

NORTHEAST UTILITIES

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WESTERN MASSACHUSETTS ELECTRIC COMPANY
NORTHEAST WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Seiden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

September 14, 1993

Docket No. 50-423
B14614

Re: 10CFR50.90
10CFR50.91

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

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Reactor Trip System Interlocks - Power Range Neutron Flux P-10
Proposed Changes to Technical Specifications

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend its Operating License NPF-49 by incorporating the changes identified in the attachments into the Millstone Unit No. 3 Technical Specifications. Specifically, the proposed changes to the Millstone Unit No. 3 Technical Specification Table 2.2-1 will revise and clarify the trip setpoints associated with the reactor trip system (RTS) P-10 interlock (i.e., power range neutron flux interlock). Also, NNECO is requesting that the NRC Staff process this license amendment request on an exigent basis pursuant to 10CFR50.91(a)(6). Exigent authorization is required by October 3, 1993, to support start-up (i.e., enter into MODE 2) of the plant. At the present time, Millstone Unit No. 3 is shut down for refueling. In parallel, the Staff may wish to consider whether it is advisable to exercise an enforcement discretion from the subject technical specification, to be effective until the amendment is issued, allowing NNECO to start up and operate Millstone Unit No. 3 in the interim. We believe that an exigent license amendment is warranted in this case to allow the start-up and operation of the plant since the associated operational risk with the request involves minimal safety impact. We further believe it to be consistent with the health and safety of the public.

Background

On Thursday, September 2, 1993, NNECO determined that, as presently written, the technical specification related to the RTS P-10 interlock cannot be complied with. Specifically, the Millstone Unit No. 3 Technical Specification Table 2.2-1, RTS Instrumentation Trip Setpoints, refers to the P-10 function in two places (Functional Unit 18.b.1 and 18.e). The first functional unit (18.b.1) refers to its function as power increases and has a trip setpoint of $\leq 10\%$ of the reactor thermal power (RTP) and the second functional unit (18.e) refers to its function as power decreases and has a trip setpoint of $\geq 10\%$ of the RTP.

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The low power reactor trip block, P-7 interlock, is actuated by input from either the power range neutron flux, P-10 interlock, or the turbine impulse pressure, P-13 interlock.

On increasing power, the P-10 interlock provides input to the P-7 interlock (Table 2.2.1, Functional Unit 18.b.1). This input is similar to reactor trips at high power levels. In other words, the bistable actuates on an increasing signal before the parameter reaches the specified values. Therefore, this specification requires the P-10 interlock to trip at $\leq 10\%$ of the RTP as an input to the P-7 interlock. Then the P-7 interlock automatically enables the reactor trips for the following functions:

- Pressurizer Pressure — Low
- Reactor Coolant Flow — Low (more than one loop)
- Reactor Coolant Pump Shaft Speed — Low
- Pressurizer Water Level — High

The P-13 interlock (turbine impulse pressure) also trips before both impulse pressure detectors reach 10% of the RTP. These reactor trips are credited in the accident analysis and are only required when operating above the P-10 setpoint (i.e., above the P-7 setpoint which is approximately 10% of the RTP). The reactor trips provide protection against violating the departure from nucleate boiling ratio. Below the P-10 setpoint, the reactor coolant system is capable of providing sufficient natural circulation without any reactor coolant pump running.

The "allowable value" listed in Table 2.2-1 (see Table 2.2-1, Functional Units 18.b.1 and 18.b.2) for this function is 12.1% of the RTP. A secondary function of this interlock is to allow the operator to manually block the intermediate range neutron flux reactor trip and power range neutron flux low setpoint trip before approaching the setpoints.

However, on decreasing power, the power range neutron flux P-10 interlock (Table 2.2-1, Functional Unit 18.e) actuates before it reaches the specified value. Therefore, Table 2.2-1, Functional Unit 18.e requires the P-10 interlock to be enabled any time power is $\geq 10\%$. Before power, as indicated on three of the four detectors, decreases below 10%, the bistable should reset and reenable the intermediate range neutron flux and power range neutron flux low setpoint trips. The P-10 interlock bistable has a reset adjustment to give a deadband of approximately 2% of full power. Therefore, the P-10 interlock bistable reset value should be set at approximately 2% lower than the trip setpoint (i.e., below trip setpoint of Functional Unit 18.b.1). However, Millstone Unit No. 3 has previously set this trip function at 9.75%. Therefore, as presently written, the technical specifications cannot comply with Functional Unit 18.e. NNECO determined that this condition is reportable per 10CFR50.73 and a Licensee Event Report will be submitted to the NRC by October 1, 1993. The revised setpoint of $\leq 11\%$ on increasing power and $\geq 9\%$ on decreasing power will satisfy the intent of the P-10 interlock permissive

for both of the trip and reset functions of the bistable and eliminate the existing noncompliance with Technical Specification Section 2.2.1.

Description of the Proposed Changes

In order to resolve this noncompliance, NNECO proposes to revise the existing technical specification trip setpoints for Functional Units 18.b.1 and 18.e. Specifically, for Functional Unit 18.b.1, the trip setpoint will be $\leq 11\%$ of the RTP whereas for Functional Unit 18.e, the trip setpoint will be $\geq 9\%$ of the RTP. In addition, a footnote is being added to clarify that the trip setpoint for Functional Unit 18.b.1 is for increasing power whereas the trip setpoint for Functional Unit 18.e is for decreasing power. The proposed changes are intended to explicitly account for the dead band inherent in the bistable which precludes having both settings at 10% of the RTP. The Bases Section 2.2.1, "Reactor Trip System Instrumentation Setpoints," is also revised to provide a better description of what function the RTS trip interlock P-10 performs. It is noted that there are no changes to the surveillance requirements or the "allowable values" for this trip function. The "allowable values" included in the technical specification are credited in the safety analysis.

It is our understanding that the technical specification changes related to the P-10 interlock have been accepted by the NRC on Farley Unit 1 (Docket No. 50-348, Amendment No. 26). The changes proposed herein are similar in nature to those approved by the NRC on the Farley Unit 1 docket.

The marked up technical specification pages are provided in Attachment 1, and the retyped technical specification pages are provided in Attachment 2.

Safety Assessment

The proposed changes modify the trip setpoints associated with the P-10 interlock (Table 2.2-1, Functional Units 18.b.1 and 18.e). The setpoint for the P-10 input to the P-7 interlock is being raised from $\leq 10\%$ to $\leq 11\%$ and the setpoint for the P-10 interlock (for decreasing power) is being reduced from $\geq 10\%$ to $\geq 9\%$. The revised setpoint of $\leq 11\%$ on increasing power and $\geq 9\%$ on decreasing power will satisfy the intent of the P-10 interlock permissive for both of the trip and reset functions of the bistable and eliminate the compliance problem with Technical Specification Section 2.2.1. The corresponding "allowable values" listed in Table 2.2-1 are not being modified by the proposed changes. The "allowable values" are the values that assure that any design basis function associated with the setpoints remains valid. Since the "allowable values" are not changing, there can be no impact on the design basis analyses and, therefore, no impact on the consequences of the design basis analyses. Therefore, the proposed changes do not pose a condition adverse to safety, and there are no adverse safety consequences created by the proposed changes.

It is noted that the proposed changes have been discussed with Westinghouse (W) and W finds the proposed changes to be acceptable.⁽¹⁾

Justification for Exigent License Amendment

Pursuant to 10CFR50.91(a)(6), NNECO hereby requests NRC Staff "exigent" approval of the proposed amendment to its Operating License NPF-49. Exigent authorization is required by October 3, 1993, to allow start-up (enter MODE 2) of the plant. At the present time, Millstone Unit No. 3 is shut down for refueling.

The exigent situation could not be avoided for the following reasons. Recently, a voltage versus power table to support the setpoint calculations was being developed. While reviewing this table, NNECO personnel discovered a problem with the Millstone Unit No. 3 Technical Specifications. Based on our review on September 2, 1993, NNECO determined that as currently written, the technical specification related to the RTS interlock P-10 (i.e., Functional Unit 18.e) cannot be complied with. It is noted that the Millstone Unit No. 3 Technical Specifications were developed using the W Standard Technical Specification (STS), NUREG-1452, Revision 4 and specifically, the trip setpoints for Functional Units 18.b.1 and 18.e of Table 2.2-1 are consistent with the W STS. Following identification of this problem, NNECO promptly informed the Staff of the status and planned course of action for resolution of this issue. Discussions with the Staff culminated in an understanding reached on Wednesday, September 8, 1993, that the technical specification should be modified to revise the trip setpoints for the P-10 interlock.

Further, the requested exigent authorization is appropriate because this amendment does not involve a significant hazards consideration (SHC). Based on the SHC discussion provided below, NNECO has determined that these proposed changes are acceptable and thoroughly justified from a safety standpoint.

Significant Hazards Consideration

In accordance with 10CFR50.92, NNECO has reviewed the attached proposed changes and has concluded the changes do not involve an SHC. The basis for this conclusion is that the three criteria of 10CFR50.92(c) are not compromised. The proposed changes do not involve an SHC because the changes would not:

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

The proposed changes modify the trip setpoints associated with the P-10 interlock (Table 2.2-1, Functional Units 18.b.1 and 18.e).

(1) W. H. Krueger (W) letter to Northeast Utilities Service Company, "Changes to Technical Specifications - P-10," dated September 10, 1993.

The P-10 interlock is associated with the following reactor trips that are credited in the safety analyses:

- Pressurizer Pressure — Low
- Pressurizer Water Level — High
- Reactor Coolant Flow — Low (more than one loop)
- Reactor Coolant Pump Shaft Speed — Low

Based on this list of reactor trips, the accidents potentially impacted include:

- Loss of Forced Reactor Coolant Flow
- Rod Withdrawal from Subcritical
- Loss of Load
- Reactor Coolant Pump Shaft Seizure (locked rotor)

The proposed changes are intended to explicitly account for the dead band inherent in the bistable which precludes having both settings at 10% of the RTP. The "allowable value" listed in Table 2.2-1 for Functional Unit 18.b.1 is $\leq 12.1\%$ of the RTP and the "allowable value" listed in Table 2.2-1 for Functional Unit 18.e is $\geq 7.9\%$ of the RTP. The "allowable values" of the limiting safety system settings are the values that assure that the associated design basis assumptions are valid. There are no changes proposed to these "allowable values" associated with the P-10 interlock. Since, the allowable values are not changing, the changes do not have any impact on the design basis analyses. Therefore, the changes cannot increase the probability nor consequences of an accident previously evaluated.

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

The proposed changes do not affect the plant operation or introduce any new failure mechanisms. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any previously evaluated.

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

The allowable values in the technical specifications are the values that assure the validity of the design basis assumptions. The trip setpoint provides a value that limits the potential for exceeding the allowable value and thereby limits the potential for exceeding any design basis assumption. Based on this, the design basis assumptions are not impacted. Since the allowable values are not changing, the changes do not have any impact on the design basis analyses. Therefore, the proposed changes will not involve a significant reduction in a margin of safety.

Moreover, the Commission has provided guidance concerning the application of the standards in 10CFR50.92 by providing certain examples (51FR7751, March 6, 1986) of amendments that are considered not likely to involve an SHC. The changes proposed herein are not enveloped by a specific example. The proposed changes modify the trip setpoints associated with the P-10 interlock. The corresponding "allowable values" listed in Table 2.2-1 are not being modified by the proposed changes.

The "allowable values" are the values that assure that any design basis function associated with the setpoints remains valid. Since the "allowable values" are not changing, there can be no impact on the design basis analyses. Therefore, the proposed changes cannot increase the probability nor consequences of an accident previously evaluated.

Request for an Enforcement Discretion

NNECO is providing justification for an enforcement discretion associated with compliance with the Millstone Unit No. 3 Technical Specification Table 2.2-1, Functional Unit 18.e, the RTS interlock - power range neutron flux P-10.

1. The Technical Specification Condition that Will Be Violated

The Millstone Unit No. 3 Technical Specification Table 2.2-1, RTS Instrumentation Trip Setpoints, refers to the P-10 function in two places (Functional Units 18.b.1 and 18.e). The first functional unit (18.b.1) refers to its function as power increases and has a trip setpoint of $\leq 10\%$ of the RTP. The P-10 interlock bistable has a reset adjustment to give a deadband of approximately 2% of full power. Therefore, the P-10 interlock bistable reset value should be set at approximately 2% lower than the trip setpoint (i.e., below the trip setpoint of Functional Unit 18.b.1). However, Millstone Unit No. 3 has previously set the trip function at 9.75%. Therefore, the technical specification for the reset trip setpoint of Functional Unit 18.e, as currently written, cannot be complied with.

NNECO hereby requests an enforcement discretion associated with compliance with the Millstone Unit No. 3 Technical Specification Table 2.2-1, Functional Unit 18.e, the RTS interlock power range neutron flux P-10 until the proposed license amendment is approved and issued by the NRC.

2. The Circumstances Surrounding the Situation Including the Need for Prompt Action

NNECO identified this noncompliance while reviewing the calculation for the 18-month calibration of the RTS interlock P-10. A discussion of the circumstances surrounding this situation and a determination of why the need for prompt action could not have been avoided is provided in the

"Justification for Exigent License Amendment" Section of this letter. In addition, NNECO notified the NRC of this condition on September 7, 1993, and has pursued an expeditious resolution of this matter by working with the Staff on a daily basis.

3. Safety Basis for the Request

NNECO believes that the safety significance of this request is minimal. The proposed changes simply correct the deficiency in the existing technical specification. As discussed in the "Safety Assessment" Section of this letter, the proposed changes do not pose a condition adverse to safety and there can be no adverse safety consequences created by the proposed changes.

4. Compensatory Measures

The proposed amendment request, if approved, will allow NNECO to start up and operate the plant. During the timeframe that the enforcement discretion is in effect, the following compensatory actions have been or will be taken. The P-10 interlock will be set such that it will meet the proposed requirements of Functional Units 18.b.1 and 18.e and is within the allowable value specified in the technical specifications. This is consistent with the safety analysis. Therefore, no further compensatory action is deemed necessary.

5. Duration of Requested Waiver

The enforcement discretion is being requested for the period until the license amendment is approved by the NRC. This will allow NNECO to start up and operate the plant safely.

6. Bases for No Significant Hazards Consideration

The basis for this enforcement discretion not involving an SHC is the same as described previously for the proposed amendment. However, since the period for which enforcement discretion would apply is very brief, the no SHC conclusion is more persuasive.

7. Basis for No Irreversible Environmental Consequences

The requested enforcement discretion involves no environmental consequences, since the request, if approved, will allow NNECO to start up and operate Millstone Unit No. 3 safely. The proposed changes to the technical specification do not affect any accident analyses or the associated radiological consequences or nonradiological effluents.

8. Safety Review

The Millstone Unit No. 3 Plant Operations Review Committee (PORC) and Nuclear Review Board (NRB) has reviewed and approved the request for an enforcement discretion.

9. Additional Information

Additional information is provided in the above eight sections and in the body of this letter.

Environmental Consideration

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not increase the types or amounts of effluents that may be released off-site, nor does it significantly increase individual or cumulative occupational radiation exposure. Based on the foregoing, NNECO concludes that the proposed changes meet the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an environmental impact statement.

Conclusion

In summary, NNECO is requesting an exigent license amendment that would serve to eliminate the existing technical specification noncompliance without altering the provisions of the surveillance requirement. This would allow NNECO to start up and operate the plant safely. As stated previously, NNECO seeks regulatory action by whatever vehicle is most appropriate to authorize start-up of the plant.

We wish to emphasize our conclusion that this proposed amendment involves no undue safety risk nor irreversible environmental consequences. We are, therefore, requesting this action to allow start-up and operation of the plant, an action which is in the interest of the health and safety of the public, our customers, and shareholders.

The Millstone Unit No. 3 PORC and NRB has reviewed and approved the proposed changes including the request for an enforcement discretion and concurred with the above determination.

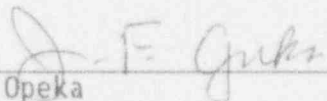
In accordance with 10CFR50.91(b), we are providing the State of Connecticut with a copy of this amendment via facsimile to ensure their awareness of this request.

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Should the Staff request any additional information to process this request, NNECO remains available to promptly provide such information.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



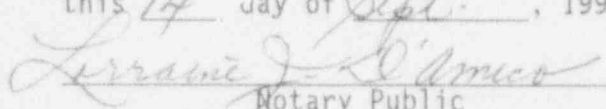
J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2,
and 3

Mr. Kevin T. A. McCarthy, Director
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
P.O. Box 5066
Hartford, CT 06102-5066

Subscribed and sworn to before me

this 14 day of Sept., 1993



Notary Public

Date Commission Expires: 3/31/95