

APR 3 1973

Docket No. 50-263

Northern States Power Company  
ATTN: Mr. Arthur V. Dienhart  
Vice President of Engineering  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

Change No. 6  
Provisional Operating  
License No. DPR-22

Gentlemen:

Your letter dated November 20, 1972, submitted proposed changes to the Technical Specifications of Provisional Operating License No. DPR-22 for the Monticello Nuclear Generating Plant Unit 1. The request for changes involve proposed revisions to the Administrative Controls section (6.0) of the Technical Specifications, and other areas affected by these changes.

During our review of the proposed changes, we informed your staff that certain modifications to the Technical Specifications were necessary to meet regulatory requirements. These modifications have been made.

On the basis of our review of your proposed changes, as modified, we have concluded that the proposed changes do not present significant hazards considerations not described or implicit in the Monticello Safety Analysis Report and that there is reasonable assurance that the health and safety of the public will not be endangered by operation of the Monticello Nuclear Generating Plant in the proposed manner.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Provisional Operating License No. DPR-22 are hereby changed as set forth in Attachment A to this letter.

Sincerely,

Original Signed by  
D. J. Skovholt

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

Enclosure and cc: See next page

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LB

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cc w/enclosure and copy of NSP's  
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OFFICE ▶	L:OS / L:OR	L:OR	L:OR	L:OR		
SURNAME ▶	JSears/RMDiggs	JJShea	DLZiemann	DJSkovholt		
DATE ▶	3/2/73	3/2/73	4/3/73	4/3/73		

ATTACHMENT A

CHANGE NO. 6 TO TECHNICAL SPECIFICATIONS

PROVISIONAL OPERATING LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

1. In Section 1.0, Definitions, replace page 1 with the attached pages 1 and 1A.
2. On page 81, in Section 3.3.E., change ". . . Specifications 6.6" to read ". . . Specification 6.7.B.1."
3. On page 90:
  - a. Change Specification 3.4.B.1 to replace the comma at the end of the second line with a period and delete the word "or" on line 3, and
  - b. Delete Specification 3.4.B.2 in its entirety.
4. On pages 108 and 113, delete Specification 3.5.H and its basis in their entirety.
5. On the following pages and Specifications, delete the words "either 3.5.H shall be complied with or":
  - a. 98 - (3.5.A.5)
  - b. 101 - (3.5.B.6)
6. On the following pages and Specifications, delete the words "either the requirements of 3.5.H shall be complied with or":
  - a. 102 - (3.5.C.5)
  - b. 107 - (3.5.F.3)
7. On the following pages and Specifications, delete the words "either 3.5.H shall be complied with or procedures for":
  - a. 104 - (3.5.D.4)

OFFICE ▶	b. 105-106 - (3.5.E.4)				
SURNAME ▶					
DATE ▶					

8. On page 131, 4th paragraph, Bases 3.6 and 4.6, change ". . . Specification 6.6.E.3.d." to read ". . . Specification 6.7.C.4."
9. On page 136, 2nd paragraph, Bases 3.6 and 4.6, change ". . . Specification 6.6.E.3." to read ". . . Specification 6.7.C.3."
10. Replace Specification 6.0 Administrative Controls consisting of pages 192 through 211 with the attached revised Section 6.0 consisting of pages 192 through 218.

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DATE ▶						

## INTRODUCTION

These Technical Specifications are prepared in accordance with the requirements of 10 CFR 50.36 and apply to the Monticello Nuclear Generating Plant, Unit No. 1. The bases for these Specifications are included for information and understandability purposes.

### 1.0 DEFINITIONS

The succeeding frequently used terms are explicitly defined so that a uniform interpretation of the Specifications may be achieved.

#### A. Abnormal Occurrence

1. A safety system setting less conservative than the limiting setting established in the Technical Specifications.
2. Violation of a limiting condition for operation established in the Technical Specifications.
3. An uncontrolled or unplanned release of radioactive material from the site.
4. Failure of one or more components of an engineered safety feature or plant protection system that causes or threatens to cause the feature or system to be incapable of performing its intended function.
5. Abnormal degradation of one of the several boundaries designed to contain the radioactive materials resulting from the fission process.
6. An uncontrolled or unanticipated change in reactivity greater than 1% delta k/k.
7. An observed inadequacy in the implementation of administrative or procedural controls such that the inadequacy causes or threatens to cause the existence or development of an unsafe condition in connection with the operation of the plant.
8. Conditions arising from a natural or man-made event that affects or threatens to affect the safe operation of the plant.

B. Alteration of the Reactor Core

The act of moving any component in the region above the core support plate, below the upper grid and within the shroud. (Normal operating functions such as control rod movement using the normal drive mechanism, tip scans, SRM and IRM detector movements, etc., are not to be considered core alterations.)

C. Hot Standby

Hot Standby means operation with the reactor critical in the startup mode at a power level just sufficient to maintain reactor pressure and temperature.

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 Organization

- A. The Plant Manager has the overall full-time onsite responsibility for safe operation of the facility. During periods when the Plant Manager is unavailable, he may delegate this responsibility to other qualified supervisory personnel.
- B. The Northern States Power corporate organizational structure relating to the operation of this plant is shown in Figure 6.1.1.
- C. The minimum functional organization for operation of the plant shall be as shown in Figure 6.1.2. The minimum shift complement for special plant conditions shall be as follows:
  - 1. The unit shutdown and the reactor contains fuel: a Licensed Senior Operator on site; a Licensed Operator in the control room; and a plant operator on site.
  - 2. During cold startup, while shutting down the reactor and during recovery from any reactor trip: a Licensed Senior Operator in the plant and a minimum of two Licensed Operators in the control room.
  - 3. Fuel handling operations: a Licensed Senior Operator shall be directly in charge of any refueling operation, alteration of the reactor core, and handling of irradiated fuel and shall have no other concurrent duties.
  - 4. Any fuel on site: an individual qualified in radiation protection shall be on site at all times that there is fuel on site.
- D. Minimum qualifications, training, replacement training and retraining of plant personnel shall be in accordance with that stated in the "Standard for Selection and Training of Personnel for Nuclear Power Plants," ANSI N18.1 - 1971. The minimum frequency of the re-training program shall be every two years. The training program shall be under the direction of a designated member of the plant staff.

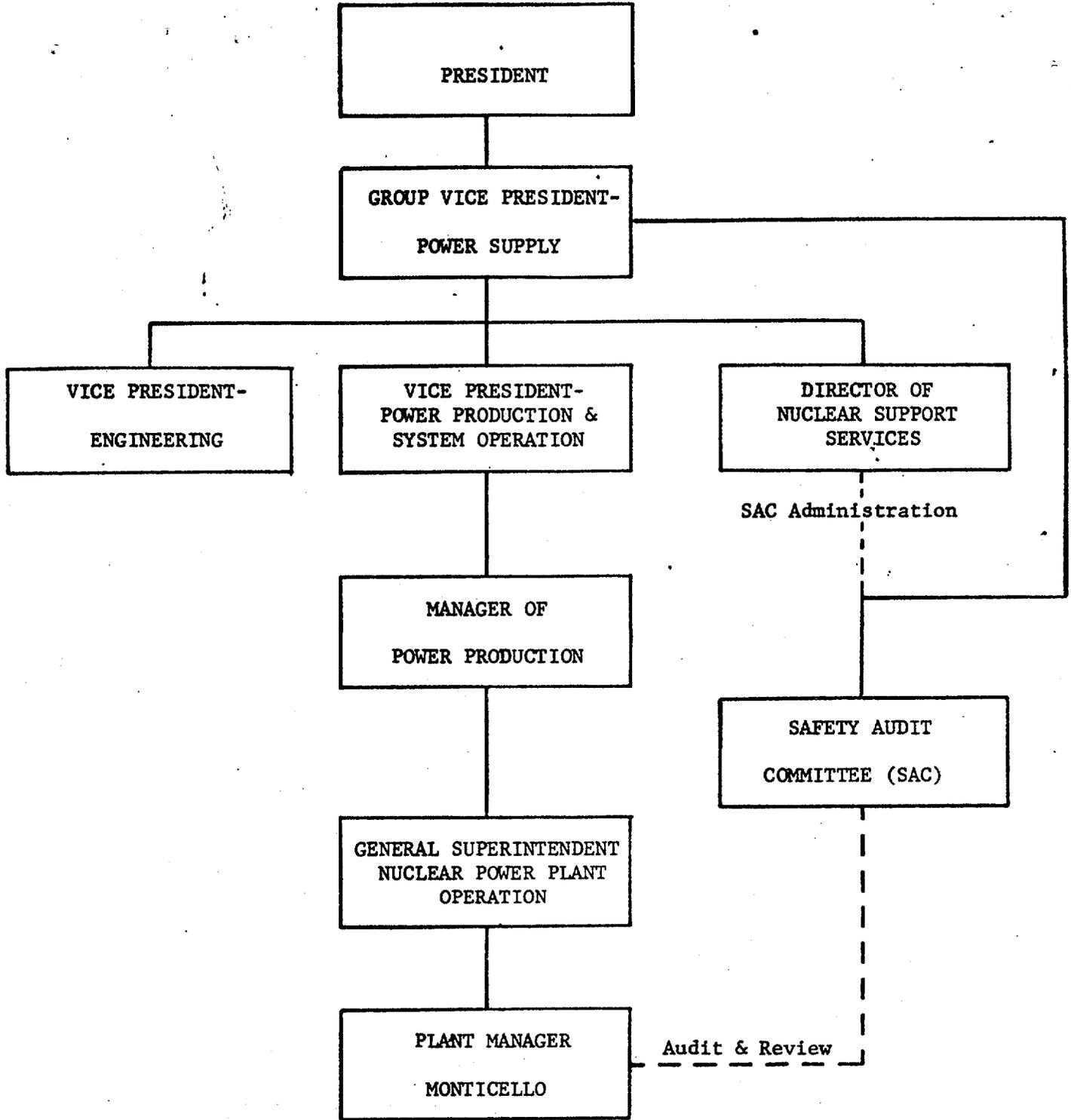
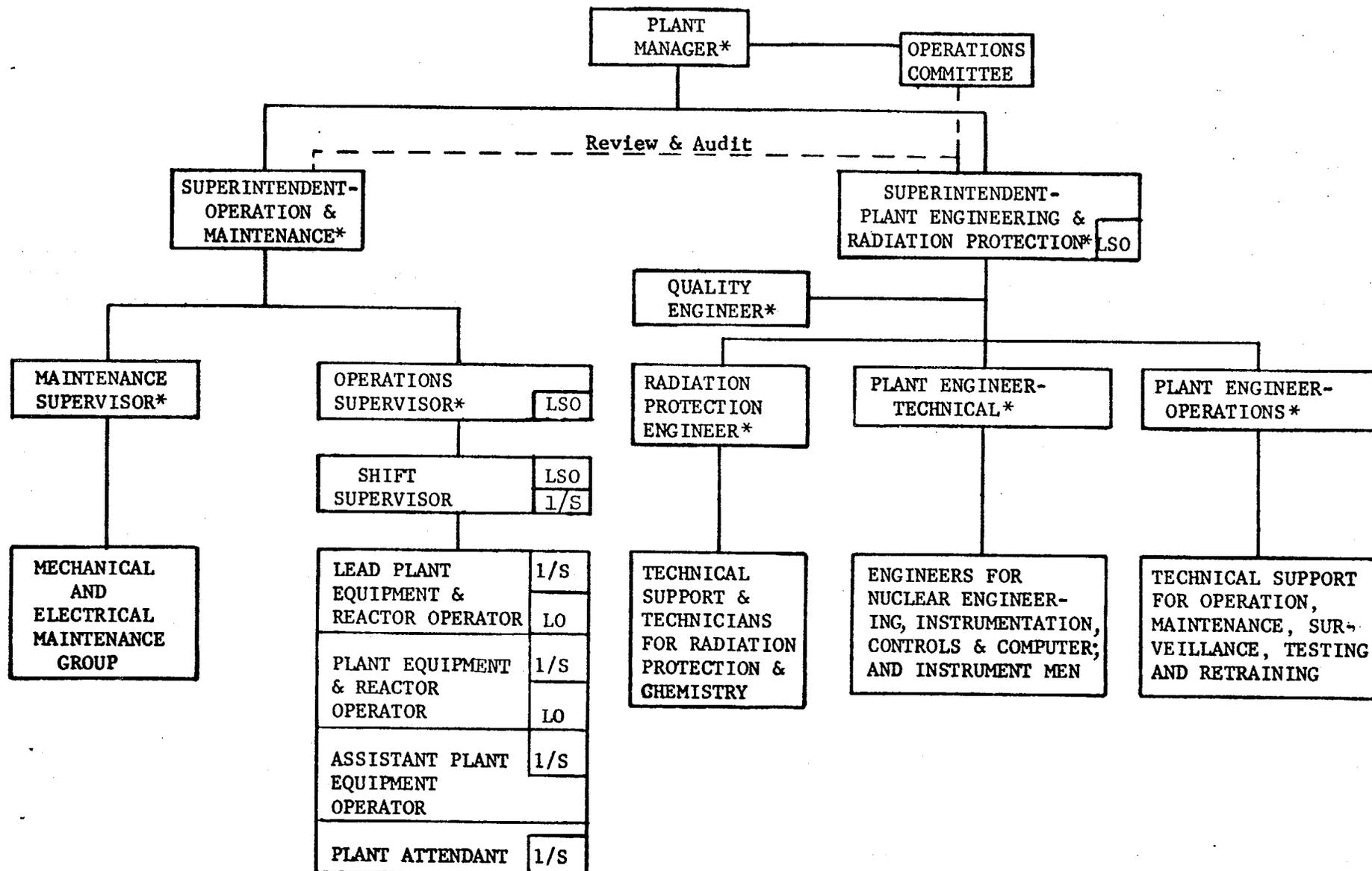


FIGURE 6.1.1

NSP CORPORATE ORGANIZATIONAL  
RELATIONSHIP TO ON-SITE OPERATING ORGANIZATION



CODE: \* - Key Supervisor  
 1/S - one/shift  
 RO - Licensed Operator  
 SRO - Licensed Senior Operator

MONTICELLO NUCLEAR GENERATING PLANT  
 Functional Organization For  
 On-Site Operating Group

FIGURE 6.1.2

## 6.2 Review and Audit

Organizational units for the review and audit of facility operations shall be constituted and have the responsibilities and authorities outlined below:

### A. Safety Audit Committee (SAC)

The SAC must: verify that operation of the plant is consistent with company policy and rules, approved operating procedures and operating license provisions; review important proposed plant changes, tests and procedures; verify that unusual events are promptly investigated and corrected in a manner which reduces the probability of recurrence of such events; and detect trends which may not be apparent to a day-to-day observer.

Audits of selected aspects of plant operation shall be performed with a frequency commensurate with their safety significance and in such a manner as to assure that an audit of all nuclear safety related activities is completed within a period of two years. Periodic review of the audit programs should be performed by the SAC at least twice a year to assure that such audits are being accomplished in accordance with requirements of Technical Specifications. The audits shall be performed in accordance with appropriate written instructions or procedures and shall include verification of compliance with internal rules, procedures (for example: normal, off-normal, emergency, operating, maintenance, surveillance, test and radiation control procedures and the emergency and security plans), regulations involving nuclear safety and operating license provisions; training, qualification and performance of operating staff; and corrective actions following abnormal occurrences or unusual events. A representative portion of procedures and records of the activities performed during the audit period shall be audited and, in addition, observations of performance of operating and maintenance activities shall be included. Written reports of such audits shall be reviewed at a scheduled meeting of the SAC and by appropriate members of management including those having responsibility in the area audited. Follow-up action, including reaudit of deficient areas, shall be taken when indicated.

#### 1. Membership

- a. The SAC shall consist of at least five (5) persons.

- b. The SAC Chairman shall be a NSP management representative appointed by the Group Vice President-Power Supply. Other SAC members shall be appointed by the Group Vice President-Power Supply or such other person as he may designate. The Chairman shall appoint a Vice Chairman from the SAC membership to act in his absence.
- c. No more than two members of the SAC shall be from groups holding line responsibility for operation of the plant.
- d. The SAC members should collectively have the capability required to review problems in the following areas: nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, instrumentation and control, radiological safety, mechanical and electrical engineering, and other appropriate fields associated with the unique characteristics of the nuclear power plant involved. A minimum of four voting members shall have a minimum of a Bachelors Degree in Engineering or a scientific discipline and possess a minimum of three years of professional level experience in nuclear services, nuclear plant operation, or nuclear engineering. When the nature of a particular problem dictates, special consultants will be utilized, as necessary, to provide expert advice to the SAC.

## 2. Meeting Frequency

The SAC shall meet on call by the Chairman but not less frequently than twice a year.

## 3. Quorum

A quorum shall include a majority of the permanent members, including the Chairman or Vice Chairman. No more than a minority of the quorum shall be from groups holding line responsibility for the operation of the plant.

## 4. Responsibilities - The following subjects should be reported to and reviewed by the SAC:

- a. Proposed tests and experiments, and their results, when such tests or experiments may constitute an unreviewed safety question as defined in Section 50.59(c), Part 50, Title 10, Code of Federal Regulations.
- b. Evaluations of proposed changes to procedures, equipment and systems completed under provisions of Section 50.59(b), Part 50, Title 10, Code of Federal Regulations to verify that such proposed changes do not constitute unreviewed safety questions.

- c. Proposed changes in procedures, equipment or systems which may involve an unreviewed safety question as defined in Section 50.59(c), Part 50, Title 10, Code of Federal Regulations or changes referred to it by the operating organization.
- d. Proposed changes in Technical Specifications or operating license.
- e. Violations of applicable statutes, codes, regulations, orders, Technical Specifications, operating license requirements, or of internal procedures or instructions having safety significance.
- f. Significant operating abnormalities or deviations from normal and expected performance of plant equipment.
- g. Abnormal occurrences as defined in these Technical Specifications.
- h. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems or components.
- i. Operations Committee proceedings and minutes to determine if matters considered by that Committee involve unreviewed or unresolved safety questions.
- j. Training, qualification and performance of operating staff.
- k. Disagreement ~~between the~~ recommendations of the Operations Committee and the Plant Manager.
- l. Security and emergency plans and their implementing procedures.
- m. Environmental Monitoring Program and its results.
- n. Quality Assurance program and evaluate its adequacy.

Review of events covered under 4.e-4.h above shall include reporting to appropriate members of management on the results of investigations and recommendations to prevent or reduce the probability of recurrence.

## 5. Authority

The SAC shall be advisory to the Group Vice President-Power Supply.

## 6. Records

Minutes shall be prepared and retained for all scheduled meetings of the Safety Audit Committee and shall identify all documentary material reviewed. The minutes shall be distributed to the Group Vice President-Power Supply, the General Superintendent of Nuclear Power Plant Operation, each member of the SAC and others designated by the Chairman or Vice President within one month of the meeting. There shall be a formal approval of the minutes.

## 7. Procedures

A written charter for the SAC shall be prepared that contains:

- a. Subjects within the purview of the group
- b. Responsibility and authority of the group including responsibility to identify problems and to recommend solutions to appropriate management
- c. Mechanisms for convening meetings
- d. Provisions for any use of specialists and subgroups
- e. Authority to obtain access to the nuclear power plant operating record files and operating personnel to perform the audit function
- f. Requirements for distribution of reports and minutes prepared by the group to others in the NSP organization
- g. Identification of the management position to which the SAC reports
- h. Provisions for assuring that the SAC is kept informed on a timely basis of matters within its purview

B. Operations Committee (OC)

1. Membership

The Operations Committee shall consist of at least six (6) members drawn from the key supervisors of the on-site supervisory staff. The Plant Manager shall serve as Chairman of the OC and shall appoint a Vice Chairman from the OC membership to act in his absence.

2. Meeting Frequency

The Operations Committee will meet on call by the Chairman or as requested by individual members and at least monthly.

3. Quorum

A quorum shall include a majority of the permanent members, including the Chairman or Vice Chairman.

4. Responsibilities - The following subjects shall be reviewed by the Operations Committee:

- a. Proposed tests and experiments and their results.
- b. Modifications to plant systems or equipment as described in Final Safety Analysis Report and having nuclear safety significance or which involve an unreviewed safety question as defined in 10 CFR 50.59.
- c. Proposals which would effect permanent changes to normal and emergency operating procedures and any other proposed changes or procedures that are determined by the Plant Manager to affect nuclear safety.
- d. Proposed changes to the Technical Specifications or operating license.
- e. All reported or suspected violations of Technical Specifications, operating license requirements, administrative procedures, operating procedures. Results of investigations, including evaluation and recommendations to prevent recurrence, will be reported, in writing, to the General Superintendent of Nuclear Power Plant Operation and to the Chairman of the Safety Audit Committee.

- f. Abnormal Occurrences and unusual events as defined in these Technical Specifications.
- g. Drills on emergency procedures (including plant evacuation) and adequacy of communication with off-site support groups.
- h. All procedures required by these Technical Specifications, including implementing procedures of the Emergency Plan and the Security Plan shall be reviewed with a frequency commensurate with their safety significance but at an interval of not more than two years.
- i. Perform special reviews and investigations, as requested by the Safety Audit Committee.

#### 5. Authority

- The OC shall be advisory to the Plant Manager. In the event of disagreement between the recommendations of the OC and the Plant Manager, the course determined by the Plant Manager to be the more conservative will be followed. A written summary of the disagreement will be sent to the General Superintendent of Nuclear Power Plant Operation and the Chairman of the SAC for review.

#### 6. Records

Minutes shall be recorded for all meetings of the OC and shall identify all documentary material reviewed. The minutes shall be distributed to each member of the OC, the Chairman and each member of the Safety Audit Committee, the General Superintendent of Nuclear Power Plant Operation and others designated by OC Chairman or Vice Chairman.

#### 7. Procedures

A written charter for the OC shall be prepared that contains:

- a. Responsibility and authority of the group
- b. Content and method of submission of presentations to the Operations Committee

- c. Mechanism for scheduling meetings
- d. Meeting agenda
- e. Use of subcommittees
- f. Review and approval, by members, of OC actions
- g. Distribution of minutes

### 6.3 Actions to be Taken in the Event of An Abnormal Occurrence in Plant Operation

- A. Any abnormal occurrence as defined in these Technical Specifications shall be reported to the General Superintendent of Nuclear Power Plant Operation, or his designated alternate in his absence, and shall be reviewed by the Operations Committee. A separate, sequentially numbered, report shall be prepared for each abnormal occurrence. Each report shall describe the circumstances leading up to and resulting from the occurrence, the corrective action taken, an attempt to define the cause of the occurrence and shall recommend appropriate action to prevent or reduce the probability of a repetition of the occurrence. The Operations Committee shall review the report and recommend further action, if necessary.

Copies of all such reports and Operations Committee recommendations shall be submitted to the Chairman of the Safety Audit Committee for review and to the General Superintendent of Nuclear Power Plant Operation for review and approval of any recommendations. All abnormal occurrences shall be reported to the AEC as specified in Section 6.7.B.1.

### 6.4 Action to be Taken if a Safety Limit is Exceeded

If a Safety Limit is exceeded, the reactor shall be shut down immediately. An immediate report shall be made to the General Superintendent of Nuclear Power Plant Operation, or his designated alternate in his absence, and reported as specified for an abnormal occurrence in Section 6.7.B.1. A complete analysis of the circumstances leading up to and resulting from the situation, together with recommendations by the Operations Committee, shall also be prepared. This report shall be submitted to the General Superintendent of Nuclear Power Plant Operation and the Chairman of the Safety Audit Committee.

Reactor operation shall not be resumed until authorized by the U. S. Atomic Energy Commission.

## 6.5 Plant Operating Procedures

Detailed written procedures, including the applicable check-off and instructions, covering areas listed below shall be prepared and followed. These procedures and changes thereto, except as specified in 6.5.D shall be reviewed by the Operation Committee and approved by a member of plant management designated by the Plant Manager.

### A. Plant Operations

1. Integrated and system procedures for normal startup, operation and shutdown of the reactor and all systems and components involving nuclear safety of the facility.
2. Fuel handling operations .
3. Actions to be taken to correct specific and foreseen potential or actual malfunction of systems or components including responses to alarms, primary system leaks and abnormal reactivity changes and including follow-up actions required after plant protective system actions have initiated.
4. Surveillance and testing requirements that could have an effect on nuclear safety.
5. Implementing procedures of the security plan.
6. Implementing procedures of the emergency plan, including procedures for coping with emergency conditions involving potential or actual releases of radioactivity.

Drills on the procedures specified in A.3 above shall be conducted as a part of the retraining program. Drills on the procedures specified in A.6 above shall be conducted at least semiannually, including a check of communications with offsite support groups.

### B. Radiological

Radiation control procedures shall be maintained and made available to all plant 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.

1. a. Paragraph 20.203 "Caution signs, labels, signals and controls." In lieu of the "Control device" or alarm signal required by paragraph 20.203 (c) (2), each high radiation area in which the intensity of radiation is 1000 mRem/hr or less shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. The above procedure shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr, except that locked doors shall be provided to prevent unauthorized entry into these areas and the keys to these locked doors shall be maintained under the administrative control of the Plant Manager.
2. 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 license 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 of individual dose in 20.101. These materials shall be subject to applicable process and other engineering controls.

3. 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 specified in paragraph 2 of this section 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 purposes 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 factor specified in Table 6.5.1, 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 than that initially estimated, the latter quantity shall be used in evaluating the exposures.
  - 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 and 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 6.5.1 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 6.5.1 below.
- f. Unless otherwise authorized by the Commission, the licensee does not assign protection factors in excess of those specified in Table 6.5.1 below in selecting and using respiratory protective equipment.

4. These Specifications with respect to the provisions of 20.103 shall be superseded by adoption of proposed changes to 10 CFR 20 Section 20.103, which would make this Specification unnecessary.

TABLE 6.5.1  
PROTECTION FACTORS FOR RESPIRATORS

DESCRIPTION	MODES <sup>1/</sup>	PROTECTION FACTORS <sup>2/</sup>	GUIDES TO SELECTION OF EQUIPMENT
		PARTICULATES AND VAPORS AND GASES EXCEPT TRITIUM OXIDE <sup>3/</sup>	BUREAU OF MINES APPROVAL SCHEDULES* FOR EQUIPMENT CAPABLE OF PROVIDING AT LEAST EQUIVALENT PROTECTION FACTORS *or schedule superseding for equipment of type listed
<b>I. AIR-PURIFYING RESPIRATORS</b>			
Facepiece, half-mask <sup>4/</sup> <sup>7/</sup>	NP	5	21B 30 CFR § 14.4 (b) (4)
Facepiece, full <sup>7/</sup>	NP	100	21B 30 CFR § 14.4 (b) (5); 14F 30 CFR 13
<b>II. ATMOSPHERE-SUPPLYING RESPIRATOR</b>			
<b>1. Airline respirator</b>			
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 <sup>7/</sup>	D	500	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	<sup>5/</sup>	<sup>6/</sup>
Suit	CF	<sup>5/</sup>	<sup>6/</sup>
<b>2. Self-contained breathing apparatus (SCBA)</b>			
Facepiece, full <sup>7/</sup>	D	500	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)
<b>III. COMBINATION RESPIRATOR</b>			
Any combination of air-purifying and atmosphere-supplying respirator		Protection factor for type and mode of operation as listed above	19B CFR § 12.2 (e) or applicable schedules as listed above

<sup>1/</sup>, <sup>2/</sup>, <sup>3/</sup>, <sup>4/</sup>, <sup>5/</sup>, <sup>6/</sup>, <sup>7/</sup>, (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 facepiece) 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.

### C. Maintenance and Test

The following maintenance and test procedures will be developed to satisfy routine inspection, preventive maintenance programs, and operating license requirements:

1. Routine testing of Engineered Safeguards and equipment as required by the facility license and the Technical Specifications.
2. Routine testing of standby and redundant equipment.
3. Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety.
4. Calibration and preventive maintenance of instrumentation that could affect the nuclear safety of the plant.
5. Special testing of equipment for proposed changes to operational procedures or proposed system design changes.

### D. Temporary Changes to Procedures

Temporary changes to procedures described in A, B, and C above, which do not change the intent of the original procedures may be made with the concurrence of two individuals holding senior operator licenses. Such changes shall be documented, reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager within one month.

## 6.6 Plant Operating Records

### A. Records Retained for Five Years

Records and logs relative to the following items shall be retained for a minimum of five years:

1. Normal plant operation including such items as power level, periods of operation at each level, fuel exposure and shutdowns.
2. Written shift supervisory and reactor logs.
3. Periodic checks, inspections, tests and calibrations of components and systems, as related to these Technical Specifications.
4. Reviews of changes made to procedures or equipment and reviews of tests and experiments.

5. Principal maintenance activities, including inspection, repairs and substitution or replacement of principal items of equipment pertaining to nuclear safety.
6. Records of changes to plant procedures and records of special tests and experiments.
7. Records of wind speed and direction.
8. Records of individual plant staff members showing qualifications, training and retraining.

**B. Records Retained for Plant Life**

Records and logs relative to the following items shall be retained for the life of the plant:

1. Liquid and gaseous radioactive releases to the environs
2. Radiation exposures for all plant, visitor and contractor personnel
3. Off-site environmental monitoring surveys
4. Fuel accountability including new and spent fuel inventories and transfers, and fuel assembly histories
5. Radioactive shipments
6. Abnormal occurrences
7. Plant radiation and contamination surveys
8. Changes made to the plant as it is described in the Final Safety Analysis Report, reflected in updated, corrected and as-built drawings
9. Cycling beyond normal limits for those components that have been designed to operate safely for a limited number of cycles beyond such limits

10. Reactor coolant system in-service inspections

11. Minutes of meetings of the Safety Audit Committee

#### 6.7 Plant Reporting Requirements

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

##### A. Operating 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 the facility startup and power escalation testing shall be submitted following receipt of operating licenses, following amendment to the licenses involving a planned increase in power level, following installation of fuel that has a different design and/or has been manufactured by a different fuel supplier, or following modifications to an extent that the nuclear, thermal, or hydraulic performance of the unit may be significantly altered. The report shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall be described. Startup reports shall be submitted with 60 days following commencement of commercial power operation, i.e., initially following synchronization of the turbo-generator to produce commercial power or resumption of commercial power operation.

##### 2. Semi-annual Operating Report\*

A report covering a six-month period shall be submitted within 60 days after January 1 and July 1 of each year and include the following:

\*A single submittal may be made for a multiple facility station. The report shall combine those sections such as environmental monitoring that are common to all the facilities at the station.

a. Operations Summary

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

- (1) changes in facility design,
- (2) performance characteristics (e.g., equipment and fuel performance),
- (3) changes in operating methods 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) changes in the plant operating staff for those 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),
- (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, and
- (6) histogram of thermal power vs. time.

c. Shutdown

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,
- (4) unit status during the outage; e.g., cold shutdown or hot shutdown, and
- (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-N18.7-1972 (ANS-3.2, Nov. 2, 1972)] and on systems and components that reduce or prevent the release of radioactive material to the environs. 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, and
- (5) special precautions taken to provide for reactor safety during repair.

e. Changes, Tests and Experiments

A brief description and the summary of the safety evaluation for those changes, tests, and experiments which were carried out without prior Commission approval, pursuant to the requirements of §50.59(b) of the Commission's regulations.

**f. Radioactive Effluent Releases**

A statement of the quantities of radioactive effluent released from the plant, with data summarized on a monthly basis following a standard format as issued by the AEC:

**(1) Gaseous Effluents**

**(a) Gross Radioactivity Releases**

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

**(b) Iodine Releases**

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

**(c) Particulate Releases**

- (i) Total gross radioactivity ( $\beta, \gamma$ ) released (in curies) excluding background radioactivity.
- (ii) Gross alpha radioactivity released (in curies) excluding background radioactivity.
- (iii) Total gross radioactivity (in curies) of nuclides with half-lives greater than eight days.
- (iv) Percent of technical specification limit for particulate radioactivity with half-lives greater than eight days.

**(2) Liquid Effluents**

- (a) Total gross radioactivity ( $\alpha, \beta$ ) released (in curies) excluding tritium and average concentration released to the unrestricted area.
- (b) The maximum concentration of gross radioactivity ( $\alpha, \beta$ ) released to the unrestricted area (averaged over the period of release).
- (c) Total tritium and total alpha radioactivity (in curies) released and average concentration released to the unrestricted area.
- (d) Total dissolved gas radioactivity (in curies) and average concentration released to the unrestricted area.
- (e) Total volume (in liters) of liquid waste released.
- (f) Total volume (in liters) of dilution water used prior to release from the restricted area.
- (g) Total gross radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
- (h) Percent of technical specification limit for total radioactivity.

**g. Solid Waste**

- (1) The total amount of solid waste packaged (in cubic feet).
- (2) The total estimated radioactivity (in curies) involved.
- (3) Disposition including date and destination if shipped offsite.

**h. Environmental Monitoring**

- (1) For each medium sampled, e.g., air, river bottom, 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 annual average concentrations or levels of radiation for the sampling point with the highest average and description of the location of that point with respect to the site.
- (2) If levels of radioactive materials in environmental media as determined by an environmental monitoring program indicate the likelihood of public intakes in excess of 1% of those that could result from continuous 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 variation of offsite environmental concentrations with time are observed, correlation of these results with effluent release shall be provided.

1. Occupational Personnel Radiation Exposure

Tabulate the number of personnel exposures for plant personnel by duty function in the following exposure increments for the reporting period:

less than 100 mRem, 100 - 500 mRem, 500 - 1250 mRem, 1250 - 2500 mRem, 2500 - 5000 mRem, above 5000 mRem. Annually tabulate the number of personnel having an exposure greater than 2500 mRem and report the major cause(s).

B. Non-Routine Reports

1. Abnormal Occurrence Reports

Notification shall be made within 24 hours by telephone and telegraph to the Director of the Regional Regulatory Operations Office (cc to the 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. The written report on these abnormal occurrences, and to the extent possible, the preliminary telephone and telegraph notification, shall: (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.

## 2. Unusual Events

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.

## G. Special Reports

The following special reports shall be submitted in writing to the Director of Licensing, USABC, Washington, D. C. 20545:

<u>Area</u>	<u>Specification Reference</u>	<u>Submittal Date</u>
1. Primary Containment Leak Rate Tests	4.7A	90 days after completion of each test requiring a summary technical report
2. Secondary Containment Leak Rate Tests (1)	4.7C	90 days after completion of the first refueling outage
3. In-service Inspection Evaluation & Development	4.6F & 4.6F Bases	90 days after the "five-year" inspection has been completed (2)
4. Analysis of Surveillance Specimens	4.6B Bases	Within one year after removal from the vessel
5. Main Steam Line Isolation Valve Leakage & Closure Time	4.7A Bases	90 days after completion of leak rate tests

	<u>Area</u>	<u>Specification</u>	<u>Submittal Date</u>
6.	Summary Status of Fuel	2.1 Bases	90 days after each refueling outage starting with second refueling outage
7.	Failed Fuel Detection	3.2 Bases	5 years (2)
8.	Primary Coolant Leakage to Drywell	4.6D Bases	Annual Report by March 31 of following year
9.	Instrument Line Flow Check Valve Evaluation	4.7D Bases	90 days after completion of first refueling outage

- NOTE:**
- (1) This summary technical 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 these data which demonstrate compliance with the specified leak rate limits. Surveillance testing at refueling outages after the first operating cycle should be reported in the semiannual operating reports.
  - (2) The summary technical report shall be submitted within the period of time listed based on the initial commercial service date as the starting point.