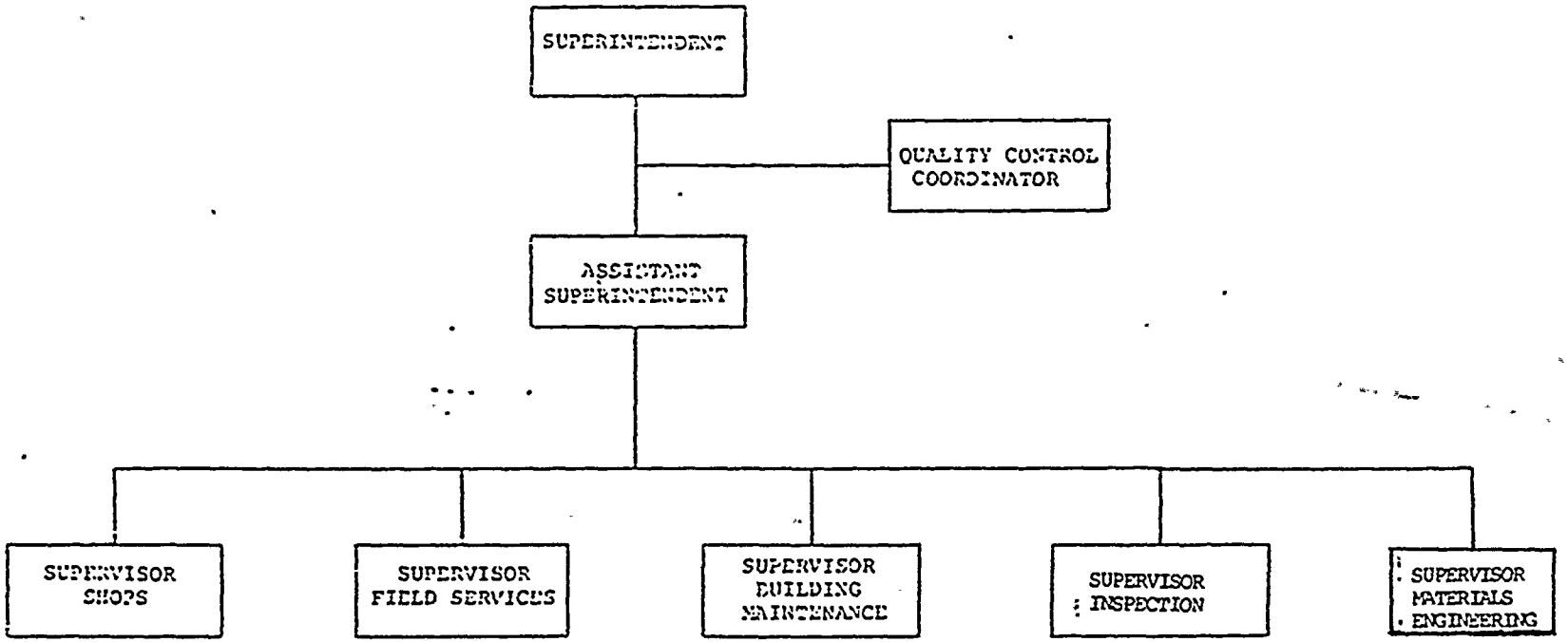

Figure IV.2-4
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Rochester Gas and Electric Corporation
Engineering Department Organization

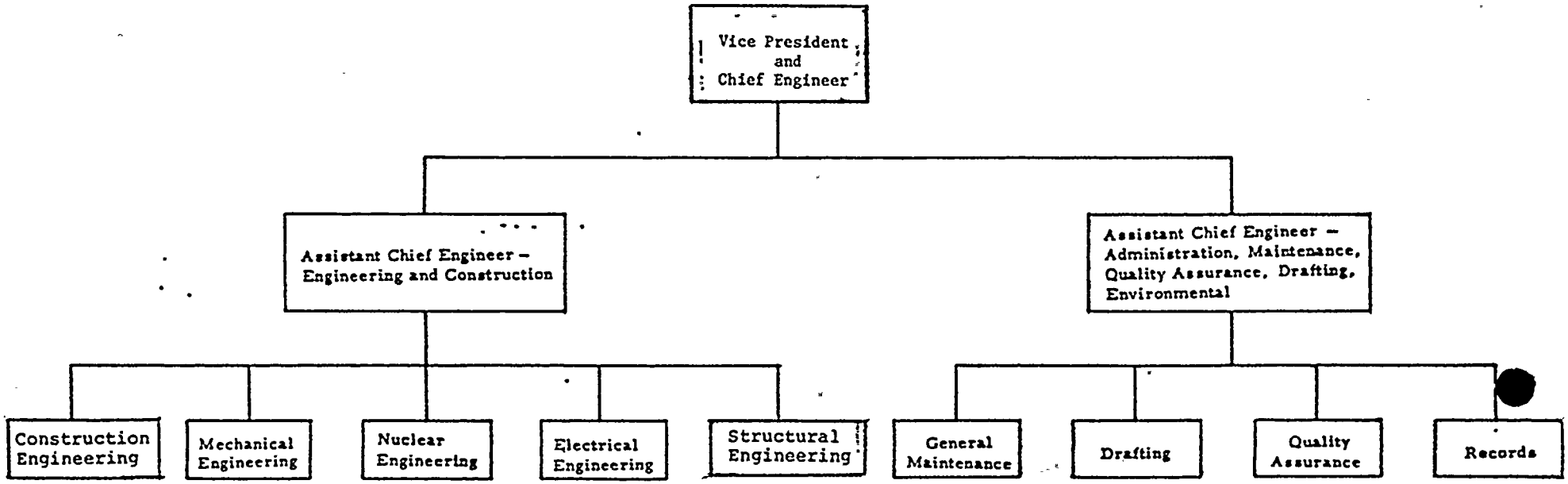

Figure IV.2-5
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Rochester Gas and Electric Corporation

Ginna Station

Review and Audits Functions

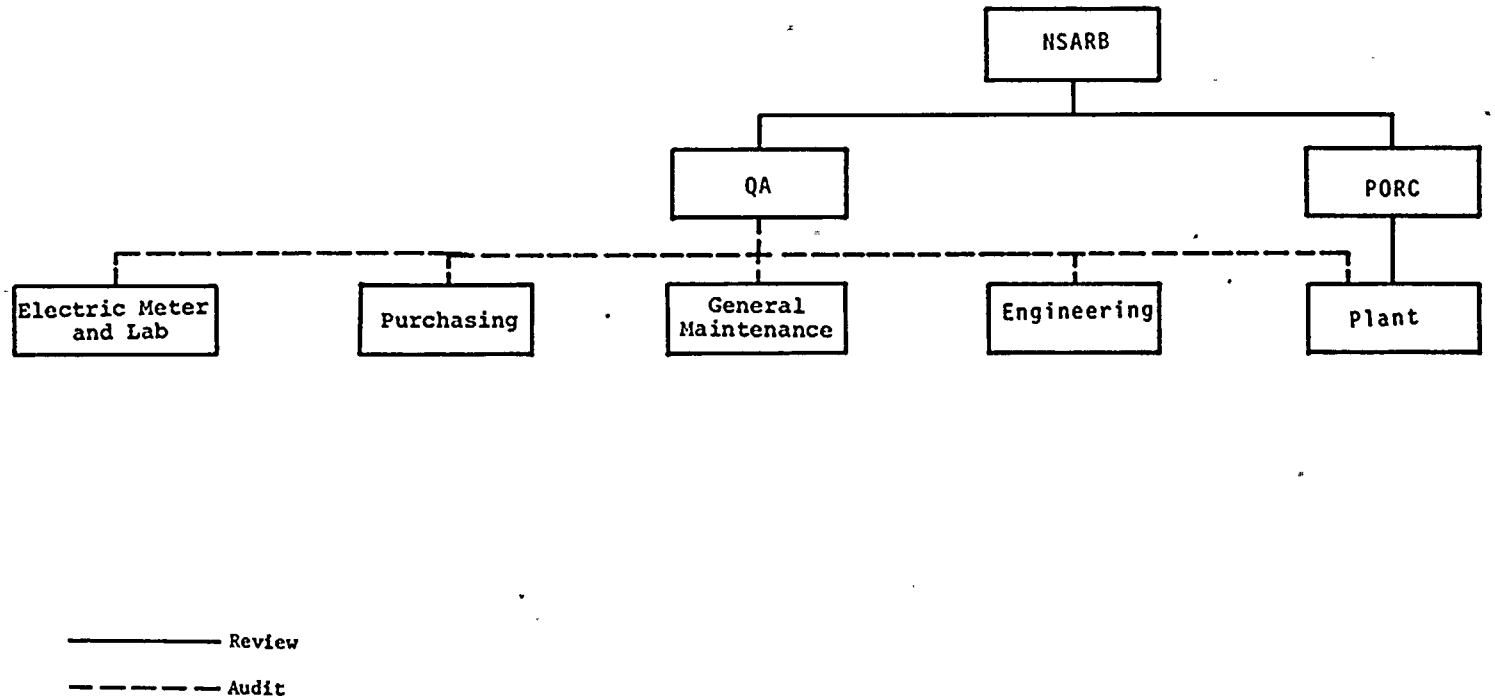

Figure IV. 2-6
February 1, 1976

50-244
GINNA
Supple IV to Tech Spec
Accompanying Appl. For
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Superceded pages per Revision 2 to Supple 4 ltr dtd 11-1-74

1-15-79 updated CP

Introduction

In a May 28, 1974 letter from Mr. Robert A. Purple, the United States Atomic Energy Commission asked several questions on the R. E. Ginna Quality Assurance Program for Station Operation. The information requested and further clarification of the program are provided in Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. Supplement IV is a revised description of the R. E. Ginna Quality Assurance Program for Station Operation and supersedes Supplement II in its entirety. The following revisions have been made to the description of the program:

Section IV.2

Additions

That all Quality Assurance, Quality Control, Engineering, and Purchasing procedures are reviewed for adequacy at least once every two years.

That the list of structures, systems, and components covered by the quality assurance program are based on the list in Section 1.2.1 of the FSAR.

That management review of the quality assurance program may be in a form other than an audit.

That the Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years.

That the Chairman of the Nuclear Safety Audit and Review Board reports to the Chairman of the Board of Rochester Gas and Electric Corporation on NSARB activities.

Section IV.3

Additions

That spare or replacement parts meet, at least, the requirements of the original design.

That for plant modification, the design engineer selects and reviews materials, parts, and equipment for suitability of application.

That design deficiencies are documented and controlled in accordance with Section IV.16.

That design documents are collected, stored, and maintained in accordance with Section II.17 and a listing of which design documents are maintained.

Clarification

Clarified which design documents are reviewed by Quality Assurance.

Section IV.4

Additions

That procurement documents for spare or replacement parts are processed in the same manner as other procurement documents.

That the review and approval of procurement documents is reflected on the document or on a control form which is attached to the procurement document.

That the documents are available for verification in Purchasing and plant records.

That Quality Control reviews procurement documents for spare and replacement parts for similarity to the original requirements, and adequacy of quality requirements.

Section IV.5

Clarification

Clarifies which documents are reviewed by Quality Assurance.

Section IV.6

Addition

Made procurement document review requirements consistent with Section IV.4.

That suppliers of materials, equipment, and services are required by procurement documents to provide control of manufacturing inspection and testing instructions.

Section IV.9

Additions

Made procurement document review requirements consistent with Section IV.4.

Added Quality Control responsibilities for surveillance and inspection of special process activities.

Section IV.10

Additions

That all documentation necessary to perform an inspection is available to the inspector prior to the performance of the activity.

That Quality Control inspection procedures include the identification of quality characteristics to be inspected and a description of the method of inspection to be used, the identification of the organization responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity.

That inspection equipment is calibrated in accordance with Section IV.12 and that calibration status is verified prior to performing the inspection activity.

Section IV.11

Addition

That test procedures include test methods and test instrumentation definition.

Section IV.12

Addition

That shop standards calibration is traceable to national standards or, where national standards are not available, the basis of calibration is documented.

Section IV.14

Addition

That written procedures control the use of hold tags, test tags and labels and that the procedures require the recording of the name of the person placing and removing the tag.

Section IV.15

Addition

That Quality Control issues monthly material deficiency report summaries, that these summaries are reviewed and analyzed by Quality Assurance, and that when unsatisfactory trends are noted, they are reported to management, using the corrective action report in accordance with Section IV.16.

Section IV.17

Additions

That plant records include operating logs, drawings, specifications, calibration procedures and reports, nonconformance reports, and the results of inspections, tests, audits and the monitoring of plant activities and material analyses.

That quality assurance records of special process activities are maintained by Engineering and that they include the qualification records of personnel, procedures, and equipment.

That inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

Section IV.18

Addition

That Quality Assurance is responsible for conducting the audits listed in Table IV.18-1.

In July 1974, the United States Atomic Energy Commission requested information on the conformance of the R. E. Ginna Quality Assurance Program for Station Operation to the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0). The information requested is provided in Revision 1 to Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. The following changes have been made to Supplement IV:

Section IV.1

Additions

A description of the extent to which the quality assurance program conforms to the document entitled "Guidance on Quality Assurance Requirements During The Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0).

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* Table IV.18-1, Figure IV.2-1 and Figure IV.2-3 Have been revised. Figure IV.2-6 has been added.

QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

IV.1 Quality Assurance Program

The quality assurance program described in this Supplement has been developed by the Rochester Gas and Electric Corporation to assure safe and reliable operation of the R.E. Ginna Nuclear Power Plant. This program applies to all activities affecting the safety related functions of the 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 quality affecting activities include operating, maintaining, repairing, refueling, and modifying.

The basic Rochester Gas and Electric Corporation quality assurance policy is established by the Chairman of the Board and Chief Executive Officer in his Corporate Statement of Quality Assurance Policy. This policy is implemented by the Senior Vice President, Electric and Steam through the Quality Assurance Coordinator and the Ginna Station Superintendent.

The program is governed by a Ginna Station Quality Assurance Manual which contains the requirements and assignment of responsibilities for implementation of the program. The manual is developed and maintained by the Quality Assurance Coordinator and reviewed and approved by the Senior Vice President, Electric and Steam.

The program is implemented through Quality Assurance, Quality Control, Engineering, and Purchasing Procedures. These procedures are developed by the responsible organization (i.e., Quality Assurance, Operations, Engineering, and Purchasing) and reviewed and approved by the Quality Assurance Coordinator. The procedures are contained in separate manuals maintained by the responsible organization. All these procedures are reviewed for adequacy at least once every two years by the responsible organization. Table IV. 1-1 provides a listing of the subjects and a short description of the subject matter which is contained in the procedures.

Organizational interfaces are defined and controlled by sections of the Quality Assurance Manual. Organizational responsibilities are described in Section IV.2.

The quality assurance program covers all existing Seismic Category I structures, systems, and components, including their foundations and supports. Activities affecting the quality of these structures, systems, and components are controlled to an extent consistent with their importance to safety. A detailed listing of the structures, systems,

and components covered by the quality assurance program, based on Section 1.2.1 of the Final Facility Description and Safety Analysis Report, is contained in the Quality Assurance Manual.

Details of the system boundaries and the quality classification of water-and-steam-containing components are contained on system flow drawings. The listing of structures, systems, and components covered by the quality assurance program and the system flow drawings are prepared and maintained by Engineering and reviewed and approved by Quality Assurance.

Modifications or additions to existing structures, systems, and components are designated the same seismic classification as the existing system. New structures, systems, and components are designated a seismic classification in accordance with the guidelines in USAEC Regulatory Guide 1.29.

Supervisory personnel are indoctrinated in quality assurance policies, manuals, and procedures to assure they understand that these are mandatory requirements which must be implemented and enforced. Personnel responsible for performing activities affecting quality are trained and indoctrinated in the requirements, purpose, scope, and implementation of quality related manuals and procedures. Refresher sessions

are held periodically and retraining is required whenever a new procedure is issued or a major revision is made to an existing procedure. Training of personnel not in the quality assurance organization is the responsibility of each department performing an activity affecting quality. Quality Assurance assists in establishing training requirements and assures that personnel are trained by auditing training records.

In addition to training in quality assurance, each department conducts on-the-job training to assure that personnel are qualified for their primary work assignments.

The Ginna Station Superintendent is responsible for the formal training, qualification, licensing, and requalification of operators, as necessary. Where necessary, personnel are trained in radiation protection, plant safety and security.

The Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years to assure that it is meaningful and is effectively complying with corporate policy and 10CFR50, Appendix B. This review consists of audits or a review equivalent to an audit performed by company personnel or outside consultants. Reviews will be conducted every six months during the first two years that the program is implemented.

The quality assurance program is designed to meet the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants." The program conforms to the following AEC Regulatory Guides and ANSI Standards:

a. AEC Regulatory Guide 1.8, "Personnel Selection and Training", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

b. AEC Regulatory Guide 1.28, "Quality Assurance Program Requirements (Design and Construction)", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants", Revision 1 dated May 1974 (Gray Book - Revision 1)

   Note: The requirements and guidelines contained in ANSI N45.2 and associated standards are applied only to Seismic Category I structures, systems, and components, including their foundations and supports.

c. AEC Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment"

d. AEC Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

e. AEC Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants"

f. AEC Regulatory Guide 1.38, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants"

g. AEC Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants"

h. AEC Regulatory Guide 1.58, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel"

i. AEC Regulatory Guide 1.64, "Quality Assurance Requirements for the Design of Nuclear Power Plants"

j. AEC Regulatory Guide 1.74, "Quality Assurance Terms and Definitions"

k. Extracts from ANSI N45.2.8, "Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants", contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

l. ANSI N45.2.9, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants"

   Note: When record storage facilities are not designed in accordance with the requirements of ANSI 45.2.9, duplicate records are kept in two separate storage locations in separate buildings which are physically isolated from each other.

m. ANSI N45.2.12, "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants""

n. ANSI N45.2.13, "Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants," and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants", Revision 1 dated May 1974 (Gray Book - Revision 1)

IV.2 Organization

The major organizations participating in the quality assurance program are the Purchasing, Engineering, and Electric and Steam Production Departments; Quality Assurance; the Plant Operations Review Committee; and the Nuclear Safety Audit and Review Board. Figure IV.2-1 is an organizational chart showing these organizations and their relationship to the corporate organization.

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

Chairman of the Board

Senior Vice President, Electric and Steam

Vice President and Chief Engineer

Quality Assurance Coordinator

Quality Assurance Engineer, Operations

Quality Assurance Engineer, Design

Quality Assurance Engineer, Welding and Non-destructive Examination

Purchasing Agent

Ginna Station Superintendent

Ginna Station Quality Control Engineer

In addition to the above individuals, two advisory groups are utilized to review and audit plant operations. These are the Plant Operations Review Committee and the Nuclear

Safety Audit and Review Board. The Plant Operations Review Committee acts in an advisory capacity to the Ginna Station Superintendent and the Nuclear Safety Audit and Review Board advises the Senior Vice President, Electric and Steam. The qualifications of members and the responsibilites of these organizations are described in Appendix A to Provisional Operating License No. DPR-18, Section 6.0, Technical Specifications.

The Chairman of the Board of the Rochester Gas and Electric Corporation directed the establishment of the quality assurance program and issued the governing policy statement. He has established the Nuclear Safety Audit and Review Board to review and audit plant operations. The Chairman of the Nuclear Safety Audit and Review Board is responsible to the Chairman of the Board on all activities of the Nuclear Safety Audit and Review Board.

The Senior Vice President, Electric and Steam has corporate responsibility for operation of Ginna Station in accordance with applicable regulatory requirements. He is responsible for establishing the policies and requirements necessary to assure safe and reliable operation of Ginna Station. He is also responsible for those items

delineated in Section 6.0, Technical Specifications. He has overall responsibility for and authority to direct quality affecting activities. He has assigned the responsibility for the detailed development and overall coordination of the quality assurance program to the Quality Assurance Coordinator.

The responsibility for proper implementation of the quality assurance program requirements at Ginna Station has been assigned to the Ginna Station Superintendent.

The Vice President and Chief Engineer is responsible for the design of plant modifications in accordance with applicable design bases, regulatory requirements, codes, and standards. He has the responsibility for preparing drawings and specifications for the procurement of materials and components for plant maintenance and modification as required. He is responsible for reviewing operating and fuel handling procedures referred to him by the Ginna Station Superintendent and for reviewing maintenance and repair procedures for major equipment.

The Quality Assurance Coordinator is responsible for establishing and executing the overall quality assurance program. He is responsible for assuring that the program satisfies the requirements of 10CFR50, Appendix B, that all applicable regulatory guides have been considered,

and for keeping the total program updated. He is responsible for assuring that all the 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 affecting activities are performed. He is responsible for maintaining a quality assurance staff and directing its activities and for establishing and implementing a comprehensive audit program.

The Quality Assurance Coordinator is a graduate engineer with at least six years of responsible experience, of which two years is in quality assurance and three years in the design or operation of nuclear or fossil fuel power plants.

The Quality Assurance Engineer, Operations is responsible for supervising the operational quality assurance program for Ginna Station. This includes writing quality assurance policies and procedures, coordinating supplier qualification and surveillance, and establishing and implementing the in-service inspection program. He is responsible for staying

current in all applicable regulatory and code quality assurance requirements and providing guidance and assistance to the Ginna Station Superintendent, the Ginna Station Quality Control Engineer, and other affected personnel on these requirements.

The Quality Assurance Engineer, Design is responsible for interpreting the requirements of 10CFR50, Appendix B and applicable regulatory and code requirements related to plant modifications and providing guidance and assistance to engineering and station personnel on these requirements. He writes quality assurance policies and procedures related to design activities and interfaces between Engineering and other departments. He is responsible for reviewing engineering and procurement documents to assure that quality assurance requirements are incorporated.

The Quality Assurance Engineer, Welding and Nondestructive Examination is responsible for developing and qualifying procedures for special processes. He is also responsible for assuring that personnel are trained and qualified in special processes and for inspection activities involving nondestructive examination.

The Purchasing Agent is responsible for the procurement of materials, services, and components, from qualified

suppliers, in accordance with applicable commercial, technical, and quality requirements. He maintains a listing of qualified suppliers determined through an evaluation made by Purchasing, Engineering, Operations, and Quality Assurance.

The Ginna Station Superintendent is responsible for safe operation of Ginna Station. He is responsible for the operation, maintenance, repair, refueling, and modification of Ginna Station in accordance with the requirements of the quality assurance program. He is responsible for providing qualified personnel to perform these activities in accordance with approved drawings, specifications, and procedures. He is also responsible for those items delineated in Section 6.0, Technical Specifications.

The Ginna Station Assistant Superintendent supports the Ginna Station Superintendent in discharging his responsibilities. He is responsible for the day-to-day operation of the station and implementing the policies, procedures, and directions of the Ginna Station Superintendent.

The Ginna Station Quality Control Engineer is responsible to the Station Superintendent for assuring that activities affecting quality are prescribed and carried out in accordance with approved drawings, specifications, and

procedures. In his day-to-day activities, he reports to the Ginna Station Assistant Superintendent. He is a member of the Plant Operations Review Committee and is responsible for the review of all plant procedures presented to the Committee. He also reviews procurement documents initiated at the plant. He is responsible for the control of documents and records stored at the plant. He co-ordinates inspection activities and assures that inspection requirements are included in approved procedures. He coordinates the receipt inspection of incoming materials, parts, and components and the processing of material deficiency reports. He coordinates the processing of corrective action reports, and assures that corrective action is taken. He is responsible for routine surveillance of other groups involved in quality affecting activities and provides the Ginna Station Superintendent with objective information concerning the quality of these activities.

The Ginna Station Quality Control Engineer is assisted in the performance of his duties by a staff which includes an engineer and a technician who coordinate inspection and record-keeping activities, respectively. Additional inspectors are assigned to this group as required by the level of work activities.

In addition to the Ginna Station Quality Control Engineer, the Ginna Station Superintendent is assisted by other designated staff members in the implementation of certain quality assurance program requirements at the plant. These staff members are assigned responsibility for testing, storage of material and equipment, operating and test status control, calibration and control of measuring and test equipment not used by Quality Control, maintenance of material handling equipment, operator training, and control of all activities involving operation, maintenance, repair, refueling, and modification.

IV.3 Design Control

Design activities are performed by Rochester Gas and Electric Corporation personnel or are subcontracted to organizations providing services to Rochester Gas and Electric.

The Vice President and Chief Engineer is responsible for the design and control of design activities (including design interfaces) for the modification of structures, systems, or components.

Design control is implemented by means of engineering procedures which include: design considerations; design review requirements; internal and external interface

control considerations; design document review, approval distribution, control, and revision requirements; and corrective action. Design considerations include, as appropriate: physics, stress, materials, thermal, hydraulic, radiation and accident analysis; appropriate design bases, codes, standards and regulations; acceptance and rejection criteria; and quality assurance requirements. Design verification utilizes various methods such as formal design reviews, alternate calculations, or tests as appropriate to assure the adequacy of the design.

The design of plant modifications is reviewed by an engineer other than the one who performed the original design. This may be done by Rochester Gas and Electric design engineers or consulting engineers as required. The design also is reviewed by the Plant Operations Review Committee for acceptability for operation, maintenance, and repair.

Spare or replacement parts must at least meet the original equipment technical and quality requirements. For plant modifications, standard "off the shelf" commercial or previously approved materials, parts, and equipment are selected and reviewed for suitability of application by the design engineer.

Design changes, including field changes, are reviewed and approved in accordance with the same procedures as the original design. In general, design changes are reviewed and approved by the organizations or individuals that performed the original design, review, and approval. Where this is not practical, other responsible design organizations or individuals are designated, provided they have access to pertinent background information and are competent in the specific design area.

Design documents are collected, stored, and maintained in accordance with Section IV.17. Design documents include design criteria, analyses, specifications, drawings, design review records, and changes thereto.

The Quality Assurance Coordinator is responsible for assuring that design control procedures, whether the work is done by Rochester Gas and Electric or by other organizations, are prepared and implemented and incorporate appropriate design control practices, checks, and reviews. Design control procedures are reviewed to assure that an independent design verification is performed.

The Vice President and Chief Engineer is responsible for the timely approval and updating of specifications and drawings, as well as changes or deviations thereto,

utilized for purchase or installation of materials, parts, or components. Any other design documents, specifications, drawings, installation requirements, and changes thereto, are approved in the same manner.

Errors and deficiencies detected in the design process are documented as conditions adverse to quality and controlled in accordance with the corrective action requirements of Section IV.16.

Design criteria and specifications, and changes thereto, are reviewed by Quality Assurance for the inclusion of quality assurance and quality control program requirements as well as for the use of proper codes, material specifications, regulatory requirements, design bases, and quality standards. The Quality Assurance Coordinator reviews and approves any deviations from quality standards when they occur.

Plant modifications are controlled by means of applicable quality assurance and quality control procedures. These procedures provide for the preparation, review, and approval of design documents, safety analyses, and plant modification procedures. Proposed plant modifications are reviewed by the Plant Operations Review Committee and Nuclear Safety Audit and Review Board as required by Section 6.0, Technical Specifications.

IV.4 Procurement Document Control

Procurement document control applies to the control of procurement documents for materials, parts, components, and services required to perform quality affecting activities. Such documents may be prepared by Rochester Gas and Electric or by a contractor and include purchase requisitions, purchase orders, service agreements, contracts, specifications, and drawings.

Procurement of materials, parts, components, and services is initiated by Ginna Station or Engineering Department staff personnel. Procurement procedures require that organizations preparing procurement documents consider and include, as appropriate, the items listed in Table IV.4-1.

Procurement documents, including those requesting spare or replacement parts, initiated at Ginna Station are reviewed for concurrence by Quality Control and approved by the Ginna Station Superintendent or his designated representative. Procurement documents initiated in Engineering are reviewed for concurrence by Quality Assurance and approved by the Vice President and Chief Engineer or his designated representative.

Evidence of review and approval of procurement documents is recorded on the documents or on the attached control

form. These documents are maintained in Purchasing and plant records.

After purchase requisitions, service agreements, contracts, specifications, and drawings have received the required reviews and approvals, a purchase order is issued to a qualified supplier and controlled as described in Section IV.7. Under no circumstances are purchasing requirements altered (except for quantity or pricing) during order placement unless review and concurrence is obtained from those who were required to review, concur with, and approve the original documents as described above.

Engineering review of procurement documents includes verification of appropriate classifications, technical requirements, and code application. Quality Assurance review of the above includes checks to verify that proper codes, regulatory requirements, and material specifications are invoked; that FSAR and Technical Supplement commitments are included; that ppropriate acceptance or rejection criteria are required; and that quality assurance requirements are incorporated. Quality Control reviews procurement documents for spare or replacement parts for adequacy

of quality requirements and to determine similarity, compatibility, and the inclusion of the quality requirements and acceptance criteria of the original design.

IV.5 Instructions, Procedures, and Drawings

Each Rochester Gas and Electric organization is responsible for developing, reviewing, approving, and implementing procedures as required to implement the quality assurance program. These procedures cover activities such as document control, training of personnel, and responsibilities and duties of personnel. The Quality Assurance Coordinator is responsible for the review and approval of these procedures. Table IV.1-1 provides a summary of the subject matter contained in the procedures which are used to implement the quality assurance program. Procurement documents require suppliers and contractors to have appropriate instructions, procedures, specifications, and drawings.

The Ginna Station Superintendent is responsible for preparing, reviewing, approving, and implementing instructions and procedures associated with operation, maintenance, repair, refueling, and modification. This includes instructions and procedures listed in USAEC Regulatory Guide 1.33 for administrative control; general plant operation; startup, operation, and shutdown of safety

related systems; correction of abnormal, offnormal, or alarm conditions; combat of emergencies and other significant events; radioactivity control; control of measuring and test equipment; chemical and radiochemical control; and fuel handling and refueling. He is also responsible for the issuance of appropriate changes to such documents upon receipt of regulatory directives, instructions from Rochester Gas and Electric management, or the completion of plant modifications.

The Plant Operations Review Committee has the responsibility for reviewing procedures prior to their approval by the Ginna Station Superintendent as required by the Section 6.0, Technical Specifications.

Quality Control is responsible for reviewing plant administrative, operating, maintenance, repair, refueling, and modification procedures prior to use to assure quality assurance requirements are included.

The Vice President and Chief Engineer is responsible for preparing, reviewing, approving and issuing specifications, drawings, and installation requirements associated with plant modifications. These documents require those performing the work to obtain, understand, and comply with appropriate instructions, procedures, specifications,

and drawings. The Vice President and Chief Engineer has established procedures for maintaining drawings and specifications in a current status. These procedures cover updating of as-built drawings after plant modifications and the revision, approval, distribution, and control of all drawings and specifications.

Quality Assurance is responsible for the review of design criteria and specifications, and changes thereto, for concurrence with quality assurance requirements.

The Ginna Station Quality Control Engineer is responsible for preparing and implementing plant quality control procedures. The procedures require the approval of the Quality Assurance Coordinator and the Ginna Station Superintendent.

Persons preparing and approving documents are responsible for assuring that specifications, instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished and assuring that the documents are kept current.

Surveillance of the implementation of instructions, drawings, and procedures for operation, maintenance,

repair, modification, and refueling is the responsibility of the Ginna Station Quality Control Engineer.

IV.6 Document Control

Procedures are established to control the issuance of procedures, instructions, drawings, and specifications. Standard document control requirements are contained in the Quality Assurance Manual. The Ginna Station Superintendent is responsible for the control of all documents issued at Ginna Station. Engineering is responsible for the control of all documents issued by Engineering, Quality Assurance, and Purchasing. Engineering and Operations have separate procedures to control documents in accordance with the requirements of the Quality Assurance Manual.

The Quality Assurance Manual requires that documents be controlled as appropriate, considering the type of document involved, its importance to safety, and the intended use of the document. It specifies the types of documents which must be controlled; identifies the difference between controlled and uncontrolled copies of the same document; includes the method for identifying holders of controlled copies; requires that only controlled copies of a document be used for official purposes; requires that lists of effective revisions be issued periodically; requires lists

of document holders to be maintained by the distributors; and requires that distributors transmit controlled documents using approved forms internally and externally. Types of documents which are controlled include Technical Specifications, FSAR, Technical Supplements, Quality Assurance Manual, procedures (such as, quality assurance, engineering, purchasing, repair, maintenance, test, calibration, fuel handling, modification, and administrative), specifications, drawings, and nonconformance and corrective action documentation. Suppliers of materials, equipment, and services are required in procurement documents to provide for control of documents, including manufacturing inspection and testing instructions.

The Quality Assurance Manual further requires that each organization provide in its procedures for measures: to insure that documents are available when required; to properly review and approve documents such as procedures, instructions, specifications, and drawings; to provide the same reviews and approvals for changes to documents as was required of the original document; to require that organizations which review and approve documents have access to pertinent information and adequate knowledge of the original document intent; to assure that approved changes are promptly transmitted for incorporation

into documents; and to assure that obsolete or superseded documents are eliminated from the system and not used.

Quality Assurance and Quality Control are responsible for review and concurrence of procurement documents and, therefore, procurement document control requirements.

Quality Assurance and Quality Control are further responsible for review, inspection, surveillance, and audit, as appropriate, of document control systems to assure adequate systems are implemented.

IV.7 Control of Purchased Material, Equipment, and Services

Procurement documents, supplier selection, supplier surveillance, and receipt inspection are the four major means used in controlling purchased material, equipment, components, and services. All procurement is conducted in accordance with procurement documents as stated in Section IV-4. All reviews, inspections, surveillances, and audits are conducted by personnel who are competent in establishing whether or not a supplier is capable of providing acceptable, quality products.

Suppliers must be on an approved suppliers' list prior to being issued a purchase order. Supplier evaluations are conducted by a team consisting of qualified personnel

from Quality Assurance, Engineering, Purchasing, and other interested parties or their representatives as required. The depth of the supplier evaluation varies depending on the complexity and importance to safety of the item involved. For example, for mass produced or off-the-shelf items, only a check of past performance may be necessary. On the other hand, for complex, important items a very thorough review is performed.

Engineering is responsible for evaluating the overall design or manufacturing capability of the supplier including his particular technical ability to produce the design, service, item, or component delineated in the procurement documents. As part of this review, the supplier's design capabilities, machinery capabilities, special fabrication processes, output capabilities, handling capabilities, testing facilities, service capabilities, and experience are reviewed.

Quality Assurance is responsible for evaluating the supplier's overall quality assurance organization and program in accordance with applicable codes, standards, applicable parts of 10CFR50 Appendix B, and Rochester Gas and Electric requirements. The review includes consideration of: company organization, quality assurance

personnel qualifications, review and control of design documents, manufacturing procedures, quality assurance procedures, calibration practices, acceptance criteria, required quality assurance records and their retention, and quality assurance requirements and controls imposed by the supplier on his subcontractors. Supplier evaluation is conducted by means of procedures or checklists which identify applicable regulatory or code quality assurance requirements.

Quality Assurance and Engineering document their supplier evaluation results in reports which discuss areas investigated, findings, and conclusions. Concurrence of Purchasing, Engineering, Operations, and Quality Assurance is required to place a supplier on the qualified suppliers list. One organization can remove a supplier from the list without concurrence of the others.

Quality Assurance is responsible for determining and documenting the degree of supplier surveillance (including review, inspection, or audit) required during design, fabrication, inspection, testing, and shipping, and for providing the required surveillance. The objective of supplier surveillance is to provide a sampling review of the supplier's quality assurance program implementation and of product conformance with respect to the purchase

order requirements. For complex equipment and designs, Quality Assurance and Engineering are responsible for joint development of surveillance plans in advance of surveillance trips to identify areas to be reviewed.

The results of the surveillance trip are documented by means of inspection sheets or trip reports which are distributed to the Quality Assurance Coordinator, the Vice President and Chief Engineer, the Ginna Station Quality Control Engineer, and the Ginna Station Superintendent. When a deviation from purchase order requirements is noted, the Quality Assurance representative has the authority to inform the vendor that a particular item is unacceptable, to issue a nonconformance report, or to stop work, if necessary.

The Ginna Station Quality Control Engineer is responsible for surveillance of site contractors to assure that they meet all technical and quality requirements. The reporting and documenting of contractor surveillance is managed in a manner similar to supplier surveillance.

The Ginna Station Superintendent is responsible for receiving and storing materials, parts, and components. Upon arrival, the plant storekeeper logs the item, places a "hold" tag on the item, and notifies Quality Control that the item has arrived.

Quality Control is responsible for receipt inspection upon delivery at the plant of material, equipment, and associated services for operation, maintenance, repair, modifications, and refueling. This inspection includes the use of written procedures or checklists to verify that the material, equipment, and services conform to the procurement documents (if this has not been performed by source inspections) and that documentary evidence of conformance is available at the plant prior to installation or use. Documentary evidence sufficient to identify the codes, standards, or specifications met by the purchased material, equipment, and services is retained. In the event a final source inspection is conducted prior to the arrival at the plant, Quality Control performs an inspection for shipping damage or lost parts and a document check to assure that the required documentation has been reviewed and is complete. A receiving inspection checklist is completed for all items received to document the extent of the inspection performed, including the documents checked, and the inspection results.

If the item and documentation are adequate, Quality Control labels the item as "Accepted", files the documentation and receipt inspection results, and returns the item to the station stockroom. If the item is nonconforming or the

documentation is incomplete, Quality Control initiates a material deficiency report which is controlled in accordance with Section IV.15.

All items issued must bear an acceptance tag and have documentation to support the acceptability of the item. In the event the traceability is lost or the documentation review is unsatisfactory, the item becomes nonconforming and may not be released for use.

IV.8 Identification and Control of Materials, Parts, and Components

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

parts, and components prior to release for manufacturing, shipping, construction, and installation.

The Vice President and Chief Engineer is responsible for assuring that 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. Each item is required to be physically identified, either by marking on the item or by tags. Physical identification by purchase order number is used to the maximum extent possible for relating an item at any time to applicable documentation. Identification is either on the item or records traceable to the item. Where physical identification is impractical, physical separation, procedural control, or other appropriate means are employed.

The Ginna Station Superintendent is responsible for maintaining identification and control of materials, parts, or components received, stored, installed, and used at the plant. Procedures covering the identification and control of materials, parts, and components are prepared by Quality Control and approved by the Ginna Station Superintendent.

In the event that traceability is lost for a specific item, it is handled as nonconforming material and deviations

and waivers are controlled and documented in accordance with Section IV.15.

IV.9 Control of Special Processes

Written procedures are established to control special processes, such as welding, heat treating, and nondestructive examination to assure compliance with applicable codes, standards, and design specifications. Qualification of personnel and procedures complies 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, the personnel qualification requirements, the equipment necessary, and the special process qualification requirements.

The Vice President and Chief Engineer and the Ginna Station Superintendent are responsible for requiring suppliers, in procurement documents, to control special processes in accordance with the above requirements. Quality Assurance and Quality Control are responsible for reviewing procurement documents to assure that requirements for control of special processes are included.

Rochester Gas and Electric procedures for special processes are prepared, reviewed, and approved by Quality Assurance. Special process procedures submitted by suppliers and contractors are reviewed and approved by Quality Assurance.

The Ginna Station Maintenance Engineer is responsible for assuring that personnel performing special processes under his cognizance are qualified and are using qualified procedures in accordance with applicable codes, specifications, and standards. Quality Assurance is responsible for the qualification of welding and NDE personnel and procedures. Engineering maintains records for personnel and procedures to demonstrate that required qualifications have been obtained and are kept current.

Quality assurance and Quality Control perform surveillance, inspections, and audits of special processes performed by Rochester Gas and Electric or contractors to assure compliance with procedures.

IV.10 Inspection

Procedures prepared for the control of plant activities include inspection requirements and hold points as required by drawings, instructions, requirements documents, specifications, codes, standards, or regulatory requirements. Instructions for conducting inspections are contained in Quality Control inspection procedures. These inspection procedures and all supporting specifications and drawings are provided to inspection personnel for use prior to performing the inspection. Inspection requirements and hold points are utilized to verify conformance of activities to the documented instructions,

specifications, and drawings for accomplishing the activity. Quality Control inspection procedures include the identification of quality characteristics to be inspected, a description of the method of inspection to be used, the identification of the organization responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity. Inspections are performed by Quality Control personnel who are independent of the personnel performing the work. Outside contractors are required by procurement documents to have and follow similar procedures and to use independent inspectors. Inspectors are sufficiently trained to adequately evaluate the activity they are inspecting.

Quality Control personnel are responsible for performing inspections, as required, during plant operation, maintenance, repair, refueling, and modification when the work is performed by Rochester Gas and Electric personnel. When the work is performed by outside contractors, Quality Control is responsible for surveillance of the subcontractor's inspection activities. All inspection equipment is calibrated and controlled in accordance with Section IV.12. Calibration status is verified by inspection personnel prior to performing an inspection operation.

In the event an inspection of processed material or products is impossible or impractical, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are required when control is inadequate without both.

The Vice President and Chief Engineer is responsible for including inspection requirements in engineering specifications.

Quality Assurance is responsible for assuring that adequate inspection requirements are included in engineering specifications and for establishing the requirements for the inservice inspection program.

The Ginna Station Quality Control Engineer is responsible for assuring that adequate inspection requirements and hold points are included in operation, maintenance, repair, refueling, and modification procedures. He is also responsible for the assignment of qualified inspection personnel required for inspection of quality affecting activities and for coordinating the performance of and conducting the surveillance of inservice inspection.

The program for inservice inspection of the reactor coolant system and other safety related systems is contained in Section 4.2, Technical Specifications.

IV.11 Test Control

Whenever testing is required to demonstrate that a material, part, component, or system will perform satisfactorily in service, a test program is instituted employing written and approved procedures which are in accordance with basic requirements established in Technical Specifications, drawings, instructions, procurement documents, specifications, codes, standards, and regulatory requirements. 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 test procedures and checklists include: necessary test equipment and calibration requirements; material requirements; test personnel requirements; prerequisite plant and equipment conditions; limiting conditions; detailed performance instructions for the testing method and test equipment instrumentation; acceptance and rejection criteria; instructions for disposition of deviations; data collection requirements; and test result approval.

The Ginna Station Superintendent is responsible for the station test program, including the surveillance test program required by Section 4.0, Technical Specifications.

Test procedures are prepared by the plant staff, reviewed by the Plant Operations Review Committee and Quality Control, and approved by the Ginna Station Superintendent. The Ginna Station Superintendent is responsible for the performance of the required tests in a correct and timely manner utilizing written and approved procedures. When contractors are employed for tests, the contractor is required to perform testing in accordance with his quality assurance program requirements. All test results are required to be documented, reviewed, and approved by those responsible for performing the test.

The Vice President and Chief Engineer is responsible for assuring that required tests for modifications are required in engineering specifications. He is further responsible for providing engineering assistance to the Ginna Station staff in the preparation of modification-related test procedures. Engineering is responsible for reviewing and approving modification-related test results.

IV.12 Control of Measuring and Test Equipment

The calibration and control system for measuring and test equipment includes calibration procedures, establishment of calibration frequencies, and maintenance and control requirements of measuring and test in-

struments, tools, gauges, shop standards, and nondestructive test equipment which are to be used in the measurement, inspection, and monitoring of components, systems, and structures. Calibration procedures include step-by-step methods for calibration 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.

Control of measuring and test equipment requires: a recall system assuring timely calibration of equipment; a system providing unique identification of equipment, traceability to calibration test data, and identification of the next calibration date on the equipment; a system providing traceability of shop standards to nationally recognized standards (where national standards do not exist, procedures contain instructions to document the basis for calibration) and periodic revalidation of shop standards; a system providing for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates; and a system controlling the purchase requirements of

new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions. In the event a measuring instrument is found out of calibration, an investigation is conducted to determine the validity of previous measurements.

The Ginna Station Superintendent is responsible for the procedures and program required to assure control and calibration of measuring and test equipment at Ginna Station in accordance with the above requirements. Instruments specified in Section 4.1, Technical Specifications, are included in the program. Tools, gauges, and instruments necessary for maintenance, inspection, and test are calibrated and controlled in accordance with station procedures. Measuring, test, or inspection equipment used by Quality Control is included in the program.

IV.13 Handling, Storage, and Shipping

The Ginna Station Superintendent is responsible for developing and implementing procedures for the handling, storage, shipping, preservation, and cleaning of material and equipment delivered to or located at Ginna Station. Under normal circumstances, manufacturer's specific written

instructions and recommendations and purchase specification requirements are invoked for cleanliness, preservation, special handling, and storage with respect to environmental requirements. In the absence of, or in addition to, specific manufacturer requirements, the superintendent may invoke additional requirements in accordance with the plant procedures.

The Vice President and Chief Engineer is responsible for specifying in procurement documents and in engineering specifications that written procedures be used, as appropriate, for the handling, shipping, storage, cleaning, and preservation of materials and equipment procured for modifications. These procedures are prepared by contractors or by the station staff as appropriate. Rochester Gas and Electric procedures are reviewed and approved by Quality Control and the Ginna Station Superintendent.

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

Quality Assurance is responsible for review of engineering specifications and contractor procedures to assure that proper handling, storing, and shipping requirements have been specified. Quality Control is responsible for surveillance of handling, storage, and shipping activities by suppliers, Rochester Gas and Electric personnel, and contractors.

IV.14 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 in a positive manner. The identification is sufficient to positively indicate the status of the particular equipment or system being isolated.

The Ginna Station Superintendent 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 Rochester Gas and Electric Intra-Station Holding Rules. The Ginna Station Superintendent designates personnel who have station holding authority.

Personnel who have station holding authority are responsible for directing the status change of equipment and systems in accordance with the approved company Intra-Station

Holding Rules. System status is indicated through the use of hold tags and control logs.

Equipment or system inspection and test status are indicated by use of test tags, labels, or work inspection and test status sheets. Written procedures control the use of hold tags, test tags, and labels. The procedures require the recording of the name of the person placing and removing the tag.

Systems, components, and equipment which are found to be unacceptable during or after testing are clearly identified.

Fuel handling operations involving fuel assemblies or other radioactive sources are identified and controlled by the use of tags, stamps, or other suitable means.

Plant maintenance, repair, or modification of components, systems, or structures utilizes a work inspection or test status sheet to indicate acceptance or rejection for a particular component, system, or structure. Work inspection or test status sheets are prepared and maintained at a designated control location to indicate the status of work and the completion of required inspections and tests.

Quality Control monitors the status change activities for their compliance to approved procedures and assures

that inspection results are properly logged. Quality Control also establishes the procedures for implementing the work inspection or status sheets during maintenance, repair, and modification.

IV.15 Nonconforming Materials, Parts, and Components

Procedures are established for the control, evaluation and disposition of deficient material, parts, and components. Materials, parts, or components which do not conform to drawing or specification requirements are identified with a hold tag and reported on a material deficiency report. Quality Control is responsible for issuing material deficiency reports, recommending disposition, initiating repair or rework, and inspecting and approving repaired or reworked items. Prior to installation or use, nonconforming items remain in a Quality Control receiving inspection area until approved disposition has been received. After installation or use, nonconforming items are identified until approved disposition has been received.

Prior to installation or use, suppliers are notified of all nonconforming items and requested to recommend disposition. Purchasing is responsible for obtaining the recommended disposition from the supplier. Engineering is responsible for reviewing and approving supplier's recommended disposition. After installation or use, Engineering is responsible for determining and approving disposition of nonconforming items.

Items are repaired or reworked only in accordance with documented procedures and drawings prepared and approved by Engineering. Quality Control assures that approved procedures and drawings are available for use prior to the repair or rework and reinspects all repaired or reworked items. The repair or rework must be verified as acceptable by an inspection of the affected item which is at least equal to the original inspection method.

Items which are accepted for use with a known deficiency are fully documented with the specification requirement, justification for acceptance, and affect of such use. All such items are approved prior to use by the Senior Vice President, Electric and Steam.

Quality Control issues monthly material deficiency report summaries which are reviewed and analyzed by Quality Assurance. Unsatisfactory trends are reported to management by means of the corrective action report in accordance with Section IV.16.

IV.16 Corrective Action

Quality Assurance establishes the requirements for identification, review and correction of conditions adverse to quality. Conditions adverse to quality,

such as, failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are reported on a corrective action report. Conditions adverse to quality include conditions affecting safety, conditions which could result in plant shutdown, high maintenance items, and operating procedure deficiencies. The corrective action report identifies the condition, the cause of the condition, and the corrective action taken.

Corrective action reports may be initiated by Quality Assurance, Engineering, Ginna Station, or Purchasing staff personnel. Corrective action reports initiated at Ginna Station are submitted to Quality Control for review and subsequent processing. Corrective action reports initiated by Engineering and Purchasing are reviewed and processed by Quality Assurance.

When a condition adverse to quality at Ginna Station is identified, Quality Control evaluates the affect of continuing the activity. If continuing the activity would cover up and preclude identification and correction of the deficiency, continuing the activity would increase the extent of the deficiency or lead to an unsafe condition, stop work action is taken. The Ginna Station Quality Control Engineer has authority to stop work on maintenance, repair, refueling, or modification deficiencies. The Ginna Station Quality

Control Engineer may recommend stop work action to the Ginna Station Superintendent on operating deficiencies.

The Plant Operations Review Committee reviews all corrective action reports initiated at Ginna Station and recommends interim corrective action if the action does not represent a change in configuration of the deficient item. The Committee recommends permanent corrective action for all conditions adverse to quality which involve operating procedures.

Conditions adverse to quality which involve design deficiencies or a recommended corrective action which involves a design change are reviewed by Engineering. Engineering determines the cause of the condition and recommends corrective action to preclude repetition.

Quality Assurance reviews all corrective action reports to assure that the cause of the condition has been determined and that corrective action has been taken to preclude repetition. Quality Assurance also reviews material deficiency report summaries for unsatisfactory trends and initiates a corrective action report if such a trend occurs.

Completed corrective action reports are submitted to the Senior Vice President, Electric and Steam to keep him aware of significant conditions adverse to quality.

IV.17 Quality Assurance Records

Quality Assurance is responsible for establishing the basic requirements for quality assurance record retention and maintenance. The Ginna Station Superintendent is responsible for the retention and maintenance of plant records. Records of Engineering and Quality Assurance activities are retained and maintained by Engineering. Purchasing is responsible for maintaining Purchasing records. Each organization is responsible for preparation, review, approval, and implementation of specific quality assurance record procedures for their areas of responsibility in accordance with these requirements. The records which fall within quality assurance record requirements include those records required by Section 6.5, Technical Specifications, the quality assurance program, and procurement documents. All documents and records associated with the operation, maintenance, repair, refueling, and modification of structures, systems and components covered by the quality assurance program are included.

Plant records include operating logs; the results of inspections, tests, audits, and the monitoring of plant activities; drawings, specifications, procurement documents and material analyses; calibration procedures and reports; and nonforming and corrective action reports. Records of the qualification of personnel, procedures, and equipment

for special processes and the results of reviews are maintained by Engineering.

Inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

The requirements and responsibilities for record accessability and transmittal are in accordance with document control procedures as described in Section IV.6. Requirements and responsibilities for preparation, inspection, identification, review, storage, retrieval, maintenance, and the retention of quality assurance records are in accordance with applicable quality assurance record procedures, codes, standards, and procurement documents. Records are available to authorized personnel. Removal from record storage is documented on sign-out cards and accountability is maintained by the responsible document control activity.

Records are stored in record storage facilities which are designed to prevent destruction of records through fire, flooding, theft, and deterioration by temperature or humidity conditions; or, duplicate records are kept

in two separate storage locations in separate buildings which are physically isolated from each other.

Record keeping procedures provide for receiving, classifying, indexing, labeling, and preparing records for storage. The procedures establish retention requirements, accessability, control of obsolete record destruction, and control for issuance and return of all records.

The Ginna Station Superintendent is responsible for maintaining plant operating records as required in Section 6.5, Technical Specifications.

The Vice President and Chief Engineer is responsible for maintaining design records, such as specifications, drawings, design review reports, and design control documentation.

The Quality Assurance Coordinator is responsible for maintaining records of quality assurance activities, such as audit reports and vendor surveillance reports.

IV.18 Audits

Compliance with all aspects of the quality assurance program and the effectiveness of the program is determined by audits of all organizations performing

quality affecting activities. Quality Assurance is responsible for conducting audits of each organization involved in the quality assurance program on a planned periodic basis. Audit intervals are based on the status and safety importance of activities being performed.

Audits of Ginna Station, Engineering and Purchasing organizations are performed annually. Table IV.18-1 is a list of the activities to be audited in each of the organizations. Audit frequencies are based on the level of activity in each area. Audit schedules are established to assure that each activity is audited at least annually. Additional audits are conducted as required by special conditions or circumstances.

Each audit requires the development of an audit plan to provide information about the audit, such as the functional areas to be audited, the names and assignments of those who will perform the audit, the scheduling arrangements, and the method of reporting findings and recommendations. The audits are performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited.

Audit results are documented and reported to the person having supervisory responsibility in the area audited, the Senior Vice President, Electric and Steam, and the

Nuclear Safety Audit and Review Board. Within a specified period of time, the person having supervisory responsibility in the area audited is required to review the audit results, take necessary action to correct the deficiencies revealed by the audit, and document and report the corrective action.

Quality Assurance is responsible for developing audit plans and audit check lists, designating and training audit personnel, and conducting audits.

Audits may be conducted by Quality Assurance engineers or other qualified personnel, such as technical specialists from other company departments and outside consultants.

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

The Quality Assurance Coordinator will perform regular analyses of audit results to evaluate quality trends. Results of these analyses will be provided to management for their regular review.

Table IV.1-1
Quality Assurance Program Procedures
Subject Listing

Quality Assurance Procedures	Appendix B Criteria
Quality Assurance Group Implementation of Quality Assurance Program The purpose of this procedure is to establish the Quality Assurance Procedures Manual for the Rochester Gas and Electric Company to assure safe and reliable operation of a nuclear plant. The manual is established to assure meeting the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants" and the requirements of the Rochester Gas and Electric Quality Assurance Manual.	I
Training of Quality Assurance Personnel To establish an education program for personnel whose work has an effect on the quality program. The education program described by this procedure is concerned with informing personnel of quality operations and does not include training of personnel in technical skills.	I
Management Review of Quality Assurance Program This procedure describes how management reviews of the quality assurance program are conducted. This includes how management level audits are conducted, what reports	I

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
are submitted to management for review, and how management comments are incorporated into the program.	
Quality Assurance Group Organization and Responsibilities This procedure describes the Quality Assurance Organization and its responsibilities for establishing and executing a quality assurance program to assure that the Rochester Gas and Electric nuclear facilities are operated in conformance to 10CFR 50, Appendix B requirements.	II
Modification of Structures, Systems and Components Covered By the Quality Assurance Program This procedure defines the method followed to perform modifications to safety related structures, systems and components.	III
Review of Engineering Documents This procedure defines the requirements for Quality Assurance review of design criteria and specifications to assure that appropriate quality requirements are included.	III

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
Procurement of Material, Equipment, and Services Covered By The Quality Assurance Program This procedure describes the requirements to be met in the procurement of safety related parts, components, materials, structures, systems, and services.	IV
Review of Purchase Requisitions To define the procedure for controlling the quality of supplier and subcontractor furnished materials, components, parts, and services.	IV
Requirements for Supplier Quality Assurance Programs This procedure establishes the requirements for the quality assurance program which must be in existance at a supplier's facility.	IV
Requirements for Quality Assurance Manual and Procedures The purpose of this procedure is to establish the quality and safety related procedures which are required to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the requirements for instructions, procedures and drawings,	V

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)

Appendix B Criteria

defines the responsibilities for preparing procedures for each involved department, establishes the interfaces between the various sections of the several procedures manuals, and provides directions for the preparation of quality assurance procedures and instructions.

Quality Assurance Procedures — V

The purpose of this procedure is to establish the requirements for Quality Assurance procedures needed to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the responsibilities for preparing the Quality Assurance procedures manual, establishes the interfaces between sections of the manual and the manuals of other departments, and provides direction for the preparation of the Quality Assurance procedures.

Review of Quality Control, Engineering and Purchasing Procedures — V

The purpose of this procedure is to establish the requirements for the review and approval of all quality and safety related documents generated by the Rochester Gas and Electric Company in accordance with the requirements of the Rochester Gas and Electric Quality Assurance Manual.

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
Document Issuance, Control and Distribution	VI
This procedure defines the requirements for the identification, issuance, revision, distribution, and storage of all documents related to safety related structures, systems, and components controlled by the Rochester Gas and Electric Quality Assurance Manual.	
Qualification of Suppliers	VII
This procedure describes the requirements for qualifying suppliers and maintaining an approved suppliers list.	
Evaluation of Supplier Quality Assurance Programs	VII
This procedure establishes the requirements for the evaluation of the quality assurance program controlling the operations of suppliers of safety related parts, materials, components, structures, or systems to the Rochester Gas and Electric Corporation.	
Control of Purchased Material, Equipment and Services the Quality Assurance Program	VIII
This procedure describes the method used to control material and services through the procurement cycle from the time of placing the order until the material is placed in stock or released for use or until the service contracted for has been completed.	

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
Welding Procedures The purpose of this procedure is to identify the process by which welding procedures shall be designed.	IX
Welding Procedure Qualification The purpose of this procedure is to identify the process by which welding procedures shall be qualified.	IX
Welder Qualification The purpose of this procedure is to identify the process by which individual welders shall be qualified.	IX
Nondestructive Examination Procedures The purpose of this procedure is to outline the program by which nondestructive examination procedures shall be developed.	IX
Nondestructive Examination Procedure Qualification The purpose of this procedure is to outline the program by which nondestructive examination (NDE) procedures shall be qualified and approved.	IX

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
Heat Treating Procedures The purpose of this procedure is to define how heat treating procedures shall be established and implemented.	IX
Test Program Requirements This procedure defines the requirements for control of the nuclear plant test program. The test program shall include, but not be limited to surveillance testing, special tests, post maintenance testing, physics testing, testing following modification or significant changes in operating procedures, and any evaluation or qualification testing required for new designs.	XI
Material Deficiency Reporting System This procedure establishes the methods for handling and control of non-conformant material and the documentation of non-conformances of all safety related materials, parts, and components to meet the requirements of the Rochester Gas and Electric Quality Assurance Manual.	XV
Disposition of Discrepant Material This procedure defines the categories of non-conforming or discrepant material and describes the handling and	XV

Table IV.1-1 (cont'd.)

Quality Assurance Procedures (cont'd.)	Appendix B Criteria
control of each category from the time of identification until disposition is complete.	
Quality Control Deficiency Reporting System	XVI
This procedure establishes the method required to detect, identify, analyze, review, and correct conditions which adversely affect quality or safety and to preclude repetition of the deficiency.	
Records	XVII
This procedure defines the requirements for the storage of all records related to safety related, structures, systems, and components controlled by Rochester Gas and Electric Quality Assurance Manual.	
Performance of Quality Assurance Audits	XVIII
This procedure provides the instructions for implementation of audits scheduled and planned in accordance with procedure QA1802 including preparation performance, reporting, and followup.	

Table IV.1-1 (cont'd.)

Quality Control Procedures	Appendix B Criteria
Ginna Q.A. Program Implementation This procedure establishes the guidelines for the implementation of the Quality Assurance Program at Ginna Station.	I
Training of Ginna Personnel To provide instructions regarding the indoctrination and training of Ginna Personnel about the Ginna Quality Assurance Program and implementing QC procedures.	I
Ginna Quality Control Organization To describe the organization responsible for implementing the requirements of the Quality Assurance requirements at Ginna Station.	II
Work Start Authorization To provide instructions which ensure that necessary preparation for plant modifications are complete prior to the start of work.	III
Procurement of Nuclear Materials, Parts, and Components To provide an outline for processing of orders for nuclear material, parts, and components, at Ginna	IV

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Station, and to assure that regulatory requirements, design bases, and other requirements necessary to ensure adequate quality are suitably included and referenced in the procurement documents.	
Review, Approval, Notification, and Transmittal of Supplier Design and QA/QC Requirements	IV
To provide written instruction for outlining the steps necessary for review, approval, notification, and transmittal of supplier procedures, design drawings, or any other requirements as specified in the procurement documents for nuclear material, parts, or components ordered for spare parts or maintenance purposes by plant personnel.	
Plant Quality Control Procedures	V
To describe the intent, scope, and format of the plant quality control procedures.	
Procedures for Performing Routine Maintenance, Repair, or Modification	V
To outline procedure requirements for routine maintenance, repair, or modification activities on safety class A and B systems, equipment, or structures.	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Plant Operating Procedures	V
To outline Quality Assurance requirements to be included in plant operating procedures which are used to direct operating, test, and refueling activities on safety Class A and B structures, systems, or equipment.	
Issuance Control of Procedures Used For the Operation of the Plant	VI
This procedure establishes the method by which procedures and check off lists used in the operation of the plant are to be controlled.	
Document Control for Procedure Changes	VI
This procedure describes the method by which procedures described in reference 2.3 to be revised shall be controlled.	
Document Control at Ginna	VI
To define those non-procurement documents requiring control at Ginna and the method by which they shall be controlled.	
Drawing Changes at Ginna	VI
To define the responsibilities and to provide instructions for ensuring that existing piping and	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
circuit drawings are kept current and updated to always reflect the "As built" condition of the plant following modifications to systems and equipment.	
Receiving Inspection of Purchased Material	VII
To define the activities and responsibilities necessary for properly receiving nuclear materials and inspecting them prior to acceptance for use.	
Control of Purchased Material, Equipment, and Services	VIII
To outline the program for control of material, equipment, and services purchased through contractors.	
Control of Materials, Parts, and Components	VIII
To establish the system for effective control of material, parts, or components from receipt at Ginna through installation or use.	
Identification and Marking of Material	VIII
To establish an outline for identification and marking of material to maintain quality and traceability through the life of the material.	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)

	Appendix B Criteria
Control of Welding The purpose of this procedure is to establish the program for effective control of qualified personnel and procedures pertaining to welding.	IX
Issue, Control, and Storage of Weld Consumables To provide instructions for issue, control, and storage of weld consumables.	IX
Welding Equipment Performance Verification To outline the program for periodic performance verification of equipment used on special processes.	IX
Inspection Activities at Ginna To establish guide lines for the activities requiring inspectors, source of inspectors, and qualifications of inspectors.	X
Inspector Qualification and Responsibilities To establish requirements for those designated to perform inspection activities at Ginna.	X

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Test Procedure Requirements To outline requirements for the procedures which are performed to verify the correct operability of safety related equipment or structures.	XI
Performance of Tests To establish requirements for performing tests to include, but not be limited to, surveillance testing, special tests, post maintenance testing, physics testing, and testing following modification or significant changes in operating procedures.	XI
Documentation, Evaluation and Disposition of Test Results To describe the requirements for accumulating, documenting, evaluating, and dispositioning of results of all tests.	XI
Test Personnel Requirements To establish requirements for personnel designated to perform and/or assist in the conductance of tests.	XI
Calibration and Control of Test Instruments Used For Calibration To provide guidelines for test instrument calibration and control which satisfy the requirements of the	XII

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Quality Assurance Manual.	
Calibration and Control of Maintenance Measuring Tools and Equipment To provide guidelines for calibration and control of measuring tools and equipment used by maintenance to perform critical maintenance measurement.	XII
Calibration and Control of Quality Control Measuring Tools To outline calibration and control instructions for inspection measuring tools used by quality control to determine the reject or accept status of parts and components.	XII
Handling, Storage, and Shipping To outline the plan for control of handling, storage, shipping, and preservation of material to prevent damage, deterioration, or loss from on-site delivery through installation.	XIII
Material Handling Equipment To outline the requirements for ensuring that material handling equipment remains in good condition.	XIII

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Work, Inspection, Test Status Control as Related to Maintenance, Repair, Modification, or Refueling To establish work inspection or test status sheets for indicating the inspection and test status of components and systems involved in maintenance, repair, or modification.	XIV
Systems or Equipment Operating and Test Status Control Indicators To define the system for indicating the operating status of structures, systems, and components to prevent their inadvertent operation during maintenance, repair, modification, or test.	XIV
Control and Disposition of Deficient Materials To outline the necessary steps for effective control and disposition of non-conforming materials, parts, and components.	XV
Issue of Material Deficiency Reports To establish an outline for issuing and processing Material Deficiency Reports.	XV

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Quality Deficiencies and Corrective Action To provide instructions for identifying, reporting, and correcting conditions adverse to quality.	
Control of Quality Assurance Records at Ginna To outline the procedure for control of records and documents to be retained.	XVII
Processing of New Records To detail the processing steps required of new records from their receipt in Central Records until final placement in their storage location.	XVII
Record Storage Facility and Equipment To provide a description of the record storage facilities and equipment requirements.	XVII
Routine Surveillance To provide instructions for Quality Control Surveillance of plant activities covered by the quality assurance program.	XVIII
Correction of Audit Deficiencies To provide instructions to be used for correcting audit deficiencies at Ginna.	XVIII

Table IV.1-1 (cont'd.)

Engineering Procedures	Appendix B Criteria
Engineering Implementation of the Quality Program The purpose of this procedure is to establish the Engineering Procedures Manual for the Rochester Gas and Electric Company to assure safe and reliable operation of a nuclear plant. The manual is established to assure meeting the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants" and the requirements of the Rochester Gas and Electric Quality Assurance Manual.	I
Training This procedure explains the requirements for the training of engineering personnel in the use of the Engineering Procedures Manual.	I
Engineering Department Organization and Responsibilities This procedure describes the Engineering Department Organization and defines its responsibilities for the design of safety related components, structures and systems.	II
Design Criteria This procedure defines the criteria to be considered in the design of modifications to a nuclear plant.	III

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
It establishes the requirements for documentation and review of these criteria.	
Design Analysis & Calculations	III
This procedure defines the requirements for controlling the preparation and documentation of design analyses and calculations.	
Engineering Drawings	III
This procedure establishes the requirements for the preparation and revision of Engineering Drawings.	
Engineering Specifications	III
This procedure defines the requirement for specifications and requirements documents needed to assure that all safety related structures, components, and systems are purchased, constructed, inspected and tested in accordance with applicable codes and standards and the provisions of 10CFR50, Appendix B. The procedure establishes the content and format of the documents.	
Design Control and Review	III
This procedure defines the activities required to assure adequate control of design modifications and the requirements for design verification and review.	

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
Purchase Requisitions This procedure describes the actions required of Engineering personnel to purchase material related to quality or safety of a nuclear power plant.	IV
Engineering Procedures The purpose of this procedure is to establish the requirements for Engineering instructions, procedures and drawings needed to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the responsibilities for preparing and approving the Engineering procedures manual, establishes the interfaces between sections of the manual and the manuals of other departments and provides direction for the preparation of the Engineering procedures.	V
Fabrication and Construction Specifications This procedure describes the requirements for documentation of the interpretation of engineering drawings and specifications into work instructions to permit plant operations to properly make modifications to the nuclear plant.	V

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
Control and Issuance of Engineering Documents This procedure establishes the requirements for the control and issuance of engineering drawings, specifications, requirements documents, and work instructions. It establishes the numbering system, the control of originals, approvals, distribution, and revisions for both Rochester Gas and Electric and supplier originated drawings.	VI
Supplier Evaluation This procedure defines the requirements for the evaluation of a supplier's engineering and manufacturing organization and his design and production capabilities to be performed prior to subcontracting a safety or quality related effort to a new supplier.	VII
Review of Test Results The purpose of this procedure is to establish the requirements for the review and evaluation of test results to implement the requirements of Section 11 of the Rochester Gas and Electric Quality Assurance Manual.	XI
Quality Control Deficiency Reporting This procedure establishes the requirements for	XVI

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
evaluating and answering Quality Control Deficiency Reports which are related to design deficiencies.	
Engineering Records	XVII
This procedure establishes the requirements for the storage of all Engineering Department drawings, specifications, requirements documents and supplier documents for all safety related components, structures, and systems controlled by the Rochester Gas and Electric Quality Assurance Manual.	
Audit Requirements	XVIII
The purpose of this procedure is to describe the responsibilities of the Engineering Department before, during, and after an audit.	
Purchasing Procedures	
Purchasing Implementation of the Quality Program	I
The purpose of this procedure is to establish the Purchasing Procedures for the Rochester Gas and Electric Company to assure safe and reliable operation of a nuclear plant. The manual is established to assure meeting the requirements of	

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants" and the requirements of the Rochester Gas and Electric Quality Assurance Manual.	
Training of Purchasing Personnel	I
This procedure defines the requirements for the training of Purchasing Department personnel in the use of the Purchasing Procedures Manual.	
Purchasing Department Organization and Responsibilities	II
This procedure describes the Purchasing Department organization and its responsibilities for the procurement of safety related materials, components, structures, and systems.	
Preparation, Review, Approval and Issuance of Purchase Orders and Change Orders	IV
This procedure establishes the procedure for processing a Purchase Order upon receipt of a Purchase Requisition.	
Purchasing Procedures	V
The purpose of this procedure is to establish the requirement for purchasing instructions and	

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
procedures needed to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the responsibilities for preparing and approving the Purchasing Procedures Manual, establishes the interfaces between sections of the manual and the manuals of other departments and provides direction for the preparation of the purchasing procedures.	
Control and Issuance of Purchasing Procedures This procedure establishes the methods for the development, maintenance, control, and issuance of the Purchasing Procedures Manual.	VI
Supplier Qualification, Surveillance, and Control This procedure describes the requirements for qualifying suppliers, maintaining records of approved suppliers, and evaluating their performance during the manufacturing stage to assure conformance to specification requirements. Suppliers shall be evaluated prior to issuance of a purchase order to insure that they are capable of manufacturing and delivering a product conforming to the applicable purchase specifications.	VII
Qualified Suppliers List This procedure describes the method to be used for the development and maintenance of the Qualified Suppliers List.	VII

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)

	Appendix B Criteria
Material Deficiency Reports This procedure describes the actions to be taken by the Purchasing Department in processing Material Deficiency Reports which affect supplier material.	XV
Quality Control Deficiency Reporting This procedure describes the actions to be taken by the Purchasing Department when supplier deficiencies which require corrective action are discovered.	XVI
Purchasing Records This procedure establishes the requirements for the storage of all Purchasing Department records for safety related components, structures, and systems as controlled by the Rochester Gas and Electric Quality Assurance Manual.	XVII
Audit Requirements The purpose of this procedure is to describe the responsibilities of the Purchasing Department during an internal audit.	XVIII

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
Material Deficiency Reports This procedure describes the actions to be taken by the Purchasing Department in processing Material Deficiency Reports which affect supplier material.	XV
Quality Control Deficiency Reporting This procedure describes the actions to be taken by the Purchasing Department when supplier deficiencies which require corrective action are discovered.	XVI
Purchasing Records This procedure establishes the requirements for the storage of all Purchasing Department records for safety related components, structures, and systems as controlled by the Rochester Gas and Electric Quality Assurance Manual.	XVII
Audit Requirements The purpose of this procedure is to describe the responsibilities of the Purchasing Department during an internal audit.	XVIII

TABLE IV.4-1

Procurement Document Requirements

Items to be considered for inclusion in procurement documents include:

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

TABLE IV.18-1

Audit List

Functional Organization	Activities Audited
Engineering	
	Indoctrination and Training
	Design Control
	Procurement Document Control
	Document Control
	Control of Special Processes
	Records
Purchasing	
	Indoctrination and Training
	Procurement Document Control
	Records
Ginna Station	
	Indoctrination and Training
	Modification
	Maintenance and Repair
	Procurement Control
	Document Control
	In-Service Inspection
	Surveillance Testing
	Storage
	Operations
	Refueling
	Control of Measuring and Test Equipment
	Health Physics and Chemistry
	Operator Training and Retraining
	Security
	Emergency Plan
	Inspection and Surveillance
	Records

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

MANAGEMENT ORGANIZATION

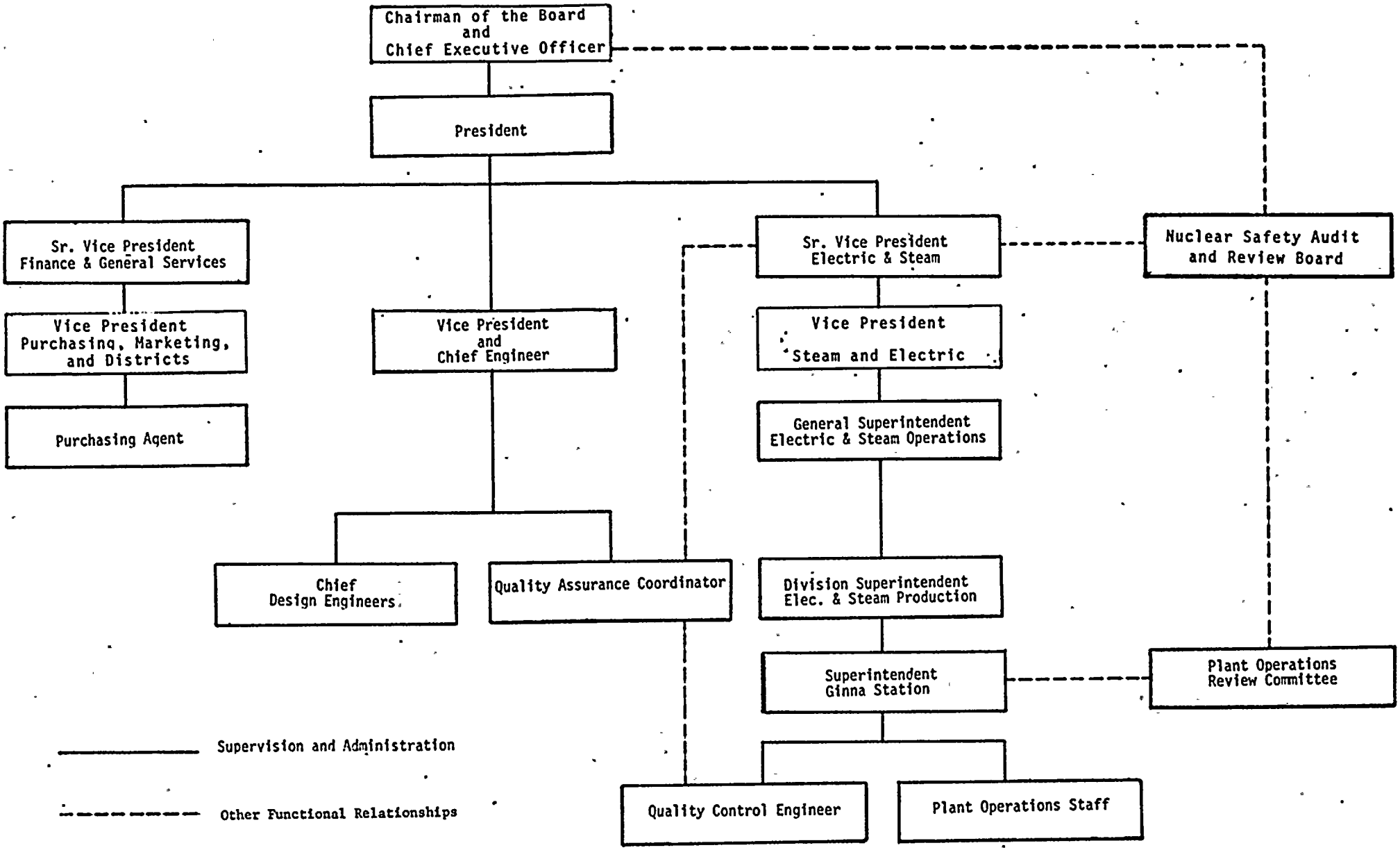


Figure IV. 2-1
July 1, 1974

ROCHESTER GAS AND ELECTRIC CORPORATION

QUALITY ASSURANCE ORGANIZATION

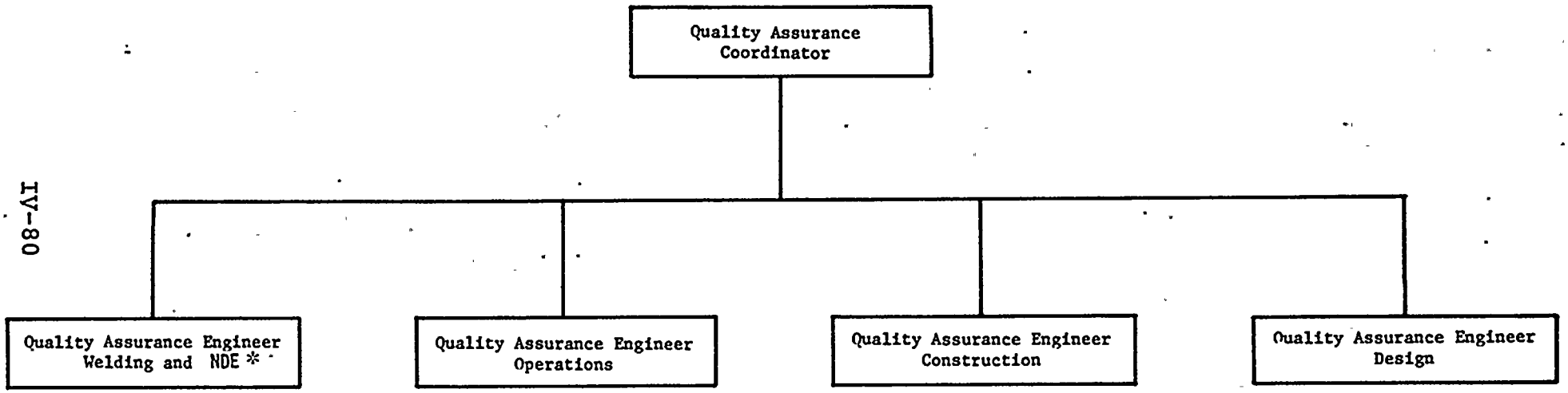


Figure IV.2-2
July 1, 1974

* Nondestructive Examination

ROCHESTER GAS AND ELECTRIC CORPORATION
GINNA STATION ORGANIZATION

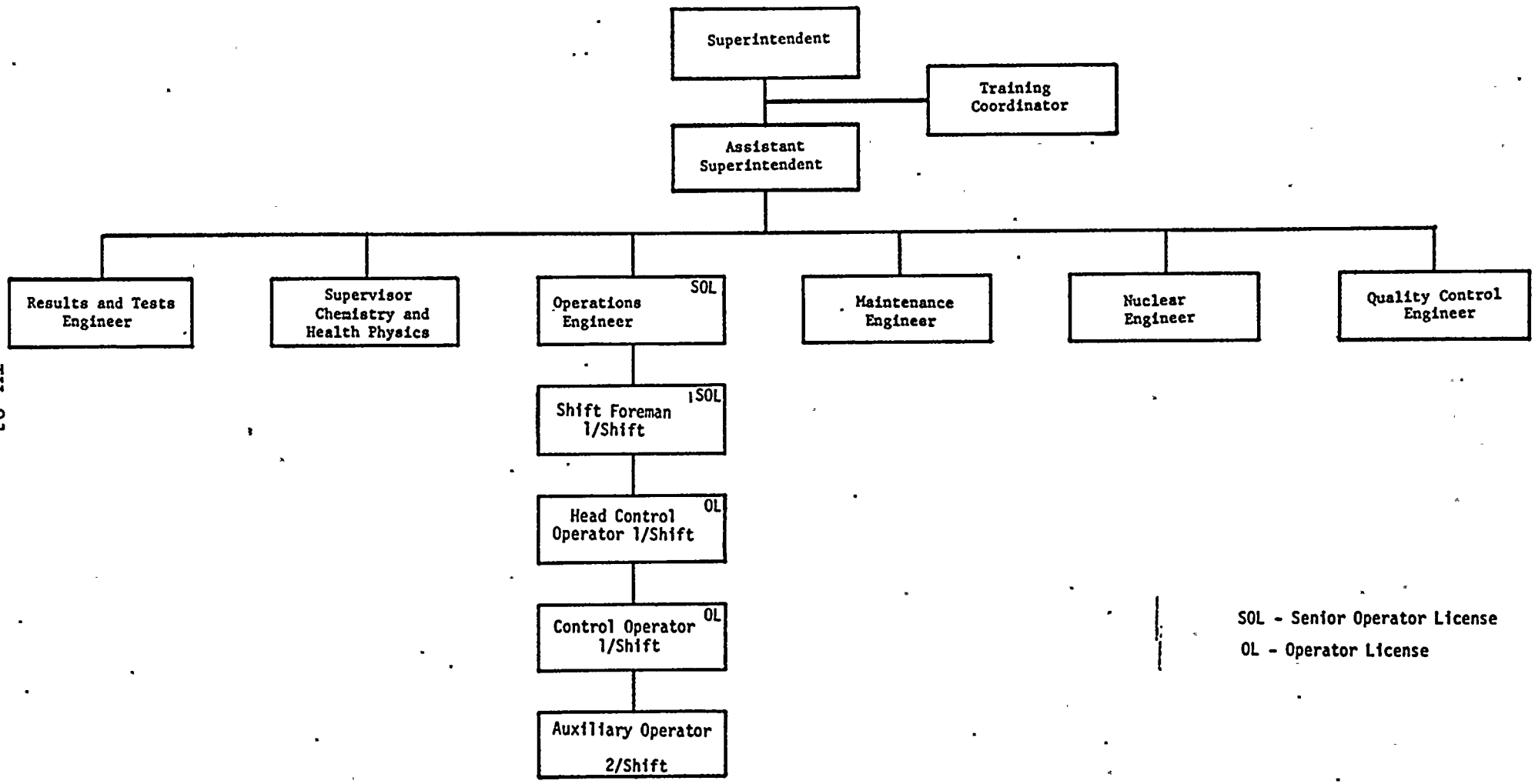


Figure IV. 2-3
July 1, 1974

GINNA STATION

QUALITY CONTROL ORGANIZATION

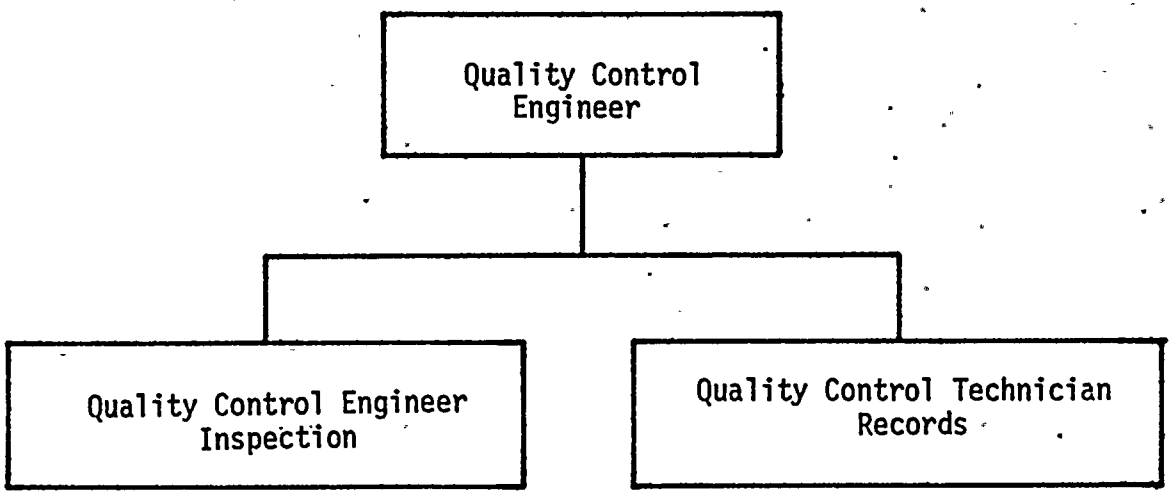


Figure IV.2-4

July 1, 1974

ROCHESTER GAS AND ELECTRIC CORPORATION
ENGINEERING DEPARTMENT ORGANIZATION

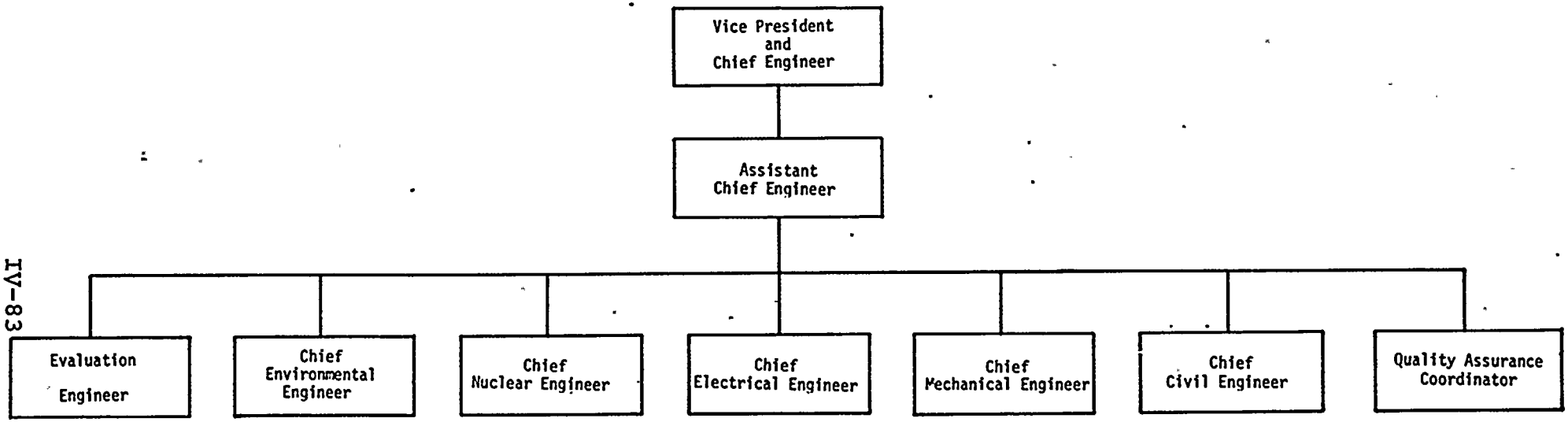


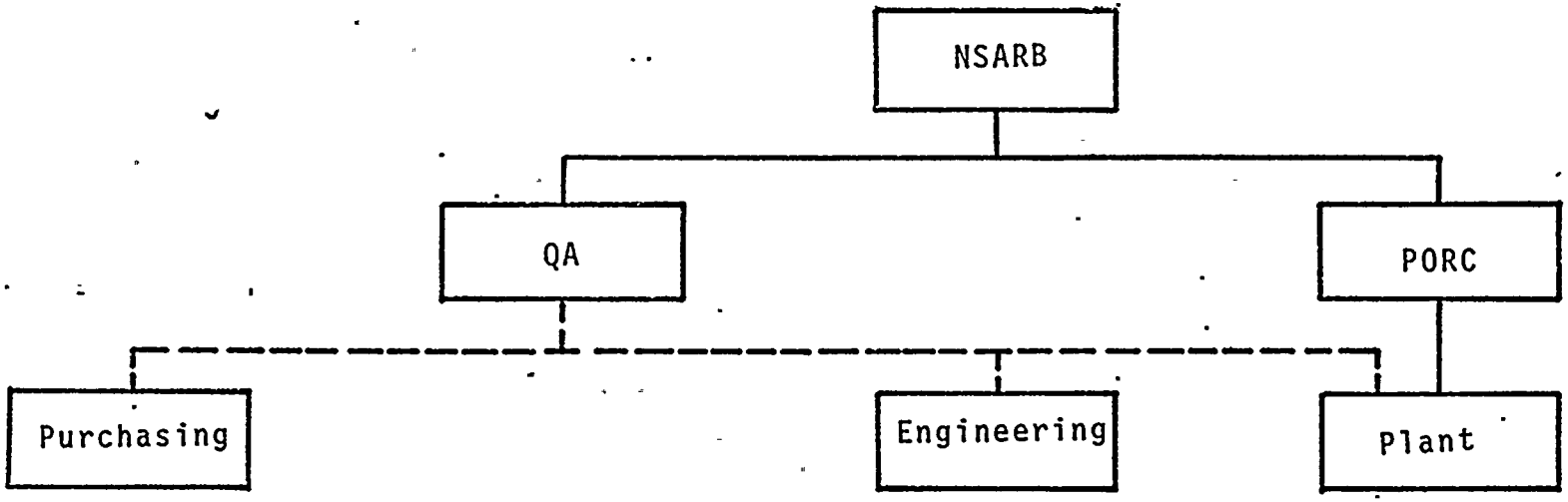
Figure IV.2-5

July 1, 1974

Rochester Gas and Electric Corporation

Ginna Station

Review and Audits Functions



Review

Audit

Figure IV. 2-6
July 1, 1974

Suppl 4 to Tech Spec Appl to Full Term OL

Superceded pages per Revsum 3 to Supplement IV ltr dtd 1-30-76 50-244

Updated CCP 1-16-79

Introduction

In a May 28, 1974 letter from Mr. Robert A. Purple, the United States Atomic Energy Commission asked several questions on the R. E. Ginna Quality Assurance Program for Station Operation. The information requested and further clarification of the program are provided in Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. Supplement IV is a revised description of the R. E. Ginna Quality Assurance Program for Station Operation and supersedes Supplement II in its entirety. The following revisions have been made to the description of the program:

Section IV.2

Additions

That all Quality Assurance, Quality Control, Engineering, and Purchasing procedures are reviewed for adequacy at least once every two years.

That the list of structures, systems, and components covered by the quality assurance program are based on the list in Section 1.2.1 of the FSAR.

That management review of the quality assurance program may be in a form other than an audit.

That the Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years.

That the Chairman of the Nuclear Safety Audit and Review Board reports to the Chairman of the Board of Rochester Gas and Electric Corporation on NSARB activities.

Section IV.3

Additions

That spare or replacement parts meet, at least, the requirements of the original design.

That for plant modification, the design engineer selects and reviews materials, parts, and equipment for suitability of application.

That design deficiencies are documented and controlled in accordance with Section IV.16.

That design documents are collected, stored, and maintained in accordance with Section II.17 and a listing of which design documents are maintained.

Clarification

Clarified which design documents are reviewed by Quality Assurance.

Section IV.4

Additions

That procurement documents for spare or replacement parts are processed in the same manner as other procurement documents.

That the review and approval of procurement documents is reflected on the document or on a control form which is attached to the procurement document.

That the documents are available for verification in Purchasing and plant records.

That Quality Control reviews procurement documents for spare and replacement parts for similarity to the original requirements, and adequacy of quality requirements.

Section IV.5

Clarification

Clarifies which documents are reviewed by Quality Assurance.

Section IV.6

Addition

Made procurement document review requirements consistent with Section IV.4.

That suppliers of materials, equipment, and services are required by procurement documents to provide control of manufacturing inspection and testing instructions.

Section IV.9

Additions

Made procurement document review requirements consistent with Section IV.4.

Added Quality Control responsibilities for surveillance and inspection of special process activities.

Section IV.10

Additions

That all documentation necessary to perform an inspection is available to the inspector prior to the performance of the activity.

That Quality Control inspection procedures include the identification of quality characteristics to be inspected and a description of the method of inspection to be used, the identification of the organization responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity.

That inspection equipment is calibrated in accordance with Section IV.12 and that calibration status is verified prior to performing the inspection activity.

Section IV.11

Addition

That test procedures include test methods and test instrumentation definition.

Section IV.12

Addition

That shop standards calibration is traceable to national standards or, where national standards are not available, the basis of calibration is documented.

Section IV.14

Addition

That written procedures control the use of hold tags, test tags and labels and that the procedures require the recording of the name of the person placing and removing the tag.

Section IV.15

Addition

That Quality Control issues monthly material deficiency report summaries, that these summaries are reviewed and analyzed by Quality Assurance, and that when unsatisfactory trends are noted, they are reported to management, using the corrective action report in accordance with Section IV.16.

Section IV.17

Additions

That plant records include operating logs, drawings, specifications, calibration procedures and reports, nonconformance reports, and the results of inspections, tests, audits and the monitoring of plant activities and material analyses.

That quality assurance records of special process activities are maintained by Engineering and that they include the qualification records of personnel, procedures, and equipment.

That inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

Section IV.18

Addition

That Quality Assurance is responsible for conducting the audits listed in Table IV.18-1.

In July 1974, the United States Atomic Energy Commission requested information on the conformance of the R. E. Ginna Quality Assurance Program for Station Operation to the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0). The information requested is provided in Revision 1 to Supplement IV to the Technical Supplement accompanying Application for a Full-Term Operating License. The following changes have been made to Supplement IV:

Section IV.1

Additions

A description of the extent to which the quality assurance program conforms to the document entitled "Guidance on Quality Assurance Requirements During The Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0).

2 On October 1, 1974, Rochester Gas and Electric Corporation revised its corporate structure. This organization change has not affected the functional interrelationships between the organizations responsible for implementing the quality assurance program. In addition, the RG&E commitment to the "Orange Book" in August has necessitated some shifting of responsibilities. The changes RG&E has made are reflected in Revision 2 to Supplement IV to the Technical Supplement accompanying Application for a Full Term Operating License. The changes affect every section of the supplement except sections 12 & 14. Change pages are listed in Instructions - 2 and each revised page is marked with revision level. In addition, the latest revision is marked with a vertical line in the left hand margin of each page. The revision level is noted by an arabic numeral next to each vertical line.

Tables and figures which have been completely revised are shown by revision level at the bottom of the page and by reference in the index, page IV-vii. Unrevised pages with a vertical solid black line in the margin reflect changes to the document between Supplement II and Supplement IV. Some editorial corrections have been made and these are also marked.

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LIST OF TABLES

LIST OF FIGURES

*Pages IV-51 through IV-58 have been revised.

**Table IV.4-1, Table IV.18-1, Figure IV.2-1, Figure IV.2-2 and Figure IV.2-5 have been revised.

QUALITY ASSURANCE PROGRAM FOR STATION OPERATION

IV.1 Quality Assurance Program

The quality assurance program described in this Supplement has been developed by the Rochester Gas and Electric Corporation to assure safe and reliable operation of the R. E. Ginna Nuclear Power Plant. This program applies to all activities affecting the safety related functions of the 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 quality affecting activities include operating, maintaining, repairing, refueling and modifying.

The basic Rochester Gas and Electric Corporation quality assurance policy is established by the Chairman of the Board and Chief Executive Officer in his Corporate Statement of Quality Assurance Policy. This policy is implemented by the Vice President, Electric and Steam Production through the Quality Assurance Coordinator and the Ginna Station Superintendent.

The program is governed by a Ginna Station Quality Assurance Manual which contains the requirements and assignment of responsibilities for implementation of the program. The manual is prepared, reviewed, and maintained by Quality Assurance and approved by the Vice President, Electric and Steam Production.

The program is implemented through Quality Assurance, Quality Control, Engineering, and Purchasing Procedures. These procedures are prepared and approved by the responsible organization (i.e., Quality Assurance, Operations, Engineering, and Purchasing) and reviewed and concurred with by Quality Assurance. The procedures are contained in separate manuals maintained by the responsible organization. All these procedures are reviewed for adequacy at least once every two years by the responsible organization. Table IV.1-1 provides a listing of the subjects and a short description of the subject matter which is contained in the procedures.

Organizational interfaces are defined and controlled by sections of the Quality Assurance Manual. Organizational responsibilities are described in Section IV.2.

The quality assurance program covers all existing Seismic Category I structures, systems, and components, including their foundations and supports. Activities affecting the quality of these structures, systems, and components are controlled to an extent consistent with their importance to safety. A detailed listing of the structures, systems,

and components covered by the quality assurance program, based on Section 1.2.1 of the Final Facility Description and Safety Analysis Report, is contained in the Quality Assurance Manual.

Details of the system boundaries and the quality classification of water-and-steam-containing components are contained on system flow drawings. The listing of structures, systems, and components covered by the quality assurance program and the system flow drawings are prepared and maintained by Engineering and reviewed and concurred with by Quality Assurance.

Modifications or additions to existing structures, systems, and components are designated the same seismic classification as the existing system. New structures, systems, and components are designated a seismic classification in accordance with the guidelines in USAEC Regulatory Guide 1.29.

Supervisory personnel are indoctrinated in quality assurance policies, manuals, and procedures to assure they understand that these are mandatory requirements which must be implemented and enforced. Personnel responsible for performing activities affecting quality are trained and indoctrinated in the requirements, purpose, scope, and implementation of quality related manuals and procedures. Refresher sessions

are held periodically and retraining is required whenever a new procedure is issued or a major revision is made to an existing procedure. Training of personnel not in the quality assurance organization is the responsibility of each department performing an activity affecting quality. Quality Assurance assists in establishing training requirements and assures that personnel are trained by auditing training records.

In addition to training in quality assurance, each department conducts on-the-job training to assure that personnel are qualified for their primary work assignments.

The Ginna Station Superintendent is responsible for the formal training, qualification, licensing, and requalification of operators, as necessary. Where necessary, personnel are trained in radiation protection, plant safety and security.

The Nuclear Safety Audit and Review Board is required to review the status and adequacy of the quality assurance program at least once every two years to assure that it is meaningful and is effectively complying with corporate policy and 10CFR50, Appendix B. This review consists of audits or a review equivalent to an audit performed by company personnel or outside consultants. Reviews will be conducted every six months during the first two years that the program is implemented.

The quality assurance program is designed to meet the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants." The program conforms to the following AEC Regulatory Guides and ANSI Standards:

a. AEC Regulatory Guide 1.8, "Personnel Selection and Training", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

b. AEC Regulatory Guide 1.28, "Quality Assurance Program Requirements (Design and Construction)", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants", Revision 1 dated May 1974 (Gray Book - Revision 1)

   Note: The requirements and guidelines contained in ANSI N45.2 and associated standards are applied only to Seismic Category I structures, systems, and components, including their foundations and supports.

c. AEC Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment"

d. AEC Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)", and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

e. AEC Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants"

f. AEC Regulatory Guide 1.38, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants"

g. AEC Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants"

h. AEC Regulatory Guide 1.58, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel"

i. AEC Regulatory Guide 1.64, "Quality Assurance Requirements for the Design of Nuclear Power Plants"

j. AEC Regulatory Guide 1.74, "Quality Assurance Terms and Definitions"

k. Extracts from ANSI N45.2.8, "Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants", contained in the document entitled "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants", Revision 0 dated October 1973 (Orange Book - Revision 0)

l. ANSI N45.2.9, "Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants"

Note: When record storage facilities are not designed in accordance with the requirements of ANSI N45.2.9, duplicate records are kept in two separate storage locations in separate buildings which are physically isolated from each other.

m. ANSI N45.2.12, "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants"

n. ANSI N45.2.13, "Quality Assurance Requirements for Control of Procurement of Equipment, Materials and Services for Nuclear Power Plants," and regulatory staff comments and supplementary guidance contained in the document entitled "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants", Revision 1 dated May 1974 (Gray Book - Revision 1)

IV.2 Organization

The major organizations participating in the quality assurance program are the Purchasing, Engineering, and Electric and Steam Production Departments; Quality Assurance; the Plant Operations Review Committee; and the Nuclear Safety Audit and Review Board. Figure IV.2-1 is an organizational chart showing these organizations and their relationship to the corporate organization.

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

Chairman of the Board

Vice President, Electric and Steam Production

Vice President, Engineering and Construction

Chief Engineer

Quality Assurance Coordinator

Quality Assurance Engineer, QA Programs

Quality Assurance Engineer, Operations

Quality Assurance Engineer, Design

Quality Assurance Engineer, Welding and Nondestructive Examination

Purchasing Agent

Ginna Station Superintendent

Ginna Station Quality Control Engineer

In addition to the above individuals, two advisory groups are utilized to review and audit plant operations. These

are the Plant Operations Review Committee and the Nuclear Safety Audit and Review Board. The Plant Operations Review Committee acts in an advisory capacity to the Ginna Station Superintendent and the Nuclear Safety Audit and Review Board advises the Vice President, Electric and Steam Production. The qualifications of members and the responsibilities of these organizations are described in Appendix A to Provisional Operating License No. DPR-18, Section 6.0, Technical Specifications.

The Chairman of the Board of the Rochester Gas and Electric Corporation directed the establishment of the quality assurance program and issued the governing policy statement. He has established the Nuclear Safety Audit and Review Board to review and audit plant operations. The Chairman of the Nuclear Safety Audit and Review Board is responsible to the Chairman of the Board on all activities of the Nuclear Safety Audit and Review Board.

The Vice President, Electric and Steam Production has corporate responsibility for operation of Ginna Station in accordance with applicable regulatory requirements. He is responsible for establishing the policies and requirements necessary to assure safe and reliable operation of Ginna Station. He is also responsible for those items

delineated in Section 6.0, Technical Specifications. He has overall responsibility for and authority to direct quality affecting activities. He has assigned the responsibility for the detailed development and overall coordination of the quality assurance program to the Quality Assurance Coordinator.

The responsibility for proper implementation of the quality assurance program requirements at Ginna Station has been assigned to the Ginna Station Superintendent.

The Vice President, Engineering and Construction is responsible for the design and construction of plant modifications in accordance with applicable design bases, regulatory requirements, codes and standards. He delegates these responsibilities to the Chief Engineer.

2 The Chief Engineer has the responsibility for preparing drawings and specifications for the procurement of materials and components for plant maintenance and modification as required. He is responsible for reviewing operating and fuel handling procedures referred to him by the Ginna Station Superintendent and for reviewing maintenance and repair procedures for major equipment.

The Quality Assurance Coordinator is responsible for establishing and executing the overall quality assurance

2 program. He is responsible for assuring that the program satisfies the requirements of 10CFR50, Appendix B,

and for keeping the total program updated. He is responsible for assuring that all the 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 affecting activities are performed. He is responsible for maintaining a quality assurance staff and directing its activities and for establishing and implementing a comprehensive audit program.

The Quality Assurance Coordinator is a graduate engineer with at least six years of responsible experience, of which two years is in quality assurance and three years in the design or operation of nuclear or fossil fuel power plants.

The Quality Assurance Engineer, Operations is responsible for supervising the operational quality assurance program for Ginna Station. This includes writing quality assurance policies and procedures, coordinating supplier qualification and surveillance, and establishing and implementing the in-service inspection program. He is responsible for staying

current in all applicable regulatory and code quality assurance requirements and providing guidance and assistance to the Ginna Station Superintendent, the Ginna Station Quality Control Engineer, and other affected personnel on these requirements.

The Quality Assurance Engineer, Design is responsible for interpreting the requirements of 10CFR50, Appendix B and applicable regulatory and code requirements related to plant modifications and providing guidance and assistance to engineering and station personnel on these requirements. He writes quality assurance policies and procedures related to design activities and interfaces between Engineering and other departments. He is responsible for reviewing engineering and procurement documents to assure that quality assurance requirements are incorporated.

The Quality Assurance Engineer, Welding and Nondestructive Examination is responsible for developing and qualifying procedures for special processes. He is also responsible for assuring that personnel are trained and qualified in special processes and for inspection activities involving nondestructive examination.

2 The Quality Assurance Engineer, QA Program assists the Quality Assurance Coordinator and is responsible for implementing

the program requirements assigned to Quality Assurance. He is responsible for the preparation and maintenance of the Quality Assurance Procedures Manual. He also prepares and maintains the quality assurance audit schedule, plans and conducts training programs for quality assurance personnel, and reviews corrective action reports on quality assurance deficiencies.

The Purchasing Agent is responsible for the procurement of materials, services, and components, from qualified

suppliers, in accordance with applicable commercial, technical, and quality requirements. He maintains a listing of qualified suppliers determined through an evaluation made by Purchasing, Engineering, Operations, and Quality Assurance.

The Ginna Station Superintendent is responsible for safe operation of Ginna Station. He is responsible for the operation, maintenance, repair, refueling, and modification of Ginna Station in accordance with the requirements of the quality assurance program. He is responsible for providing qualified personnel to perform these activities in accordance with approved drawings, specifications, and procedures. He is also responsible for those items delineated in Section 6.0, Technical Specifications.

The Ginna Station Assistant Superintendent supports the Ginna Station Superintendent in discharging his responsibilities. He is responsible for the day-to-day operation of the station and implementing the policies, procedures, and directions of the Ginna Station Superintendent.

The Ginna Station Quality Control Engineer is responsible to the Station Superintendent for assuring that activities affecting quality are prescribed and carried out in accordance with approved drawings, specifications, and

procedures. In his day-to-day activities, he reports to the Ginna Station Assistant Superintendent. He is a member of the Plant Operations Review Committee and is responsible for the review of all plant procedures presented to the Committee. He also reviews procurement documents initiated at the plant. He is responsible for the control of documents and records stored at the plant. He co-ordinates inspection activities and assures that inspection requirements are included in approved procedures. He coordinates the receipt inspection of incoming materials, parts, and components and the processing of material deficiency reports. He coordinates the processing of corrective action reports, and assures that corrective action is taken. He is responsible for routine surveillance of other groups involved in quality affecting activities and provides the Ginna Station Superintendent with objective information concerning the quality of these activities.

The Ginna Station Quality Control Engineer is assisted in the performance of his duties by a staff which includes an engineer and a technician who coordinate inspection and record-keeping activities, respectively. Additional inspectors are assigned to this group as required by the level of work activities.

In addition to the Ginna Station Quality Control Engineer, the Ginna Station Superintendent is assisted by other designated staff members in the implementation of certain quality assurance program requirements at the plant. These staff members are assigned responsibility for testing, storage of material and equipment, operating and test status control, calibration and control of measuring and test equipment not used by Quality Control, maintenance of material handling equipment, operator training, and control of all activities involving operation, maintenance, repair, refueling, and modification.

IV.3 Design Control

Design activities are performed by Rochester Gas and Electric Corporation personnel or are subcontracted to organizations providing services to Rochester Gas and Electric.

2 Engineering is responsible for the design and control of design activities (including design interfaces) for the modification of structures, systems, or components.

Design control is implemented by means of engineering procedures which include: design considerations, design review requirements; internal and external interface

control considerations; design document review, approval, distribution, control, and revision requirements; and corrective action. Design considerations include, as appropriate: physics, stress, materials, thermal, hydraulic, radiation and accident analysis; appropriate design bases, codes, standards and regulations; acceptance and rejection criteria; and quality assurance requirements. Design verification utilizes various methods such as formal design reviews, alternate calculations, or tests as appropriate to assure the adequacy of the design.

The design of plant modifications is reviewed by an engineer other than the one who performed the original design. This may be done by Rochester Gas and Electric design engineers or consulting engineers as required. The design also is reviewed by Ginna Station for acceptability for operation, maintenance, and repair.

Spare or replacement parts must at least meet the original equipment technical and quality requirements. For plant modifications, standard "off the shelf" commercial or previously approved materials, parts, and equipment are selected and reviewed for suitability of application by the design engineer.

Design changes, including field changes, are reviewed and approved in accordance with the same procedures as the original design. In general, design changes are reviewed and approved by the organizations or individuals that performed the original design, review, and approval. Where this is not practical, other responsible design organizations or individuals are designated, provided they have access to pertinent background information and are competent in the specific design area.

Design documents are collected, stored, and maintained in accordance with Section IV.17. Design documents include design criteria, analyses, specifications, drawings, design review records, and changes thereto.

The Quality Assurance Coordinator is responsible for assuring that design control procedures, whether the work is done by Rochester Gas and Electric or by other organizations, are prepared and implemented and incorporate appropriate design control practices, checks, and reviews. Design control procedures are reviewed to assure that an independent verification is performed.

2 The Chief Engineer is responsible for the timely approval and updating of specifications and drawings, as well as changes or deviations thereto, utilized for purchase

or installation of materials, parts, or components. Any other design documents, specifications, drawings, installation requirements, and changes thereto, are approved in the same manner.

Errors and deficiencies detected in the design process are documented as conditions adverse to quality and controlled in accordance with the corrective action requirements of Section IV.16.

Design criteria and specifications, and changes thereto, are reviewed by Quality Assurance for the inclusion of quality assurance and quality control program requirements and the proper quality standards. The Quality Assurance Coordinator reviews and approves any deviations from quality standards when they occur. Quality Assurance also spot checks design criteria and specifications for use of proper codes, material specifications, regulatory requirements and design bases.

Plant modifications are controlled by means of applicable quality assurance and quality control procedures. These procedures provide for the preparation, review, and approval of design documents, safety analyses, and plant modification procedures. Proposed plant modifications are reviewed by the Plant Operations Review Committee and Nuclear Safety Audit and Review Board as required by Section 6.0, Technical Specifications.

IV.4 Procurement Document Control

Procurement document control applies to the control of procurement documents for materials, parts, components, and services required to perform quality affecting activities. Such documents may be prepared by Rochester Gas and Electric or by a contractor and include purchase requisitions, purchase orders, service agreements, contracts, specifications, and drawings.

Procurement of materials, parts, components, and services is initiated by Ginna Station or Engineering Department staff personnel. Procurement procedures require that organizations preparing procurement documents consider and include, as appropriate, the items listed in Table IV.4-1.

Procurement documents, including those requesting spare or replacement parts, initiated at Ginna Station are reviewed for concurrence by Quality Control and approved by the Ginna Station Superintendent or his designated representative. Procurement documents initiated in Engineering are reviewed for concurrence by Quality Assurance and approved by the Chief Engineer or his designated representative.

Evidence of review and approval of procurement documents is recorded on the documents or on the attached control

form. These documents are maintained in Purchasing and plant records.

After purchase requisitions, service agreements, contracts, specifications, and drawings have received the required reviews and approvals, a purchase order is issued to a qualified supplier and controlled as described in Section IV.7. Under no circumstances are purchasing requirements altered (except for quantity or pricing) during order placement unless review and concurrence is obtained from those who were required to review, concur with, and approve the original documents as described above.

Engineering review of procurement documents includes verification of appropriate classifications, technical requirements, and code application. Quality Assurance review of the above includes checks to verify that proper codes, regulatory requirements, and material specifications are invoked; that FSAR and Technical Supplement commitments are included; that appropriate acceptance or rejection criteria are required; and that quality assurance requirements are incorporated. Quality Control reviews procurement documents for spare or replacement parts for adequacy

of quality requirements and to determine similarity, compatibility, and the inclusion of the quality requirements and acceptance criteria of the original design.

IV.5 Instructions, Procedures, and Drawings

Each Rochester Gas and Electric organization is responsible for developing, reviewing, approving, and implementing procedures as required to implement the quality assurance program. These procedures cover activities such as document control, training of personnel, and responsibilities and duties of personnel. Quality Assurance reviews and concurs with these procedures. Table IV.1-1 provides a summary of the subject matter contained in the procedures which are used to implement the quality assurance program. Procurement documents require suppliers and contractors to have appropriate instructions, procedures, specifications, and drawings.

The Ginna Station Superintendent is responsible for preparing, reviewing, approving, and implementing instructions and procedures associated with operation, maintenance, repair, refueling, and modification. This includes instructions and procedures listed in USAEC Regulatory Guide 1.33 for administrative control; general plant operation; startup, operation, and shutdown of safety

related systems; correction of abnormal, offnormal, or alarm conditions; combat of emergencies and other significant events; radioactivity control; control of measuring and test equipment; chemical and radiochemical control; and fuel handling and refueling. He is responsible for the preparation and implementation of Quality Control Procedures. He is also responsible for the issuance of appropriate changes to such documents upon receipt of regulatory directives, instructions from Rochester Gas and Electric management, or the completion of plant modifications.

The Plant Operations Review Committee has the responsibility for reviewing procedures prior to their approval by the Ginna Station Superintendent as required by the Section 6.0, Technical Specifications.

Quality Control is responsible for reviewing plant administrative, operating, maintenance, repair, refueling, and modification procedures prior to use to assure quality assurance requirements are included.

The Chief Engineer is responsible for preparing, reviewing, approving and issuing specifications, drawings, and installation requirements associated with plant modifications. These documents require those performing the work to obtain, understand, and comply with appropriate instructions, procedures, specifications and drawings.

2 The Chief Engineer has established procedures for maintaining drawings and specifications in a current status. These procedures cover updating of as-built drawings after plant modifications and the revision, approval, distribution, and control of all drawings and specifications.

Quality Assurance reviews design criteria and specifications, and changes thereto, for concurrence with quality assurance requirements.

2 Station Quality Control Procedures require the review and concurrence of Quality Assurance and the approval of the Ginna Station Superintendent.

Persons preparing and approving documents are responsible for assuring that specifications, instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished and assuring that the documents are kept current.

Surveillance of the implementation of instructions, drawings, and procedures for operation, maintenance, repair, modification, and refueling is the responsibility of the Ginna Station Quality Control Engineer.

IV.6 Document Control

Procedures are established to control the issuance of procedures, instructions, drawings, and specifications. Standard document control requirements are contained in the Quality Assurance Manual. The Ginna Station Superintendent is responsible for the control of all documents issued at Ginna Station. Engineering controls all documents issued by Engineering, Quality Assurance, and Purchasing. Engineering and Operations have separate procedures to control documents in accordance with the requirements of the Quality Assurance Manual.

The Quality Assurance Manual requires that documents be controlled as appropriate, considering the type of document involved, its importance to safety, and the intended use of the document. It specifies the types of documents which must be controlled; identifies the difference between controlled and uncontrolled copies of the same document; includes the method for identifying holders of controlled copies; requires that only controlled copies of a document be used for official purposes; requires that lists of effective revisions be issued periodically; requires lists of document holders to be maintained by the distributors; and requires that distributors transmit controlled documents using approved forms internally and externally.

Types of documents which are controlled include Technical Specifications, FSAR, Technical Supplements, Quality Assurance Manual, procedures (such as, quality assurance, engineering, purchasing, repair, maintenance, test, calibration, fuel handling, modification, and administrative), specifications and drawings. Suppliers of materials, equipment, and services are required in procurement documents to provide for control of documents, including manufacturing inspection and testing instructions.

The Quality Assurance Manual further requires that each organization provide in its procedures for measures: to assure that documents are available when required; to properly review and approve documents such as procedures, instructions, specifications, and drawings; to provide the same reviews and approvals for changes to documents as was required of the original document; to require that organizations which review and approve documents have access to pertinent information and adequate knowledge of the original document intent; to assure that approved changes are promptly transmitted for incorporation into documents; and to assure that obsolete or superseded documents are eliminated from the system and not used.

Quality Assurance and Quality Control are responsible for review and concurrence of procurement documents and, therefore, procurement document control requirements.

Quality Assurance and Quality Control are further responsible for review, inspection, surveillance, and audit, as appropriate, of document control systems to assure adequate systems are implemented.

IV.7 Control of Purchased Material, Equipment, and Services

Procurement documents, supplier selection, supplier surveillance, and receipt inspection are the four major means used in controlling purchased material, equipment, components, and services. All procurement is conducted in accordance with procurement documents as stated in Section IV-4. All reviews, inspections, surveillances, and audits are conducted by personnel who are competent in establishing whether or not a supplier is capable of providing acceptable, quality products.

Suppliers must be on an approved suppliers' list prior to being issued a purchase order. Supplier evaluations are performed by Quality Assurance, Engineering, Purchasing, and/or Ginna Station, as necessary, for the item or service involved. The depth of the supplier evaluation varies depending on the complexity and importance to safety of the item involved. For example, for mass produced or off-the-shelf items, only a check of past performance may be necessary. On the other hand, for complex, important items a very thorough review is performed.

Engineering is responsible for evaluating the overall design or manufacturing capability of the supplier including his particular technical ability to produce the design, service, item, or component delineated in the procurement documents. As part of this review, the supplier's design capabilities, machinery capabilities, handling capabilities, testing facilities, service capabilities, and experience are reviewed.

Quality Assurance is responsible for evaluating the supplier's overall quality assurance organization and program in accordance with applicable codes, standards, applicable parts of 10CFR50 Appendix B, and Rochester Gas and Electric Requirements. The review includes consideration of: company organization, quality assurance personnel qualifications, review and control of design documents, manufacturing procedures, quality assurance procedures, calibration practices, acceptance criteria, required quality assurance records and their retention, and quality assurance requirements and controls imposed by the supplier on his subcontractors. Supplier evaluation is conducted by means of procedures or checklists which identify applicable regulatory or code quality assurance requirements.

Ginna Station qualifies suppliers of inspection, test, and calibration services and the suppliers of spare and replacement parts if the procurement is of the identical part from the original supplier.

2 Quality Assurance, Engineering, and Ginna Station document their supplier evaluation results in reports which discuss areas investigated, findings, and conclusions. As applicable, concurrence of Purchasing, Engineering, Ginna Station, and Quality Assurance is required to place a supplier on the qualified suppliers' list. One organization can remove a supplier from the list without concurrence of the others.

Quality Assurance is responsible for determining and documenting the degree of supplier surveillance (including review, inspection, or audit) required during design, fabrication, inspection, testing, and shipping, and for providing the required surveillance. The objective of supplier surveillance is to provide a sampling review of the supplier's quality assurance program implementation and of product conformance with respect to the purchase order requirements. For complex equipment and designs, Quality Assurance and

Engineering are responsible for joint development of surveillance plans in advance of surveillance trips to identify areas to be reviewed.

The results of the surveillance trip are documented by means of inspection sheets or trip reports which are distributed to the Quality Assurance Coordinator, the Purchasing Agent, the Chief Engineer, the Ginna Station Quality Control Engineer, and the Ginna Station Superintendent. When a deviation from purchase order requirements is noted, the Quality Assurance representative has the authority to inform the vendor that a particular item is unacceptable, to issue a nonconformance report, or to stop work, if necessary.

The Ginna Station Quality Control Engineer is responsible for surveillance of site contractors to assure that they meet all technical and quality requirements. The reporting and documenting of contractor surveillance is managed in a manner similar to supplier surveillance.

The Ginna Station Superintendent is responsible for receiving and storing materials, parts, and components. Upon arrival, the plant storekeeper logs the item, places a "hold" tag on the item, and notifies Quality Control that the item has arrived.

Quality Control is responsible for receipt inspection upon delivery at the plant of material, equipment, and associated services for operation, maintenance, repair, modifications, and refueling. This inspection includes the use of written procedures or checklists to verify that the material, equipment, and services conform to the procurement documents (if this has not been performed by source inspections) and that documentary evidence of conformance is available at the plant prior to installation or use. Documentary evidence sufficient to identify the codes, standards, or specifications met by the purchased material, equipment, and services is retained. In the event a final source inspection is conducted prior to the arrival at the plant, Quality Control performs an inspection for shipping damage or lost parts and a document check to assure that the required documentation has been reviewed and is complete. A receiving inspection checklist is completed for all items received to document the extent of the inspection performed, including the documents checked, and the inspection results.

If the item and documentation are adequate, Quality Control labels the item as "Accepted", files the documentation and receipt inspection results, and returns the item to the station stockroom. If the item is nonconforming or the

documentation is incomplete, Quality Control initiates a material deficiency report which is controlled in accordance with Section IV.15.

All items issued must bear an acceptance tag and have documentation to support the acceptability of the item. In the event the traceability is lost or the documentation review is unsatisfactory, the item becomes nonconforming and may not be released for use.

IV.8 Identification and Control of Materials, Parts, and Components

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

parts, and components prior to release for manufacturing, shipping, construction, and installation.

2 The Chief Engineer is responsible for assuring that 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. Each item is required to be physically identified, either by marking on the item or by tags. Physical identification by purchase order number is used to the maximum extent possible for relating an item at any time to applicable documentation. Identification is either on the item or records traceable to the item. Where physical identification is impractical, physical separation, procedural control, or other appropriate means are employed.

The Ginna Station Superintendent is responsible for maintaining identification and control of materials, parts, or components received, stored, installed, and used at the plant. Procedures covering the identification and control of materials, parts, and components are prepared by Quality Control and approved by the Ginna Station Superintendent.

In the event that traceability is lost for a specific item, it is handled as nonconforming material and deviations

and waivers are controlled and documented in accordance with Section IV.15.

IV.9 Control of Special Processes

Written procedures are established to control special processes, such as welding, heat treating, and nondestructive examination to assure compliance with applicable codes, standards, and design specifications. Qualification of personnel and procedures complies 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, the personnel qualification requirements, the equipment necessary, and the special process qualification requirements.

2 The Chief Engineer and the Ginna Station Superintendent are responsible for requiring suppliers, in procurement documents, to control special processes in accordance with the above requirements. Quality Assurance and Quality Control are responsible for reviewing procurement documents to assure that requirements for control of special processes are included.

Rochester Gas and Electric procedures for special processes are prepared, reviewed, and approved by Quality Assurance. Special process procedures submitted by suppliers and contractors are reviewed and approved by Quality Assurance.

The Ginna Station Maintenance Engineer is responsible for assuring that personnel performing special processes under his cognizance are qualified and are using qualified procedures in accordance with applicable codes, specifications, and standards. Quality Assurance is responsible for the qualification of welding and NDE personnel and procedures. Engineering maintains records for personnel and procedures to demonstrate that required qualifications have been obtained and are kept current.

2 Quality Assurance and Quality Control perform surveillance, inspections, and audits of special processes performed by Rochester Gas and Electric or contractors to assure compliance with procedures.

IV.10 Inspection

Procedures prepared for the control of plant activities include inspection requirements and hold points as required by drawings, instructions, requirements documents, specifications, codes, standards, or regulatory requirements. Instructions for conducting inspections are contained in Quality Control inspection procedures. These inspection procedures and all supporting specifications and drawings are provided to inspection personnel for use prior to performing the inspection. Inspection requirements and hold points are utilized to verify conformance of activities to the documented instructions,

specifications, and drawings for accomplishing the activity. Quality Control inspection procedures include the identification of quality characteristics to be inspected, a description of the method of inspection to be used, the identification of the organization responsible for performing the inspection, the acceptance and rejection criteria, the requirements for the recording of inspection results, and the requirements for providing evidence of completion and certification of the inspection activity. Inspections are performed by Quality Control personnel who are independent of the personnel performing the work. Outside contractors are required by procurement documents to have and follow similar procedures and to use independent inspectors. Inspectors are sufficiently trained to adequately evaluate the activity they are inspecting.

Quality Control personnel are responsible for performing inspections, as required, during plant operation, maintenance, repair, refueling, and modification when the work is performed by Rochester Gas and Electric personnel. When the work is performed by outside contractors, Quality Control is responsible for surveillance of the subcontractor's inspection activities. All inspection equipment is calibrated and controlled in accordance with Section IV.12. Calibration status is verified by inspection personnel prior to performing an inspection operation.

In the event an inspection of processed material or products is impossible or impractical, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are required when control is inadequate without both.

The Chief Engineer is responsible for including inspection requirements in engineering specifications.

Quality Assurance is responsible for assuring that adequate inspection requirements are included in engineering specifications and for establishing the requirements for the inservice inspection program.

The Ginna Station Quality Control Engineer is responsible for assuring that adequate inspection requirements and hold points are included in operation, maintenance, repair, refueling, and modification procedures. He is also responsible for the assignment of qualified inspection personnel required for inspection of quality affecting activities and for coordinating the performance of and conducting the surveillance of inservice inspection.

The program for inservice inspection of the reactor coolant system and other safety related systems is contained in Section 4.2, Technical Specifications.

IV.11 Test Control

Whenever testing is required to demonstrate that a material, part, component, or system will perform satisfactorily in service, a test program is instituted employing written and approved procedures which are in accordance with basic requirements established in Technical Specifications, drawings, instructions, procurement documents, specifications, codes, standards, and regulatory requirements. 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 test procedures and checklists include: necessary test equipment and calibration requirements; material requirements; test personnel requirements; prerequisite plant and equipment conditions; limiting conditions; detailed performance instructions for the testing method and test equipment instrumentation; acceptance and rejection criteria; instructions for disposition of deviations; data collection requirements; and test result approval.

The Ginna Station Superintendent is responsible for the station test program, including the surveillance test program required by Section 4.0, Technical Specifications.

Test procedures are prepared by the plant staff, reviewed by the Plant Operations Review Committee and Quality Control, and approved by the Ginna Station Superintendent. The Ginna Station Superintendent is responsible for the performance of the required tests in a correct and timely manner utilizing written and approved procedures. When contractors are employed for tests, the contractor is required to perform testing in accordance with his quality assurance program requirements. All test results are required to be documented, reviewed, and approved by those responsible for performing the test.

2 The Chief Engineer is responsible for assuring that required tests for modifications are required in engineering specifications. He is further responsible for providing engineering assistance to the Ginna Station staff in the preparation of modification-related test procedures. Engineering is responsible for reviewing and approving modification-related test results.

IV.12 Control of Measuring and Test Equipment

The calibration and control system for measuring and test equipment includes calibration procedures, establishment of calibration frequencies, and maintenance and control requirements of measuring and test in-

struments, tools, gauges, shop standards, and nondestructive test equipment which are to be used in the measurement, inspection, and monitoring of components, systems, and structures. Calibration procedures include step-by-step methods for calibration 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.

Control of measuring and test equipment requires: a recall system assuring timely calibration of equipment; a system providing unique identification of equipment, traceability to calibration test data, and identification of the next calibration date on the equipment; a system providing traceability of shop standards to nationally recognized standards (where national standards do not exist, procedures contain instructions to document the basis for calibration) and periodic revalidation of shop standards; a system providing for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates; and a system controlling the purchase requirements of

new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions. In the event a measuring instrument is found out of calibration, an investigation is conducted to determine the validity of previous measurements.

The Ginna Station Superintendent is responsible for the procedures and program required to assure control and calibration of measuring and test equipment at Ginna Station in accordance with the above requirements. Instruments specified in Section 4.1, Technical Specifications, are included in the program. Tools, gauges, and instruments necessary for maintenance, inspection, and test are calibrated and controlled in accordance with station procedures. Measuring, test, or inspection equipment used by Quality Control is included in the program.

IV.13 Handling, Storage, and Shipping

The Ginna Station Superintendent is responsible for developing and implementing procedures for the handling, storage, shipping, preservation, and cleaning of material and equipment delivered to or located at Ginna Station. Under normal circumstances, manufacturer's specific written

instructions and recommendations and purchase specification requirements are invoked for cleanliness, preservation, special handling, and storage with respect to environmental requirements. In the absence of, or in addition to, specific manufacturer requirements, the superintendent may invoke additional requirements in accordance with the plant procedures.

2 The Chief Engineer is responsible for specifying in procurement documents and in engineering specifications that written procedures be used, as appropriate, for the handling, shipping, storage, cleaning, and preservation of materials and equipment procured for modifications. These procedures are prepared by contractors or by the station staff as appropriate. Rochester Gas and Electric procedures are reviewed and approved by Quality Control and the Ginna Station Superintendent.

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

Quality Assurance is responsible for review of engineering specifications to assure that proper handling, storing, and shipping requirements have been specified. Quality Control is responsible for surveillance of handling, storage, and shipping activities by suppliers, Rochester Gas and Electric personnel, and contractors.

IV.14 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 in a positive manner. The identification is sufficient to positively indicate the status of the particular equipment or system being isolated.

The Ginna Station Superintendent 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 Rochester Gas and Electric Intra-Station Holding Rules. The Ginna Station Superintendent designates personnel who have station holding authority.

Personnel who have station holding authority are responsible for directing the status change of equipment and systems in accordance with the approved company Intra-Station

Holding Rules. System status is indicated through the use of hold tags and control logs.

Equipment or system inspection and test status are indicated by use of test tags, labels, or work inspection and test status sheets. Written procedures control the use of hold tags, test tags, and labels. The procedures require the recording of the name of the person placing and removing the tag.

Systems, components, and equipment which are found to be unacceptable during or after testing are clearly identified.

Fuel handling operations involving fuel assemblies or other radioactive sources are identified and controlled by the use of tags, stamps, or other suitable means.

Plant maintenance, repair, or modification of components, systems, or structures utilizes a work inspection or test status sheet to indicate acceptance or rejection for a particular component, system, or structure. Work inspection or test status sheets are prepared and maintained at a designated control location to indicate the status of work and the completion of required inspections and tests.

Quality Control monitors the status change activities for their compliance to approved procedures and assures

that inspection results are properly logged. Quality Control also establishes the procedures for implementing the work inspection or status sheets during maintenance, repair, and modification.

IV.15 Nonconforming Materials, Parts, and Components

Procedures are established for the control, evaluation and disposition of deficient material, parts, and components. Materials, parts, or components which do not conform to drawing or specification requirements are identified with a hold tag and reported on a material deficiency report. Quality Control is responsible for issuing material deficiency reports, recommending disposition, initiating repair or rework, and inspecting and approving repaired or reworked items. Prior to installation or use, nonconforming items remain in a Quality Control receiving inspection area until approved disposition has been received. After installation or use, nonconforming items are identified until approved disposition has been received.

Prior to installation or use, suppliers are notified of all nonconforming items and requested to recommend disposition. Purchasing is responsible for obtaining the recommended disposition from the supplier. Engineering is responsible for reviewing and approving supplier's recommended disposition. After installation or use, Engineering is responsible for determining and approving disposition of nonconforming items.

Items are repaired or reworked only in accordance with documented procedures and drawings prepared and approved by Engineering. Quality Control assures that approved procedures and drawings are available for use prior to the repair or rework and reinspects all repaired or reworked items. The repair or rework must be verified as acceptable by an inspection of the affected item which is at least equal to the original inspection method.

Items which are accepted for use with a known deficiency are fully documented with the specification requirement, justification for acceptance, and affect of such use. All such items are approved prior to use by the Vice President, Electric and Steam Production. 2

Quality Control issues monthly material deficiency report summaries which are reviewed and analyzed by Quality Assurance. Unsatisfactory trends are reported to management by means of the corrective action report in accordance with Section IV.16.

IV.16 Corrective Action

Quality Assurance establishes the requirements for identification, review and correction of conditions adverse to quality. Conditions adverse to quality,

such as, failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are reported on a corrective action report. Conditions adverse to quality include conditions affecting safety, conditions which could result in plant shutdown, high maintenance items, and operating procedure deficiencies. The corrective action report identifies the condition, the cause of the condition, and the corrective action taken.

Corrective action reports may be initiated by Quality Assurance, Engineering, Ginna Station, or Purchasing staff personnel. Corrective action reports initiated at Ginna Station are submitted to Quality Control for review and subsequent processing. Corrective action reports initiated by Engineering and Purchasing are reviewed and processed by Quality Assurance.

When a condition adverse to quality at Ginna Station is identified, Quality Control evaluates the affect of continuing the activity. If continuing the activity would cover up or preclude identification and correction of the deficiency, continuing the activity would increase the extent of the deficiency or lead to an unsafe condition, stop work action is taken. The Ginna Station Quality Control Engineer has authority to stop work on maintenance, repair, refueling, or modification deficiencies. The Ginna Station Quality

Control Engineer may recommend stop work action to the Ginna Station Superintendent on operating deficiencies.

The Plant Operations Review Committee reviews all corrective action reports initiated at Ginna Station and recommends interim corrective action if the action does not represent a change in configuration of the deficient item. The Committee recommends permanent corrective action for all conditions adverse to quality which involve operating procedures.

Conditions adverse to quality which involve design deficiencies or a recommended corrective action which involves a design change are reviewed by Engineering. Engineering determines the cause of the condition and recommends corrective action to preclude repetition.

Quality Assurance reviews all corrective action reports to assure that the cause of the condition has been determined and that corrective action has been taken to preclude repetition. Quality Assurance also reviews material deficiency report summaries for unsatisfactory trends and initiates a corrective action report if such a trend occurs.

Completed corrective action reports are submitted to the Vice President, Electric and Steam Production to keep him aware of significant conditions adverse to quality.

IV.17 Quality Assurance Records

Quality Assurance is responsible for establishing the basic requirements for quality assurance record retention and maintenance. The Ginna Station Superintendent is responsible for the retention and maintenance of plant records. Records of Engineering and Quality Assurance activities are retained and maintained by Engineering. Purchasing is responsible for maintaining Purchasing records. Each organization is responsible for preparation, review, approval, and implementation of specific quality assurance record procedures for their areas of responsibility in accordance with these requirements. The records which fall within quality assurance record requirements include those records required by Section 6.5 of the Technical Specifications, the quality assurance program, and procurement documents. All documents and records associated with the operation, maintenance, repair, refueling, and modification of structures, systems and components covered by the quality assurance program are included.

Plant records include operating logs; the results of inspections, tests, audits, and the monitoring of plant activities; drawings, specifications, procurement documents and material analyses; calibration procedures and reports; and nonforming and corrective action reports. Records of the qualification of personnel, procedures, and equipment for special processes

and the results of reviews are maintained by Engineering.

Inspection and test records contain a description of the type of test or inspection activity, evidence of completion of the activity, results, the name of the inspector or data recorder, the acceptance or rejection of the activity, and a record of any nonconformances.

The requirements and responsibilities for record accessability and transmittal are in accordance with document control procedures as described in Section IV.6. Requirements and responsibilities for preparation, inspection, identification, review, storage, retrieval, maintenance, and the retention of quality assurance records are in accordance with applicable quality assurance record procedures, codes, standards, and procurement documents. Records are available to authorized personnel. Removal from record storage is documented on sign-out cards and accountability is maintained by the responsible document control activity.

[2] Records are either stored in record storage facilities which are designed to prevent destruction of records through fire, flooding, theft, and deterioration by temperature or humidity conditions; or, duplicate records are kept

in two separate storage locations in separate buildings which are physically isolated from each other.

Record keeping procedures provide for receiving, classifying, indexing, labeling, and preparing records for storage. The procedures establish retention requirements, accessability, control of obsolete record destruction, and control for issuance and return of all records.

The Ginna Station Superintendent is responsible for maintaining plant operating records as required in Section 6.5, Technical Specifications.

Engineering is responsible for maintaining design records, such as specifications, drawings, design review reports, and design control documentation; quality assurance records, such as audit reports and vendor surveillance reports; and purchasing records, such as supplier qualifications, supplier surveillance reports, bid evaluations, and purchase requisitions.

IV.18 Audits

Compliance with all aspects of the quality assurance program and the effectiveness of the program is determined by audits of all organizations performing quality affecting activities. Quality Assurance is responsible for conducting audits of each organization involved in the

quality assurance program on a planned, periodic basis. Audit intervals are based on the status and safety importance of activities being performed.

Audits of Ginna Station, Engineering and Purchasing organizations are performed annually. Table IV.18-1 is a list of the activities to be audited in each of the organizations. Audit frequencies are based on the level of activity in each area. Audit schedules are established to assure that each activity is audited at least annually. Additional audits are conducted as required by special conditions or circumstances.

Each audit requires the development of an audit plan to provide information about the audit, such as the functional areas to be audited, the names and assignments of those who will perform the audit, the scheduling arrangements, and the method of reporting findings and recommendations. The audits are performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited.

Audit results are documented and reported to the person having supervisory responsibility in the area audited, the Vice President, Electric and Steam Production, and the

Nuclear Safety Audit and Review Board. Within a specified period of time, the person having supervisory responsibility in the area audited is required to review the audit results, take necessary action to correct the deficiencies revealed by the audit, and document and report the corrective action.

Quality Assurance is responsible for developing audit plans and audit checklists, designating and training audit personnel, and conducting audits.

Audits may be conducted by Quality Assurance engineers or other qualified personnel, such as technical specialists from other company departments and outside consultants.

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

2 | Quality Assurance performs regular analyses of audit results to evaluate quality trends. Results of these analyses will be provided to management for their regular review.

Table IV.1-1
Quality Assurance Program Procedures
Subject Listing

Quality Assurance Procedures	Appendix B Criteria
Indoctrination of Quality Assurance and Supervisory Personnel The purpose of this procedure is to provide the instructions for indoctrination of Quality Assurance and supervisory personnel in quality assurance policies, manuals, and procedures.	I
Training of Quality Assurance Group Personnel The purpose of this procedure is to provide the instructions for training of the Quality Assurance Group in quality assurance policies, manuals, and procedures.	I
Management Review of Quality Assurance Program This procedure describes how management reviews of the quality assurance program are conducted. This includes how management level audits are conducted, what reports are submitted to management for review, and how management comments are incorporated into the program.	I
Periodic Review of Quality Assurance Procedures This procedure provides the instructions necessary for the periodic review of Rochester Gas and Electric Corporation Quality Assurance Procedures.	I

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Quality Assurance Group Organization and Responsibilities	II
The purpose of this procedure is to describe the Rochester Gas and Electric quality assurance organization and the responsibilities within the organization.	
Quality Assurance Review of Rochester Gas and Electric Design Criteria	III
The purpose of this procedure is to provide the instructions necessary for quality assurance review of Rochester Gas and Electric design criteria.	
Quality Assurance Review of Rochester Gas and Electric Engineering Specifications	III
The purpose of this procedure is to provide the instructions necessary for quality assurance review of Rochester Gas and Electric engineering specifications.	
Quality Assurance Review of Architect Engineer's Design Documents	III
This procedure provides instructions for quality assurance review of design criteria, specifications, and related documents prepared by an architect engineer. This review is performed when design criteria and/or specifications are submitted for Rochester Gas and Electric review and comment as a result of a procurement document requirements.	

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Requisitioning Quality Assurance Services This procedure describes the requirements to be met in the preparation, review and approval of purchase requisitions for services procured by Quality Assurance.	IV
Quality Assurance Review of Rochester Gas and Electric Procurement Documents The purpose of this procedure is to provide instructions for quality assurance review of Rochester Gas and Electric procurement documents and release of Purchase Requisitions and Nuclear Procurement Control Forms (QA-07) prepared by other departments.	IV
Preparation, Review and Approval of Rochester Gas and Electric Q.A. Specifications The purpose of this procedure is to establish the methods required for preparation, review, approval, issuance, and revision of Rochester Gas and Electric Quality Assurance Specifications. Quality Assurance specifications establish the Quality Assurance program requirements imposed on suppliers of safety related equipment, and services.	IV

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Preparation, Review and Approval of Ginna Station Quality Assurance Manual The purpose of this procedure is to provide the instructions necessary for the preparation, review and approval of changes to the Ginna Station Quality Assurance Manual.	V
Preparation, Review and Approval of Quality Assurance Procedures This procedure provides the instructions for preparation, review and approval of the Rochester Gas and Electric Corporation Quality Assurance Procedures.	V
Review of Quality Control, Quality Assurance, Engineering and Purchasing Procedures The purpose of this procedure is to establish the requirements for the review and approval of all quality and safety related documents generated by the Rochester Gas and Electric Company in accordance with the requirements of the RG&E Quality Assurance Manual.	VI
Preparation, Review and Approval of Procedure Deviation Requests by Quality Assurance This procedure provides the instructions for preparing, reviewing and approving a deviation from an approved Quality Assurance Procedure for (1) a specified period	VI

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
time or activity, or (2) in advance of the formal release of a revision to the subject procedure, or of a new procedure which would eliminate the need for such a deviation.	
Qualification of Suppliers This procedure describes the requirements for evaluation and qualification of supplier by Quality Assurance.	VII
Supplier Surveillance This procedure establishes the requirements for the evaluation of the quality assurance program controlling the operations of suppliers of safety related parts, materials, components, structures or systems to the Rochester Gas & Electric Corporation.	VII
Quality Assurance Review of Architect - Engineer's Bid Selection This procedure provides the basis and requirements for Quality Assurance Review of the Architect - Engineer's Bid Selection.	VII
Quality Assurance Review of Architect - Engineer's Bidders List This procedure provides the requirement for quality assurance review and approval of the Architect - Engineer's Bidders List.	VII

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Welding Procedures The purpose of this procedure is to identify the process by which welding procedures shall be designed.	IX
Welding Procedure Qualification The purpose of this procedure is to identify the process by which welding procedures shall be qualified.	IX
Welder Qualification The purpose of this procedure is to identify the process by which individual welders shall be qualified.	IX
Nondestructive Examination Procedures The purpose of this procedure is to outline the program by which nondestructive examination procedures shall be developed.	IX
Nondestructive Examination Procedure Qualification The purpose of this procedure is to outline the program by which nondestructive examination (NDE) procedures shall be qualified and approved.	IX
Heat Treating Procedures The purpose of this procedure is to define how heat treating procedures shall be established and implemented.	IX

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Quality Assurance Review and Analysis of Material Deficiency Report Summaries The purpose of this procedure is to provide the instruction necessary to implement the process for the review and analysis of Material Deficiency Report Summaries.	XV
Preparation, Review and Processing of R.G.&E. Corrective Action Reports by Quality Assurance The purpose of this procedure is to provide the instruction necessary to implement the methods for preparation, review, and processing of RG&E Corrective Action Reports by quality assurance.	XVI
Qualification of Auditing Personnel This procedure describes the requirements for qualification of auditing personnel.	XVIII
Audit Scheduling and Planning This procedure describes the methods for scheduling and planning internal and external audits.	XVIII
Performance of Quality Assurance Audits This procedure describes the methods for conducting the pre-audit conference, performing the audit and conducting the post-audit conference.	XVIII

Table IV.1-1 (cont'd)

Quality Assurance Procedures (cont'd)	Appendix B Criteria
Reporting and Follow-Up of Audit Findings This procedure describes the methods for reporting audit findings, following-up on audit reports and filing audit records.	XVIII
Conduct of Quality Assurance During and in the Follow-up of USAEC and Management Audits This procedure provides the instructions for audit preparation, audit performance and correction of nonconformances found by the auditors.	XVIII

Table IV.1-1 (cont'd.)

Quality Control Procedures	Appendix B Criteria
Ginna Q.A. Program Implementation This procedure establishes the guidelines for the implementation of the Quality Assurance Program at Ginna Station.	I
Training of Ginna Personnel To provide instructions regarding the indoctrination and training of Ginna Personnel about the Ginna Quality Assurance Program and implementing QC procedures.	I
Ginna Quality Control Organization To describe the organization responsible for implementing the requirements of the Quality Assurance requirements at Ginna Station.	II
Work Start Authorization To provide instructions which ensure that necessary preparation for plant modifications are complete prior to the start of work.	III
Procurement of Nuclear Materials, Parts, and Components To provide an outline for processing of orders for nuclear material, parts, and components, at Ginna	IV

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Station, and to assure that regulatory requirements, design bases, and other requirements necessary to ensure adequate quality are suitably included and referenced in the procurement documents.	
Review, Approval, Notification, and Transmittal of Supplier Design and QA/QC Requirements	IV
To provide written instruction for outlining the steps necessary for review, approval, notification, and transmittal of supplier procedures, design drawings, or any other requirements as specified in the procurement documents for nuclear material, parts, or components ordered for spare parts or maintenance purposes by plant personnel.	
Plant Quality Control Procedures	V
To describe the intent, scope, and format of the plant quality control procedures.	
Procedures for Performing Routine Maintenance, Repair, or Modification	V
To outline procedure requirements for routine maintenance, repair, or modification activities on safety class A and B systems, equipment, or structures.	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Plant Operating Procedures	V
To outline Quality Assurance requirements to be included in plant operating procedures which are used to direct operating, test, and refueling activities on safety Class A and B structures, systems, or equipment.	
Issuance Control of Procedures Used For the Operation of the Plant	VI
This procedure establishes the method by which procedures and check off lists used in the operation of the plant are to be controlled.	
Document Control for Procedure Changes	VI
This procedure describes the method by which procedures described in reference 2.3 to be revised shall be controlled.	
Document Control at Ginna	VI
To define those non-procurement documents requiring control at Ginna and the method by which they shall be controlled.	
Drawing Changes at Ginna	VI
To define the responsibilities and to provide instructions for ensuring that existing piping and	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
circuit drawings are kept current and updated to always reflect the "As built" condition of the plant following modifications to systems and equipment.	
Receiving Inspection of Purchased Material	VII
To define the activities and responsibilities necessary for properly receiving nuclear materials and inspecting them prior to acceptance for use.	
Control of Purchased Material, Equipment, and Services	VIII
To outline the program for control of material, equipment, and services purchased through contractors.	
Control of Materials, Parts, and Components	VIII
To establish the system for effective control of material, parts, or components from receipt at Ginna through installation or use.	
Identification and Marking of Material	VIII
To establish an outline for identification and marking of material to maintain quality and traceability through the life of the material.	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Control of Welding The purpose of this procedure is to establish the program for effective control of qualified personnel and procedures pertaining to welding.	IX
Issue, Control, and Storage of Weld Consumables To provide instructions for issue, control, and storage of weld consumables.	IX
Welding Equipment Performance Verification To outline the program for periodic performance verification of equipment used on special processes.	IX
Inspection Activities at Ginna To establish guide lines for the activities requiring inspectors, source of inspectors, and qualifications of inspectors.	X
Inspector Qualification and Responsibilities To establish requirements for those designated to perform inspection activities at Ginna.	X

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Test Procedure Requirements To outline requirements for the procedures which are performed to verify the correct operability of safety related equipment or structures.	XI
Performance of Tests To establish requirements for performing tests to include, but not be limited to, surveillance testing, special tests, post maintenance testing, physics testing, and testing following modification or significant changes in operating procedures.	XI
Documentation, Evaluation and Disposition of Test Results To describe the requirements for accumulating, documenting, evaluating, and dispositioning of results of all tests.	XI
Test Personnel Requirements To establish requirements for personnel designated to perform and/or assist in the conductance of tests.	XI
Calibration and Control of Test Instruments Used For Calibration To provide guidelines for test instrument calibration and control which satisfy the requirements of the	XII

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Quality Assurance Manual.	
Calibration and Control of Maintenance Measuring Tools and Equipment	XII
To provide guidelines for calibration and control of measuring tools and equipment used by maintenance to perform critical maintenance measurement.	
Calibration and Control of Quality Control Measuring Tools	XII
To outline calibration and control instructions for inspection measuring tools used by quality control to determine the reject or accept status of parts and components.	
Handling, Storage, and Shipping	XIII
To outline the plan for control of handling, storage, shipping, and preservation of material to prevent damage, deterioration, or loss from on-site delivery through installation.	
Material Handling Equipment	XIII
To outline the requirements for ensuring that material handling equipment remains in good condition.	

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Work, Inspection, Test Status Control as Related to Maintenance, Repair, Modification, or Refueling To establish work inspection or test status sheets for indicating the inspection and test status of components and systems involved in maintenance, repair, or modification.	XIV
Systems or Equipment Operating and Test Status Control Indicators To define the system for indicating the operating status of structures, systems, and components to prevent their inadvertent operation during maintenance, repair, modification, or test.	XIV
Control and Disposition of Deficient Materials To outline the necessary steps for effective control and disposition of non-conforming materials, parts, and components.	XV
Issue of Material Deficiency Reports To establish an outline for issuing and processing Material Deficiency Reports.	XV

Table IV.1-1 (cont'd.)

Quality Control Procedures (cont'd.)	Appendix B Criteria
Quality Deficiencies and Corrective Action To provide instructions for identifying, reporting, and correcting conditions adverse to quality.	
Control of Quality Assurance Records at Ginna To outline the procedure for control of records and documents to be retained.	XVII
Processing of New Records To detail the processing steps required of new records from their receipt in Central Records until final placement in their storage location.	XVII
Record Storage Facility and Equipment To provide a description of the record storage facilities and equipment requirements.	XVII
Routine Surveillance To provide instructions for Quality Control Surveillance of plant activities covered by the quality assurance program.	XVIII
Correction of Audit Deficiencies To provide instructions to be used for correcting audit deficiencies at Ginna.	XVIII

Table IV.1-1 (cont'd.)

Engineering Procedures	Appendix B Criteria
Engineering Implementation of the Quality Program The purpose of this procedure is to establish the Engineering Procedures Manual for the Rochester Gas and Electric Company to assure safe and reliable operation of a nuclear plant. The manual is established to assure meeting the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants" and the requirements of the Rochester Gas and Electric Quality Assurance Manual.	I
Training This procedure explains the requirements for the training of engineering personnel in the use of the Engineering Procedures Manual.	I
Engineering Department Organization and Responsibilities This procedure describes the Engineering Department Organization and defines its responsibilities for the design of safety related components, structures and systems.	II
Design Criteria This procedure defines the criteria to be considered in the design of modifications to a nuclear plant.	III

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
It establishes the requirements for documentation and review of these criteria.	
Design Analysis & Calculations	III
This procedure defines the requirements for controlling the preparation and documentation of design analyses and calculations.	
Engineering Drawings	III
This procedure establishes the requirements for the preparation and revision of Engineering Drawings.	
Engineering Specifications	III
This procedure defines the requirement for specifications and requirements documents needed to assure that all safety related structures, components, and systems are purchased, constructed, inspected and tested in accordance with applicable codes and standards and the provisions of 10CFR50, Appendix B. The procedure establishes the content and format of the documents.	
Design Control and Review	III
This procedure defines the activities required to assure adequate control of design modifications and the requirements for design verification and review.	

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
Purchase Requisitions This procedure describes the actions required of Engineering personnel to purchase material related to quality or safety of a nuclear power plant.	IV
Engineering Procedures The purpose of this procedure is to establish the requirements for Engineering instructions, procedures and drawings needed to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the responsibilities for preparing and approving the Engineering procedures manual, establishes the interfaces between sections of the manual and the manuals of other departments and provides direction for the preparation of the Engineering procedures.	V
Fabrication and Construction Specifications This procedure describes the requirements for documentation of the interpretation of engineering drawings and specifications into work instructions to permit plant operations to properly make modifications to the nuclear plant.	V

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)	Appendix B Criteria
Control and Issuance of Engineering Documents This procedure establishes the requirements for the control and issuance of engineering drawings, specifications, requirements documents, and work instructions. It establishes the numbering system, the control of originals, approvals, distribution, and revisions for both Rochester Gas and Electric and supplier originated drawings.	VI
Supplier Evaluation This procedure defines the requirements for the evaluation of a supplier's engineering and manufacturing organization and his design and production capabilities to be performed prior to subcontracting a safety or quality related effort to a new supplier.	VII
Review of Test Results The purpose of this procedure is to establish the requirements for the review and evaluation of test results to implement the requirements of Section 11 of the Rochester Gas and Electric Quality Assurance Manual.	XI
Quality Control Deficiency Reporting This procedure establishes the requirements for	XVI

Table IV.1-1 (cont'd.)

Engineering Procedures (cont'd.)

	Appendix B Criteria
evaluating and answering Quality Control Deficiency Reports which are related to design deficiencies.	
Engineering Records This procedure establishes the requirements for the storage of all Engineering Department drawings, specifications, requirements documents and supplier documents for all safety related components, structures, and systems controlled by the Rochester Gas and Electric Quality Assurance Manual.	XVII
Audit Requirements The purpose of this procedure is to describe the responsibilities of the Engineering Department before, during, and after an audit.	XVIII

Purchasing Procedures

Purchasing Implementation of the Quality Program The purpose of this procedure is to establish the Purchasing Procedures for the Rochester Gas and Electric Company to assure safe and reliable operation of a nuclear plant. The manual is established to assure meeting the requirements of	I

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
Title 10 of the Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants" and the requirements of the Rochester Gas and Electric Quality Assurance Manual.	
Training of Purchasing Personnel	I
This procedure defines the requirements for the training of Purchasing Department personnel in the use of the Purchasing Procedures Manual.	
Purchasing Department Organization and Responsibilities	II
This procedure describes the Purchasing Department organization and its responsibilities for the procurement of safety related materials, components, structures, and systems.	
Preparation, Review, Approval and Issuance of Purchase Orders and Change Orders	IV
This procedure establishes the procedure for processing a Purchase Order upon receipt of a Purchase Requisition.	
Purchasing Procedures	V
The purpose of this procedure is to establish the requirement for purchasing instructions and	

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
procedures needed to implement the Rochester Gas and Electric Quality Assurance Manual. It defines the responsibilities for preparing and approving the Purchasing Procedures Manual, establishes the interfaces between sections of the manual and the manuals of other departments and provides direction for the preparation of the purchasing procedures.	
Control and Issuance of Purchasing Procedures	VI
This procedure establishes the methods for the development, maintenance, control, and issuance of the Purchasing Procedures Manual.	
Supplier Qualification, Surveillance, and Control	VII
This procedure describes the requirements for qualifying suppliers, maintaining records of approved suppliers, and evaluating their performance during the manufacturing stage to assure conformance to specification requirements. Suppliers shall be evaluated prior to issuance of a purchase order to insure that they are capable of manufacturing and delivering a product conforming to the applicable purchase specifications.	
Qualified Suppliers List	VII
This procedure describes the method to be used for the development and maintenance of the Qualified Suppliers List.	

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
Material Deficiency Reports This procedure describes the actions to be taken by the Purchasing Department in processing Material Deficiency Reports which affect supplier material.	XV
Quality Control Deficiency Reporting This procedure describes the actions to be taken by the Purchasing Department when supplier deficiencies which require corrective action are discovered.	XVI
Purchasing Records This procedure establishes the requirements for the storage of all Purchasing Department records for safety related components, structures, and systems as controlled by the Rochester Gas and Electric Quality Assurance Manual.	XVII
Audit Requirements The purpose of this procedure is to describe the responsibilities of the Purchasing Department during an internal audit.	XVIII

Table IV.1-1 (cont'd.)

Purchasing Procedures (cont'd.)	Appendix B Criteria
Material Deficiency Reports This procedure describes the actions to be taken by the Purchasing Department in processing Material Deficiency Reports which affect supplier material.	XV
Quality Control Deficiency Reporting This procedure describes the actions to be taken by the Purchasing Department when supplier deficiencies which require corrective action are discovered.	XVI
Purchasing Records This procedure establishes the requirements for the storage of all Purchasing Department records for safety related components, structures, and systems as controlled by the Rochester Gas and Electric Quality Assurance Manual.	XVII
Audit Requirements The purpose of this procedure is to describe the responsibilities of the Purchasing Department during an internal audit.	XVIII

TABLE IV.4-1

Procurement Document Requirements

Items to be considered for inclusion in procurement documents include:

1. Detailed statement of the work to be performed.
2. Complete identification of the goods or services to be provided.
3. Identification of the safety class of the item.
4. Quantitative and qualitative technical and functional requirements and acceptance criteria.
5. Applicable regulatory codes and standards.
6. Identification of applicable drawings, specifications, instructions, and procedures.
7. Identification of all test and inspection requirements.
8. Listing of documentation required to be submitted.
9. Retention and submittal requirements of supplier quality assurance records, such as special process and test procedures, materials records, calculations and analyses.
10. Applicable portions of 10CFR50, Appendix B, special quality assurance program requirements, and requirements for supplier procurement documentation.
11. Access rights for visits and/or audits.
12. Witness and hold point requirements.
13. Interfaces between RG&E and supplier organizations.
14. Identification of special requirements or responsibilities for design, fabrication, cleaning, identification, erecting, packaging, handling, shipping and storage (including extended field storage).
15. Requirements for reporting and approving disposition of nonconformances.
16. Requirements for control of special processes.
17. Requirement for the supplier to provide a list of his exceptions to the specification.
18. Control of measuring and test equipment.

TABLE IV.18-1

Audit List

Functional Organization	Activities Audited
Engineering	
	Indoctrination and Training
	Design Control
	Procurement Document Control
	Document Control
	Control of Special Processes
	Records
2	Procurement Control
Purchasing	
	Indoctrination and Training
	Procurement Document Control
	Records
2	Procurement Control
Ginna Station	
	Indoctrination and Training
	Modification
	Maintenance and Repair
	Procurement Control
	Document Control
	In-Service Inspection
	Surveillance Testing
2	Handling, Storage, and Shipping
	Operations
	Refueling
	Control of Measuring and Test Equipment
	Health Physics and Chemistry
	Operator Training and Retraining
	Security
	Emergency Plan
	Inspection and Surveillance Records

ROCHESTER GAS & ELECTRIC CORP.
GINNA STATION
MANAGEMENT ORGANIZATION

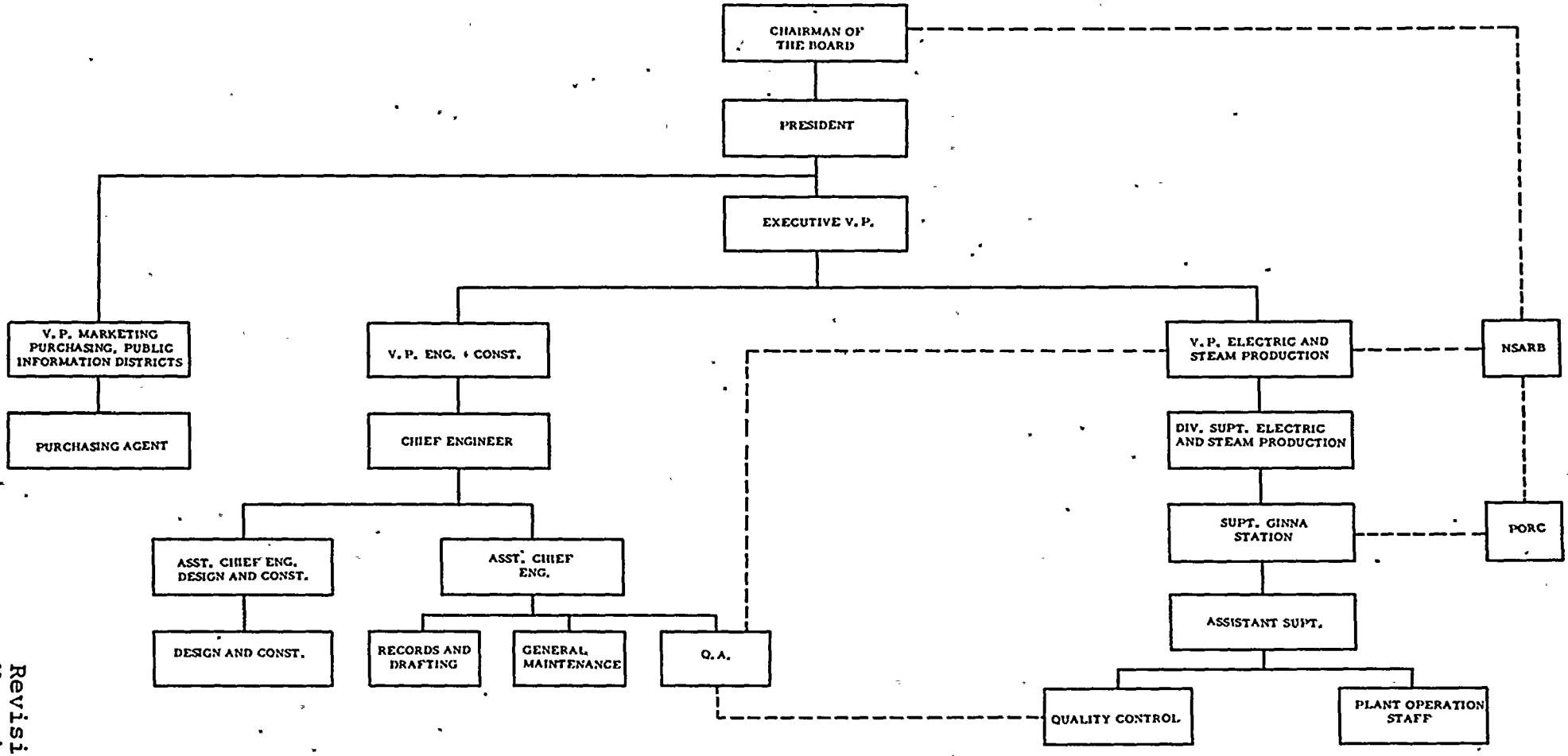


FIGURE IV.2-1
NOVEMBER 1, 1974

Revision 2
November 1, 1974

ROCHESTER GAS AND ELECTRIC CORPORATION
QUALITY ASSURANCE ORGANIZATION

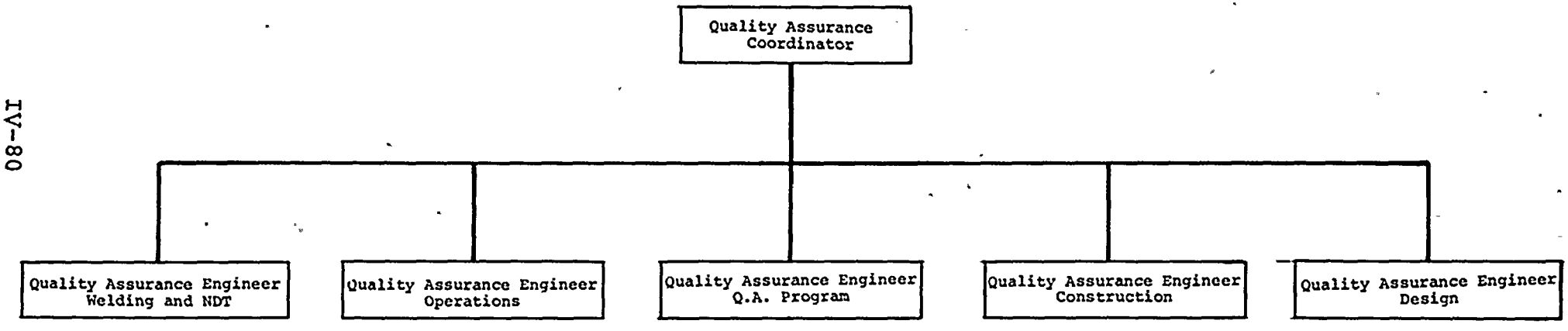


Figure IV.2-2
November 1, 1974

ROCHESTER GAS AND ELECTRIC CORPORATION
GINNA STATION ORGANIZATION

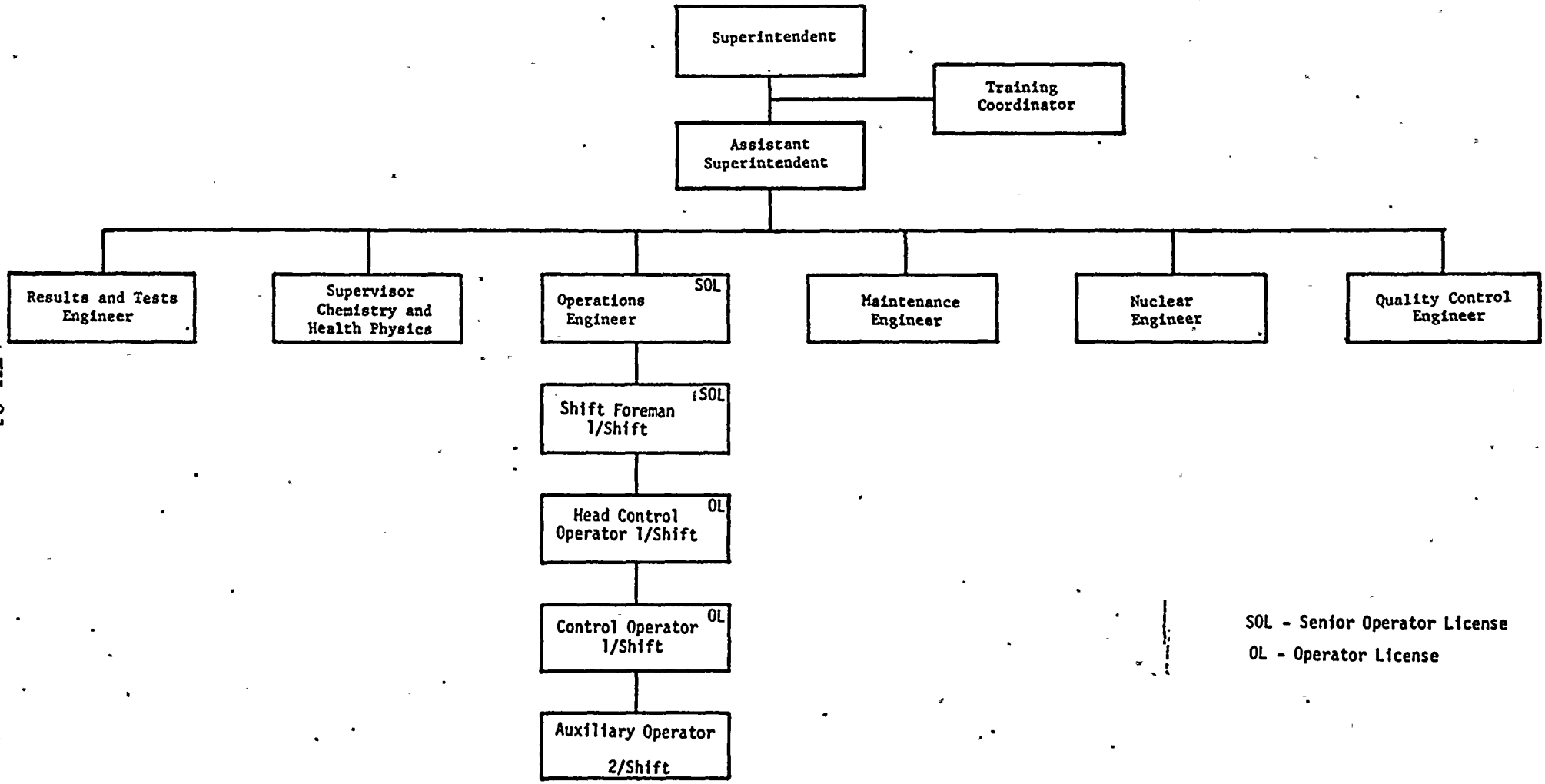


Figure IV. 2-3
July 1, 1974

GINNA STATION

QUALITY CONTROL ORGANIZATION

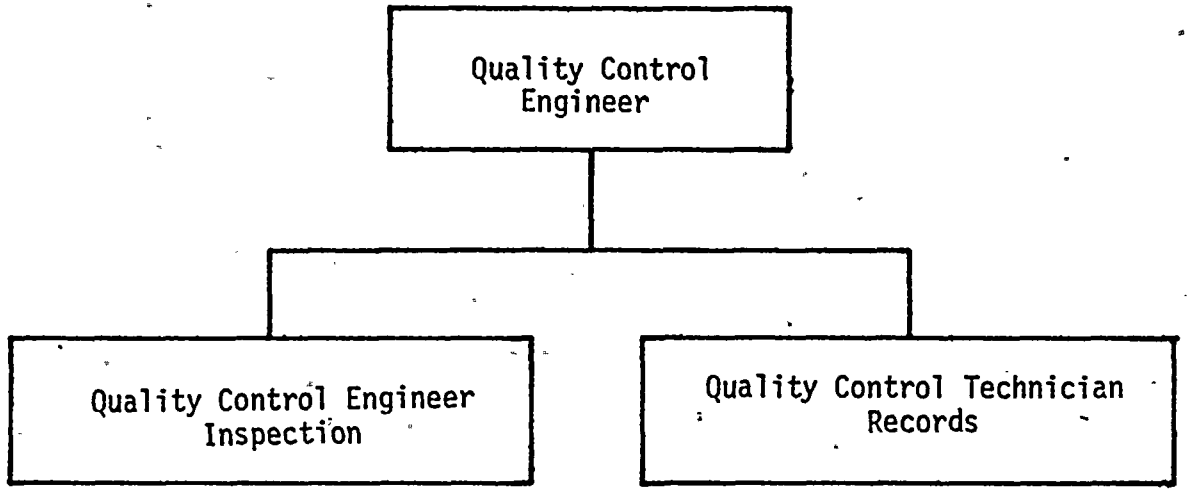


Figure IV.2-4

July 1, 1974

Rochester Gas and Electric Corporation
Engineering Department Organization

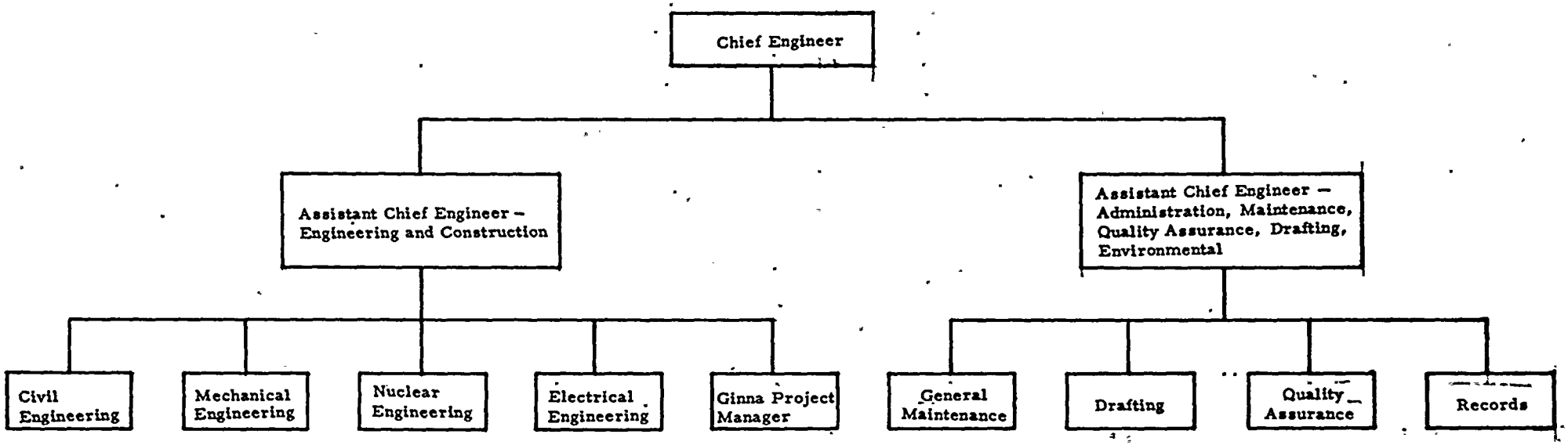
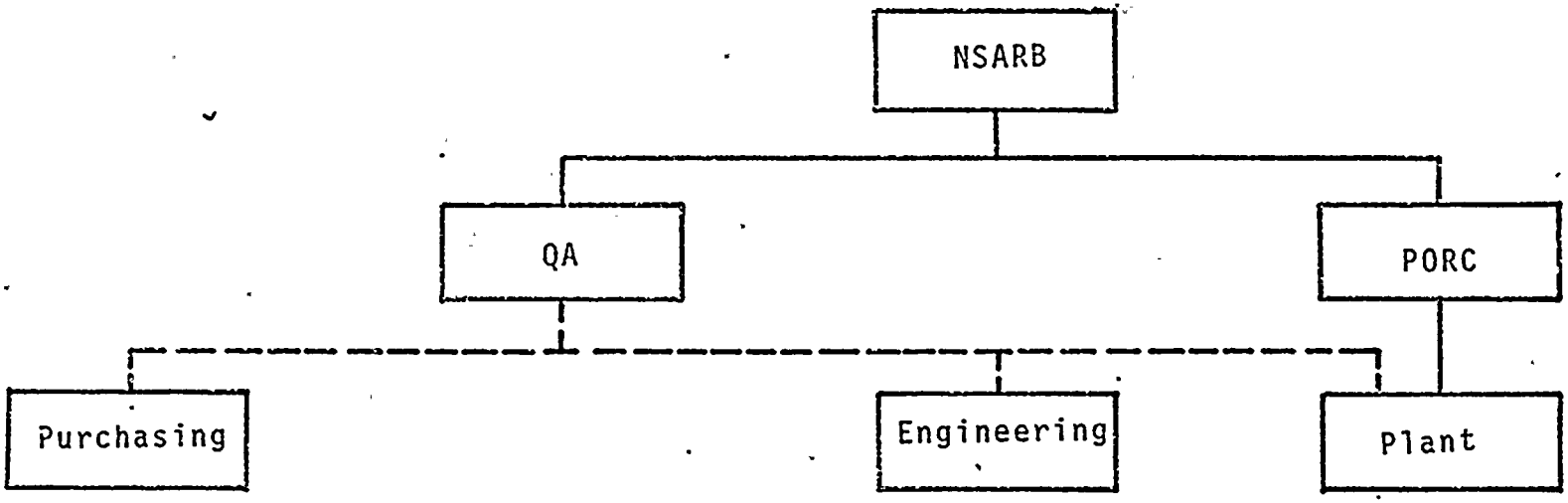


Figure IV.2-5
November 1, 1974

Rochester Gas and Electric Corporation

Ginna Station

Review and Audits Functions



——————— Review

— — — — — Audit

Figure IV. 2-6
July 1, 1974