UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DOMINION ENERGY NUCLEAR CONNECTICUT, INC.

(MILLSTONE POWER STATION, UNIT 1)

DOCKET NO. 50-245

FACILITY OPERATING LICENSE

License No. DPR-21

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for an operating license filed by the applicant complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission, as set forth in 10 CFR Chapter 1, and all required notifications to other agencies or bodies have been duly made;

   B. Deleted.

   C. The facility will be decommissioned in conformity with the provisions of the Act, and the rules and regulations of the Commission;

   D. Deleted.

   E. Dominion Energy Nuclear Connecticut, Inc. (the licensee) is technically qualified to engage in the activities authorized by this operating license, in accordance with the rules and regulations of the Commission;

   F. The licensee has furnished proof of financial protection that satisfies the requirements of 10 CFR Part 140;

   G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public; and

   H. The issuance of this license is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and

   I. Deleted.

2. Provisional Operating License No. DPR-21, dated October 7, 1970, as amended, was superseded in its entirety by Facility Operating License No. DPR-21 issued to Northeast Nuclear Energy Company and transferred to Dominion Nuclear Connecticut, Inc.* on March 31, 2001. It applies to the permanently defueled condition as follows:

   A. This license applies to the Millstone Power Station, Unit 1, a single cycle, boiling light-water reactor, and electric generating equipment (the facility). The facility is located on the licensee's site in Waterford, Connecticut, and is described in the license application, as amended, and the Safety Analysis Report, as supplemented and amended (herein the application).

   B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Dominion Energy Nuclear Connecticut, Inc.:

      (1) Pursuant to Section 104b of the Atomic Energy Act of 1954, as amended (the Act), and 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” to possess, the facility at the designated location in Waterford, Connecticut in accordance with the procedures and limitations set forth in this license;

      (2) Pursuant to the Act and 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material,” to possess at any time special nuclear material that was used as reactor fuel in accordance with the limitations for storage as described in the Safety Analysis Report, as supplemented and amended.

      (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess, and use at any time sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required and possess any byproduct, source and special nuclear material as sealed neutron sources that was used for reactor startup; and

      (4) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear material as may be produced by operation of the facility.

   C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

      (1) Deleted.

* On May 12, 2017, the name “Dominion Nuclear Connecticut, Inc.” changed to “Dominion Energy Nuclear Connecticut, Inc.”

(1) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 120, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(2) Deleted.

(3) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which may contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Millstone Power Station Physical Security Plan," with revisions submitted through March 29, 1988; "Millstone Power Station Suitability, Training and Qualification Plan," with revisions submitted through July 21, 1986; and "Millstone Power Station Safeguards Contingency Plan," with revisions submitted through October 30, 1985. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

(4) On the closing date of the transfer of MP1 to DNC*, DNC* shall: 1) obtain from the Selling Owners of MP1 the decommissioning trust fund for MP1 in an amount no less than $268,300,000; and 2) receive a parent company guarantee pursuant to 10 CFR 50.75(e)(1)(iii)(B) (to be updated annually as required under 10 CFR 50.75(f)(1) and 50.82(a)(8)(iv), unless otherwise approved by the NRC) in an amount which, when combined with the decommissioning trust fund for MP1, equals a total of the site-specific decommissioning funding cost as of the closing date of the transfer as estimated (in year 2000 dollars) in accordance with 10 CFR 50.82 (including the use of a 2 percent annual real rate of return as provided in 10 CFR 50.75(e)(1)(i)).

(5) The decommissioning trust agreement for Millstone, Unit No. 1 at the time the transfer of the unit to Dominion Nuclear Connecticut, Inc.* is effected and thereafter, is subject to the following:

(a) The decommissioning trust agreement must be in a form acceptable to the NRC.

* On May 12, 2017, the name "Dominion Nuclear Connecticut, Inc." changed to "Dominion Energy Nuclear Connecticut, Inc."

(b) With respect to the decommissioning trust fund, investments in the securities or other obligations of Dominion Energy, Inc. or its affiliates or subsidiaries, successors, or assigns are prohibited. Except for investments tied to market indexes or other non-nuclear-sector mutual funds, investments in any entity owning one or more nuclear power plants are prohibited.

(c) The decommissioning trust agreement for Millstone, Unit No. 1, must provide that no disbursements or payments from the trust, other than for ordinary administrative expenses, shall be made by the trustee until the trustee has first given the Director of the Office of Nuclear Reactor Regulation 30-days prior written notice of payment. The decommissioning trust agreement shall further contain a provision that no disbursements or payments from the trust shall be made if the trustee receives prior written notice of objection from the NRC.

(d) The decommissioning trust agreement must provide that the agreement can not be amended in any material respect without 30 days prior written notification to the Director of the Office of Nuclear Reactor Regulation.

(e) The appropriate section of the decommissioning trust agreement shall state that the trustee, investment advisor, or anyone else directing the investments made in the trusts shall adhere to a “prudent investor” standard, as specified in 18 CFR 35.32(a)(3) of the Federal Energy Regulatory Commission's regulations.

(7) Dominion Energy Nuclear Connecticut, Inc. shall take all necessary steps to ensure that the decommissioning trust is maintained in accordance with the application for approval of the transfer of the Millstone, Unit No. 1, license and the requirements of the Order approving the transfer, and consistent with the safety evaluation supporting the Order.

3. On July 21, 1998, Northeast Nuclear Energy Company (NNECO) certified that operations at Millstone Unit No. 1 would permanently cease and that the fuel had been permanently removed from the reactor vessel in accordance with 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii). As a result, the 10CFR50 license no longer authorizes operation of the reactor, or the emplacement or retention of fuel in the reactor vessel.

This license is effective as of the date of issuance and authorizes ownership and possession of Millstone Unit No. 1 until the Commission notifies the licensee in writing that the license is terminated. The licensee shall:

C. Take actions necessary to decommission the plant and continue to maintain the facility, including, where applicable, the storage, control and maintenance of the spent fuel, in a safe condition; and

D. Conduct activities in accordance with all other restrictions applicable to the facility in accordance with the NRC regulations and the applicable provisions of the 10CFR50 facility license as defined in Section 2 of this license.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Frank J. Miraglia, Director
Division of PWR Licensing - B

Attachment:
Appendix A - Technical Specifications

Date of Issuance: October 31, 1986

Jan 4, 2006

Orders and Exemptions can be found in U1-14-OPS-BAP02,
“Unit 1 Orders and Exemptions”

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INDEX PAGES ARE LICENSEE CONTROLLED

TABLE OF CONTENTS

# 1.0 USE AND APPLICATION

## 1.1 Definitions

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

| Term | Definition |
|---|---|
| ACTIONS | ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times. |
| CERTIFIED FUEL HANDLER | A CERTIFIED FUEL HANDLER is an individual who complies with provisions of the CERTIFIED FUEL HANDLER training program required by Technical Specification 5.4.1. |
| OPERABLE-OPERABILITY | A system, subsystem, division, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component or device to perform its specified safety function(s) are also capable of performing their related support function(s). |

1.0 USE AND APPLICATION

## 1.2 Logical Connectors

PURPOSE

The purpose of this section is to explain the meaning of logical connectors.

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors.

When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.

EXAMPLES

The following examples illustrate the use of logical connectors.

(continued)

1.0 USE AND APPLICATION

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1
ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. LCO not met | A.1 Verify....<br><br>AND<br><br>A.2 Restore..... | |

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

(continued))

1.0 USE AND APPLICATION

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2
ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. LCO not met | A.1 Trip.....<br><br>OR<br><br>A.2.1 Verify.....<br><br>AND<br><br>A.2.2 Reduce | |

This example represents a more complicated use of logical connectors. Required Actions A.1 and A.2 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Either of the Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND.

1.0 USE AND APPLICATION

## 1.3 Completion Times

PURPOSE The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring the safe storage of irradiated fuel. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Times(s).

DESCRIPTION The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.

EXAMPLES The following examples illustrate the use of Completion Times with different types of Conditions.

(continued)

1.0 USE AND APPLICATION

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-1
ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Required Action and associated Completion Time not met. | A.1 Verify.....<br><br>AND<br><br>A.2 Restore | 6 hours<br><br><br><br>36 hours |

Condition A has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition A is entered. The Required Actions of Condition A are to perform the verification required by ACTION A.1 within 6 hours AND to perform the restoration required by ACTION A.2 within 36 hours. A total of 6 hours is allowed for performing ACTION A.1 and a total of 36 hours (not 42 hours) is allowed for performing ACTION A.2 from the time that Condition A was entered. If ACTION A.1 is completed within 3 hours, the time allowed completing ACTION A.2 is the next 33 hours because the total time allowed for completing ACTION A.2 is 36 hours.

| | |
|---|---|
| IMMEDIATE COMPLETION TIME | When “Immediately” is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner. |

# 1.0 USE AND APPLICATION

## 1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The “Specified Frequency” is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The “Specified Frequency” consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is when irradiated fuel is stored in the fuel pool.

(continued)

1.0 USE AND APPLICATION

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| Verify parameter is within limits | 12 hours |

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in the specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified, then SR 3.0.3 becomes applicable.

(continued)

1.0 USE AND APPLICATION

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| Verify parameter is within limits | Within 24 hours prior to moving irradiated fuel<br><br>AND<br><br>24 hours thereafter |

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector “AND” indicates that both Frequency requirements must be met. The use of “prior to” indicates that the surveillance must be performed once before the initiation of fuel handling activities. This type of Frequency does not qualify for the extension allowed by SR 3.0.2. “Thereafter” indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the “prior to” performance in this example).

# 2.0 SAFETY LIMITS

This section is not applicable since Millstone Unit 1 is permanently defueled.

## 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the specified conditions in the Applicability, except as provided in LCO 3.0.2.

LCO 3.0.2 Upon discovery of the failure to meet an LCO, the required actions of the associated Conditions shall be met.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the required action is not required unless otherwise stated.

## 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

| | |
|---|---|
| SR 3.0.1 | SRs shall be met during specific conditions in the Applicability for individual LCOs unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits |
| SR 3.0.2 | The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the frequency is met. |
| SR 3.0.3 | If it is discovered that a Surveillance was not performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed from the time of discovery up to 24 hours or up to the limit of the specified frequency, whichever is less. This delay period is permitted to allow performance of the surveillance.<br><br>If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon expiration of the delay period.<br><br>When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon failure to meet the Surveillance. |

(continued)

# 3.1 DEFUELED SYSTEMS

## 3.1.1 Fuel Storage Pool Water Level

LCO 3.1.1 The Fuel Storage Pool Water Level shall be greater than or equal to 33 feet.

APPLICABILITY Whenever irradiated fuel is stored in the Fuel Storage Pool.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Fuel Storage Pool Water Level not within limit. | A.1 Suspend all Fuel Handling Operations.<br><br>AND<br><br>A.2 Restore Fuel Storage Pool Water Level to within limits. | Immediately<br><br><br><br>Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.1.1 Verify the Fuel Storage Pool Water Level is greater than or equal to 33 feet.<br><br>AND<br><br>Record the Fuel Storage Pool Water Level. | 24 hours |

# 3.2 SPENT FUEL HANDLING

## 3.2.1 Reactor Building Crane Operability

LCO 3.2.1 The Reactor Building crane shall be OPERABLE.

APPLICABILITY When the Reactor Building crane is used for handling of a spent fuel cask.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Reactor Building crane is INOPERABLE | A.1 Suspend all Spent Fuel Cask handling and place the load in a safe condition. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| SR 3.2.1 | Conduct a visual inspection of crane cables, sheaves, hook, yoke, and cask lifting trunnions. Conduct no-load mechanical and electrical tests to verify proper operation of crane controls, brakes, and lifting speeds. Conduct a load test by lifting the empty cask out of the pivot cradle. The above inspections and pre-lifting procedure shall meet the requirements of ANSI Standard B30.2, 1967. | Within 4 days prior to Spent Fuel Cask handling operations and every 4 days thereafter during spent fuel cask handling |

## 3.2 SPENT FUEL HANDLING

### 3.2.2 Reactor Building Crane Travel with a Spent Fuel Cask

LCO 3.2.2 The Reactor Building crane loaded with a Spent Fuel Cask shall be prohibited from travel over irradiated fuel assemblies. The Reactor Building crane mode switch shall be in a “Mode 2” position and the mode switch key removed.

APPLICABILITY When the Reactor Building crane is used for handling of a spent fuel cask.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. Reactor Building Crane mode switch not in “Mode 2” position and mode switch key not removed | A.1 Suspend all Spent Fuel Cask handling and place the load in a safe condition. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.2.2 Demonstrate OPERABILITY of Reactor Building crane interlocks and limit switches which prevent crane travel over irradiated fuel assemblies. | Within 7 days prior to Spent Fuel Cask handling operations<br><br>Every 7 days thereafter during Spent Fuel Cask handling |

# 4.0 DESIGN FEATURES

4.1 Site Location

The Unit 1 Reactor Building is located on the site at Millstone Point in Waterford, Connecticut. The nearest site boundary on land is 2063 feet northeast of the reactor building (1627 feet northeast of the elevated stack), which is the minimum distance to the boundary of the exclusion area as described in 10 CFR 100.3. No part of the site that is closer to the reactor building than 2063 feet shall be sold or leased except to Dominion Energy Nuclear Connecticut, Inc. or its corporate affiliates for use in conjunction with normal utility operations.

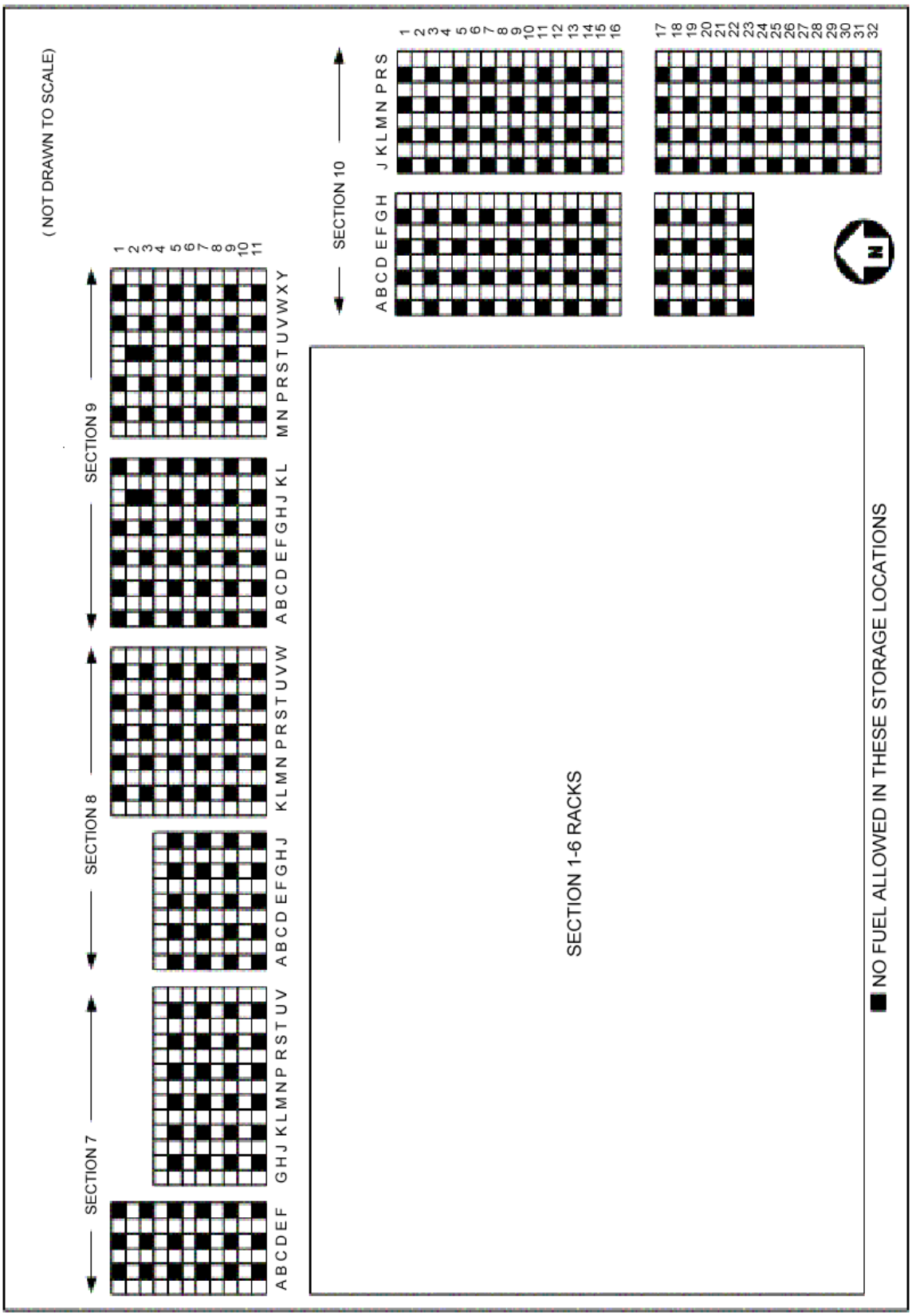
4.2 Fuel Storage

4.2.1 DELETED

4.2.2 The $K_{eff}$ of the spent fuel storage pool shall be less than or equal to 0.95. This $K_{eff}$ value is satisfied with fuel assemblies having a maximum k-infinity of 1.24 in the normal reactor configuration at cold conditions, and an average U-235 enrichment of 3.8 weight percent or less, and with no fuel allowed in the storage locations shown in Figure 4.1.

4.2.3 The number of fuel assemblies stored in the spent fuel storage pool shall not exceed 2959 bundles.

FIGURE 4.1
MILLSTONE UNIT NO. 1 SPENT FUEL POOL



# 5.0 ADMINISTRATIVE CONTROLS

## 5.1 Responsibility

5.1.1 The designated officer shall be responsible for overall operation of the Millstone Station Site and shall delegate, in writing, the succession to this responsibility. The designated manager shall be responsible for overall Unit safe operation and shall delegate in writing the succession of this responsibility.

5.1.2 The Shift Manager shall be responsible for the control room command function.

5.1.3 Unless otherwise defined, the technical specification titles for members of the staff are generic titles. Unit-specific titles for the functions and responsibilities associated with these generic titles are identified in appropriate administrative documents.

# 5.0 ADMINISTRATIVE CONTROLS

## 5.2 Organization

### 5.2.1 Onsite And Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safe storage of irradiated fuel.

a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization 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 Quality Assurance Topical Report.

b. The Designated Manager shall be responsible for overall unit safe operation and shall have control over those onsite activities and resources necessary for maintenance and storage of irradiated fuel in a safe condition.

c. The Designated Officer 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 ensure the safe storage of irradiated fuel.

d. The individuals who train the CERTIFIED FUEL HANDLERS and those who carry out radiation protection functions or perform quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their ability to perform their assigned functions.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.2 Facility Staff

a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 5.2-1.

b. At least one person qualified to stand watch in the control room shall be present in the control room when irradiated fuel is stored in the fuel storage pool.

c. Deleted

d. An individual qualified in radiation protection procedures shall be onsite during fuel handling operations.

e. All fuel handling operations shall be directly supervised by a qualified individual.

f. Deleted

g. The Shift Manager shall be a CERTIFIED FUEL HANDLER.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.2 Facility Staff (continued)

TABLE 5.2-1
MINIMUM SHIFT CREW COMPOSITION (1)

| POSITION | NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION |
|---|---|
| **Certified Fuel Handler** | **1** |
| **Non-Certified Operator** | **1** |

(1) The above shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided expeditious actions are taken to fill the required positions.

## 5.3 Facility Staff Qualifications

5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications referenced for comparable positions as specified in the Nuclear Facility Quality Assurance Program Description.

5.3.2 The operations manager or at least one operations middle manager shall be a CERTIFIED FUEL HANDLER.

5.0 ADMINISTRATIVE CONTROLS

## 5.4 Training

5.4.1 An NRC approved training and retraining program for the CERTIFIED FUEL HANDLERS shall be maintained.

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures

5.5.1 Written procedures shall be established, implemented, and maintained covering the following activities:

a. The procedures applicable to the safe storage of irradiated fuel recommended in Appendix "A" of Regulatory Guide 1.33, February 1978;

b. Fire Protection Program implementation;

c. Cold Weather Operations;

d. Quality Controls for effluent monitoring, using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974;

e. Liquid and gaseous radioactive effluent discharges from the unit for all operations involving offsite releases of radioactive effluents. These procedures shall specify the use of appropriate waste treatment utilizing the guidance provided in the REMODCM;

f. Fuel handling operations;

g. All programs specified in Specification 5.6, except for Section I.E., Radiological Environmental Monitoring of REMODCM, which is performed in accordance with Specifications 5.5.6 and 5.5.7.

5.5.2 The designated manager, designated officer, or designated senior officer may designate specific procedures and programs, or classes of procedures and programs to be reviewed in accordance with the Station Qualified Reviewer Program in lieu of review by the FSRC. The review per the FSRC or Station Qualified Reviewer Program shall be in accordance with the Quality Assurance Program Topical Report.

5.5.3 Procedures listed in Specification 5.5.1, and changes thereto, shall be approved by the designated manager, or designated officer or by cognizant managers or directors who are designated as the Approval Authority by the designated manager, or designated officer as specified in administrative procedures. The Approval Authority for each procedure and program or class of procedure and program shall be specified in administrative procedures.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures (continued)

5.5.4 Each procedure of Specification 5.5.1, and changes thereto, shall be reviewed by the FSRC and shall be approved by the designated manager or designated officer, or be reviewed and approved in accordance with the Station Qualified Reviewer Program prior to implementation. Each procedure of Specification 5.5.1 shall be reviewed periodically as set forth in administrative procedures.

5.5.5 Temporary changes to procedures of Specification 5.5.1 above may be made provided:

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

b. the change is approved by two members of the plant management staff, at least one of whom is a CERTIFIED FUEL HANDLER;

c. the change is documented, reviewed by the FSRC or the Station Qualified Reviewer Program, as applicable, and approved by the designated manager, designated officer, or the Station Qualified Reviewer Program department manager within 14 days of implementation.

5.5.6 All procedures and procedure changes required for the Radiological Environmental Monitoring Program (REMP) of Specification 5.6.1 shall be reviewed by an individual (other than the author) from the organization responsible for the REMP and approved by appropriate supervision.

5.5.7 Temporary changes may be made for the Radiological Environmental Monitoring Program provided the intent of the original procedure is not altered and the change is documented and reviewed by an individual (other than the author) from the organization responsible for the REMP within 14 days of implementation.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

The following programs shall be established, implemented and maintained.

5.6.1 Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM)

a. The REMODCM 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 and trip setpoints, and in the conduct of the radiological environmental monitoring program; and

b. The REMODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release, reports required by Specification 5.7.2 and Specification 5.7.3.

Licensee initiated changes to the REMODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

1) sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

2) a determination that the change(s) will maintain the level of radioactive effluent control required by 10CFR20.1302, 40CFR Part 190, 10 CFR 50.36a and Appendix I to 10CFR50, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after review and acceptance by FSRC and the approval of the designated officer; and

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

5.6.1 Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM) (continued)

c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire REMODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the REMODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

5.6.2 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. a change in the TS incorporated in the license; or

2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10CFR50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.6.2b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10CFR50.71(e).

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

5.6.3 Fuel Storage Pool Water Chemistry Program

This program provides controls for monitoring fuel storage pool water chemistry to minimize the potential effects of corrosion which could affect the safe storage of irradiated fuel. The program shall include identification for critical variables and control points for these variables. The program shall include sampling frequencies and define corrective actions to be taken for off control point chemistry conditions. The NRC will be notified prior to elimination or changes to the acceptance criteria for critical variables monitored.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

5.6.4 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the REMODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the REMODCM;

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402;

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the REMODCM;

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I;

e. Determination of cumulative dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the REMODCM at least every 31 days. Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the REMODCM at least every 31 days;

f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I;

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Programs and Manuals

5.6.4 Radioactive Effluent Controls Program (continued)

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be in accordance with the following:

1. For noble gases: a dose rate ≤ 500 mrem/yr to the whole body and a dose rate ≤ 3000 mrem/yr to the skin, and

2. For iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days: a dose rate ≤1500 mrem/yr to any organ;

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and

j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of Specification 3.0.2 and Specification 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

5.0 ADMINISTRATIVE CONTROLS

## 5.7 Reporting Requirements

The following reports shall be submitted in accordance with 10CFR50.4.

5.7.1 Deleted

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.2 Annual Radiological Environmental Operating Report

NOTE

A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the REMODCM, as well as summarized and tabulated results of these analyses and measurements. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in the next annual report.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.3 Radioactive Effluent Release Report

NOTE

A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

The Radioactive Effluent Release Report covering the operation of the unit in the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the REMODCM and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601 (a) and (b) of 10 CFR Part 20.

5.8.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.

b. Access to, and activities in, each such area shall be controlled by means of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously displays radiation dose rates in the area, or

2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

(i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8 High Radiation Area

continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(ii) Be under the surveillances as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job brief prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.8.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift manager, radiation protection manager, or his or her designees, and

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8 High Radiation Area

d. Each individual group entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and.

Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(iii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the “As Low As is Reasonably Achievable” principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.8 High Radiation Area

5.8 High Radiation Area

f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.

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## B 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

BASES

LCOs

LCO 3.0.1 and 3.0.2 establish general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

LCO 3.0.1

LCO 3.0.1 establishes the Applicability statement within each individual specification as the requirement for when the LCO is required to be met (i.e., when the facility is in the specified conditions of the Applicability statement of each specification).

LCO 3.0.2

LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that an ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. This specification establishes that:

a. Completion of the Required Actions within the specified Completion Times constitutes compliance with a specification; and

b. Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified.

Completing the Required Actions is not required when an LCO is met or is no longer applicable, unless otherwise stated in the individual Specifications. The Completion Times of the Required Actions are also applicable when a specified condition in the Applicability is entered intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise the safe storage of irradiated fuel. Intentional entry into ACTIONS should not be made for convenience.

# B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

## BASES

SRs

SR 3.0.1 through 3.0.3 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise specified.

SR 3.0.1

SR 3.0.1 establishes the requirement that SRs must be met during the specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that surveillances are performed to verify that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Surveillances do not have to be performed when the facility is in a specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified.

SR 3.0.2

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers facility conditions that may not be suitable for conducting the Surveillance (e.g., other ongoing Surveillance or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the SRs. Any exceptions to SR 3.0.2 are stated in the individual Specifications.

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as a convenience to extend Surveillance intervals or periodic Completion Time intervals beyond those specified.

(continued)

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SR 3.0.3 SR 3.0.3 establishes the flexibility to defer declaring an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours applies from the point of time that it is discovered that the Surveillance has not been performed in accordance to SR 3.0.2, and not at the time that the specified Frequency was not met.

This delay period provides adequate time to complete Surveillances that have been missed. This delay period permits the completion of a Surveillance before complying with Required Actions or other remedial measures that might preclude completion of the Surveillance.

The basis for this delay period includes consideration of facility conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the requirements. When a Surveillance with a Frequency based not on time intervals, but upon specified facility conditions or operational situations, is discovered not to have been performed when specified, SR 3.0.3 allows the full delay period of 24 hours to perform the Surveillance.

Failure to comply with specified Frequencies for SRs is expected to be an infrequent occurrence. Use of the delay period established by SR 3.0.3. is a flexibility which is not intended to be used as a convenience to extend Surveillance intervals.

(continued)

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SR 3.0.3 (continued)

If a Surveillance is not completed within the allowable delay period, then the variable is considered outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon expiration of the delay period. If a Surveillance is failed within the delay period, then the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

# B 3.1 DEFUELED SYSTEMS

## B 3.1.1 FUEL STORAGE POOL WATER LEVEL

BASES

**BACKGROUND**

The minimum water level in the spent fuel storage pool meets the assumptions of iodine decontamination factors following a fuel handling accident. A general description of the spent fuel storage pool design is found in Chapter 3 of the DSAR, (Ref. 1). The assumptions of the fuel handling accident are found in Chapter 5 of the DSAR (Ref. 2).

**APPLICABLE SAFETY ANALYSIS**

Although the unit is permanently shutdown and defueled, fuel handling accidents in the fuel storage pool are still possible.

A bounding calculation of the radiological consequences of such an accident in the spent fuel pool was performed, based on the following:

- Actual source term - radioactive decay since shutdown credited
- Failure of four assemblies - 248 fuel rods in four 8 x 8 assemblies
- Unfiltered ground release - no credit for secondary containment or standby gas treatment

The analysis concluded that 1) calculated doses at the exclusion area boundary and the low population zone are within 10CFR100 limits; and 2) calculated doses to the Millstone Unit 2 and 3 Control Rooms are within the limits set in GDC -19.

(continued)

BASES

LCO

The fuel storage pool water level is required to be greater than or equal to 33 feet above the bottom of the pool. The bottom of the fuel storage pool is located at elevation of 69 feet, 9 inches above mean sea level (MSL). Therefore, the 33 feet limit corresponds to an elevation of 102 feet, 9 inches above MSL.

This water level preserves the assumptions of the fuel handling accident analysis and provides shielding to minimize the general area dose when irradiated fuel is being moved.

APPLICABILITY

This LCO applies whenever irradiated fuel assemblies are stored in the fuel storage pool.

ACTIONS A.1

When the initial conditions for an accident cannot be met, action should be taken to preclude the accident from occurring. When the fuel storage pool level is lower than the required level, fuel handling activities should be suspended immediately. This does not preclude movement of items to a safe position.

Fuel handling activities as described in this specification include the movement of spent fuel, or other loads suspended from the fuel building crane or refueling machine, over irradiated fuel assemblies.

This effectively precludes a fuel handling accident from occurring.

A.2

This action is intended to restore the fuel storage pool level as soon as possible to minimize the time that the water level assumed in the accident analysis is not being met.

(continued)

BASES

SR 3.1.1

SURVEILLANCE REQUIREMENTS

This SR ensures that the water level is within the established limit. The water level in the fuel storage pool must be checked periodically. The 24 hour Frequency is based on engineering judgement and is considered adequate because of available indication of level changes and the large volume of water in the pool. Water level changes are controlled by facility procedures and level changes are unlikely based on operating experience.

References

1. DSAR Chapter 3
2. DSAR Chapter 5

# B 3.2 SPENT FUEL HANDLING

## B 3.2.1 REACTOR BUILDING CRANE OPERABILITY

BASES

BACKGROUND

The purpose of this specification is to preclude the possibility of dropping a spent fuel cask over irradiated fuel in the fuel storage pool.

A description of the Reactor Building crane design improvements was provided by the licensee to the NRC on June 29, 1973. The modification improvements were described as a “Cask Drop Prevention System.” By letter dated December 30, 1975, the NRC informed the licensee that the proposed improvements were acceptable. However, the NRC also requested the licensee to submit proposed Technical Specifications to assure safe operation and continued surveillance of the Reactor Building crane. The licensee submitted the proposed Technical Specifications on April 1, 1976, and the NRC approved new Technical Specifications, including the “Crane Operability” LCO, as Amendment 27 to License No. DPR-21.

APPLICABLE SAFETY ANALYSIS

The “Cask Drop Prevention System” utilizes a redundant hoist system rated at 110 tons for the main hoist. This redundant system ensures that a load will not be dropped for all postulated credible single-component failures. The range of component failure examined extends over the total load path from the cask trunnions through the cask lifting yoke and redundant hoist system to the crane bridge structure. In addition, once the crane is set into the cask handling mode, its travel over the fuel pool will be limited to the cask storage area of the spent fuel pool. The operability requirements of the Reactor Building crane ensure that all redundant features of the crane have been adequately inspected.

Spent fuel cask drop over irradiated fuel in the fuel storage pool is precluded by these features as well as the features described in LCO and Surveillance Requirement 3.2.2 of these Technical Specifications.

(continued)

B 3.2 SPENT FUEL HANDLING

B 3.2.1 Reactor Building Crane Operability

BASES

LCO

The Reactor Building crane is required to be OPERABLE. The operability is established by:

- a visual inspection of the crane cables, sheaves, hook, yoke, and cask lifting trunnions,
- conducting no-load mechanical and electrical tests to verify proper operation of crane controls, brakes and lifting speeds,
- conducting a load test by lifting an empty cask out of the pivot cradle.

Maintaining the Reactor Building crane OPERABLE preserves the assumption of preventing a cask drop accident.

APPLICABILITY

This LCO applies whenever the Reactor Building crane is used for handling of a spent fuel cask.

ACTIONS

A.1

When the operability requirements for the Reactor Building crane cannot be met, steps should be taken to preclude a Spent Fuel Cask drop accident from occurring. Fuel cask handling activities should be suspended immediately and the load placed in a safe condition. This will effectively preclude a spent fuel cask drop accident from occurring.

SURVEILLANCE REQUIREMENTS

SR 3.2.1

This SR verifies operability of the Reactor Building crane and ensures that the redundant features of the crane have been adequately inspected. The redundant hoist system ensures that a load will not be dropped for all postulated credible single-component failures. The Frequency is appropriate because operability is required to be established before Spent Fuel Cask handling operations commence.

(continued)

B 3.2 SPENT FUEL HANDLING

B 3.2.2 REACTOR BUILDING CRANE TRAVEL WITH A SPENT FUEL CASK

BASES

BACKGROUND

The purpose of this specification is to preclude the possibility of dropping a spent fuel cask over irradiated fuel in the fuel storage pool. The Reactor Building crane has a 2-position mode switch which is designed to restrict crane motion, when in “Mode 2,” as follows:

- It prevents a spent fuel cask height above the refueling floor not greater than 6 inches, and
- It establishes a predetermined path which specifically excludes the area above irradiated fuel by interlocks and limit switches.

This specification, in conjunction with LCO 3.2.1, ensures that a fuel cask drop over irradiated fuel in the fuel storage pool is prevented from occurring.

APPLICABLE SAFETY ANALYSIS

The “Cask Drop Prevention System” features a single-failure proof design that prevents a spent fuel cask drop over the fuel storage pool with resultant damage to irradiated fuel and/or plant equipment and structures. Once the Reactor Building crane mode switch is set into the cask handling mode, its travel over the fuel storage pool will be limited to the cask storage area of the fuel pool. This design feature as well as associated crane interlocks and limit switches ensure that a spent fuel cask drop will not occur over the irradiated fuel in the fuel storage pool.

An event initiated by a spent fuel cask drop over the irradiated fuel in the fuel storage pool is precluded by these features as well as the features described in LCO and Surveillance Requirement 3.2.1 of these Technical Specifications.

(continued)

B 3.2 SPENT FUEL HANDLING

B 3.2.2 Reactor Building Crane Travel with a Spent Fuel Cask

BASES

LCO

The Reactor Building crane mode switch is required to be in the "Mode 2" position with its key removed. This mode switch position is an engineered control which restricts crane travel to a path which excludes the area above the irradiated fuel in the fuel storage pool. Also, the height of a spent fuel cask loaded on the crane is restricted to a height of no greater than 6 inches above the refueling floor.

Maintaining the Reactor Building crane mode switch, associated crane limit switches, and interlocks preserves the assumption of preventing a cask drop accident.

APPLICABILITY

This LCO applies whenever the Reactor Building crane is used for handling of a spent fuel cask.

ACTIONS

A.1

When the mode switch requirements for the Reactor Building crane cannot be met, steps should be taken to preclude a spent fuel cask drop accident from occurring. Fuel cask handling activities should be suspended immediately and the load placed in a safe condition. This will effectively preclude a spent fuel cask drop accident from occurring.

SURVEILLANCE REQUIREMENTS

SR 3.2.2

This SR demonstrates operability of the Reactor Building crane interlocks and limit switches which restricts the height of the crane load (i.e., the spent fuel cask bottom) to no more than 6 inches above the refueling floor and restricts crane path from traveling over the irradiated fuel assemblies. The Frequency is appropriate because operability is established before spent fuel cask handling operations start and operability is periodically assured during spent fuel cask handling.