

OCT 23 1973

Docket Nos. 50-237 and 50-249

Commonwealth Edison Company
ATTN: Mr. J. S. Abel
Nuclear Licensing Administrator -
Boiling Water Reactors
Post Office Box 767
Chicago, Illinois 60690

Change No. 22
License No. DPR-19
Change No. 13
License No. DPR-25

Gentlemen:

In separate letters dated July 31, 1973, and August 1, 1973, you proposed identical changes to the Technical Specifications for Dresden Units 2 and 3, respectively, concerning administrative controls, the radiological monitoring program, and liquid poison solution. Your letter of August 1 also included a request for a change concerning control rod scram reactivity for Dresden 3. We have not completed our review of the scram reactivity considerations; therefore, this change applies only to administrative controls, the radiological monitoring program, and liquid poison solution. Scram reactivity will be addressed separately at a later date.

The proposed administrative control specifications are based on those approved for Quad-Cities in May 1973. During review of these changes, we informed your staff that modifications were necessary to continue present requirements for special reports and to require a larger minimum staff. These modifications have been made.

The revised radiological monitoring program involves changes in location of several sampling stations. We have reviewed the proposed revisions and concluded that the proposed relocations will result in providing at least equivalent or better information on activity releases than is provided from sampling at the present locations.

The change concerning liquid poison corrects a typographical error.

We have concluded that the proposed changes, as modified, do not present significant hazards considerations and there is reasonable assurance that the health and safety of the public will not be endangered.

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OCT 23 1973

Pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Facility Operating Licenses Nos. DPR-19 and DPR-25 are hereby changed by replacing pages 69, 70, 138, 142, 142B, and 158-185 with the revised pages appended hereto.

In accordance with your request of September 7, 1973, the revised pages 158-185 concerning Administrative Controls are to be effective as of November 1, 1973. We are handling the issuance of similar Technical Specifications for Dresden Unit 1 in a separate letter.

Sincerely,

Original Signed by
D. J. Skovholt

Donald J. Skovholt
Assistant Director for
Operating Reactors
Directorate of Licensing

Enclosures:

Revised pages 69, 70, 138, 142,
142B, and 158-185

cc w/enclosures:

John W. Rowe, Esquire
Isham, Lincoln & Beale
Counselors at Law
One First National Plaza
Chicago, Illinois 60670

Morris Public Library

cc w/enclosures and cy of CECO
ltrs dtd 7/31, 8/1, and 9/7/73:

Mr. Hans L. Hamester
ATTN: Joan Sause
Office of Radiation Programs
Environmental Protection Agency
Room 647A East Tower, Waterside Mall
401 M Street, S. W.
Washington, D. C. 20460

Mr. Gary Williams
Federal Activities Branch
Environmental Protection Agency
1 N. Wacker Drive, Room 822
Chicago, Illinois 60606

Distribution

- ✓ Pocket File
- AEC PDR
- Local PDR
- RP Reading
- Branch Reading
- JRBuchanan, ORNL
- TBAbernathy, DTIE
- VMoore, L: BWR
- DJ Skovholt, L: OR
- TJ Carter, L: OR
- ACRS (16)
- RO (3)
- OGC
- RVollmer, L: QA
- DLZiemann, L: ORB #2
- RDSilver, L: ORB #2
- RMDiggs, L: ORB #2
- NDube, L: OPS
- MJinks, DRA (8)
- BScharf, DRA (15)
- SKari, L: RP
- PCoolins, L: OLB

OFFICE ▶	Chicago, Illinois 60606	L:ORB #2	L:ORB #2	L:ORB #2	L:OR
NAME ▶		X7403 RDSilver: sjh	RMDiggs	DLZiemann	DJ Skovholt
DATE ▶		10/17/73	10/19/73	10/19/73	10/22/73

10/22/73

SODIUM PENTABORATE SOLUTION (Weight Percent $\text{Na}_2\text{B}_{10}\text{O}_{16} \cdot 10\text{H}_2\text{O}$)

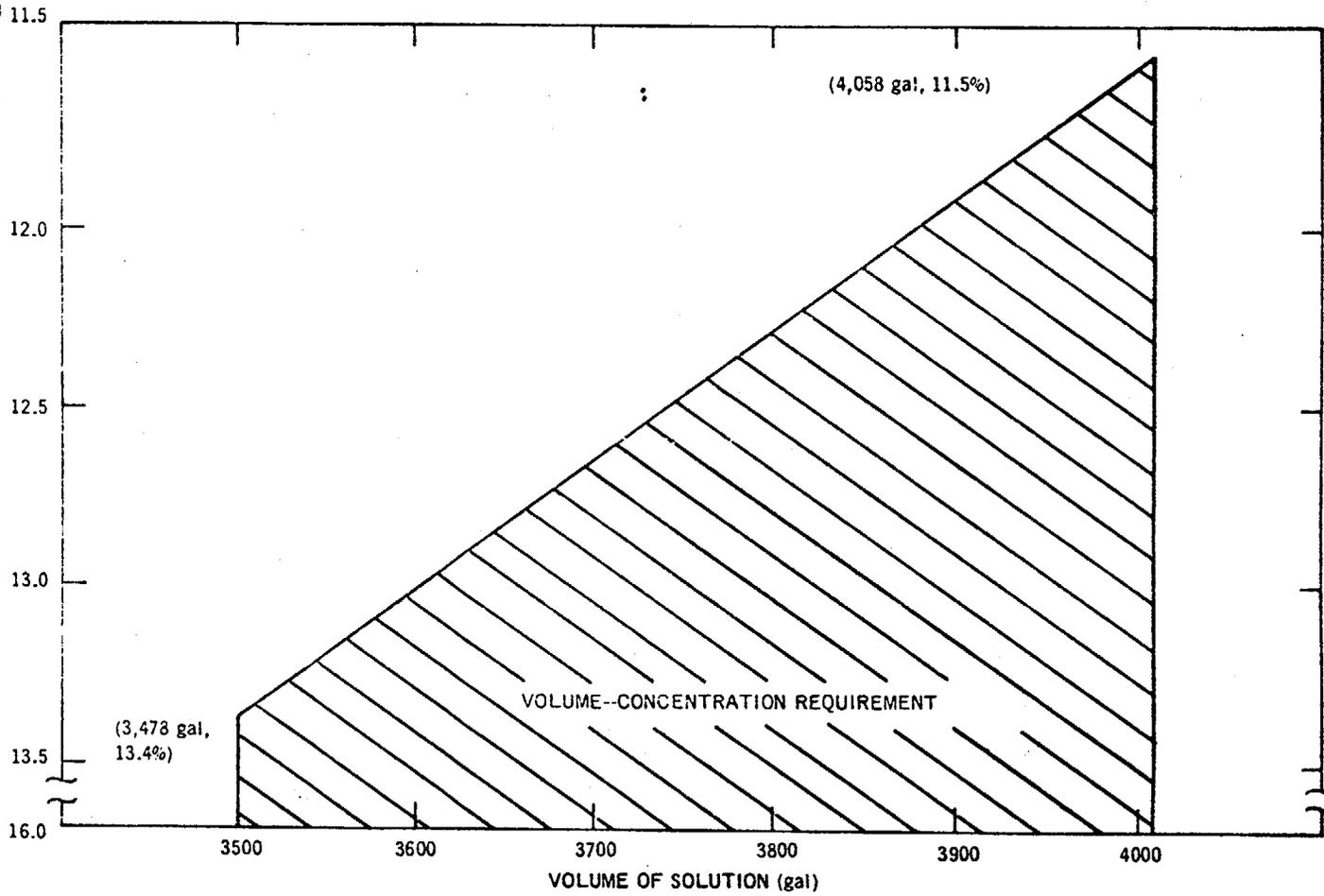


Figure 3.4.1 Standby Liquid Control Solution Requirements

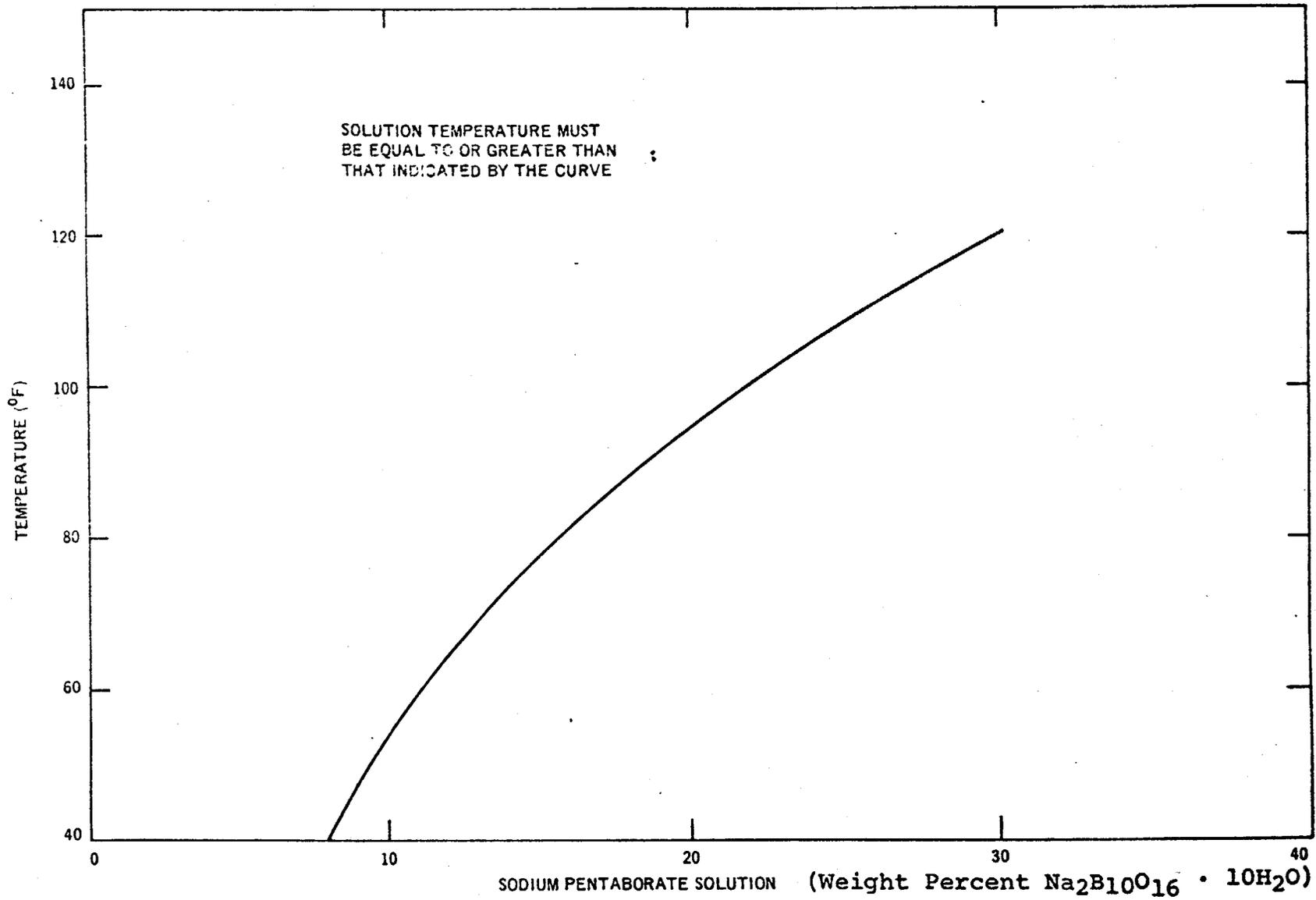


Figure 3.4.2 Sodium Pentaborate Solution Temperature Requirements

TABLE 4.8.1

SAMPLE COLLECTION AND ANALYSIS
DRESDEN NUCLEAR POWER STATION - ENVIRONMENTAL MONITORING PROGRAM

Sample Media	Type of Analysis	Collection Sites	Collection Frequency	Collection Dates
1. a. Airborne Particulate (AP)	Beta Gamma Scans (Special)	Elwood J-15 Joliet J-48 Wilmington 464 Collins Road 0773 Morris 016 Lisbon 024 Coal City J-68 Bennett Farm BE Prairie Park PP Channabon CH Pheasant Trail PT Goose Lake Vil. 0672 Minoocka J-27 Clay Products J-21 On -Site Stations #1, #2, #3	Weekly	---
b. Airborne Screen (in addition to airborne particulate)	I-131	Same Locations as in 1. a.	Bi-Weekly	---
2. Gamma Background (Ion Chambers)	Gamma	Same Locations as Air Particulate Stations	Weekly	---

TABLE 4.8.1

SAMPLE COLLECTION AND ANALYSIS
DRESDEN NUCLEAR POWER STATION - ENVIRONMENTAL MONITORING PROGRAM

Sample Media	Type of Analysis	Collection Sites	Collection Frequency	Collection Dates
	Beta, Tritium, Gamma Scans (Special)	Dresden Well #1 (W1) Dresden Well #2 (W2)	Quarterly	Jan.-Apr.- Jul.-Oct. Feb.-May- Aug.-Nov.
	Beta Gamma Scans (Special)	Drinking Fountain - Unit #1 (DF-1)		
	11. Milk (M)	a.131-I b.89Sr, 90Sr, 137Cs Elemental Calcium		Davidson (DA) and Filotto (F)
12. a. Fish b. Sediment c. Water	Beta, 89Sr, 90Sr Gamma Scan	Dresden Lock and Dam Pool (Routine) Brandon Lock and Dam Pool and County Line Bridge (Special)	Semi-Annual	---
d. Aquatic Plants	Beta, 89Sr, 90Sr, Gamma Scan	Dresden Inlet and Discharge Canal (General Area)	Semi-Annual	---

6.0 ADMINISTRATIVE CONTROLS

6.1 Organization, Review, Investigation and Audit

- A. The Station Superintendent shall have overall full-time responsibility for safe operation of the facility. During periods when the Station Superintendent is unavailable, he shall designate this responsibility to the Assistant Station Superintendent.
- B. The portion of the corporate management which relates to the operation of this station is shown in Figure 6.1.1.
- C. The normal functional organization for operation of the station shall be as shown in Figure 6.1.2. The shift manning for the station shall be as shown in Figure 6.1.3.
- D. Qualifications of the Dresden plant management and operating staff shall meet minimum acceptable levels as described in ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel", dated March 8, 1971.
- E. Retraining and replacement training of Station personnel shall be in accordance with ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel", dated March 8, 1971.
- F. Retraining shall be conducted at intervals not exceeding two years.

- G. The Review and Investigative Function and the Audit Function for facility operations shall be constituted and have the responsibilities and authorities outlined below:

- 1. The Offsite Review and Investigative Function and Audit Function shall be supervised by the Superintendent of Nuclear and Fossil Systems.

- a. Offsite Review and Investigative Function

The Superintendent of Nuclear and Fossil Systems shall: (i) provide direction for the review and investigative function and appoint a senior participant to provide appropriate direction, (ii) select each participant for this function, (iii) review and approve the findings and recommendations developed by personnel performing the review and investigative function, and (iv) report all findings of violations and provide recommendations to the Station Superintendent, Superintendent of Production Division "A", Manager of Production and that position of corporate management that has responsibility for nuclear activities.

The responsibilities of the personnel performing this function are stated below:

CORPORATE ORGANIZATION

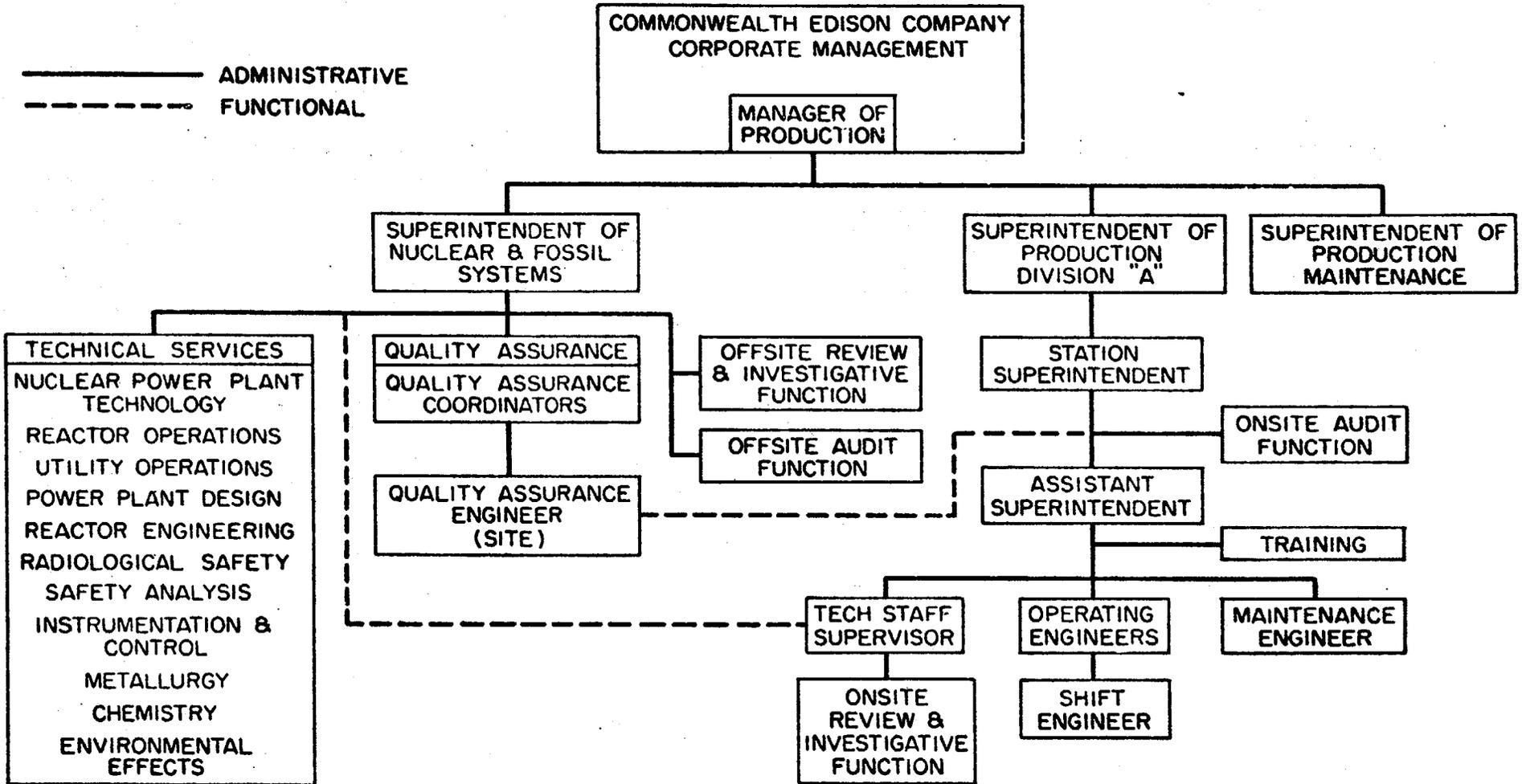
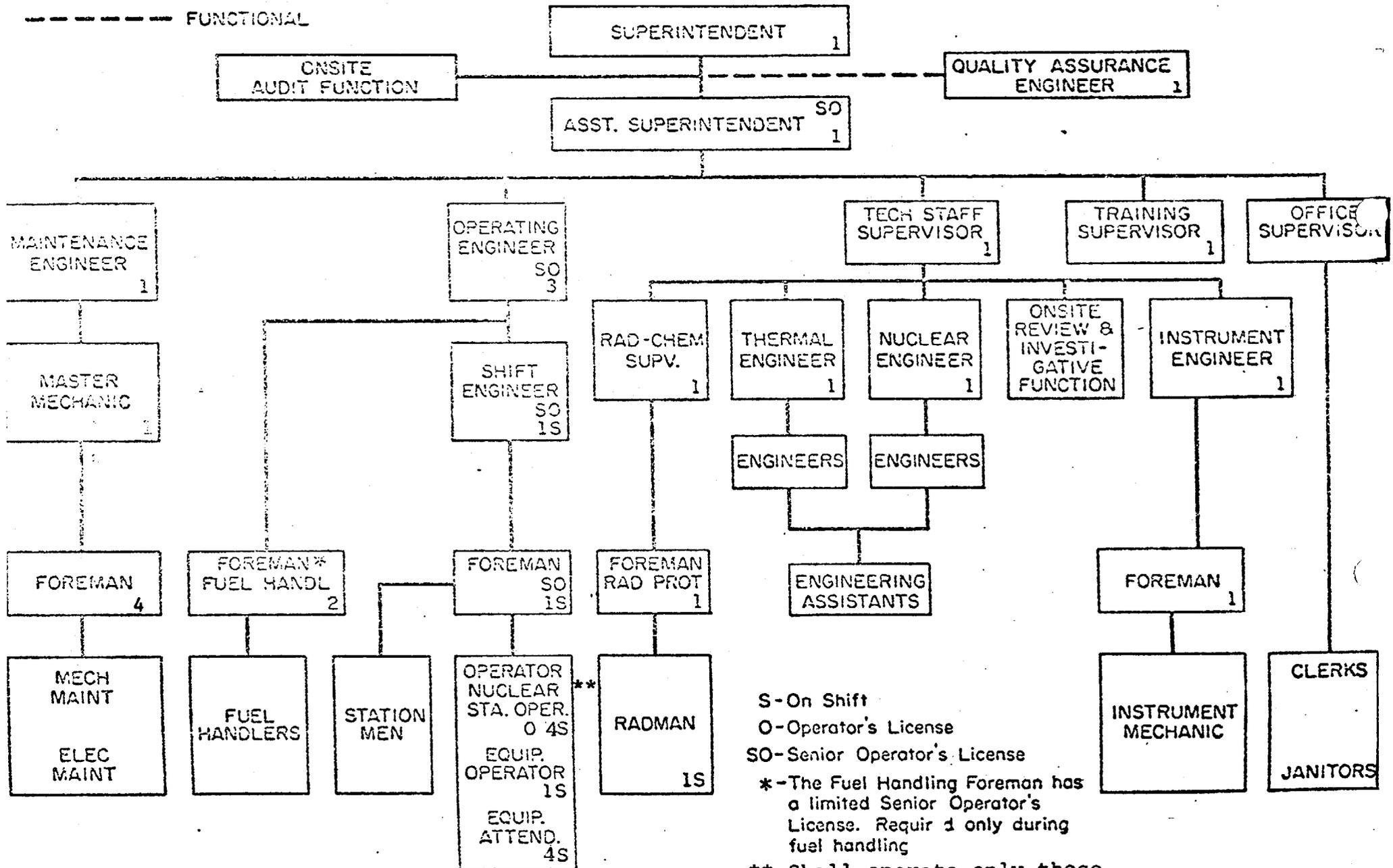


FIGURE 6.1.1

STATION ORGANIZATION CHART
(THREE UNITS AT HOT SHUTDOWN OR POWER)

----- ADMINISTRATIVE
- - - - - FUNCTIONAL



S-On Shift
O-Operator's License
SO-Senior Operator's License

*-The Fuel Handling Foreman has a limited Senior Operator's License. Required only during fuel handling

**-Shall operate only those units for which he is licensed.

FIGURE 6.1.2

TABLE 6.1.1

MINIMUM SHIFT MANNING CHART

Condition of one Unit	Condition of		No. of Men in Each Position			
	Second Unit	Third Unit	LSO*	LO*	Non-Lic	Rad Men
COLD SHUTDOWN	Cold Shutdown	Cold Shutdown	1	3	5	1
	Cold Shutdown	Refuel	1	3	5	1
	Cold Shutdown	Above cold Shutdown	1	3	5	1
	Refuel	Refuel	2	3	5	1
	Refuel	Above Cold Shutdown	2	3	5	1
	Above Cold Shutdown	Above Cold Shutdown	2	3	5	1
REFUEL	Refuel	Refuel	2	4	5	1
	Refuel	Above Cold Shutdown	2	4	5	1
	Above Cold Shutdown	Above Cold Shutdown	2	4	5	1
ABOVE COLD SHUTDOWN	Above Cold Shutdown	Above Cold Shutdown	3	4	5	1

LSO - Licensed Senior Operator

LO - Licensed Operator

NON-LIC - Equipment Operators and Equipment Attendants

RAD MEN - Radiation Protection Men

* - Shall not operate units on which they are not licensed.

6.0 ADMINISTRATIVE CONTROLS

- (1) Review and report findings and recommendations regarding proposed changes to the operating license of each unit, including technical specifications, analyses, and reports concerning unreviewed safety questions, and the Safety Analysis Report for submittal to the AEC.
 - (2) Review and report findings and recommendations regarding reports to be submitted to the AEC of proposed modifications to plant systems or components involving a proposed revision to the technical specifications or an unreviewed safety question.
 - (3) Advise in matters considered to involve unreviewed safety questions or changes to the license, technical specifications, or the Safety Analysis Report.
 - (4) Investigate reported instances of abnormal occurrences and violations of technical specifications, including review of recommendations to prevent a reoccurrence. Review and report recommendations regarding abnormal occurrence reports submitted to the AEC.
 - (5) Review and report findings and recommendations regarding all changes to the Generating Stations Emergency Plan prior to implementation of such change.
 - (6) Review and report findings and recommendations regarding all items referred by the Technical Staff Supervisor, Station Superintendent, and Superintendent of Production Division. "A".
- b. Offsite Audit Function
- The Offsite Audit Function shall be directly supervised by the Superintendent of Nuclear and Fossil Systems or his designated alternate. He shall appoint the auditors and approve the findings and reports of each audit. The audit functions are itemized below:
- (1) Perform, at least semiannually, audits of station operations including records, logs, reports, tests, procedures, and changes thereto which may affect safety or radiation exposure and verify that operations comply with the terms, conditions, and intent of licenses or permits and other applicable regulations.
 - (2) Approve, review, and audit the system of onsite audit of the station operations.

- (3) Report all findings of violations and recommendations and results of each audit to the Station Superintendent, the Superintendent of Production Division "A", Manager of Production, and to that position of corporate executive management that has responsibility for nuclear activities.

c. Authority

The Superintendent of Nuclear and Fossil Systems reports to the Manager of Production. He has the authority to order unit shutdown or request any other action which he deems necessary to avoid unsafe plant conditions.

d. Records

- (1) Reviews, audits, and recommendations shall be documented with copies to the Superintendent of Production Division "A", and the Station Superintendent.
- (2) Copies of documentation, reports, and correspondence shall be kept on file in the Superintendent of Nuclear and Fossil Systems Office and at the station.

e. Procedure

Written administrative procedures shall be prepared and maintained for the functions

described in Specifications 6.1.G.1.a and b. These procedures shall cover the following:

- (1) Content and method of submission of presentations to the Superintendent of Nuclear and Fossil Systems.
- (2) Use of committees and consultants.
- (3) Review and approval.
- (4) Detailed listing of items to be reviewed.
- (5) Review and approval of procedures and checklists to be used for each audit of the facilities.
- (6) Method of (a) appointing personnel, (b) performing reviews, investigations and audits, (c) reporting findings and recommendations of reviews, investigations and audits, (d) approving reports, and (e) distributing reports.
- (7) Determining satisfactory completion of action required based on approved findings and recommendations reported by personnel performing the review and investigative function and the auditing function.

f. Personnel

(1) The persons, including consultants, performing the review and investigative function and the audit function, in addition to the Superintendent of Nuclear and Fossil Systems, shall have expertise in one or more of the following disciplines as appropriate for the subject or subjects being reviewed, investigated, or audited:

- (a) nuclear power plant technology
- (b) reactor operations
- (c) utility operations
- (d) power plant design
- (e) reactor engineering
- (f) radiological safety
- (g) reactor safety analysis
- (h) instrumentation and control
- (i) metallurgy

and any other appropriate disciplines required by unique characteristics of the facility.

(2) Individuals performing the Review and Investigative Function and the Audit Function shall possess a minimum formal training and experience as listed below for each discipline. The audit function

shall be performed by personnel qualified as described for and representing at least the disciplines in (a), (b), (d), (f), and (g) below:

(a) Nuclear Power Plant Technology

Graduate in engineering or a scientific discipline with 5 years' experience in technical or technical management positions relating to nuclear power plant design and/or operation.

(b) Reactor Operations

Graduate in engineering or a scientific discipline with 5 years' experience in reactor operations of which at least 3 years have been in supervision or management of nuclear power plant operation.

(c) Utility Operations

Graduate in engineering or a scientific discipline with at least 5 years' experience in supervision of utility operations.

(d) Power Plant Design

Graduate in engineering or a scientific discipline with at least 5 years of experience in technical or technical management positions involving nuclear power plant design of which at least 3 years are related to the system under audit or investigation.

(e) Reactor Engineering

Graduate in engineering or a scientific discipline with at least one year additional academic work in nuclear engineering and/or nuclear physics relating to nuclear power reactors. In addition, at least 5 years of experience in technical or technical management positions performing nuclear power plant engineering or technical support for operating nuclear power plants are required.

(f) Radiological Safety

Graduate in engineering or a scientific discipline and 5 years of experience as a technical member or supervisor of a radiation control organization of which at least 2 years have been directly associated with an operating nuclear power plant.

(g) Reactor Safety Analysis

Graduate in engineering or a scientific discipline with at least 5 years of experience in nuclear engineering of which at least 3 years have been in technical or technical management positions that perform reactor safety analyses of nuclear power plants.

(h) Instrumentation and Control

Graduate in engineering or a scientific discipline with at least 5 years of experience in instrumentation and control design or operation of which at least 3 years have been in technical or technical management positions involving nuclear power plant instrumentation and controls.

(i) Metallurgy

Graduate in metallurgical engineering or in mechanical engineering with special training in metallurgy and at least 5 years' experience in technical or technical management positions in the metallurgical field including at least 3 years' experience related to nuclear power plants.

2. The Onsite Review and Investigative Function and Audit Function shall be supervised by the Station Superintendent.

a. Onsite Review and Investigative Function

The Station Superintendent shall: (i) provide direction for the Review and Investigative Function and appoint the Technical Staff Supervisor as a senior participant to provide appropriate direction, (ii) select each participant for this function, (iii) review and approve the findings and recommendations developed by personnel performing the Review and Investigative Function, (iv) report all findings of violations, and provide recommendations to the Superintendent of Production Division "A" and the Superintendent of Nuclear and Fossil Systems, and (v) submit to the Offsite Review and Investigative Function for concurrence those items described in Specifications 6.1.G.1.a which have been approved by the Onsite Review and Investigative Function.

The responsibilities of the personnel performing this function are stated below:

- (1) Review and report findings and recommendations regarding all station and company orders which affect operations.

- (2) Review and report findings and recommendations regarding all tests and experiments, proposed to be performed at the station, which could involve hazards not previously evaluated in the Safety Analysis Report or which require evaluation to determine whether or not they are within the technical specifications.
- (3) Review and report findings and recommendations regarding proposed changes to the Technical Specification, license, and Safety Analysis Report.
- (4) Review and report findings and recommendations regarding proposed modifications to plant systems or equipment.
- (5) Investigate reported instances of abnormal occurrences and violations of technical specifications and recommend corrective actions to prevent recurrences.
- (6) Review plant operation and maintenance logs to detect potential safety hazards.
- (7) Perform special reviews and investigations and render reports thereon as requested by the Superintendent of Production Division "A" and the Superintendent of Nuclear and Fossil Systems.

b. Onsite Audit Function

The Onsite Audit Function shall be directly supervised by the Station Superintendent. He shall appoint the auditors and approve the findings and reports of each audit. The audit functions are itemized below:

- (1) Make at least quarterly audits of station operation including the review of a representative sample of records, logs, reports, tests, procedures and changes thereto as well as other items which may affect nuclear safety and radiation exposure and verify that the station operation complies with the terms, conditions and intent of licenses or permits and other applicable regulations. All station documents discussed above and relating to the safe operation of the station shall be audited at least once each calendar year.
- (2) Report all findings of violations and recommendations and results of each audit to the Superintendent of Production Division "A" and the Superintendent of Nuclear and Fossil Systems.

c. Authority - The Technical Staff Supervisor is responsible to the Station Superintendent and shall make recommendations in all areas of review, investigation, audit, and quality assurance phases of plant maintenance, operation and administrative procedures relating to facility operations and shall have the authority to request the action necessary to ensure compliance with rules, regulations, and procedures when in his opinion such action is necessary. The Station Super-

intendent shall follow such recommendations or select a course of action that is more conservative regarding safe operation of the facility. All such disagreements shall be reported immediately to the Superintendents of Production Division "A" and Nuclear and Fossil Systems.

d. Records

- (1) Reports, reviews, investigations, audits, and recommendations shall be documented with copies to the Superintendents of Production Division "A", Nuclear and Fossil Systems, and the Station Superintendent.
- (2) Copies of all records and documentation shall be kept on file at the station.

e. Procedures - Written administrative procedures shall be prepared and maintained for conduct of the Onsite Review and Investigative Function and Audit Function. These procedures shall include the following:

- (1) Content and method of submission and presentation to the Station Superintendent, Superintendent of Production Division "A", and Superintendent of Nuclear and Fossil Systems.
- (2) Use of committees.
- (3) Review and approval
- (4) Detailed listing of items to be reviewed.

- (5) Procedures for administration of the Quality Assurance Program.
- (6) Assignment of responsibilities.

F. Personnel

- (1) The personnel performing the Onsite Review and Investigative Function and Audit Function, in addition to the Station Superintendent, shall consist of persons having expertise in:
 - (a) nuclear power plant technology
 - (b) reactor operations
 - (c) reactor engineering
 - (d) radiological and chemistry
 - (e) instrumentation and control
 - (f) mechanical and electric systems
- (2) Personnel performing the Onsite Review and Investigative Function and Audit Function shall meet minimum acceptable levels as described in ANSI N18.1.
- (3) The audits performed by the Onsite Audit Function shall be performed by personnel representing at any time no less than four of the technical disciplines in specification 6.1.G.2.f(1).

6.2 Plant Operating Procedures

- A. Detailed written procedures including applicable checkoff lists covering items listed below shall be prepared, approved, and adhered to:

- 1. Normal startup, operation, and shutdown of the reactor and other systems and components involving nuclear safety of the facility.
- 2. Refueling operations.
- 3. Actions to be taken to correct specific and foreseen potential malfunctions of systems or components including responses to alarms, suspected primary system leaks, and abnormal reactivity changes.
- 4. Emergency conditions involving potential or actual release of radioactivity - "Generating Stations Emergency Plan" and station emergency and abnormal procedures.
- 5. Instrumentation operation which could have an effect on the safety of the facility.
- 6. Preventive and corrective maintenance operations which could have an effect on the safety of the facility.
- 7. Surveillance and testing requirements.
- 8. Tests and experiments.
- 9. A procedure to ensure safe shutdown of the plant in the event of a flood designated as a Probable Maximum Flood (PMF).

- B. Radiation control procedures shall be maintained and made available to all station personnel. These procedures shall show permissible radiation exposure and shall be consistent with the requirements of 10 CFR 20. This radiation protection program shall be organized to meet the requirements of 10 CFR 20.

6.0 ADMINISTRATIVE CONTROLS

1. Pursuant to 10 CFR 20.103(c)(1) and (3), allowance can be made for the use of respiratory protective equipment in conjunction with activities authorized by the operating licenses for this plant in determining whether individuals in restricted areas are exposed to concentrations in excess of the limits specified in Appendix B, Table I, Column 1 of 10 CFR 20 subject to the following conditions and limitations:
 - a. The limits provided in Section 20.103(a) and (b) are not exceeded.
 - b. If the radioactive material is of such form that intake through the skin or other additional route is likely, individual exposures to radioactive material shall be controlled so that the radioactive content of any critical organ from all routes of intake averaged over 7 consecutive days does not exceed that which would result from inhaling such radioactive material for 40 hours at the pertinent concentration values provided in Appendix B, Table I, Column 1 of 10 CFR 20.
 - c. For radioactive materials designated "Sub" in the "Isotope" column of Appendix B, Table I, Column 1 of 10 CFR 20, the concentration value specified is based upon exposure to the material as an external radiation source. Individual exposures to these materials shall be accounted for as part of the limitation on individual dose in Paragraph 20.101. These materials

shall be subject to applicable process and other engineering controls.

2. In all operations in which adequate limitation of the inhalation of radioactive material by the use of process or other engineering controls is impracticable, the licensee may permit an individual in a restricted area to use respiratory protective equipment to limit the inhalation of airborne radioactive material provided:
 - a. The limits in Specification 6.2.B.1 are not exceeded.
 - b. Respiratory protective equipment is selected and used so that the peak concentrations of airborne radioactive material inhaled by an individual wearing the equipment does not exceed the pertinent concentration values specified in Appendix B, Table I, Column 1 of 10 CFR 20. For the purpose of this subparagraph, the concentration of radioactive material that is inhaled when respirators are worn may be determined by dividing the ambient airborne concentration by the protection factors in Table 6.2.1, appended to this specification, for the respiratory protective equipment worn. If the intake of radioactivity is later determined by other measurements to have been different from that initially estimated, the later quantity shall be used in evaluating the exposures.

6.0 ADMINISTRATIVE CONTROLS

- c. The licensee advises each respirator user that he may leave the area at any time for relief from respirator use in case of equipment malfunction, physical or psychological discomfort, or any other condition that might cause reduction in the protection afforded the wearer.
- d. The licensee maintains a respiratory protective program adequate to assure that the requirements above are met and incorporates practices for respiratory protection consistent with those recommended by the American National Standards Institute (ANSI-Z88.2-1969). Such a program shall include:
 - (1) Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposures, to permit proper selection of respiratory protective equipment.
 - (2) Written procedures to assure proper selection, supervision, and training of personnel using such protective equipment.
 - (3) Written procedures to assure the adequate fitting of respirators and the testing of respiratory protective equipment for operability immediately prior to use.
 - (4) Written procedures for maintenance to assure full effectiveness of respiratory protective equipment including issuance, cleaning, and decontamination, inspection, repair, and storage.
- (5) Written operational and administrative procedures for proper use of respiratory protective equipment including provisions for planned limitations on working times as necessitated by operational conditions.
- (6) Bioassays and/or whole body counts of individuals (and other surveys, as appropriate) to evaluate individual exposures and to assess protection actually provided.
- e. The licensee uses equipment approved by the U. S. Bureau of Mines under its appropriate Approval Schedules as set forth in Table 6.2.1 below. Equipment not approved under U. S. Bureau of Mines Approval Schedules may be used only if the licensee has evaluated the equipment and can demonstrate by testing, or on the basis of reliable test information, that the material and performance characteristics of the equipment are at least equal to those afforded by U. S. Bureau of Mines approved equipment of the same type as specified in Table 6.2.1 below.
- f. Unless otherwise authorized by the Commission, the licensee does not assign protection factors in excess of those specified in Table 6.2.1 below in selecting and using respiratory protective equipment.

TABLE 6.2.1
PROTECTION FACTORS FOR RESPIRATORS

DESCRIPTION	MODES ^{1/}	PROTECTION FACTORS ^{2/}		GUIDES TO SELECTION OF EQUIPMENT BUREAU OF MINES APPROVAL SCHEDULES* FOR EQUIPMENT CAPABLE OF PROVIDING AT LEAST EQUIVALENT PROTECTION FACTORS *or schedule superseding for equipment of type listed
		PARTICULATES AND VAPORS AND GASES EXCEPT TRITIUM OXIDE ^{3/}		
I. AIR-PURIFYING RESPIRATORS				
Facepiece, half-mask <u>4/7/</u>	NP		5	21B 30 CFR § 14.4(b)(4)
Facepiece, full <u>7/</u>	NP		100	21B 30 CFR § 14.4(b)(5); 14F 30 CFR 13
II. ATMOSPHERE-SUPPLYING RESPIRATOR				
1. Airline respirator				
Facepiece, half-mask	CF		100	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, full	CF		1,000	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, full <u>7/</u>	D		100	19B 30 CFR § 12.2(c)(2) Type C(ii)
Facepiece, full	PD		1,000	19B 30 CFR § 12.2(c)(2) Type C(iii)
Hood	CF		<u>5/</u>	<u>6/</u>
Suit	CF		<u>5/</u>	<u>6/</u>
2. Self-contained breathing apparatus (SCBA)				
Facepiece, full <u>7/</u>	D		100	13E 30 CFR § 11.4(b)(2)(i)
Facepiece, full	PD		1,000	13E 30 CFR § 11.4(b)(2)(ii)
Facepiece, full	R		1,000	13E 30 CFR § 11.4(b)(1)
III. COMBINATION RESPIRATOR				
Any combination of air-purifying and atmosphere-supplying respirator			Protection factor for	19 B CFR § 12.2(e) or applicable schedules as listed above

1/, 2/, 3/, 4/, 5/, 6/, 7/ - [These notes are on the following pages]

1/ See the following symbols:

CF: continuous flow
D: demand
NP: negative pressure (i.e., negative phase during inhalation)
PD: pressure demand (i.e., always positive pressure)
R: recirculating (closed circuit)

2/ (a) For purposes of this specification, the protection factor is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of airborne radioactive material outside the respiratory protective equipment to that inside the equipment (usually inside the face-piece) under conditions of use. It is applied to the ambient airborne concentration to estimate the concentration inhaled by the wearer according to the following formula:

$$\text{Concentration Inhaled} = \frac{\text{Ambient Airborne Concentration}}{\text{Protection Factor}}$$

(b) The protection factors apply:

(i) only for trained individuals wearing properly fitted respirators used and maintained under supervision in a well-planned respiratory protective program.

(ii) for air-purifying respirators only when high efficiency [above 99.9% removal efficiency by U. S. Bureau of Mines type dioctyl phthalate (DOP) test] particulate filters and/or sorbents appropriate to the hazard are used in atmospheres not deficient in oxygen.

(iii) for atmosphere-supplying respirators only when supplied with adequate respirable air.

3/ Excluding radioactive contaminants that present an absorption or submersion hazard. For tritium oxide approximately half of the intake occurs by absorption through the skin so that an overall protection factor of not more than approximately 2 is appropriate when atmosphere-supplying respirators are used to protect against tritium oxide. Air-purifying respirators are not recommended for use against tritium oxide. See also footnote 5/, below, concerning supplied-air suits and hoods.

4/ Under chin type only. Not recommended for use where it might be possible for the ambient airborne concentration to reach instantaneous values greater than 50 times the pertinent values in Appendix B; Table I, Column 1 of 10 CFR, Part 20.

- 5/ Appropriate protection factors must be determined taking account of the design of the suit or hood and its permeability to the contaminant under conditions of use. No protection factor greater than 1,000 shall be used except as authorized by the Commission.
- 6/ No approval schedules currently available for this equipment. Equipment must be evaluated by testing or on basis of available test information.
- 7/ Only for shaven faces.

NOTE 1: Protection factors for respirators, as may be approved by the U. S. Bureau of Mines according to approval schedules for respirators to protect against airborne radionuclides, may be used to the extent that they do not exceed the protection factors listed in this Table. The protection factors in this Table may not be appropriate to circumstances where chemical or other respiratory hazards exist in addition to radioactive hazards. The selection and use of respirators for such circumstances should take into account approvals of the U. S. Bureau of Mines in accordance with its applicable schedules.

NOTE 2: Radioactive contaminants for which the concentration values in Appendix B, Table I of 10 CFR Part 20 are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations. Under such circumstances, limitations on occupancy may have to be governed by external dose limits.

6.0 ADMINISTRATIVE CONTROLS

3. These specifications with respect to the provisions of paragraph 20.103 shall be superseded by adoption of proposed changes to 10 CFR 20, Section 20.103, which would make this specification unnecessary.
- C. Standing Orders to the operating staff shall require that the procedures in Specifications 6.2.A and B above are to be followed in conducting activities identified in the order.
- D. Work instructions or special test procedures for the operating or maintenance staff shall require that the procedures in Specifications 6.2.A and B above are to be followed in conducting activities identified therein.
- E. All procedures identified in Specification 6.2.A and any changes to those procedures shall be reviewed and approved by the Operating Engineer and the Technical Staff Supervisor in areas of operation, fuel handling, or instrument maintenance, and by Maintenance Engineer and the Technical Staff Supervisor in the areas of plant maintenance and plant inspection. All procedures identified in Specification 6.2.B and any changes to those procedures shall be reviewed and approved by the Technical Staff Supervisor and the Radiological-Chemical Supervisor. The procedures, and changes thereto, must have authorization by the Station Superintendent before being implemented.
- F. Temporary changes to operating procedures described in Specification 6.2.A above, which do not change the intent of the original procedure, may be made with the concurrence of two individuals holding Senior Operator Licenses. Temporary changes to electrical and mechanical maintenance procedures described in Specification 6.2.A above, which do not change the intent of the original procedures may be made with the concurrence of the Master Mechanic, Maintenance Foreman, and the Senior Operator of the affected unit. Temporary changes to instrument maintenance procedures described in Specification 6.2.A above, which do not change the intent of the original procedures, may be made with the concurrence of the Instrument Engineer, Instrument Foreman, and the Senior Operator of the affected unit. Such changes shall be documented and subsequently reviewed, approved, and authorized as provided in Specifications 6.2.E above.
- G. Drills of the emergency procedures described in Specification 6.2.A.4 shall be conducted quarterly. These drills will be planned so that during the course of the year communication links are tested and outside agencies are contacted.

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6.3 Action to be Taken in the Event of an Abnormal Occurrence in Plant Operation

Any abnormal occurrence shall be promptly reported to the Superintendent of Production Division "A" or his designated alternate. The incident shall be promptly reviewed pursuant to Specification 6.1.G.2.a.(5) and a separate report for each abnormal occurrence shall be prepared in accordance with the requirements of Specification 6.6.B.1.

6.4 Action to be Taken in the Event a Safety Limit is Exceeded

If a safety limit is exceeded, the reactor shall be shut down immediately and reactor operation shall not be resumed until authorized by the AEC. The conditions of shutdown shall be promptly reported to the Superintendent of Production Division "A" or his designated alternate. The incident shall be reviewed pursuant to Specification 6.1.G.2.a.(5) and a separate report for each occurrence shall be prepared in accordance with Specification 6.6.B.1.

6.5 Plant Operating Records

A. Records and/or logs relative to the following items shall be kept in a manner convenient for review and shall be retained for at least five years.

1. Records of normal plant operation, including power levels and periods of operation at each power level.

2. Records of principal maintenance and activities, including inspection and repair, regarding principal items of equipment pertaining to nuclear safety.
3. Records and reports of abnormal and safety limit occurrences.
4. Records and periodic checks, inspection and/or calibrations performed to verify the Surveillance Requirements (see Section 4 of these Specifications) are being met. All equipment failing to meet surveillance requirements and the corrective action taken shall be recorded.
5. Records of changes made to the equipment or reviews of tests and experiments to comply with 10 CFR 50.59.

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6. Records of radioactive shipments.
 7. Records of physic tests and other tests pertaining to nuclear safety.
 8. Records of changes to operating procedures.
 9. Shift Engineers Logs.
- B. Records and/or logs relative to the following items shall be recorded in a manner convenient for review and shall be retained for the life of the plant.
1. Substitution or replacement of principal items of equipment pertaining to nuclear safety.
 2. Changes made to the plant as it is described in the Safety Analysis Report.
 3. Records of new and spent fuel inventory and assembly histories.
 4. By-product material inventory records and source leak test results.
 5. Updated, corrected, and as-built drawings of the plant.
 6. Records of plant radiation and contamination surveys.
 7. Records of off-site environmental monitoring surveys.
 8. Records of radiation exposure for all plant personnel, including all contractors and visitors to the plant in accordance with 10 CFR 20.
 9. Records of radioactivity in liquid and gaseous wastes released to the environment.
 10. Records of transient or operational cycling for those components that have been designed to operate safely for a limited number of transient or operational cycles.
 11. Records of individual staff members indicating qualifications, experience, training, and retraining.
 12. Inservice inspections of the reactor coolant system.
 13. Minutes of meetings and results of reviews and audits performed by the off-site and on-site review and audit functions.

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6.6 Plant Reporting Requirements

The following information shall be submitted in addition to those reports required by Title 10, Code of Federal Regulations.

A. Operation Reports

Operation reports shall be submitted in writing to the Director of Licensing, USAEC, Washington, D. C. 20545.

1. Startup Report

A summary report of unit startup and power escalation testing shall be submitted following receipt of operating licenses, following amendments to the licenses involving a planned increase in power level, following the installation of fuel that has a different design or was fabricated by a different vendor, or following NSSS modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the facility. The report shall include a comparison of measured and predicted values and describe any corrective action taken to obtain acceptable operation. Startup reports shall be submitted within 60 days

following commencement or resumption of commercial power operation (i.e., initially following synchronization of the turbo-generator to produce commercial power or resuming power production).

2. First Year Operation Report

A report shall be submitted within 60 days after completion of the first year of commercial power operation as defined above. This report may be incorporated into the semiannual operating report and shall cover the following:

- a. an evaluation of unit performance to date in comparison with design predictions and specifications;
- b. a reassessment of the safety analysis submitted with the license application in light of measured operating characteristics when such measurements indicate that there may be substantial variance from prior analyses;
- c. an assessment of the performance of structures, systems and components important to safety;

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- d. a progress and status report on any items identified as requiring additional information during the operating license review or during the startup of the plant, including items discussed in the AEC's safety evaluation, items on which additional information was required as conditions of the license and items identified in the licensee's startup report.

3. Semiannual Operating Reports

Semiannual operating reports covering the previous six months operations shall be submitted within 60 days after January 1 and July 1 of each year. The first such period shall begin with the date of initial criticality. These reports shall include the following:

a. Operations Summary

A summary of operating experience occurring during the reporting period that relates to the safe operation of the plant, including a summary of:

- (1) changes in plant design,
- (2) performance characteristics (e.g., equipment and fuel performance),

- (3) changes in procedures which were necessitated by (1) and (2) or which otherwise were required to improve the safety of facility operations,
- (4) results of surveillance tests and inspections required by these technical specifications,
- (5) the results of any periodic containment leak rate tests performed during the reporting period,
- (6) a brief summary of those changes, tests and experiments requiring authorization from the Commission pursuant to 10 CFR 50.59(a), and
- (7) any changes in the plant operating organization which involve positions which are designated as key supervisory personnel on Figure 6.1.2.

b. Power Generation

A summary of power generated during the reporting period including:

- (1) gross thermal power generated (in MWH)

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- (2) gross electrical power generated (in MWH)
- (3) net electrical power generated (in MWH)
- (4) number of hours the reactor was critical
- (5) number of hours the generator was on-line
- (6) histogram of thermal power vs time

c. Shutdowns

Descriptive material covering all outages occurring during the reporting period. For each outage, information shall be provided on:

- (1) the cause of the outage,
- (2) the method of shutting down the reactor; e.g., trip automatic rundown, or manually controlled deliberate shutdown,
- (3) duration of the outage (in hours),
- (4) unit status during the outage; e.g., cold shutdown or hot shutdown,
- (5) corrective action taken to prevent repetition, if appropriate.

d. Maintenance

A discussion of corrective maintenance (excluding preventative maintenance) performed during the reporting period on safety related systems and components [safety related is defined in ANSI 18.7-1972 (ANS-3.2, November 2, 1972)]. For any malfunctions for which corrective maintenance was required, information shall be provided on:

- (1) the system or component involved,
- (2) the cause of the malfunction,
- (3) the results and effect on safe operation,
- (4) corrective action taken to prevent repetition,
- (5) precautions taken to provide for reactor safety during repair.

e. Changes, Tests and Experiments

The report shall include a brief description and the summary of the safety evaluation for those changes, tests, and experiments carried out without prior Commission approval pursuant to the requirements of subsection 50.59(b) of the Commission's regulations.

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f. Radioactive Effluent Releases

A statement of the quantities of radioactive effluents released from the plant with data summarized on a monthly basis following the format of the USAEC Regulatory Guide 1.21.

(1) Gaseous Effluents

(a) Gross Radioactivity Releases

- (1) Total gross radioactivity (in curies) primarily noble and activation gases released.
- (2) Maximum gross radioactivity release rate during any one-hour period.
- (3) Total gross radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
- (4) Percent of technical specification limit.

(b) Iodine Releases

- (1) Total iodine radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
- (2) Percent of technical specification limit for I-131 released.

(c) Particulate Releases

- (1) Total gross radioactivity (β, γ) released (in curies) excluding background radioactivity.
- (2) Total gross alpha radioactivity released (in curies) excluding background radioactivity.
- (3) Total gross radioactivity (in curies) of nuclides with half-lives greater than eight days.
- (4) Percent of technical specification limit for particulate radioactivity with half-lives greater than eight days.

(2) Liquid Effluents

- (a) Total gross radioactivity (β, γ) released (in curies) excluding tritium and average concentration released to the unrestricted area.

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- (b) Total tritium and total alpha radioactivity released (in curies) and average concentration released to the unrestricted area.
 - (c) Total dissolved noble gas radioactivity released (in curies) and average concentration released to the unrestricted area.
 - (d) Total volume (in liters) of liquid waste released.
 - (e) Total volume (in liters) of dilution water used prior to release from the restricted area.
 - (f) The maximum concentration of gross radioactivity (β, γ) released to the unrestricted area (averaged over the period of release).
 - (g) Total gross radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
 - (h) Percent of technical specification limit.
- g. Solid Radioactive Waste
 - (1) The total amount of solid waste shipped (in cubic feet).
 - (2) The total estimated radioactivity (in curies) involved.
 - (3) The dates of shipment and disposition (if shipped offsite).
 - h. Environmental Monitoring
 - (1) For each medium sampled during the reporting period, e.g., air, baybottom, surface water, soil, fish, include:
 - (a) Number of sampling locations,
 - (b) Total number of samples,
 - (c) Number of locations at which levels are found to be significantly above local backgrounds,
 - (d) Highest, lowest, and the average concentrations or levels of radiation for the sampling point with the highest average and

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description of the location of that point with respect to the site.

- (2) If levels of radioactive materials in the environmental media as determined by the environmental monitoring program indicate the likelihood of public intakes in excess of 1% of those that could result from continuous annual exposure to the concentration values listed in Appendix B, Table II, Part 20, estimates of the likely resultant exposure to individuals and to population groups, and assumptions upon which estimates are based shall be provided.

- (3) If statistically significant variations of offsite environmental concentrations with time are observed, correlation of these results with radioactive effluent releases shall be provided.

1. Occupational Personnel Radiation Exposure

Tabulate the number of personnel exposures for plant operations

personnel (permanent and temporary) in the following exposure increments for the reporting period: Less than 100 mRem, 100-500 mRem, 500-1250 mRem, 1250-2500 mRem, and greater than 2500 mRem. Tabulate the number of personnel receiving more than 500 mRem exposure in the reporting period according to duty function, i.e., routine plant surveillance and inspection (regular duty), routine plant maintenance, special plant maintenance (describe maintenance), routine refueling operations, special refueling operation (described operation) and other job related exposures. Annually tabulate the number of personnel receiving more than 2500 mRem and report major cause(s).

B. Non-Routine Reports

1. Abnormal Occurrence Reports

- a. Notification shall be made within 24 hours by telephone and telegraph to the Director of the Regional Regulatory Operations Office (cc to Director of Licensing) followed by a written report within 10 days to the Director of Licensing (cc to the Director of the Regional Regulatory Operations Office) in the event of the abnormal occurrences as defined in Section 1.0 of these technical specifications. The written report on these abnormal

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occurrences, and to the extent possible the preliminary telephone and telegraph notification shall include the events leading up to and resulting from the occurrence, an evaluation of the cause of the occurrence, and: (a) describe, analyze and evaluate safety implications, (b) outline the measures taken to assure that the cause of the condition is determined, (c) indicate the corrective action (including any changes made to the procedures and to the quality assurance program) taken to prevent repetition of the occurrence and of similar occurrences involving similar components or systems, and (d) evaluate the safety implications of the incident in light of the cumulative experience obtained from the record of previous failures and malfunctions of similar systems and components.

- b. Copies of all such reports shall be submitted to the Superintendent of Production Division "A" and Nuclear and Fossil Systems for review of any recommendations.

2. Unusual Events Reports

A written report shall be forwarded within 30 days to the Director of Licensing, and to the Director of the Regional Regulatory Operations Office, in the event of:

- a. Discovery of any substantial errors in the transient or accident analyses, or in the methods used for such analyses, as described in the Safety Analysis Report or in the bases for the technical specifications.
- b. Discovery of any substantial variance from performance specifications contained in the technical specifications or in the Safety Analysis Report.
- c. Discovery of any condition involving a possible single failure which, for a system designed against assumed single failures, could result in a loss of the capability of the system to perform its safety function.

3. Special Reports

Special reports shall be submitted in writing within 90 days to the Director of Licensing, USAEC, Washington, D. C. 20545.

- a. In the event a redundant component (or system) covered by these technical specifications is determined to be out of service for periods longer than those specified in other sections, it shall be the subject of a special maintenance report. If this report requests approval to continue plant operation, it shall be

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submitted prior to expiration of the out of service time of the above. The report shall describe:

- (1) The nature of the problem and the specific steps to be taken to remedy the situation.**
 - (2) An estimate of the time required to return the component (or system) to an operable condition.**
 - (3) The amount of component (or system) redundancy remaining or the availability of other system(s) to perform the same function as the inoperable component (or system).**
 - (4) Surveillance Requirements on the operable components (or systems).**
- b. Any significant changes in the information supplied in Specifications 6.6.B.3.a(1), (2), (3) or (4) shall be submitted as a report within seven days of discovery.
- c. Reports on the following areas shall be as indicated in Table 6.6.1.

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TABLE 6.6.2
SPECIAL REPORTS

<u>AREA</u>	<u>SPECIFICATION REFERENCE</u>	<u>SUBMITTAL DATE</u>
a. Primary Containment Leak Rate Test (1)	4.7. A	Upon completion of each test.
b. Secondary Containment Leak Rate Test (2)	4.7.C	Upon completion of each test.
c. Summary Status of Fuel Performance	1.1 Bases	After each refueling outage.
d. Primary Coolant Leakage to Drywell	4.6.D Bases	5 years (3)
e. In-Service Inspection Evaluation	Table 4.6.1	5 years (3)
f. Materials Radiation Surveillance Specimens	4.6,B,2	After each specimen removal and completion of analyses.
g. Evaluation of ADS Operation	3.3.F Bases	Upon completion of initial testing.
h. Failed Fuel Detection	3.2 Bases	5 years (3)
i. Main Steam Line Leakage to Steam Tunnel	4.6.D Bases	5 years (3)
j. In-Service Inspection Development	4.6.1 Bases	5 years (3)
k. In-Service Inspection of Sensitized Stainless Steel Components (Dresden 2 only)	4.6,F	4 years (3)

NOTES:

1. Each integrated leak rate test of the primary containment shall be the subject of a summary technical report including results of the local leak rate tests since the last report.
2. Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of those data which demonstrate compliance with the specified leak rate limits.
3. The report shall be submitted within the period of time listed based on the commercial service date as the starting point.

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