Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

June 30, 1994

Docket No. 50-423
B14875

Re: 10CFR50.90

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

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Degraded Grid Trip Setpoint Change

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License No. NPF-49 by incorporating the attached change into the Technical Specifications of Millstone Unit No. 3.

Description of the Proposed Change

NNECO proposes to modify Technical Specification Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoints," by revising the trip setpoint for the 4kV bus undervoltage relay (for the grid degraded voltage) from its current value of ≥3710 volts to its new setting of ≥3730 volts.

As a result of an issue which developed from the Millstone Unit No. 3 electrical distribution system functional inspection (EDSFI), a calculation was redone and it was determined that the undervoltage trip setpoint, contained in the Technical Specification, should be modified.

The earlier version of the undervoltage calculation identified the degraded voltage setpoint as ≥3710V, as captured in Technical Specification Table 3.3-4, item 8a. The allowable value was determined to be 3706V. The revision to this calculation, done as a result of the EDSFI, determined the setpoint value should be 3730V, with the allowable value remaining at 3706V. However, the actual field settings on the undervoltage relays, are 3745V. This actual field setting was chosen by NNECO to establish additional conservatisms over and above that calculated to occur in a degraded voltage condition, yet still ensure that plant transients would not needlessly occur if the settings were too high.

Safety Assessment

NRC Branch Technical Position PSB-1, "Adequacy of Station Electric Distribution System Voltages," discusses the adverse effects that can be caused by sustained low grid voltage conditions on the class 1E loads. PSB-1 also discusses protective schemes that should be implemented to address these issues, namely the development of an undervoltage scheme to detect the loss of offsite power at the class 1E buses along with a second level of undervoltage protection with a time delay.

This proposed Technical Specification modification will modify the second level of undervoltage protection by adjusting the undervoltage trip setpoint from 3710V to 3730V. This calculational increase of 20 volts will provide an acceptable allowance for instrument uncertainties over the allowable value of 3706V.

The safe operation of the plant is not affected by this modification. This modification will affect the undervoltage relay setpoint for detecting a degraded voltage condition. This setpoint is that point at which continued long term operation at or below the degraded voltage level could damage safety-related equipment. In order to prevent unnecessary challenges to the safeguard systems, a time delay relay is actuated once the setpoint is reached. If the voltage returns above the setpoint value before the timer trips, offsite power will not be shed and the relay will be reset. If power remains below the setpoint, after a predetermined time, the diesels will receive a signal to start and an attempt will be made to transfer the class 1E loads from the preferred offsite source to the alternate offsite source. If the alternate offsite source is not available, the emergency diesel generator will power the class 1E loads. The ability of the plant to sense a loss of offsite power is also not affected. Should a loss of offsite power occur, a loss of offsite power signal will be generated and the plant will continue to respond as designed.

The increase in the undervoltage value from 3710V to 3730V will not result in an increase of engineered safety features (ESF) actuations. The current field setting for this relay is 3745V. This value was conservatively chosen by NNECO to provide additional margin over and above what was identified by the calculation, yet is still low enough so as to not needlessly cycle the diesels. Therefore, no field modifications are necessary as a result of this proposed amendment.

Therefore, the accident analyses in Chapter 15 of the Millstone Unit No. 3 FSAR are not affected since the undervoltage protection is still provided by this undervoltage relay. In addition,

unnecessary challenges to the ESF system are prevented by the conservative setting of the relays.

Significant Hazards Consideration

In accordance with 10CFR50.92, NNECO has reviewed the attached proposed change and has concluded it does not involve a significant hazards consideration (SHC). The bases for this conclusion is that the three criteria of 10CFR50.92(c) are not compromised. The proposed change does not involve an SHC because the change does not:

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

   The proposed change involves the modification of the undervoltage relay setpoint from 3710V to 3730V. The protection provided by this system is unaffected and is still in accordance with the guidance provided in NRC Branch Technical Position PSB-1. This refinement increases the Technical Specification minimum trip setpoint for the degraded voltage relays on the 4kV safety buses. It does not detrimentally affect the safe operation of the plant, nor does this proposed modification increase the probability or consequences of an accident previously evaluated. The actual trip setpoints of the subject relays do not require any changes and are currently conservatively set at 3745V. The allowable value of ≥3706V remains unchanged. This slightly higher than required setting was chosen by NNECO to provide added margin should an undervoltage condition be present. This higher setting will not cause more actuations of the ESF systems.

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

   The undervoltage protection system is provided to address the concerns identified in NRC Branch Technical Position PSB-1 by providing a scheme to detect the loss of offsite power at the class 1E buses, and a second level of undervoltage protection to protect the class 1E equipment. The change in the setpoint will not affect the ability of this circuitry to detect a loss of offsite power or to respond to an undervoltage condition.

   Since the equipment will operate as previously described in the FSAR, and there are no physical plant modifications required (the current setting at the undervoltage relay is 3745V), the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

These relays do not cause a loss of offsite power, nor do they cause a degraded voltage condition. These relays react to conditions that have been placed upon the plant. In the event that a degraded voltage condition exists on the 4kV safety buses, alarms in the control room alert the operators of this condition. In addition, the Connecticut Valley Electric Exchange (CONVEX), the system dispatch center for generation and VAR/voltage control, is aware of the minimum voltage requirements for the three nuclear plants at the Millstone station and has a minimum target switchyard voltage of 345kV. Under normal operating conditions the switchyard voltage would have to degrade below 328kV before one of the 4kV safety buses would start to enter the degraded voltage level and trip the degraded voltage circuit. These administrative controls help preclude a degraded voltage condition on the 4kV safety buses prior to actuation of the degraded voltage protection circuits.

The proposed change of the 4kV degraded voltage minimum trip setpoint to 3730V from 3710V will not result in any physical relay setting change. The existing trip setting for the 4kV degraded voltage relays have been conservatively set at 3745V, while the existing allowable value remains unchanged at 3706V. The response times or actuation logic of the degraded voltage protection circuit remains unaffected, therefore revising the trip setpoint value in the Technical Specifications will not involve a significant reduction in the margin of safety.

Moreover, the Commission has provided guidance concerning the application of the standards in 10CFR50.92 by providing certain examples (March 6, 1986, 51FR7751) of amendments that are considered not likely to involve a significant hazards consideration. The proposed change is most like example (i) a purely administrative change to Technical Specifications: for example, a change to achieve consistency throughout the Technical specifications, correction of an error, or a change in nomenclature. The proposed change corrects an incorrect trip setpoint. However, the as-installed trip setpoint is set above this proposed value. Therefore, no physical modification to the plant is required, and this change is, in essence, administrative.

Environmental Impact

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not increase the types or amounts of effluents that may be release off site, nor significantly increase individual or cumulative occupational radiation exposures. Based on the

foregoing, NNECO concludes that the proposed change meets the criteria delineated in 10CFR51.22(c)9 for a categorical exclusion from the requirements for an environmental impact statement.

In accordance with 10CFR50.91(b), we are hereby providing the State of Connecticut with a copy of this proposed amendment.

Schedule

Regarding our proposed schedule for this amendment, we request issuance at your earliest convenience, with the amendment effective as of the date of issuance, to be implemented within 30 days of issuance.

Conclusions

As discussed above, the proposed change has been determined not to involve a significant hazards consideration pursuant to 10CFR50.92. Additionally, NNECO has determined that the proposed license amendment request meets the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an environmental impact statement.

The Millstone Unit No. 3 Nuclear Review Board has reviewed and has concurred with the above determination.

Attachment 1 provides a markup of proposed change, whereas Attachment 2 provides the retyped page of the Millstone Unit No. 3 Technical Specifications. The retype of the proposed change to the Technical Specifications in Attachment 2 reflects the currently issued version of the Technical Specifications. NNECO hereby suggests that the NRC Staff check with NNECO for continuity with the Technical Specifications prior to issuance.

If you should have any questions on the above, please contact Mr. T. G. Cleary at (203) 665-5700.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: J. F. Opeka
Executive Vice President

BY: E. A. DeBarba
Vice President

cc: See Page 6

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 30th day of June, 1994

Rose J. Dubois

Date Commission Expires: 3/31/95