NORTHEAST UTILITIES
THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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November 19, 1987

Docket No. 50-423
B12750
Re: 10CFR50.90 and 50.91

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specification
Containment Penetration Conductor Overcurrent Protective Devices

Pursuant to 10CFR50.90 and 50.91, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend its Operating License, NPF-49, by incorporating the attached proposed changes into the Technical Specifications of Millstone Unit No. 3.

Specifically, the proposed changes to Technical Specification Section 4.8.4.1.a.2 will clarify surveillance testing requirements for molded case circuit breakers and unitized starters which are used at Millstone Unit No. 3 for containment electrical penetration secondary overcurrent protection.

Background

Recently, three unitized starters were declared inoperable as a result of functional testing per Technical Specification Section 4.8.4.1.a.2 surveillance requirements. Millstone Unit No. 3 was in Mode 5 at the time of testing. On November 13, 1987, while investigating the reasons for the above failures of the unitized starters to satisfy the surveillance test requirements, it was noticed that the test current values specified in the existing Technical Specification for the above devices do not agree with the industry standard (NEMA AB 2-1980). NNECO failed to identify the above discrepancy at the time of certification of the Millstone Unit No. 3 Final Draft Technical Specifications. In addition, this discrepancy was not noticed until this Technical Specification section was exercised during this outage for the first time since Millstone Unit No. 3 received its operating license. In a telephone conference on November 16, 1987, NNECO informed the NRC of the findings of the investigation and indicated that a license amendment may be necessary to clarify surveillance testing requirements for molded case circuit breakers and unitized starters. The existing Technical Specification requires that testing of molded case circuit breakers and unitized starters follow the same procedures as the electrically operated power air circuit breakers. Testing of the electrically operated power air circuit breakers consists of injecting a current with a value equal to 300% of the pickup of the long-time delay trip element and 150% of the pickup of the

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short-time delay trip element. This Technical Specification section also requires that the instantaneous element be tested by injecting a current equal to ±20% of the pickup value of the element. These specified values are not applicable to molded case circuit breakers or unitized starters as these devices have only one time delay element and one instantaneous element.

The NEMA AB 2-1980 standard recommended method of determining whether a molded case circuit breaker has been calibrated in accordance with the manufacturer's limits is to test the circuit breaker in accordance with UL 489, "Standard for Molded Case Circuit Breakers and Circuit Breakers Enclosures." However, NEMA AB 2-1980 recognizes that it is impractical to field test circuit breakers in accordance with UL 489 because of the impracticality of providing the controlled environmental conditions or the instrumentation required. Therefore, NEMA AB 2-1980 provides the following recommendations for selecting test currents for field testing molded case circuit breakers (250 amp frame and less):

1.	Instantaneous Test	-25% to 40% of low and high setting (respectively)
2.	Long-Time Test	300% of continuous rating.

The additional 40% tolerance is necessary for testing of molded case breakers to assure operability of the instantaneous trip element. This element is tested by injecting a seven cycle (0.12 sec.) current pulse and verifying the breaker trips. If the magnitude of that pulse is restricted to ±20% of the limits of the manufacturer's instantaneous trip current range, it may be possible that the thermal element causes the trip before the magnetic element reacts. (This is due to the thermal-magnetic overlap or premature heating of the thermal element.) By pulsing at the higher current levels, this can be avoided, ensuring a magnetic element trip.

Accordingly, NNECO proposes to make the following changes to Technical Specification Section 4.8.4.1.a.2 (Attachment 1) for selection test current values:

Device	Present Test Current per Technical Specification	Proposed Test Current
Molded Case Circuit Breaker or Unitized Starters	a. 300% of long-time delay pickup	a. 300% of continuous rating
	b. 150% of short-time delay pickup	b. none
	c. +/-20% of instantaneous element	c. -25% to +40% of instantaneous element trip value or range limit.

In addition, in the event instantaneous element test results of a single pole of a device fail to meet these tolerances, additional instantaneous element testing will be conducted using two poles in series, including A-B, B-C, and C-A phase combinations to ensure that these combination tests meet tolerances specified.

The Millstone Unit No. 3 FSAR will be revised to state that all future design changes involving circuits passing through the electrical penetrations will be reviewed against NERM 71, "Electrical Penetration Protection," to ensure compliance with Regulatory Guide 1.63. NERM 71 will be revised to add the design criterion that the maximum test current value be within the thermal capability of the electrical penetration.

It is noted that Technical Specification requirements for testing of molded case circuit breakers and unitized starters similar to those proposed herein have been accepted by the NRC on Seabrook 1 (Docket No. 50-443) and South Texas Project 1 (Docket No. 50-498).

Significant Hazards Consideration

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

1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The changes proposed for selecting the test current values are in accordance with manufacturer's recommendations for field testing of molded case circuit breakers and unitized starters. A review has been performed to ensure that these new test current values for instantaneous elements are within the thermal capability of the electrical penetrations. NERM 71, dated December 3, 1985, "Electrical Penetration Protection," was an engineering study performed to ensure that the electrical containment penetrations are protected in accordance with Regulatory Guide 1.63. As part of this report, for each circuit passing through the containment electrical penetration for which an overcurrent condition may exceed thermal capability of the penetration, the circuit's overcurrent device's time vs. current characteristic along with the penetration's time vs. current characteristic were plotted on the same graph. To ensure the adequacy of the proposed changes, the revised test current value was reviewed for each circuit against the penetration thermal limit curve (time vs. current characteristic) provided in NERM 71. In each case, the reviewed test current value was within the penetration's thermal limit. The example provided in Table 1 illustrates the applicability of the revised Technical Specification. Therefore, the proposed changes have no impact on the consequences of the accidents previously evaluated. The proposed changes do not increase the probability of an inoperable circuit breaker/unitized starter going undetected. Therefore, the proposed changes do not involve an 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 previously evaluated. There are no new failure modes associated with the proposed changes, as no design changes are being made. The proposed changes only involve revising the test current values used for allowing NNECO to safely determine the operability of the molded case circuit breakers and unitized starters. The change in selection of the test current does not increase the probability of an inoperable circuit breaker going undetected. The proposed changes do not modify the plant response to the point where it can be considered a new accident. Therefore, the proposed changes do not create the possibility of an accident or malfunction of a different type than any evaluated previously in the safety analysis report.

3) Involve a significant reduction in a margin of safety. The change of test current values for molded case circuit breakers and unitized starters are in accordance with the industry standards for field testing these devices. The change in test current values has no impact on the probability of an inoperable device going undetected. There is no impact on the safety limit for the protective boundaries.

Moreover, the Commission has provided guidance concerning the application of standards in 10CFR50.92 by providing certain examples (March 6, 1986, FR7751) of amendments that are considered not likely to involve a significant hazards consideration. Although, the proposed changes herein are not enveloped by a specific example, the proposed changes would not involve a significant increase in the probability or consequences of an accident previously analyzed. As stated earlier, the changes proposed for selecting the test current values are in accordance with the manufacturer's recommendations for field testing of molded case circuit breakers and unitized starters, and the new test current values for instantaneous elements are within the thermal capabilities of the electrical containment penetrations.

Exigency Technical Specification Amendment

Pursuant to 10CFR50.91(a)(6), NNECO hereby requests NRC exigency authorization and approval of this proposed amendment to its Operating License, NPF-49. Exigency authorization is required by December 17, 1987 to start up the plant. At the present time, the plant is shut down for refueling. 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 background section of this letter. In addition, on November 18, 1987, NNECO notified the NRC of this condition pursuant to 10CFR50.72(b)(2)(i)(1) and has pursued an expeditious resolution of this matter by working with the Staff on a daily basis.

(1) NNECO will file a Licensee Event Report pursuant to 10CFR50.73 by December 18, 1987.

Further, the requested exigency authorization is appropriate because this amendment request does not involve a significant hazards consideration. The specific amendment changes the selection of the test current values which are in accordance with the manufacturer's recommendations for field testing of molded case circuit breakers and unitized starters. These new test current values for instantaneous elements are within the thermal capabilities of the electrical containment penetrations. Therefore, NNECO requests that this amendment request be approved prior to the start-up of the plant. Alternatively, it is requested that a temporary waiver be granted that will allow start-up and operation of the plant until the issuance of a license amendment.

Based upon the information contained in this submittal and the environmental assessment for Millstone Unit No. 3, there are no significant radiological or nonradiological impacts associated with the proposed action, and that the proposed license amendment will not have a significant effect on the quality of the human environment.

The Millstone Unit No. 3 Nuclear Review Board concurs with the above determinations.

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

Pursuant to the requirements of 10CFR170.12(c), enclosed with this amendment request is the application fee of $150.00.

We trust you find this information satisfactory and request review and approval of this amendment request by December 17, 1987 in order to support the start of Cycle 2. We will continue to keep the Staff informed of the progress of the outage. In the event that other developments delay the start-up of the plant, we will so notify the Staff so that the 30-day notice period can be accommodated to the maximum extent possible.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

E. J. Mroczka
Senior Vice President

cc: W. T. Russell, Region I Administrator
R. L. Ferguson, NRC Project Manager, Millstone Unit No. 3
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

Mr. Kevin McCarthy
Director, Radiation Control Unit
Department of Environmental Protection
Hartford, Connecticut 06116

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me E. J. Mroczka, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, a Licensee herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Licensees herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1988

Table 1

Containment Electrical Penetration Circuit Protection Data

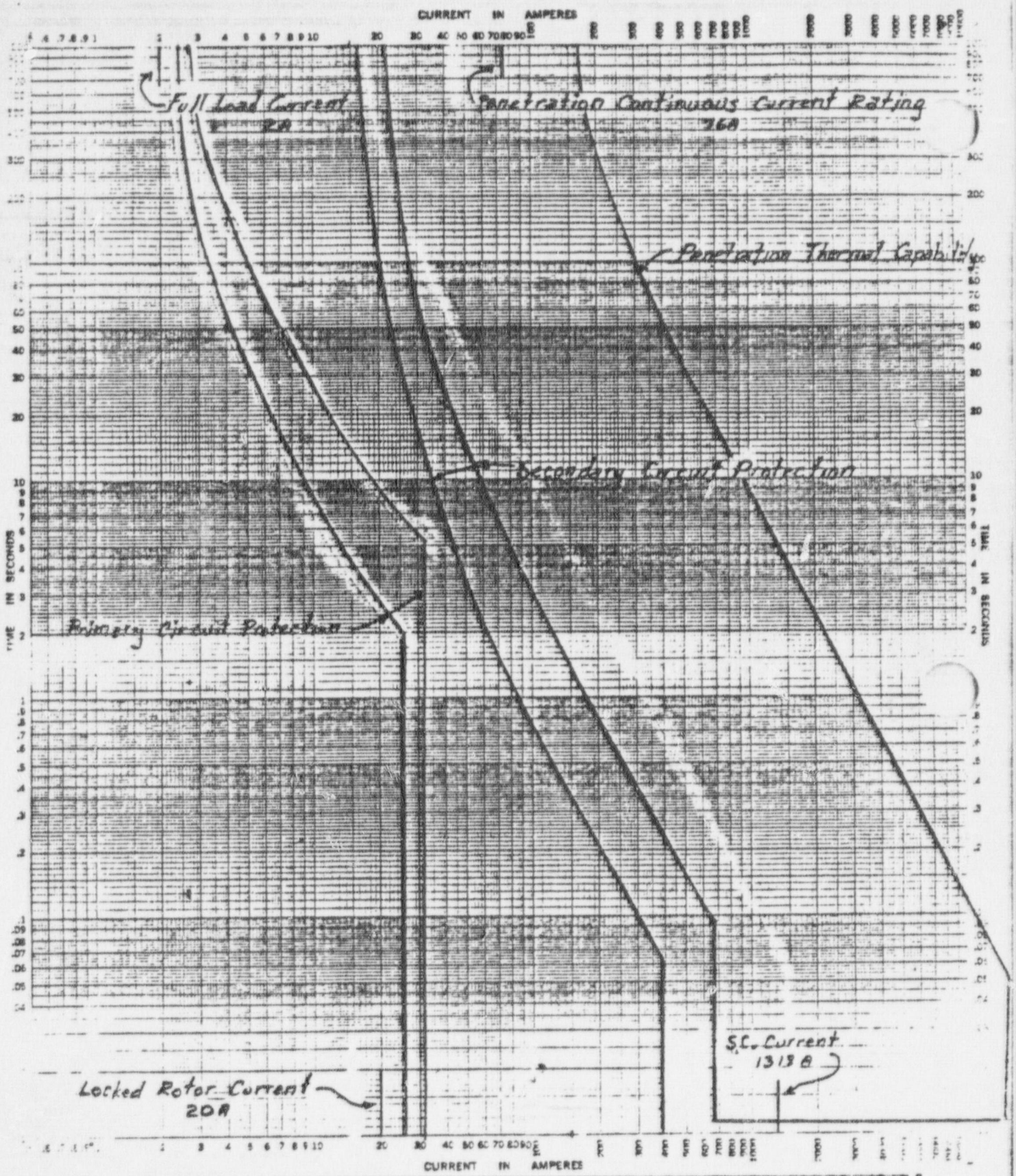
Equipment - 3DAS-P1 (Reactor Plant Aerated Drain System)

		Trip Set Point	
Primary Circuit Protection -	Unitized Starter		
	Trip Coil A80E10 Set 1	29A	
	Heater Cat. No. G30T23	2.19A	(1.25 x minimum heater catalog FLA)
Secondary Circuit Protection -	Thermal Magnetic Breaker I-T-E HE 43		
	Cont. Rating	15 A	
	Inst. Range	400-700 A	

Device	Time Delay Test Value (300% of Device Rating)	Instant. Test Value Range (-25% to +40%)
Primary Device	3 x 2.19A = 6.57A	Low end = 29 -(0.25)(29) = 21.8A High end = 29 +(.40)(29) = 40.6A
Secondary Device	3 x 15A = 45A	Low end = 400 -(.25)400 = 300A High end = 700 + (.40)700 = 980A

Instantaneous Thermal Limit of Penetration - Greater than 10,000A

See attached curve (Figure 1) for graphical illustration.



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TIME-CURRENT CHARACTERISTIC CURVES

For 3DAS-P1 (3RCP-B12) Fuse Links. In Millstone Penetration Study

BASIS FOR DATA Standards Dated

1. Tests made at Volts a-c at p-f., starting at 25C with no initial load

2. Curves are plotted to Test points so variations should be

No. CURVE NO 1

Date 2/17/72

TIME-CURRENT CHARACTERISTIC 48 5286

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Figure 1