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1. LIMITING CONDITIONS FOR FUEL HANDLING OPERATION & SURVEILLANCE REQUIREMENTS

SECTION

(NOT USED)

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DEFINITIONS

FREQUENCY NOTATIONS

1.6 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

FUEL HANDLING OPERATIONS

1.7 FUEL HANDLING OPERATIONS shall be the movement of fuel over or within the Spent Fuel Pool. Suspension of FUEL HANDLING OPERATIONS shall not preclude completion of the movement of fuel, ~~equipment or components~~ to a safe conservative position.

MEMBER(S) OF THE PUBLIC

1.8 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.9 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in: the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.7.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semiannual Radioactive Effluent Release Reports required by Specifications 6.8.1.3 and 6.8.1.4.

SECTION 2.0
SAFETY LIMITS
AND
LIMITING SAFETY SYSTEM SETTINGS
USED
(NOT ~~REQUIRED~~)

3/4.4. ELECTRICAL POWER SYSTEMS

3/4.4.1 A.C. SOURCES

LIMITING CONDITION FOR FUEL HANDLING OPERATION

3.4.1.1 One circuit between the offsite transmission network and the onsite distribution system and one diesel generator shall be OPERABLE.

APPLICABILITY: DEFUELED MODE * #

ACTION:

With one of the above A.C. sources not OPERABLE suspend handling of irradiated fuel in the secondary containment and crane operations over the spent fuel storage pool when fuel assemblies are stored therein.

SURVEILLANCE REQUIREMENTS

4.4.1.1 The above required independent circuit between the offsite transmission network and the onsite AC distribution system shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.2 The above required diesel generator shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.3 The above required diesel generator shall be demonstrated OPERABLE:

a. At least once per 92 days by:

1. Verifying that the day fuel tank contains a minimum of 275 gallons of fuel.
2. Verifying the fuel storage tank contains a minimum of 20,412 gallons.

* The specified diesel generator shall be OPERABLE only when handling fuel in the secondary containment.

OPERABILITY of A.C. sources is unaffected by the use of commercial grade (non-Category I) parts, provided that the use of such parts is administratively documented and tracked. In addition, OPERABILITY does not apply to the safety-related functions.

ELECTRICAL POWER SYSTEMS

3/4.4.2 ONSITE POWER DISTRIBUTION SYSTEMS

LIMITING CONDITION FOR FUEL HANDLING OPERATION

3.4.2.1 As a minimum, two of the following A.C. system divisions, and one D.C. power distribution system division which corresponds to ~~an~~ OPERABLE diesel generator shall be OPERABLE and energized: an

a. A.C. power distribution:

1. Division 1 consisting of:

- a) 4160-volt A.C. bus 101.
- b) 480-volt A.C. bus 111 and MCCs 1110 through 1116, 1118, 1119, 111Y and 111Z.
- c) 120-volt A.C. distribution panels R1, R2, and R3.

2. Division 2 consisting of:

- a) 4160-volt A.C. bus 102
- b) 480-volt A.C. bus 112 and MCCs 1120 through 1126, 1128, 1129, and 112X.
- c) 120-volt A.C. distribution panels in B1, B2 and B3.

3. Division 3 consisting of:

- a) 4160-volt A.C. bus 103
- b) 480-volt A.C. bus 113 and MCCs 1133 and 1134.
- c) 120-volt A.C. distribution panels 01 and 02

b. D.C. power distribution:

1. Division 1 consisting of 125-volt D.C. distribution bus A.

2. Division 2 consisting of 125-volt D.C. distribution bus B.

3. Division 3 consisting of 125-volt D.C. distribution bus C.

APPLICABILITY: DEFUELED MODE *

* The D.C. power distribution system shall be OPERABLE only when handling fuel in the secondary containment.

OPERABILITY of Onsite Power Distribution Systems is unaffected by the use of commercial grade (non-Category I) parts, provided that the use of such parts is administratively documented and tracked. In addition, OPERABILITY does not apply to the safety-related functions.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR FUEL HANDLING OPERATION (CONTINUED)

ACTION:

- a. With one division of the above required two A.C. divisions not energized, suspend handling of irradiated fuel in the secondary containment and immediately initiate action to restore the required A.C. divisions.
- b. With the D.C. division associated with ^{an} ~~a~~ OPERABLE diesel generator not energized, suspend handling of irradiated fuel in the secondary containment and crane operations over the spent fuel storage pool when fuel assemblies are stored therein.

SURVEILLANCE REQUIREMENTS

4.4.2.1 The above required power distribution system divisions shall be determined energized at least once per 7 days by verifying correct breaker alignment and voltage on the busses and power availability to the MCCs and the panels.

3/4.4 ELECTRICAL POWER SYSTEMS

BASES

3/4.4.1 AND 3/4.4.2 A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the specified A.C. power source⁶ and associated distribution systems during fuel storage and handling ensures that sufficient instrumentation and control capability is available for monitoring and maintaining the unit status. The use of commercial grade parts is acceptable because these systems are not performing safety-related functions.

DESIGN FEATURES

SECONDARY CONTAINMENT

5.2.3 The secondary containment consists of the Reactor Building, the equipment access structure and a portion of the main steam tunnel and has a design minimum free volume of 2,000,000 cubic feet.

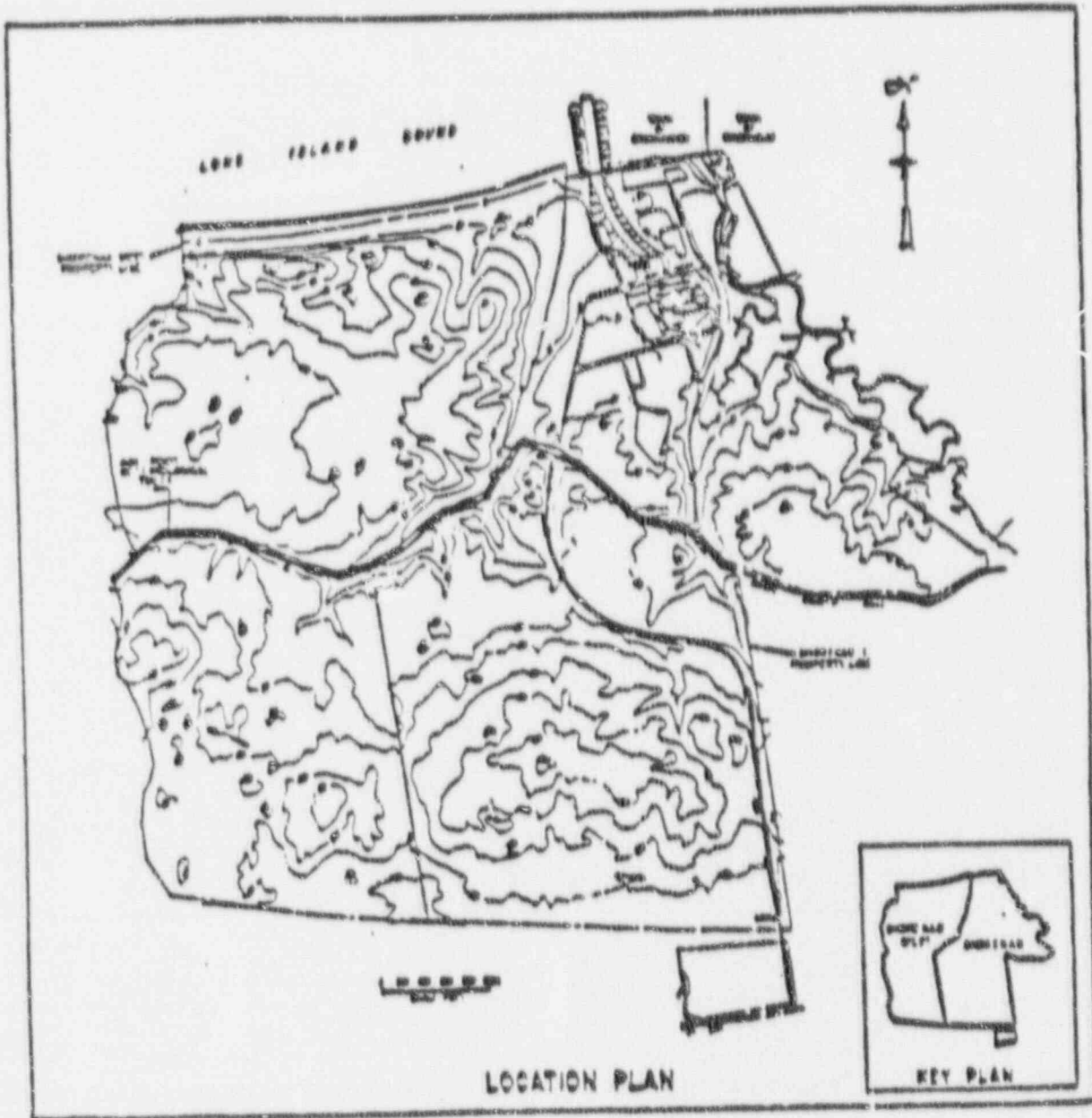


FIGURE 5.1.2-1

LOW POPULATION ZONE

SHOREHAM - UNIT 1

5-6
5-3



SITE BOUNDARY FOR RADIOACTIVE
GASEOUS AND LIQUID EFFLUENTS

FIGURE 5.1.3-1

SHOREHAM - UNIT 1

5-5
5-4

DESIGN FEATURES

5.2 ² ~~REACTOR CORE~~ FUEL AND CONTROL ROD DATA

FUEL ASSEMBLIES

5.2.1 The ~~reactor core is designed to~~ ^{spent fuel storage pool} contains 560 fuel assemblies with each fuel assembly containing 62 fuel rods and two water rods clad with Zircaloy-2. Each fuel rod is designed to have a nominal active fuel length of 150 inches. The ~~initial core loading is designed to have~~ ^{fuel hrs} a maximum average enrichment of 1.90 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.2.2 ^{There are} ~~The reactor core is designed to contain~~ 137 control rod assemblies, each consisting of a cruciform array of stainless steel tubes containing 143 inches of boron carbide, B_4C , powder surrounded by a cruciform shaped stainless steel sheath.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed:

- a. For a pressure of:
 1. 1150 psig on the suction side of the recirculation pump.
 2. 1325 psig from the recirculation pump discharge to the outlet side of the discharge shutoff valve.
 3. 1325 psig from the discharge shutoff valve to the jet pumps.
- b. For a temperature of 562°F.

VOLUME

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is designed to be approximately 16,410 cubic feet at a nominal T_{ave} of 533°F.

DESIGN FEATURES

5.6³ METEOROLOGICAL TOWER LOCATION

5.6.1 The 400 foot meteorological tower is located as shown on Figure 5.1.3-1.

5.6⁴ FUEL STORAGE

CRITICALITY

5.6.1 The spent fuel storage racks are designed and shall be maintained with:

- a. A k_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 1.0% delta k/k for uncertainties as described in Appendix 9A of the SAR.
- b. A nominal 6 inches in one direction and 9.25 inches in the other direction center-to-center distance between fuel assemblies placed in the storage racks.

5.6.1.2 The k_{eff} for new fuel for the first core loading stored dry in the spent fuel storage racks shall not exceed 0.98 when aqueous moderation is assumed.

DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 152'- 4 1/2".

CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2176 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7.1-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7.1-1.

TABLE 5.7.1-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor	120 heatup and cooldown cycles	70°F to 560°F to 70°F
	80 step change cycles	Loss of all feedwater heaters
	180 reactor trip cycles	100% to 0% of RATED THERMAL POWER
	130 hydrostatic pressure and leak tests	Pressurized to \geq 930 and \leq 1250 psig

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for the management of the overall plant and ensuring the safe storage and handling of irradiated fuel. The Plant Manager shall delegate in writing the succession to this responsibility during his absence.

6.1.2 ^{licensed operator} The Watch engineer (or during his absence from the Control Room a designated ~~individual~~), shall be responsible for the Control Room command function. A management directive to this effect, signed by the Vice President, Office of Nuclear shall be reissued to all station personnel on an annual basis.

6.2 ORGANIZATION

6.2.1 Nuclear Organization

An organization shall be established for the unit in the DEFUELED MODE and for corporate management. This organization shall include the positions for activities affecting the safe storage and handling of irradiated nuclear fuel.

- a. Lines of authority, responsibility and communication shall be established and defined from the highest management levels through intermediate levels to and including all organization positions involved with the safe storage and handling of irradiated fuel. These relationships shall be documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the SAR and updated in accordance with 10 CFR 50.71(e).
- b. The responsible Vice President shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure the safe storage and handling of irradiated fuel.
- c. The Plant Manager shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe maintenance of the plant and storage and handling of irradiated fuel.
- d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

ADMINISTRATIVE CONTROLS

AUDITS (Continued)

- b. The performance, training and qualifications of the entire staff at least once per 12 months;
- c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems, or method of operation that affect nuclear safety, at least once per year;
- d. The performance of activities required by the Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50, at least once per 24 months;
- e. The fire protection programmatic controls including the implementing procedures, equipment and program implementation at least once per 24 months utilizing either a qualified offsite licensee fire protection engineer(s) or an outside independent fire protection consultant.
- f. Any other area of station operation considered appropriate by the NRB, President or the Vice President, Office of Nuclear;
- g. The ^Radiological ^Environmental ^Monitoring ^Program and the results thereof at least once per 12 months;
- h. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months; and
- i. The PROCESS CONTROL PROGRAM and implementing procedures for solidification of radioactive wastes at least once per 24 months.
- j. The performance of activities required by the Quality Assurance program for effluent and environmental monitoring at least once per 12 months.

RECORDS

6.5.2.9 Records of NRB activities shall be prepared, approved, and distributed as indicated below:

- a. Minutes of each NRB meeting shall be prepared, approved, and forwarded to the President and the Vice President, Office of Nuclear within 14 days following each meeting.
- b. Reports of reviews encompassed by Specification 6.5.2.7 shall be prepared, approved, and forwarded to the President and the Vice President, Office of Nuclear within 14 days following completion of the review.

Deleted

ADMINISTRATIVE CONTROLS

6.7.2 Each procedure of Specification 6.7.1, and changes thereto, shall be reviewed by the RDC prior to implementation. The Plant Manager shall approve Station Administrative procedures, Security Plan implementing procedures and Emergency Plan Implementing Procedures prior to implementation. Other procedures of Specification 6.7.1 shall be approved by the appropriate plant Division Manager or by the Plant Manager prior to implementation. Each Plant Division Manager shall be responsible for a designated set of procedures. These procedures shall be reviewed periodically, as set forth in administrative procedures.

6.7.3 Temporary changes to procedures of Specification 6.7.1 may be made provided:

- a. The intent of the original procedure is not altered;
- b. The change is approved by two members of the unit management staff, at least one of whom holds a Senior Reactor Operators License on the unit affected; and
- c. The change is documented, reviewed by the RDC, and approved by the Plant Manager within 14 days of implementation.

6.7.4 The following programs shall be established, implemented, and maintained:

a. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluent and for maintaining doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM.

ADMINISTRATIVE CONTROLS

h. Records of annual physical inventory of all sealed source material of record.

6.9.3 The following records shall be retained for the duration of the unit Operating License:

- a. Records and drawing changes reflecting station design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories.
- c. Records of radiation exposure for all individuals issued monitoring devices in accordance with 10CFR20.202.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of training and qualification for current members of the unit staff.
- f. Records of quality assurance activities required by the Quality Assurance Manual which are not listed in Section 6.9.2.
- g. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 30.59.
- h. Records of meetings of the ROC and NRB.
- i. Records of analyses required by the ^Radiological ^Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.
- j. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

6.10 RADIATION PROTECTION PROGRAM

6.10 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.