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The Northeast Utilities System

JAN 27 2000

Docket No. 50-336
B17964

Re: 10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 2
Proposed Revision to Technical Specifications
Ultimate Heat Sink

Introduction

Pursuant to 10 CFR 50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed change into the Technical Specifications of Millstone Unit No. 2. NNECO is proposing to change Technical Specification 3.7.11, "Plant Systems - Ultimate Heat Sink." The Bases for this Technical Specification will be modified to address the proposed change.

Attachment 1 provides a discussion of the proposed change and the Safety Summary. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the marked-up version of the appropriate pages of the current Technical Specifications. Attachment 4 provides the retyped pages of the Technical Specifications.

This License Amendment Request supercedes a previous request submitted on July 16, 1999.[1]

[1] R. P. Necci letter to the NRC, "Millstone Nuclear Power Station, Unit No. 2, Proposed Revision to Technical Specifications, Ultimate Heat Sink," dated July 16, 1999.

A001

Environmental Considerations

NNECO has reviewed the proposed License Amendment Request against the criteria of 10 CFR 51.22 for environmental considerations. The proposed changes will modify the Technical Specification action requirements for the Ultimate Heat Sink, and the associated Bases. These changes do not significantly increase the type and amounts of effluents that may be released off site. In addition, this amendment request will not significantly increase individual or cumulative occupational radiation exposures. Therefore, NNECO has determined the proposed changes will not have a significant effect on the quality of the human environment.

Conclusions

The proposed change does not involve a significant impact on public health and safety (see the Safety Summary provided in Attachment 1) and does not involve a Significant Hazards Consideration pursuant to the provisions of 10 CFR 50.92 (see the Significant Hazards Consideration provided in Attachment 2). In addition, we have concluded the proposed change is safe.

Plant Operations Review Committee and Nuclear Safety Assessment Board

The Plant Operations Review Committee and Nuclear Safety Assessment Board have reviewed and concurred with the determinations.

Schedule

We request issuance of this amendment for Millstone Unit No. 2 prior to June 30, 2000, with the amendment to be implemented within 30 days of issuance.

State Notification

In accordance with 10 CFR 50.91(b), a copy of this License Amendment Request is being provided to the State of Connecticut.

There are no regulatory commitments contained within this letter.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Raymond P. Necci
Vice President - Nuclear Technical Services

Sworn to and subscribed before me

this 27 day of January, 2000

Donna Lynne Williams
Notary Public

My Commission expires Nov. 30, 2001

Attachments (4)

cc: H. J. Miller, Region I Administrator
J. I. Zimmerman, NRC Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
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Docket No. 50-336
B17964

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Discussion of Proposed Changes

January 2000

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Discussion of Proposed Changes

Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License DPR-65 by incorporating the attached proposed change into the Technical Specifications of Millstone Unit No. 2. NNECO is proposing to change Technical Specification 3.7.11, "Plant Systems - Ultimate Heat Sink." The Bases for this Technical Specification will be modified to address the proposed change.

The proposed Technical Specification change will increase the action requirement time to be in Mode 3 if the temperature of the Ultimate Heat Sink (UHS) exceeds the Technical Specification limit of 75°F. The increase in time will only apply if the UHS temperature is between 75°F and 77°F. The current action time requirement will apply if the UHS temperature exceeds 77°F. The current Technical Specification Limiting Condition for Operation (LCO) limit of 75°F will not be changed. The Bases for the associated Technical Specification will be modified.

Background

The UHS for Millstone Unit No. 2 is Long Island Sound. The UHS provides the water source for the Service Water System (SWS) and the Circulating Water System (CWS) to remove sensible heat from both safety and non-safety components and cooling systems during normal operation, shutdown, and accident conditions. The SWS consists of two independent and redundant flow paths, each supplying cooling water to the safety related components. The SWS removes heat from the Emergency Diesel Generator (EDG) engine coolers, Reactor Building Closed Cooling Water (RBCCW) System heat exchangers, Vital DC switchgear room chillers, and Vital AC switchgear room coolers. The SWS also removes heat from the non-safety related Turbine Building Closed Cooling Water (TBCCW) System heat exchangers. The service water flow to the TBCCW heat exchangers is isolated on either a loss of normal (offsite) power or a safety injection actuation signal (SIAS). The SWS is designed to provide sufficient cooling water to the safety-related components, following a loss of coolant accident (LOCA) with a loss of normal power (LNP) and a single active failure with a maximum inlet temperature (UHS) of 75°F.

The CWS is a non-safety system that provides cooling water to the main condenser. The CWS is not used for accident mitigation.

High temperatures and dry weather conditions during the second and third quarters of 1999 resulted in an elevated UHS temperature, approaching the current 75°F Technical Specification limit. In addition, the UHS temperature is heavily influenced by tidal effects which can result in temperature swings of two to three degrees in a 12 hour period during normal hot weather conditions. It is expected that in the future, the UHS

temperature will approach, and may even exceed the 75°F limit. Exceeding the 75°F limit at the Millstone site is statistically rare. A review of plant data for the past 17 years indicates the UHS temperature limit of 75°F has been exceeded approximately 5 times, and for each time the duration was less than 2 hours. Exceeding the Technical Specification limit currently requires the plant to be in Hot Standby within 6 hours, and in Cold Shutdown within the following 30 hours.

Description of Technical Specification Changes

The proposed change to Technical Specification 3.7.11 will modify the action requirements to add a 12 hour period where plant operation will be permitted if the UHS water temperature exceeds the Technical Specification limit of 75°F. During this 12 hour period, the UHS water temperature will be required to be monitored once per hour. If the UHS water temperature does not decrease below 75°F by the end of this 12 hour period, or if the UHS water temperature exceeds 77°F, the unit will be required to be in Hot Standby (Mode 3) within the next 6 hours, and in Cold Shutdown (Mode 5) within the following 30 hours.

This additional 12 hour period will provide time to allow the tidal effects on UHS water temperature to dissipate without requiring the commencement of a plant shutdown. However, the proposed action requirement will not change the Technical Specification LCO limit of 75°F for UHS water temperature. Continuous plant operation above 75°F will not be permitted.

The proposed Technical Specification change is similar to a change to the Millstone Unit No. 3 Technical Specifications that was approved by the NRC as License Amendment No. 118.[1]

Safety Summary

The proposed change will allow Millstone Unit No. 2 to operate for an additional 12 hours with an UHS water temperature above the Technical Specification limit of 75°F. Analyses have been performed which show the EDGs and the switchgear room coolers will perform as intended in the event of a LOCA with an LNP during UHS temperature excursions up to 77°F. The containment analysis shows acceptable results if a LOCA or main steam line break (MSLB) occurs during UHS temperature excursions up to 77°F. The RBCCW peak temperature analysis indicates that the peak RBCCW temperature attained during the limiting design basis accident (LOCA) with an UHS temperature of 77°F will exceed the RBCCW temperature limit which was assumed in the Electrical Equipment Qualification (EEQ) Program, RBCCW pipe stress analysis, and RBCCW water hammer analysis. However, the increase in RBCCW peak

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[1] V. L. Rooney (NRC) letter to J. F. Opeka, "Issuance of Amendment (TAC NO. M92197)," License Amendment No. 118 to Facility Operating License No. NPF-49 for Millstone Nuclear Power Station, Unit No. 3, dated August 28, 1995.

temperature above the limit is small. As a result, the impact on the associated structures, systems, and components affected by this change is negligible. The results of the evaluation of the safety-related systems and components are discussed below. This discussion addresses the impact of a 2°F increase in service water temperature, which is supplied from the UHS.

RBCCW System

Normal operation of the RBCCW System will not be adversely affected by the proposed change. The service water to RBCCW heat exchanger temperature control valves (TCVs) will open as necessary to maintain RBCCW water temperature at the normal operating temperature. Therefore, any impact of the increase in service water temperature on normal operation of the RBCCW System will be negligible considering operating margin that exists in the system, and the length of time that plant operation with the higher service water temperature will be allowed.

There are three analyses that could potentially be impacted by the proposed increase in the maximum UHS temperature from 75°F to 77°F, and the resultant impact on RBCCW heat exchanger performance. The analyses are RBCCW peak temperature, containment pressure and temperature response to a LOCA or MSLB, and large break LOCA peak clad temperature.

RBCCW Peak Temperature Analysis

The limiting analysis from the perspective of RBCCW heat exchanger performance is the RBCCW peak temperature analysis. This analysis was performed to support EEQ and Generic Letter (GL) 96-06[(2)] hydrodynamic loading issues. The RBCCW peak temperature analysis is not an FSAR Chapter 14 accident analysis as are the containment pressure and temperature analysis and the peak clad temperature analysis. This analysis was performed using clean containment air recirculation (CAR) coolers to maximize the heat gain by the RBCCW System following the design basis LOCA. The RBCCW peak temperature analysis is considered limiting in terms of heat exchanger performance since the post accident RBCCW heat load is approximately 211 MBtu/hr.

The RBCCW peak temperature analysis of record evaluates the design basis accident scenario with a maximum UHS temperature of 75°F. A review of this analysis has been performed to qualitatively address the impact a UHS temperature of 77°F has on RBCCW peak temperature.

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(2) NRC Generic Letter 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," September 30, 1996.

The increase in UHS temperature to 77°F produces a marginal increase in RBCCW supply temperature. This marginal increase is due to the change in heat exchanger efficiency as hot side temperatures increase. For the purposes of this evaluation this increase would be bounded by a 2°F rise both in RBCCW supply and return temperatures.

The end-users of the RBCCW peak temperature analysis are the EEQ program, pipe stress analysis, and GL 96-06 evaluations for the RBCCW system. An evaluation of each of these is presented below.

EEQ

The engineered safety features (ESF) room temperature profiles were evaluated based on the RBCCW peak temperature analysis of record (75°F UHS). In the evaluation, the tested qualification profiles for each component and commodity were plotted and compared to the worst case ESF room composite ambient temperature profile. Applying a heat balance, a 2°F increase in the ESF room temperature profile is assumed based on a 2°F increase in RBCCW supply temperature. After reviewing the temperature profiles and the qualified post accident operating time it has been determined that there is more than adequate margin to accommodate a 2°F rise in the ESF room ambient temperature profile.

Piping Stress Analysis

The evaluation of the effect of RBCCW peak temperature on the analysis of piping thermal stress levels assume a LOCA or MSLB occurs. These events are the emergency or faulted condition for the purposes of stress analysis, thus allowing higher stress limits than for normal operating conditions.

The relatively small increase in the faulted peak operating temperature produces a comparatively small increase in the stress level. The increase in the peak temperature during the faulted operating mode will not produce stress levels on the affected piping and piping components which create pressure boundary failures, and the stress levels are within the allowable levels for faulted conditions.

Impact on GL 96-06 Evaluations of the RBCCW System

The RBCCW System has been evaluated to determine susceptibility for piping failures associated with water hammer events (GL 96-06). The analysis determined that water hammer conditions are not present during post-accident RBCCW operation since the system pressure provided by pump operation maintains saturation margins. Under accident conditions,

the minimum saturation margins during pump operation are approximately 30°F. This large saturation margin envelopes the bounding 2°F rise in RBCCW supply and return temperatures associated with the higher UHS temperature.

The potential for cavitation during the peak temperature analysis conditions was also evaluated. The evaluation determined that since the high temperature phase of the containment temperature profile during the accident is of such short duration, cavitation damage is not anticipated. The slightly higher temperatures have no relative effect on the temperature profile peak duration.

The analysis also demonstrated the acceptability of water hammer conditions created by delayed RBCCW pump restart following a Design Basis Accident with a single failure and an LNP. Under this accident scenario, a 26 second RBCCW pump restart delay for the operating train is assumed based on the EDG start and loading sequence times. Since no cooling water flow occurs during this delay, a void is postulated to form in the CAR cooler outlet piping. The size of this void, which is dependent on the initial RBCCW temperature, will not be affected by operating at a higher service water temperature due to the operation of the service water to RBCCW heat exchanger TCVs which will maintain RBCCW water temperature at the normal operating value. This void will collapse after pump restart, creating a water hammer condition. Since the size of the void is not affected, the increase in UHS temperature limit will not impact the evaluation for the operating train.

For the RBCCW pump assumed to fail (single failure), the analysis has determined that the pump (if not automatically operating and loaded by the EDG) should be restarted after a 45 minute or longer delay in order to minimize water hammer potential. The 45 minute value is based on the containment temperature profile determined from inputs which use a 77°F UHS temperature.

Containment Pressure/Temperature Analysis

The containment analysis is biased to maximize the containment pressure and temperature profiles during a design basis LOCA or MSLB by minimizing the heat removed by the RBCCW system. The RBCCW heat load is approximately 166 MBtu/hr for the design basis LOCA (the limiting accident), which is less than the RBCCW peak temperature analysis. This analysis uses 77°F as the UHS temperature. Therefore, no further evaluation is required.

Peak Clad Temperature Analysis

The peak clad temperature analysis is not limiting since the inputs are based on cold service water conditions which create a post accident low pressure containment to minimize core reflood rate.

EDG Cooling System

The current analysis of the EDG coolers (three coolers per EDG) assumes a service water temperature of 75°F, with 10% tube plugging. This analysis has been reevaluated assuming a service water temperature of 77°F, with 5% tube plugging. The reduction in the tube plugging limit adequately compensates for the increase in UHS temperature such that the EDG coolers will remove sufficient heat for EDG operation at the required rated loading of 2750 KW. Therefore, the EDG coolers will perform as intended to maintain EDG temperatures within limits during a postulated LOCA with an LNP (peak EDG loading event).

Vital DC Switchgear Room Chillers and Vital AC Switchgear Room Coolers

East and West DC Switchgear Rooms

Service water is used to remove heat from the chiller condensers that provide cooling to the East and West DC Switchgear Rooms. For this application, service water cools the secondary heat exchanger. Therefore, it is sized to include the heat load from the room, plus the heat of compression produced by the chiller's compressor. The proposed increase in service water temperature to 77°F on the East and West DC Switchgear Rooms chiller condensers has been evaluated and it has been determined there will be no significant impact on the condenser capacity, and substantial margin remains for heat removal.

West 480 Volt Switchgear Room

Service water is the primary coolant medium for the West 480 Volt Switchgear Room cooling coil. The capacity of this cooling coil with a service water temperature of 77.3°F, with 13% tube plugging, is more than adequate to remove the maximum room heat load. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

East 480 Volt Switchgear Room

The East 480 Volt Switchgear Room is cooled by an exhaust fan instead of service water. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Upper 4160 Volt Switchgear Room

Service water is the primary coolant medium for the Upper 4160 Volt Switchgear Room cooling coil. The capacity of this cooling coil with a service water temperature of 82.3°F, with 14% tube plugging, is more than adequate to remove the maximum room heat load. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Lower 4160 Volt Switchgear Room

Service water is the primary coolant medium for the Lower 4160 Volt Switchgear Room cooling coil. The capacity of this cooling coil with a service water temperature of 85.5°F, with 14% tube plugging, is more than adequate to remove the maximum room heat load. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Shutdown Cooling System

The Shutdown Cooling (SDC) System transfers heat from Reactor Coolant System (RCS) to the RBCCW System. A short term excursion (12 hours) of service water temperature above 75°F, up to 77°F, in Mode 4 with SDC in operation will not have a significant impact on the ability of the SDC System to cool the RCS. This condition is bounded by the RBCCW heat loads evaluated for the accident condition. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Appendix R

Millstone Unit No. 2 is required to be able to achieve cold shutdown (Mode 5) conditions within 72 hours following an Appendix R event. A fire in the intake structure, which could result in damage to all three service water pumps, is the most limiting Appendix R scenario for this evaluation because of the delay in repairs to restore at least one service water train to service. The Appendix R scenarios rely on the Charging System and the Auxiliary Feedwater System to bring the plant to hot shutdown (Mode 4). An analysis has been performed that illustrates with one RBCCW train in operation, the RCS can be cooled to cold shutdown conditions in less than 16.5 hours. This analysis is based on an UHS temperature of 75°F, with 10% of the tubes plugged, to remove a heat load of approximately 122 MBtu/hr. Assuming a 2°F increase in UHS temperature, potential decreases in heat transfer rate through the RBCCW heat exchangers will produce a small increase in the time to cold shutdown, however this increase will not cause the total time to exceed the 72 hour Appendix R criteria. Furthermore, it is reasonable to assume that periodic swings of UHS temperature above the 75°F, will be accompanied by temperature swings below 75°F. As a result, the integrated heat removed will be approximately equal to that using a

constant UHS temperature of 75°F. Therefore, assuming that at least one service water train is brought back to operation following a fire in the intake structure, there is reasonable assurance that plant cooldown can be achieved well within 72 hours if the UHS temperature exceeds 75°F, but is less than 77°F.

Spent Fuel Pool

The Spent Fuel Pool Cooling System (SFPCS) transfers heat from the spent fuel pool to the RBCCW System. The SFPCS could be affected by the increase in service water temperature during three different modes of operation.

Normal Operation

The proposed change will allow an additional 12 hours of plant operation above the Technical Specification limit of 75°F, not to exceed 77°F. For normal spent fuel pool operation, plant power operation does not adversely affect the operation of the SFPCS. The SFPCS is affected by service water temperature, but that affect is independent of plant power level. The increase in UHS temperature during the proposed action condition will not prevent adequate cooling of the spent fuel pool. Therefore, the proposed change in allowable outage time does not adversely impact the ability of the SFPCS to cool the spent fuel pool.

Post Accident Conditions

The proposed change will allow an additional 12 hours of plant operation above the Technical Specification limit of 75°F, not to exceed 77°F. RBCCW flow to the SFPCS is isolated following a SIAS by automatic closure of valves in the cooling water discharge piping. Approximately eight hours post accident, after the heat load on the RBCCW System is substantially reduced, cooling water is returned to the SFPCS. The containment pressure and temperature analysis for when the SFPCS is returned to service following an accident, was performed using a service water temperature of 77°F. Therefore, no further evaluation is required.

Refueling

The UHS Technical Specification is applicable in Modes 1 through 4. It does not apply in Mode 6. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Service Water System Piping and Components

The effect of a temperature rise from 75°F to 77°F on the structural integrity of the SWS piping and components has been evaluated. Since the design temperature of the SWS piping and fittings is above 77°F, the affect of a 2°F in service water temperature is negligible, and can be accommodated in the available margin. In addition, the service water pumps were procured for a design service water temperature of 85°F, and the service water strainers are designed for a service water temperature of 100°F. Therefore, there is no adverse impact associated with the proposed increase in service water temperature to 77°F.

Risk Assessment

An analysis to quantify the risk significance of various design basis accidents during periods of elevated service water temperature has been performed. This analysis assumes that the UHS temperature will be elevated above 75 °F for a total of 100 hours cumulative in any one year. This is a conservative timeframe based on a review of plant data for the past 17 years that indicates the UHS temperature limit of 75 °F has been exceeded approximately 5 times, and for each time the duration was less than 2 hours. Exceeding the 75 °F limit at the Millstone site is statistically rare.

The probability of a large LOCA or MSLB inside containment occurring during the 100 hour seasonal exposure time is less than 1.0E-5. (This value is the probability of the initiating event, not the contribution to core damage frequency since several failures of accident mitigation systems and human errors have to be considered to calculate contributions to the core damage frequency associated with these initiating events.) Therefore, the likelihood of coincidental occurrence of these postulated events during the 100 hour cumulative time is low, and not risk significant.

Technical Specification Bases

The proposed change to the Bases of Technical Specification 3.7.11 is consistent with the proposed change previously discussed.

The proposed change to the Technical Specification and associated Bases will not adversely affect the availability or operation of the equipment used to mitigate the design basis accidents. There will be no adverse effect on plant operation. The plant response to the design basis accidents will not change. Therefore, there will be no adverse impact on public health and safety. Thus, the proposed changes are safe.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Significant Hazards Consideration

January 2000

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Significant Hazards Consideration

Significant Hazards Consideration

In accordance with 10 CFR 50.92, NNECO has reviewed the proposed change and has concluded that it does not involve a significant hazards consideration (SHC). The basis for this conclusion is that the three criteria of 10 CFR 50.92(c) are not compromised. The proposed change does not involve an SHC because the change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed change will allow plant operation to continue for an additional 12 hours with the temperature of the UHS up to 2°F above the Technical Specification limit of 75°F. This increase in UHS temperature will not affect the normal operation of the plant to the extent which would make any accident more likely to occur. In addition, there exists adequate margin in the safety systems and heat exchangers to assure the safety functions are met at the higher temperature. An evaluation has confirmed that safe shutdown will be achieved and maintained for a loss of coolant accident (LOCA) with a loss of normal power (LNP) and a single active failure with an UHS water temperature as high as 77°F.

   The proposed change will have no adverse effect on plant operation, or the availability or operation of any accident mitigation equipment. The plant response to the design basis accidents will not change. In addition, the proposed change can not cause an accident. Therefore, there will be no significant increase in the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed change will allow plant operation to continue for an additional 12 hours with the temperature of the UHS up to 2°F above the Technical Specification limit of 75°F. This will not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. The proposed change will not alter the way any structure, system, or component functions and will not significantly alter the manner in which the plant is operated. There will be no adverse effect on plant operation or accident mitigation equipment. The proposed change does not introduce any new failure modes. Also, the response of the plant and the operators following

these accidents is unaffected by the change. In addition, the UHS is not an accident initiator. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any previously analyzed.

3. Involve a significant reduction in a margin of safety.

The proposed change will allow plant operation to continue for an additional 12 hours with the temperature of the UHS up to 2°F above the Technical Specification limit of 75°F. An evaluation has been performed which demonstrates that the safety systems have adequate margin to ensure their safety functions can be met with an ultimate heat sink water temperature of 77°F. In addition, safe shutdown capability has been demonstrated for an UHS water temperature as high as 77°F.

The proposed change will have no adverse effect on plant operation or equipment important to safety. The plant response to the design basis accidents will not change and the accident mitigation equipment will continue to function as assumed in the design basis accident analysis. Therefore, there will be no significant reduction in a margin of safety.

The proposed change does not alter the design, function, or operation of the equipment involved. The impact of the proposed change has been analyzed, and it has been determined it does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a margin of safety. Therefore, NNECO has concluded the proposed change does not involve an SHC.

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Attachment 3

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Marked Up Pages

January 2000

PLANT SYSTEMS

3/4.7.11 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.11 The ultimate heat sink shall be OPERABLE with a water temperature of less than or equal to 75°F.

APPLICABILITY: MODES 1, 2, 3, AND 4

ACTION:

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

INSERT A

SURVEILLANCE REQUIREMENTS

4.7.11 The ultimate heat sink shall be determined OPERABLE:

a. At least once per 24 hours by verifying the water temperature to be within limits.

b. At least once per 6 hours by verifying the water temperature to be within limits when the water temperature exceeds 70°F.

INSERT A - Page 3/4 7-34

a. With the ultimate heat sink water temperature greater than 75°F and less than 77°F, operation may continue for up to 12 hours provided the water temperature is verified below 77°F at least once per hour. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the ultimate heat sink water temperature greater than 77°F, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

3/4.7.10 DELETED

3/4.7.11 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink temperature ensure that sufficient cooling capacity is available to either,

1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on maximum temperature are based on a 30-day cooling water supply to safety related equipment without exceeding their design basis temperature.

Various indications are available to monitor the temperature of the ultimate heat sink (UHS). The following guidelines apply to ensure the UHS Technical Specification limit is not exceeded.

The control room indications are normally used to ensure compliance with this specification. Control room indications are acceptable because of the close correlation between control room indications and local Service Water System (SWS) header indications (historically within approximately 2°F). The highest reading valid temperature obtained from the Unit 2 intake structure and the inlets to the Circulating Water System water boxes shall be used to verify the UHS temperature limit of 75°F is not exceeded.

When the highest reading valid control room indication indicates the temperature of the UHS is > 70°F, local SWS header indications must be used. The highest reading valid local SWS header temperature shall be used to verify the UHS temperature limit of 75°F is not exceeded. Normally, local SWS header temperature will be taken at the inlet to the vital AC switchgear room cooling coils. If the local SWS header temperature cannot be taken at the inlet to the vital AC switchgear room cooling coils, the inlet to the Reactor Building Closed Cooling Water heater exchangers, or other acceptable instrumentation should be used to determine SWS header temperature.

INSERT B

INSERT B - Page B 3/4 7-7

If the UHS temperature exceeds 75°F, a 12 hour monitoring period is permitted. This 12 hour period should allow time for the UHS temperature to return to a value below 75°F as the tidal effects on the UHS temperature dissipate. During this 12 hour period, local service water header indications are to be used. If the UHS temperature does not drop below the 75°F Technical Specification limit within 12 hours, or if the UHS temperature exceeds 77°F, a plant shutdown in accordance with the action requirements will be necessary.

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Attachment 4

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Ultimate Heat Sink
Retyped Pages

January 2000

3/4.7.11 ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.11 The ultimate heat sink shall be OPERABLE with a water temperature of less than or equal to 75°F.

APPLICABILITY: MODES 1, 2, 3, AND 4

ACTION:

a. With the ultimate heat sink water temperature greater than 75°F and less than 77°F, operation may continue for up to 12 hours provided the water temperature is verified below 77°F at least once per hour. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With the ultimate heat sink water temperature greater than 77°F, be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.11 The ultimate heat sink shall be determined OPERABLE:

a. At least once per 24 hours by verifying the water temperature to be within limits.

b. At least once per 6 hours by verifying the water temperature to be within limits when the water temperature exceeds 70°F.

3/4.7.10 DELETED

3/4.7.11 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink temperature ensure that sufficient cooling capacity is available to either,

1) provide normal cooldown of the facility, or 2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on maximum temperature are based on a 30-day cooling water supply to safety related equipment without exceeding their design basis temperature.

Various indications are available to monitor the temperature of the ultimate heat sink (UHS). The following guidelines apply to ensure the UHS Technical Specification limit is not exceeded.

The control room indications are normally used to ensure compliance with this specification. Control room indications are acceptable because of the close correlation between control room indications and local Service Water System (SWS) header indications (historically within approximately 2°F). The highest reading valid temperature obtained from the Unit 2 intake structure and the inlets to the Circulating Water System water boxes shall be used to verify the UHS temperature limit of 75°F is not exceeded.

When the highest reading valid control room indication indicates the temperature of the UHS is > 70°F, local SWS header indications must be used. The highest reading valid local SWS header temperature shall be used to verify the UHS temperature limit of 75°F is not exceeded. Normally, local SWS header temperature will be taken at the inlet to the vital AC switchgear room cooling coils. If the local SWS header temperature cannot be taken at the inlet to the vital AC switchgear room cooling coils, the inlet to the Reactor Building Closed Cooling Water heater exchangers, or other acceptable instrumentation should be used to determine SWS header temperature.

If the UHS temperature exceeds 75°F, a 12 hour monitoring period is permitted. This 12 hour period should allow time for the UHS temperature to return to a value below 75°F as the tidal effects on the UHS temperature dissipate. During this 12 hour period, local service water header indications are to be used. If the UHS temperature does not drop below the 75°F Technical Specification limit within 12 hours, or if the UHS temperature exceeds 77°F, a plant shutdown in accordance with the action requirements will be necessary.