50-423

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

April 10, 1997

Mr. Neil S. Carns
Senior Vice President
and Chief Nuclear Officer
Northeast Nuclear Energy Company
c/o Mr. Richard T. Laudenat
Director - Regulatory Affairs
P. O. Box 128
Waterford, CT 06385

SUBJECT: ISSUANCE OF AMENDMENT AND BASES CHANGES (TAC NOS. M92798, M94600, M94865, M97272, AND M97273)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No.136 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated June 20, 1995, as supplemented August 30, 1995. This amendment also responds to your application dated January 17, 1996.

The amendment relocates the applicable requirements of Specification 3.6.3 for the main steam line isolation valves (MSIVs) to Specification 3.7.1.5, "Main Steam Line Isolation Valves." In addition, the Applicability section of Specification 3.7.1.5 is revised to indicate that Specification 3.7.1.5 is applicable in MODE 1 and in MODES 2, 3, and 4, except where all MSIVs are closed and deactivated (i.e., in MODES 2, 3, and 4, Specification 3.7.1.5 is applicable only if the MSIVs are open). Also, the Action Statement for the Limiting Condition for Operation 3.7.1.5 has been revised using the guidance of the Improved Standard Technical Specifications for Westinghouse plants (NUREG-1431). The amendment also deletes a license requirement to submit responses to and to implement requirements of Generic Letter 83-28, because the requirement has been completed. Generic Letter 83-28 pertains to the Salem anticipated transient without scram event.

In addition, this amendment incorporates technical specification (TS) Bases changes submitted by Northeast Nuclear Energy Company by letters dated June 20, 1995, February 5, 1996, and March 21 and 26, 1997. Since all four of these Bases changes affect Section B 3/4.7 of the TS, the NRC staff is issuing them in a group to avoid errors in revising the TS. The staff has reviewed the proposed changes and has no objection to the proposed wording.

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CP-1

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by:

James W. Andersen, Project Manager
Special Projects Office - Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 136 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

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A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

James W. Andersen, Project Manager
Special Projects Office - Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 136 to NPF-49
2. Safety Evaluation

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

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 136
License No. NPF-49

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

   A. The applications for amendment by Northeast Nuclear Energy Company, et al. (the licensee) dated June 20, 1995, as supplemented August 30, 1995, and January 17, 1996, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the applications, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

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

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

2. Accordingly, the license is amended by changes to the Technical Specifications and License Condition 2.C.(4) as indicated in the attachment to this license amendment, and paragraphs 2.C.(2) and 2.C.(4) of Facility Operating License No. NPF-49 are hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 136 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(4) Deleted

3. This license amendment is effective as of the date of its issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Phillip F. McKee
Deputy Director for Licensing
Special Projects Office
Office of Nuclear Reactor Regulation

Attachments: 1. Changes to the Technical Specifications
2. Change to License Condition

Date of Issuance: April 10, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 136

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A, Technical Specifications, with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove	Insert
xiv	xiv
xv	xv
3/4 6-15	3/4 6-15
3/4 7-9	3/4 7-9
B 3/4 7-3	B 3/4 7-3
B 3/4 7-4	B 3/4 7-4
B 3/4 7-5	B 3/4 7-5
B 3/4 7-6	B 3/4 7-6
B 3/4 7-7	B 3/4 7-7
B 3/4 7-8	B 3/4 7-8
B 3/4 7-9	B 3/4 7-9
-	B 3/4 7-10
-	B 3/4 7-11
-	B 3/4 7-12
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-	B 3/4 7-21
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	B 3/4 7-24
	B 3/4 7-25

Replace the following page of Operating License No. NPF-49, with the attached page.

Remove	Insert
3	3

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves shall be OPERABLE* with isolation times less than or equal to the required isolation times.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 Each isolation valve shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair, or replacement work is performed on the valve or its associated actuator, control, or power circuit by performance of a cycling test and verification of isolation time.

4.6.3.2 Each isolation valve shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position,

b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position, and

c. Verifying that on a Containment High Radiation test signal, each purge supply and exhaust isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

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*The provisions of this Specification are not applicable for main steam line isolation valves. However, provisions of Specification 3.7.1.5 are applicable for main steam line isolation valves.

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam line isolation valve (MSIV) shall be OPERABLE.

APPLICABILITY: MODE 1

MODES 2, 3, and 4, except when all MSIVs are closed and deactivated.

ACTION:

MODE 1:

With one MSIV inoperable, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 8 hours; otherwise be in MODE 2 within the next 6 hours

MODES 2, 3, and 4:

With one or more MSIVs inoperable, subsequent operation in MODE 2, or 3, or 4 may proceed provided the inoperable isolation valve(s) are closed in 8 hours and verified closed once per 7 days. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Separate condition entry is allowed for each MSIV.

SURVEILLANCE REQUIREMENTS

4.7.1.5.1 Each MSIV shall be demonstrated OPERABLE* by verifying full closure within 10 seconds on an actual or simulated actuation signal in MODES 1, 2, and 3 when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

4.7.1.5.2 Each MSIV shall be demonstrated OPERABLE by verifying full closure within 120 seconds on an actual or simulated actuation signal in MODE 4 when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for entry into MODE 4.

*If the closure time of the MSIV is less than 10 seconds when verified in accordance with Specification 4.7.1.5.2, then the operability demonstration of the MSIV in MODES 1, 2, or 3 is not required per Specification 4.7.1.5.1.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

BACKGROUND

The main steam line isolation valves (MSIVs) isolate steam flow from the secondary side of the steam generators following a high energy line break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generators.

One MSIV is located in each main steam line outside, but close to, containment. The MSIVs are downstream from the main steam safety valves (MSSVs) and auxiliary feedwater (AFW) pump turbine steam supply, to prevent MSSV and AFW isolation from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the others, and isolates the turbine, Steam Bypass System, and other auxiliary steam supplies from the steam generators.

The MSIVs close on a main steam isolation signal generated by low steam generator pressure, high containment pressure, or steam line pressure negative rate (high). The MSIVs fail closed on loss of control or actuation power.

Each MSIV has an MSIV bypass valve. Although these bypass valves are normally closed, they receive the same emergency closure signal as do their associated MSIVs. The MSIVs may also be actuated manually.

A description of the MSIVs is found in the FSAR, Section 10.3.

APPLICABLE SAFETY ANALYSIS

The design basis of the MSIVs is established by the containment analysis for the large steam line break (SLB) inside containment, discussed in the FSAR, Section 6.2. It is also affected by the accident analysis of the SLB events presented in the FSAR, Section 15.1.5. The design precludes the blowdown of more than one steam generator, assuming a single active component failure (e.g., the failure of one MSIV to close on demand).

The limiting temperature case for the containment analysis is the SLB inside containment, with a loss of offsite power following turbine trip, and failure of the MSIV on the affected steam generator to close. At hot zero power, the steam generator inventory and temperature are at their maximum, maximizing the analyzed mass and energy release to the containment. Due to reverse flow and failure of the MSIV to close, the additional mass and energy in the steam headers downstream from the other MSIV contribute to the total release. With the most reactive rod cluster control assembly assumed stuck in the fully withdrawn position, there is an increased possibility that the core will become critical and return to power. The reactor is ultimately shut down by the boric acid injection delivered by the Emergency Core Cooling System.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES (continued)

The accident analysis compares several different SLB events against different acceptance criteria. The large SLB outside containment upstream of the MSIVs is limiting for offsite dose, although a break in this short section of main steam header has a very low probability. The large SLB upstream of the MSIV at hot zero power is the limiting case for a post trip return to power. The analysis includes scenarios with offsite power available and with a loss of offsite power following turbine trip. With offsite power available, the reactor coolant pumps continue to circulate coolant through the steam generators, maximizing the Reactor Coolant System cooldown. With a loss of offsite power, the response of mitigating systems is delayed. Significant single failures considered include failure of an MSIV to close.

The MSIVs serve only a safety function and remain open during power operation. These valves operate under the following situations:

a. An HELB inside containment. In order to maximize the mass and energy release into containment, the analysis assumes that the MSIV in the affected steam generator remains open. For this accident scenario, steam is discharged into containment from all steam generators until the remaining MSIVs close. After MSIV closure, steam is discharged into containment only from the affected steam generator and from the residual steam in the main steam header downstream of the closed MSIVs in the unaffected loops. Closure of the MSIVs isolates the break from the unaffected steam generators.

b. A break outside of containment and upstream from the MSIVs is not a containment pressurization concern. The uncontrolled blowdown of more than one steam generator must be prevented to limit the potential for uncontrolled RCS cooldown and positive reactivity addition. Closure of the MSIVs isolates the break and limits the blowdown to a single steam generator.

c. A break downstream of the MSIVs will be isolated by the closure of the MSIVs.

d. Following a steam generator tube rupture, closure of the MSIVs isolates the ruptured steam generator from the intact steam generators. In addition to minimizing radiological releases, this enables the operator to maintain the pressure of the steam generator with the ruptured tube below the MSSV setpoints, a necessary step toward isolating the flow through the rupture.

e. The MSIVs are also utilized during other events, such as a feedwater line break. This event is less limiting so far as MSIV OPERABILITY is concerned.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES (continued)

LCO

This LCO requires that four MSIVs in the steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on an isolation actuation signal.

This LCO provides assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the 10CFR100 limits or the NRC Staff approved licensing basis.

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1 and in MODES 2 and 3, except when closed and deactivated when there is significant mass and energy in the RCS and steam generators. When the MSIVs are closed, they are already performing the safety function.

In MODE 4, even though steam generator energy is low, the MSIVs must be operable in MODE 4 except when closed and deactivated.

In MODE 5 or 6, the steam generators do not contain much energy because their temperature is below the boiling point of water; therefore, the MSIVs are not required for isolation of potential high energy secondary system pipe breaks in these MODES.

ACTIONS

MODE 1

With one MSIV inoperable in MODE 1, action must be taken to restore OPERABLE status within 8 hours. Some repairs to the MSIV can be made with the unit hot. The 8 hour Completion Time is reasonable, considering the low probability of an accident occurring during this time period that would require a closure of the MSIVs.

The 8 hour Completion Time is greater than that normally allowed for containment isolation valves because the MSIVs are valves that isolate a closed system penetrating containment. These valves differ from other containment isolation valves in that the closed system provides a passive barrier for containment isolation.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES (continued)

If the MSIV cannot be restored to OPERABLE status within 8 hours, the plant must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 2 within 6 hours. The Completion Times are reasonable, based on operating experience, to reach MODE 2 and to close the MSIVs in an orderly manner and without challenging plant systems.

MODES 2, 3, and 4

Since the MSIVs are required to be OPERABLE in MODES 2, 3, and 4, the inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis.

The 8 hour Completion Time is consistent with that allowed in Mode 1.

For inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, the inoperable MSIVs must be verified on a periodic basis to be closed. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day verification time is reasonable, based on engineering judgment, in view of MSIV status indications available in the control room, and other administrative controls, to ensure that these valves are in the closed position.

If the MSIVs cannot be restored to OPERABLE status or are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 5 within the next 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems. The Action Statement is modified by a note indicating that separate condition entry is allowed for each MSIV.

SURVEILLANCE REQUIREMENTS

4.7.1.5.1 This surveillance verifies that MSIV closure time is less than 10 seconds on an actual or simulated actuation signal in MODES 1, 2, and 3 when tested pursuant to Specification 4.0.5. A simulated signal is defined as any of the following engineered safety features actuation system instrumentation functional units per Technical Specification Table 4.3-2: 4.a.1) manual initiation, individual, 4.a.2) manual initiation, system, 4.c. containment pressure high-2, 4.d. steam line pressure low, and 4.e. steam line pressure - negative rate high. The MSIV closure time is assumed in the accident analyses. This surveillance is normally performed upon returning the plant to operation following a refueling outage. The test is conducted in MODE 3 with the plant at suitable (appropriate) conditions (e.g., pressure and temperature). This surveillance requirement is modified by an exception which allows a delay of testing until MODE 3, to establish conditions consistent with those under which the acceptance criterion was generated. This exception

SURVEILLANCE REQUIREMENTS (continued)

to Specification 4.0.4 would also allow the MSIVs to be cycled to demonstrate post repair OPERABILITY. Action requirements shall not apply until OPERABILITY has been verified. In addition, if the closure time of the MSIV is less than 10 seconds when verified in accordance with Specification 4.7.1.5.2, the OPERABILITY demonstration of the MSIV in MODES 1, 2, or 3 is not required per Specification 4.7.1.5.1.

4.7.1.5.2 This surveillance verifies that MSIV closure time is less than 120 seconds on an actual or simulated actuation signal in MODE 4 when tested pursuant to Specification 4.0.5. A simulated signal is defined as any of the following engineered safety features actuation system instrumentation functional units per Technical Specification Table 4.3-2: 4.a.1) manual initiation, individual, 4.a.2) manual initiation, system, 4.c. containment pressure high-2, 4.d. steam line pressure low, and 4.e. steam line pressure - negative rate high. This MSIV closure time is assumed in the analyses. This surveillance is normally performed upon returning the plant to operation following a refueling outage. The test is conducted in MODE 4 with the plant at suitable (appropriate) conditions (e.g., pressure and temperature). This surveillance requirement is modified by an exception which allows a delay of testing until MODE 4, to establish conditions consistent with those under which the acceptance criterion was generated. This exception to Specification 4.0.4 would also allow the MSIVs to be cycled to demonstrate post repair OPERABILITY. Action requirements shall not apply until OPERABILITY has been verified.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT_{NDT} of 60°F and are sufficient to prevent brittle fracture.

3/4.7.3 REACTOR PLANT COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Reactor Plant Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 SERVICE WATER SYSTEM

The OPERABILITY of the Service Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.5 ULTIMATE HEAT SINK

BACKGROUND

The ultimate heat sink (UHS) for Millstone Unit No. 3 is Long Island Sound. It serves as a heat sink for both safety and nonsafety-related cooling systems. Sensible heat is discharged to the UHS via the service water and circulating water systems.

LIMITING CONDITION FOR OPERATION

The UHS is required to be OPERABLE and is considered OPERABLE if the average water temperature is less than or equal to 75°F. The limitation on the UHS temperature ensures that cooling water at or less than the design temperature (75°F) is available to either (1) provide normal cooldown of the facility or (2) mitigate the effects of accident conditions within acceptable limits. It is based on providing a 30-day cooling water supply to safety-related equipment without exceeding its design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974.

The Circulating Water System has six condenser inlet waterboxes, each contains a temperature measurement device. The average UHS temperature is normally obtained from the plant process computer by averaging the six Circulating Water System condenser inlet waterbox temperature measurements. Given potential condenser waterbox temperature instrumentation failure(s), or that a waterbox is not operating or a process computer failure, other methods may be used to determine the average UHS temperature. For example, if one condenser waterbox instrument has failed, the average UHS temperature may be based on five condenser inlet waterbox temperature measurements. For the purposes of determining average UHS temperature, if condenser waterbox inlet temperature is used, the average should be based on no less than 3 measurements. If the process computer condenser waterbox inlet temperature average is based on less than three measurements, the average is automatically flagged to users as potentially in error. Using local Service Water System temperature instruments (two or more) is an acceptable alternative for determining average UHS temperature.

It has been concluded that using the average of multiple condenser waterbox inlet temperature measurements is sufficiently representative of the UHS temperature to assure OPERABILITY of the UHS. The only exception to this conclusion is when a condenser thermal backwash evolution is being conducted. During this evolution, there is a potential for significant intake structure temperature stratification. Therefore, during condenser thermal backwashing evolutions, the average UHS temperature shall be monitored by temperature instruments in the service water system to assure OPERABILITY of the UHS.

APPLICABILITY

In MODES 1, 2, 3, AND 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES.

ACTION STATEMENT

When the UHS temperature is above 75°F, the Action Statement for the LCO requires that the UHS temperature be monitored for 12 hours, and the plant be placed in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours in the event the UHS temperature does not drop below 75°F during the 12-hour monitoring period.

The 12-hour interval is based on operating experience related to trending of the parameter variations during the applicable modes. During this period, the UHS temperature will be monitored on an increased frequency. If the trend shows improvement, and if the trend of the UHS temperature gives reasonable expectations that the temperature will decrease below 75°F during the 12 hour monitoring period, the UHS temperature will be continued to be monitored during the remaining portion of the 12-hour period. However, if it becomes apparent that the UHS temperature will remain above 75°F throughout the 12-hour monitoring period, conservative action regarding compliance with the Action Statement should be taken.

An evaluation was conducted to qualify the risk significance of various Chapter 15 initiating events and earthquakes during periods of elevated UHS temperature. It concluded that a seismic event was not credible for the time periods with elevated UHS temperature.

With respect to the service water loads, the limiting Condition II and III Chapter 15 event initiators are those that add additional heat loads to the service water system. A loss of offsite power event is limiting because of the added loads due to the diesel generator and the residual heat removal heat exchanger. A steam generator tube rupture event is limiting because of the addition of the safety injection and diesel generator loads without isolation of the turbine plant component cooling water loads (no loss of offsite power or containment depressurization actuation signal). Although the risk significance of a Condition IV accident occurring during the period of elevated UHS temperature is considered to be negligibly small compared to that of Condition II and III events, a Loss of Coolant Accident with or without a LOP was also evaluated. These scenarios have been evaluated with the additional consideration of a single failure. The evaluation investigated whether or not these events could be resolved with an elevated UHS temperature. It was determined that Millstone Unit No. 3 could recover from these events, even with an elevated temperature of 77°F.

This evaluation provides the basis for the action statement requirement to place the plant in HOT STANDBY with six hours and in COLD SHUTDOWN within the next 30 hours, if the UHS temperature goes above 77°F during the 12-hour monitoring period.

SURVEILLANCE REQUIREMENTS

For the surveillance requirements, the UHS temperature is measured at the locations described in the LCO write-up provided in this section.

Surveillance Requirement 4.7.5.a verifies that the UHS is capable of providing a 30-day cooling water supply to safety-related equipment without exceeding its design basis temperature. The 24-hour frequency is based on operating experience related to trending of the parameter variations during the applicable modes. This surveillance requirement verifies that the average water temperature of the UHS is less than or equal to 75°F.

Surveillance Requirement 4.7.5.b requires that the UHS temperature be monitored on an increased frequency whenever the UHS temperature is greater than 70°F during the applicable modes. The intent of this Surveillance Requirement is to increase the awareness of plant personnel regarding UHS temperature trends above 70°F. The frequency is based on operating experience related to trending of the parameter variations during the applicable modes.

3/4.7.6 FLOOD PROTECTION

The limitation on flood protection ensures that the service water pump cubicle watertight doors will be closed before the water level reaches the critical elevation of 14.5 feet Mean Sea Level. Elevation 14.5 feet MSL is the level at which external flood waters could enter the service water pump cubicle.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM

BACKGROUND

The control room emergency ventilation system provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity. Additionally, the system provides temperature control for the control room during normal and post-accident operations.

The control room emergency ventilation system is comprised of the control room emergency air filtration system and a temperature control system.

The control room emergency air filtration system consists of two redundant systems that recirculate and filter the control room air. Each control room emergency air filtration system consists of a moisture separator, electric heater, prefilter, upstream high efficiency particulate air (HEPA) filter, charcoal adsorber, downstream HEPA filter, and fan. Additionally, ductwork, valves or dampers, and instrumentation form part of the system.

Normal Operation

A portion of the control room emergency ventilation system is required to operate during normal operations to ensure the temperature of the control room is maintained at or below 95°F.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

BACKGROUND (Continued)

Post Accident Operation

The control room emergency ventilation system is required to operate during post-accident operations to ensure the temperature of the control room is maintained and to ensure the control room will remain habitable during and following accident conditions.

The following sequence of events occurs upon receipt of a control building isolation (CBI) signal or a signal indicating high radiation in the air supply duct to the control room envelope.

1. The control room boundary is isolated to prevent outside air from entering the control room to prevent the operators from being exposed to the radiological conditions that may exist outside the control room. The analysis for a loss of coolant accident assumes that the highest releases occur in the first hour after a loss of coolant accident.

2. After 60 seconds, the control room envelope pressurizes to 1/8 inch water gauge by the control room emergency pressurization system. This action provides a continuous purge of the control room envelope and prevents inleakage from the outside environment. Technical Specification 3/4.7.8 provides the requirements for the control room envelope pressurization system.

3. Control room pressurization continues for the first hour.

4. After one hour, the control room emergency ventilation system will be placed in service in either the 100% recirculation mode (isolated from the outside environment) or filtered pressurization mode (outside air is diverted through the filters to the control room envelope to maintain a positive pressure). The mode of service for the filtration will be based on the radiological conditions that exist outside the control room. To run the control room emergency air filtration system in the filtered pressurization mode, the air supply line must be manually opened.

APPLICABLE SAFETY ANALYSIS

The OPERABILITY of the Control Room Emergency Ventilation System ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rems or less whole body, or its equivalent for the duration of the accident. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

LIMITING CONDITION FOR OPERATION

Two independent control room emergency air filtration systems are required to be operable to ensure that at least one is available in the event the other system is disabled.

A control room emergency air filtration system is OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions; and

c. moisture separator, heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

The integrity of the control room boundary (i.e., walls, floors, ceilings, ductwork, and access doors) is covered by LIMITING CONDITION OF OPERATION (LCO) 3.7.8.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6.

ACTIONS

Modes 1, 2, 3, and 4

With one control room emergency air filtration system inoperable, action must be taken to restore the inoperable system to an OPERABLE status within 7 days. In this condition, the remaining control room emergency air filtration system is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE train could result in a loss of the control room emergency air filtration system function. The 7-day completion time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability.

If the inoperable train cannot be restored to an OPERABLE status within 7 days, the unit must be placed in at least HOT STANDBY within the next 6 hours and within COLD SHUTDOWN within the following 30 hours. These completion times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

ACTIONS (Continued)

Modes 5 and 6

a. With one control room emergency air filtration system inoperable, action must be taken to restore the inoperable system to an OPERABLE status within 7 days, or to initiate and maintain operation of the remaining OPERABLE control room emergency air filtration system in the recirculation mode. Initiating and maintaining operation of the OPERABLE train in the recirculation mode ensures: (i) operability of the train will not be compromised by a failure of the automatic actuation logic; and (ii) active failures will be readily detected.

b. With both control room emergency air filtration systems inoperable, or with the train required by ACTION 'a' not capable of being powered by an OPERABLE emergency power source, actions must be taken to suspend all operations involving CORE ALTERATIONS or positive reactivity changes. This action places the unit in a condition that minimizes risk. This action does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

4.7.7.a

The control room environment should be checked periodically to ensure that the control room temperature control system is functioning properly. Verifying that the control room air temperature is less than or equal to 95°F at least once per 12 hours is sufficient. It is not necessary to cycle the control room ventilation chillers. The control room is manned during operations covered by the technical specifications. Typically, temperature aberrations will be readily apparent.

4.7.7.b

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing the trains once every 31 days on a STAGGERED TEST BASIS provides an adequate check of this system. This surveillance requirement verifies a system flow rate of 1,120 cfm ± 20%. Additionally, the system is required to operate for at least 10 continuous hours with the heaters energized. These operations are sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters due to the humidity in the ambient air.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.c

The performance of the control room emergency filtration systems should be checked periodically by verifying the HEPA filter efficiency, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. The frequency is at least once per REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system.

ANSI N510-1980 will be used as a procedural guide for surveillance testing.

4.7.7.c.1

This surveillance verifies that the system satisfies the in-place penetration and bypass leakage testing acceptance criterion of less than 0.05% in accordance with Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the system at a flow rate of 1,120 cfm ± 20%. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in the regulatory guide.

4.7.7.c.2

This surveillance requires that a representative carbon sample be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978 and that a laboratory analysis verify that the representative carbon sample meets the criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978 (Ref. 1) and MP3 UFSAR, Table 1.8-1, NRC Regulatory Guide 1.52 (Ref. 2), for a methyl iodide penetration of less than 0.175%. The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

4.7.7.c.3

This surveillance verifies that a system flow rate of 1,120 cfm ± 20%, during system operation when testing in accordance with ANSI N510-1980.

4.7.7.d

After 720 hours of charcoal adsorber operation, a representative carbon sample must be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, and a laboratory analysis must verify that the representative carbon sample meets the criteria of Regulatory position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

iodide penetration of less than 0.175%. The laboratory analysis is required to be performed within 31 days after removal of the sample. ANSI N510-1980 is used in lieu of ANSI N510-1975 referenced in Revision 2 of Regulatory Guide 1.52.

The maximum surveillance interval is 900 hours, per Surveillance Requirement 4.0.2. The 720 hours of operation requirement originates from Nuclear Regulatory Guide 1.52, Table 2, Note C. This testing ensures that the charcoal adsorbency capacity has not degraded below acceptable limits as well as providing trending data.

4.7.7.e.1

This surveillance verifies that the pressure drop across the combined HEPA filters and charcoal adsorbers banks at less than 6.75 inches water gauge when the system is operated at a flow rate of 1,120 cfm ± 20%. The frequency is at least once per REFUELING INTERVAL.

4.7.7.e.2

This surveillance verifies that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water gauge at less than or equal to a pressurization flow of 230 cfm relative to adjacent areas during system operation. The frequency is at least once per REFUELING INTERVAL.

The intent of this surveillance is to verify the ability of the control room emergency air filtration system to maintain a positive pressure while running in the filtered pressurization mode. This capability is independent from the requirements regarding the control room pressurization system contained in Technical Specification 3/4.7.8.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

During the first hour, the control room pressurization system creates and maintains the positive pressure in the control room. This capability is verified by Surveillance Requirement 4.7.8.C, independent of Surveillance Requirement 4.7.7.e.2. Furthermore, ACTIONS A.2 and B.1 of Limiting Condition for Operation 3.7.8 requires that an OPERABLE control room emergency air filtration system be initiated and maintained in the recirculation mode following both control room envelope pressurization systems becoming inoperable (e.g., a breech in the control room envelope). Running the control room air filtration system in the recirculation mode with the control room emergency pressurization inoperable would prohibit the ability to create and maintain a positive pressure in the control room envelope, because no source of air would be available to pressurize the control room envelope. A CBI signal will automatically align an operating filtration system into the recirculation mode of operation due to the isolation of the air supply line to the filter.

After the first hour of an event with the potential for a radiological release, the control room emergency ventilation system will be placed in service in either the recirculation mode (isolated from the outside environment) or filtered pressurization mode (outside air is diverted through the filters to the control room envelope to maintain a positive pressure). The mode of service for the control room emergency air filtration system will be based on the radiological conditions that exist outside the control room. Alignment to the filtered pressurization mode requires manual operator action to open the air supply line.

4.7.7.e.3

This surveillance verifies that the heaters can dissipate 9.4 ± 1 kW when tested in accordance with ANSI N510-1980. The frequency is at least once per REFUELING INTERVAL.

4.7.7.f

Following the complete or partial replacement of a HEPA filter bank, the operability of the cleanup system should be confirmed. This is accomplished by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criterion of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 1,120 cfm ± 20%.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.7.g

Following the complete or partial replacement of a charcoal adsorber bank, the operability of the cleanup system should be confirmed. This is accomplished by verifying that the cleanup system satisfied the in-place penetration and bypass leakage testing acceptance criterion of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow of 1,120 cfm ± 20%.

References:

(1) Nuclear Regulatory Guide 1.52, Revision 2
(2) MP3 UFSAR, Table 1.8-1, NRC Regulatory Guide 1.52
(3) NRC Generic Letter 91-04

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM

BACKGROUND

The control room envelope pressurization system provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

The control room envelope pressurization system consists of two banks of air bottles with its associated piping, instrumentation, and controls. Each bank is capable of providing the control room area with one-hour of air following any event with the potential for radioactive releases.

Normal Operation

During normal operations, the control room envelope pressurization system is required to be on standby.

Post Accident Operation

The control room envelope pressurization system is required to operate during post-accident operations to ensure the control room will remain habitable during and following accident conditions.

The sequence of events which occurs upon receipt of a control building isolation (CBI) signal or a signal indicating high radiation in the air supply duct to the control room envelope is described in Bases Section 3/4.7.7.

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM (Continued)

APPLICABLE SAFETY ANALYSIS

The OPERABILITY of the control room envelope pressurization system ensures that: (1) breathable air is supplied to the control room, instrumentation rack room, and computer room, and (2) a positive pressure is created and maintained within the control room envelope during control building isolation for the first hour following any event with the potential for radioactive releases. Each system is capable of providing an adequate air supply to the control room for one hour following an initiation of a control building isolation signal. After one hour, operation of the control room emergency ventilation system would be initiated.

LIMITING CONDITION FOR OPERATION

Two independent control room envelope pressurization systems are required to be operable to ensure that at least one is available in the event the other system is disabled.

A control room envelope pressurization system is OPERABLE when the associated:

a. air storage bottles are OPERABLE; and

b. piping and valves are OPERABLE.

In addition, the integrity of the control room boundary (i.e., walls, floors, ceilings, ductwork, and access doors) must be maintained.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6.

ACTIONS

a. With one control room envelope pressurization system inoperable, action must be taken either: (1) to restore the inoperable system to an OPERABLE status within 7 days, or (2) to initiate and maintain operation of an OPERABLE control room emergency air filtration system in the recirculation mode, or (3) to place the unit in HOT STANDBY within six hours and COLD SHUTDOWN within the next 30 hours and suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

For ACTION 3.7.8.a.1, the remaining control room envelope pressurization system is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM (Continued)

ACTIONS (Continued)

the OPERABLE train could result in a loss of the control room envelope pressurization system. The 7-day completion time is based on the low probability of a design basis accident occurring during this time period and the ability of the remaining train to provide the required capability.

For ACTION 3.7.8.a.2, initiating and maintaining operation of an OPERABLE train of the control room emergency air filtration system in the recirculation mode ensures that (i) any inleakage, as a result of loss pressurization, will be filtered from the initiation of the event, and (ii) active failures of that train will be readily detected. To meet the requirements of this action statement, the control room emergency air filtration system could be manually placed in either the 100% recirculation mode or the recirculation with makeup air mode. The recirculation with makeup air mode is used to refresh the control room air supply. While in the recirculation with makeup air mode, if a CBI signal is received, the fresh air makeup would be automatically isolated and the filters aligned to the 100% recirculation mode.

For ACTION 3.7.8.a.3, the completion times for the unit to be placed in HOT STANDBY and COLD SHUTDOWN are reasonable. They are based on operating experience, and they permit the unit to be placed in the required conditions from full power conditions in an orderly manner and without challenging unit systems.

Stud tensioning may continue in MODE 6 and a MODE change to MODE 5 is permitted with a control room envelope pressurization system inoperable (Reference 1).

b. With both control room envelope pressurization systems inoperable, action must be initiated within one hour to restore one inoperable system to an OPERABLE status and either (1) initiate and maintain operation of an OPERABLE control room emergency air filtration system in the recirculation mode, or (2) place the unit in HOT STANDBY within six hours and COLD SHUTDOWN within the next 30 hours and suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

The rationale for ACTIONS 3.7.8.b.1 and 3.7.8.b.2 are the same as those for ACTIONS 3.7.8.a.2 and 3.7.8.a.3, respectively.

Solely due to inoperability of both trains of the control room envelope pressurization system, the conditions and required actions assigned with LCO 3.7.7 are not required to be entered.

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM (Continued)

ACTIONS (Continued)

ACTIONS a.2 and b.1 of Limiting Condition for Operation 3.7.8 require that an OPERABLE control room emergency filtration system be placed in the recirculation mode. Under normal plant conditions to meet this requirement, the system would be placed in service in the recirculation with makeup air. This makeup air is used to refresh the control room envelope. In the event of a design basis accident (including control building isolation), with the filtration system operating in the recirculation with makeup air mode, the makeup air is automatically isolated and the filtration system goes into a 100% recirculation mode. Although no positive pressure is maintained in this alignment, it ensures that unfilterable noble gases are not forced into the envelope. The recirculation mode ensures that radioiodines introduced to the envelope are continuously filtered out. After one hour, the filters could be manually placed in the pressurization mode if radiological conditions permit.

SURVEILLANCE REQUIREMENTS

4.7.8.a

This surveillance requires verification that the air bottles are properly pressurized. Verifying that the air bottles are pressurized to greater than or equal to 2200 psig will ensure that a control room envelope pressurization system will be capable of supplying the required flow rate. The frequency of the surveillance is at least once per 7 days. It is based on engineering judgment and has been shown to be appropriate through operating experience.

4.7.8.b

This surveillance requires verification of the correct position of each valve (manual, power operated, or automatic) in the control room envelope pressurization system flow path. It helps ensure that the control room envelope pressurization system is capable of performing its intended safety function by verifying that an appropriate flow path will exist. The surveillance applies to those valves that could be mispositioned. This surveillance does not apply to valves that have been locked, sealed, or secured in position, because these positions are verified prior to locking, sealing, or securing.

The frequency of the surveillance is at least once per 31 days on a STAGGERED TEST BASIS. It is based on engineering judgment and has been shown to be appropriate through operating experience.

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

4.7.8.c

The performance of the control room envelope pressurization system should be checked periodically. The frequency is at least once per REFUELING INTERVAL and following any major alteration of the control room envelope pressure boundary.

A major alteration is a change to the control room envelope pressure boundary that: (1) results in a breach greater than analyzed for acceptable pressurization and requires nonroutine work evolutions to restore the boundary. A nonroutine work evolution is one which makes it difficult to determine As-Found and As-Left conditions. Examples of routine work evolution include: (1) opening and closing a door, and (2) repairing cable and pipe penetrations because the repairs are conducted in accordance with procedures and are verified via inspections. For these two examples, there is a high level of assurance that the boundary is restored to the As-Found condition.

This surveillance requires at least once per REFUELING INTERVAL or following a major alteration of the control room envelope pressure boundary by:

- Verifying the control room envelope is isolated in response to a Control Building Isolation Test signal,
- Verifying, after a 60 second time delay following a Control Building Isolation Test signal, the control room envelope pressurizes to greater than or equal to 0.125 inch water gauge relative to outside atmosphere; and
- Verifying the positive pressure of Technical Specification 4.7.8.c.2 is maintained for greater than or equal to 60 minutes.

Changes in conditions outside the control room envelope cause pressure spikes which are reflected on the differential pressure indicator, 3HVC-PDI 113.

Pressure spikes or fluctuations which result in the differential pressure momentarily dropped below the 0.125 inch water gauge acceptance criteria are acceptable providing the following conditions are met:

1. Differential pressure remains positive at all times.
2. Differential pressure is only transitorily below the acceptance criteria.
3. Differential pressure returns to a value above the acceptance criteria.

3/4.7.8 CONTROL ROOM ENVELOPE PRESSURIZATION SYSTEM (Continued)

SURVEILLANCE REQUIREMENTS (Continued)

The control room envelope pressurization system design basis criteria is set at ≥ 0.125 inch water gauge criteria to account for wind effects, thermal column effects, and barometric pressure changes. Pressurizing the control room envelope of 0.125 inch water gauge above the initial atmospheric pressure ensures it will remain at a positive pressure during subsequent changes in outside conditions over the next 60 minutes. Since the surveillance requirement is verified by actual reference to outside pressure, allowances are provided for differential pressure fluctuations caused by external forces. The 0.125 inch water gauge acceptance criteria provides the margin for these fluctuations. This meets the requirements of Regulatory Guide 1.78 and NUREG-800, Section 6.4 and is consistent with the assumptions in the Control Room Operator DBA dose calculation.

4.7.8.c.1

This surveillance verifies that the control room envelope is isolated following a control building isolation (CBI) test signal.

4.7.8.c.2

This surveillance verifies that the control room envelope pressurizes to greater than or equal to 1/8 inch water gauge, relative to the outside atmosphere, after 60 seconds following receipt of a CBI test signal.

4.7.8.c.3

This surveillance verifies that the positive pressure developed in accordance with Surveillance Requirement 4.7.8.c.2 is maintained for greater than or equal to 60 minutes. This capability is independent from the requirements regarding the control room emergency filtration system contained in Technical Specification 3/4.7.7. Also, following the first hour, the control room emergency ventilation system is responsible for ensuring that the control room envelope remains habitable.

References:

(1) NRC Routine Inspection Report 50-423/87-33, dated February 10, 1988.

(2) NRC Generic Letter 91-04.

3/4.7.9 AUXILIARY BUILDING FILTER SYSTEM

The OPERABILITY of the Auxiliary Building Filter System ensures that radioactive materials leaking from the equipment within the charging pump, component cooling water pump and heat exchanger areas following a LOCA are filtered prior to reaching the environment. The charging pump/reactor plant component cooling water pump ventilation system must be operational to ensure operability of the auxiliary building filter system and the supplementary leak collection and release system. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

3/4.7.10 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. For the purpose of declaring the affected system OPERABLE with the inoperable snubber(s), an engineering evaluation may be performed, in accordance with Section 50.59 of 10 CFR Part 50.

Snubbers are classified and grouped by design and manufacturer but not by size. Snubbers of the same manufacturer but having different internal mechanisms are classified as different types. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Operations Review Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g.,

3/4.7.10 SNUBBERS (Continued)

temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system during an earthquake or severe transient. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on asafety-related system, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

To provide assurance of snubber functional reliability, one of three functional testing methods is used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 5% tested for each functional testing failure, or

2. Functionally test a sample size and determine sample acceptance or rejection using Figure 4.7-1, or

3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

Figure 4.7-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubbers for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted

3/4.7.10 SNUBBERS (Continued)

shall be listed in the list of individual snubbers indicating the extent of the exemptions.

The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubbers, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

3/4.7.11 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(a)(3) limits for plutonium. This limitation will ensure that leakage from Byproduct, Source, and Special Nuclear Material sources will not exceed allowable intake values.

Sealed sources are classified into three groups according to their use, with Surveillance Requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

3/4.7.14 AREA TEMPERATURE MONITORING

The area temperature limitations ensure that safety-related equipment will not be subjected to temperatures in excess of their environmental qualification temperatures. Exposure to excessive temperatures may degrade equipment and can cause a loss of its OPERABILITY. The temperature limits include an allowance for instrument error of $\pm 2.2°F$.

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

(4) NNECO, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) NNECO, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operations of the facility.

c. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provision of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Northeast Nuclear Energy Company is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications

The technical specifications contained in Appendix A revised through Amendment No. , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Northeast Nuclear Energy Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) DELETED

(4) DELETED

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 136

TO FACILITY OPERATING LICENSE NO. NPF-49

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated June 20, 1995, as supplemented August 30, 1995, the Northeast Nuclear Energy Company (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS). Also, by letter dated January 17, 1996, the licensee requested that a condition be deleted from the Millstone 3 operating license. The requested changes to the TS would relocate the applicable requirements for main steam line isolation valves (MSIVs) from Specification 3.6.3 "Containment Isolation Valves" to Specification 3.7.1.5 "Main Steam Line Isolation Valves." In addition, Specification 3.7.1.5 would be revised to incorporate some of the guidance of the Improved Standard Technical Specifications for Westinghouse plants (NUREG-1431). The August 30, 1995, letter provided clarifying information that did not change the scope of the June 20, 1995, application and the initial proposed no significant hazards consideration determination. The January 17, 1996, amendment request would delete a license requirement to submit responses to and to implement requirements of Generic Letter 83-28, because the requirement has been completed. Generic Letter 83-28 pertains to the Salem anticipated transient without scram (ATWS) event.

2.0 EVALUATION

2.1 Section 3.6.3 "Containment Isolation Valves"

This specification states that containment isolation valves shall be operable with isolation times less than or equal to the required isolation times. Specification 3.6.3.a states that with one or more of the isolation valve(s) inoperable, maintain at least one isolation valve operable in each affected penetration that is open and restore the inoperable valve(s) to operable status within 4 hours. The current TS would include the MSIVs since these valves serve as containment isolation valves. However, because of the Millstone Unit 3 main steam system design, it is not possible for the licensee to comply with this requirement since there is only one containment isolation valve in each main steam line.

The Improved Standard Technical Specifications for Westinghouse designed plants (NUREG-1431) addresses this problem by specifying that the TS action statements only address penetration flow paths with two containment isolation

valves. NUREG-1431 also specifies separate action statements for MSIVs. The licensee proposes to add the following note to the Specification.

> The provisions of this Specification are not applicable for main steam line isolation valves. However, provisions of Specification 3.7.1.5 are applicable for main steam line isolation valves.

Since the applicable requirements for MSIVs are covered by TS 3.7.1.5, the staff finds the note acceptable.

In addition, Specification 3.6.3 requires that an inoperable MSIV be restored to operable status within 4 hours. As discussed below, the licensee is proposing an allowed outage time (AOT) of 8 hours for the MSIVs, which is consistent with NUREG-1431.

Finally, removal of MSIVs from the containment isolation valve specification does not affect leak testing of the valves since these valves are not Type C leak tested in accordance with 10 CFR Part 50, Appendix J.

Therefore, the staff finds that relocating the applicable requirements for MSIVs to TS 3.7.1.5 acceptable and consistent with NUREG-1431.

2.2 Specification 3.7.1.5 "Main Steam Line Isolation Valves"

The licensee has proposed making several changes that are consistent with the Improved Standard Technical Specifications for Westinghouse-designed plants (NUREG-1431).

Specification 3.7.1.5 has been revised to state that the Limiting Condition for Operation (LCO) is applicable for MODE 1 and for MODES 2, 3, and 4 except when the MSIVs are closed and deactivated. This is consistent with NUREG-1431 and is acceptable because when the MSIVs are closed, they are performing their safety function. If they are deactivated, they cannot open, either from an inadvertent command or spuriously. This requirement is consistent with Action Statement b. of LCO 3.6.3, which requires that, with an isolation valve inoperable, the affected penetration shall be isolated by the use of at least one deactivated automatic valve secured in the isolation position.

The allowed outage time of Specification 3.7.1.5 has also been revised. In MODE 1, power operation may continue for 8 hours with one MSIV inoperable. In MODES 2, 3, and 4, operation may continue for 8 hours with one or more MSIVs inoperable. Eight hours is consistent with NUREG-1431 for MSIVs but it is 4 hours longer than the allowed outage time for other containment isolation valves. The staff considers this to be acceptable based on the low probability of an accident occurring during this time, which will require MSIV closure. Also, since MSIVs are GDC-57 valves, that is, they isolate a closed system, which is neither connected directly to the reactor coolant pressure boundary nor to the containment atmosphere, a longer AOT is acceptable.

The licensee also proposes to verify that the MSIV is closed once every 7 days. This is consistent with NUREG-1431 and is a reasonable time interval since the positions of the MSIVs are indicated in the control room, and other administrative controls are in effect to ensure the valves are in the closed position.

In MODES 2, 3 and 4, the licensee proposes a separate entry condition for each inoperable MSIV. This is consistent with NUREG-1431 and is reasonable since the MSIV is performing its safety function in the closed position.

The licensee also proposes to modify the surveillance requirements 4.7.1.5.1 and 4.7.1.5.2, which require that full closure be verified to be within 10 seconds (in MODES 1, 2 and 3) or 120 seconds (in MODE 4) by adding the words "on an actual or simulated actuation signal." This is consistent with NUREG-1431 and is acceptable. The licensee's August 30, 1995, submittal modified the proposed Bases accompanying the proposed TS changes to identify the specific simulated actuation signals.

> A simulated signal is defined as any of the following engineered safety features actuation system instrumentation functional units per Technical Specification Table 4.3-2: 4.a.1) manual initiation, individual, 4.a.2) manual initiation, system, 4.c. containment pressure high-2, 4.d. steam line pressure low, and 4.e. steam line pressure - negative rate high.

2.3 Generic Letter 83-28 requirements

On July 8, 1983, the staff issued Generic Letter (GL) 83-28 in response to the Salem ATWS event. The GL identified the actions that the staff believed were necessary to respond to the ATWS event, and requested that the licensees furnish "the status of current conformance with the positions contained [within the GL], and plans and schedules for any needed improvements for conformance with the positions." Millstone 3 responded to GL 83-28 in a number of submittals, and the NRC staff concluded that the responses were acceptable. By letter dated January 17, 1996, the licensee summarized the Millstone 3 responses to GL 83-28 and the staff documents approving the licensee's responses. The licensee's proposal to delete License Condition 2.C.(4) from the license is purely administrative, because the staff has approved, by various separate documents, the acceptability of all the requirements of GL 83-28. Because the license requirement has been met and is no longer necessary, this change is acceptable.

2.4 Bases Changes

By letters dated June 20, 1995, February 5, 1996, and March 21 and 26, 1997, the licensee submitted Bases changes, which affect Section B 3/4.7 of the TS. These changes are outlined below:

(1) By letter dated June 20, 1995, the licensee submitted the Bases change associated with the MSIV surveillance changes, which are discussed in Section 2.2 of this safety evaluation.

(2) By letter dated February 5, 1996, the licensee requested a TS change concerning inservice testing. Included with this request was a Bases change associated with the control room emergency ventilation system and the control room envelope pressurization system.

(3) By letter dated March 21, 1997, the licensee provided changes to the Bases associated with potential variations in the temperature averaging methodology for determining the Millstone Unit 3 ultimate heat sink temperature.

(4) By letter dated March 26, 1997, the licensee provided additional changes to the Bases associated with the control room emergency ventilation system and the control room envelope pressurization system.

Since all four of these Bases changes affect Section B 3/4.7 of the TS, the NRC staff is issuing them in a group to avoid errors in revising the TS. The staff has reviewed the proposed changes and has no objection to the proposed wording.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued proposed findings that the amendment involves no significant hazards consideration, and there has been no public comment on such findings (60 FR 39445 and 61 FR 7555). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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