NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
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September 29, 1982

Docket No. 50-245
A02612

Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: (1) D. M. Crutchfield letter to W. G. Counsil, dated June 30, 1982.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
SEP Topic III-6, Seismic Design Considerations
SEP Topic III-11, Component Integrity

In Reference (1), the Staff forwarded the Safety Evaluation Report for SEP Topics III-6, Seismic Design Considerations, and III-11, Component Integrity, for Millstone Unit No. 1. Reference (1) identified five open items to be resolved in order to complete these topics. In response to Reference (1), NNECO is providing the following information as a summary of NNECO's intended actions to resolve these issues.

Item 1: The structural integrity of the LPCI/Containment Spray Heat Exchanger remains open due to a lack of design information.

Information regarding this issue has been transmitted to the NRC during meetings and telecons with NUSCO personnel. A telecon between NUSCO and the NRC SEP Branch on July 7, 1982 had indicated that the NRC now considers this item closed out. Therefore, no action on this item is planned.

Item 2: The structural integrity of motor operated valves attached to small piping (4" Ø and smaller) remains open due to lack of design information.

NUREG/CR-2024, from which this open item was originally generated, described the concerns about valve eccentricities in Table 9 on Page 96. The concerns were stated to be that ".....the relatively large eccentric mass of the motor, when not externally supported, will (may) cause excessive stresses in the attached piping. In addition, overstress and excesss deformation of valve yoke and stem may occur."

A035

In the NRC's SER on SEP Topic III-6, Page 2 of Attachment 2 in Reference (1), it was concluded that, "Based upon the examples submitted, valve operator eccentricity does not appear to be a pipe stress problem. The Licensee has stated that operability of the valves will be addressed within a separate program."

NNECO interprets this statement to mean that structural integrity of the valves (pressure boundary integrity), and piping has been adequately addressed. Evaluations of the impact of overstress or deflection-related concerns for the yoke and stem would be addressed within the operability evaluation referenced previously. Therefore, NNECO considers this item closed.

Items 3 and 4: The structural integrity of transformers and control room electrical panels remains open due to lack of design information about the modified anchorage systems.

Drawings, sketches, and other pertinent data related to the modified anchorage of these components are attached. An index of this information is included also.

Resolution of the remaining open item concerning the adequacy of the turbine building pile foundations to withstand the postulated SSE loadings will be pursued under SEP Topic II-4.F, Settlement of Foundations and Buried Equipment.

Reference (1) also requested NNECO to provide corrections or comments on the content of the Safety Evaluation Report. Corrections have been made to scheduler information pertaining to installation of pipe support modifications within the I&E Bulletin 79-14 program. These corrections, along with more detailed information on the status of the 79-14 program modifications, are included as Attachment 1.

NNECO has also reevaluated the scope of the upgrade planned for the condensate transfer line which will be performed under SEP Topic III-6. Based on a Probabilistic Risk Assessment (PRA), the extent of piping requiring reanalysis has been reduced. The basis for this reduction and a clarification of the redefined scope of the assessment is included as Attachment 2.

Although not included in the open items listed in Reference (1), NNECO had previously committed to a reanalysis of the recirculation system piping including an evaluation of the recirculation pump supports (snubbers) under SSE loadings. NNECO is nearing the completion of this evaluation and has determined the need for a small number of support modifications. These support modifications will be installed as part of the I&E Bulletin 79-14 (inaccessible) modifications in accordance with the schedule outlined in Attachment 2. Details on the analytical approach used for this evaluation and the resulting modifications will be forwarded to the Staff upon completion.

We trust this information is sufficient to resolve the remaining open items related to these SEP Topics.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Counsil

W. G. Counsil
Senior Vice President

MODIFICATIONS TO ANCHORAGE SYSTEMS FOR TRANSFORMERS AND CONTROL ROOM PANELS

CONTENTS

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Attachment 1

SEP Topic III-6, Seismic Design Considerations

SEP Topic III-11, Component Integrity

Status of I&E Bulletins 79-02 and 79-14

September, 1982

This summary is intended to describe the work accomplished to date and to detail the work required to bring the project to completion.

The initial phase of this project included verification of approximately 32,000 feet of pipe and 2,500 pipe supports. All inspection and measurement activities for original 79-14 scope were completed in December of 1980. This information was incorporated into an as-built analysis and reviewed to assure operability in an OBE event. All modifications required to assure operability in an OBE event were implemented in our 1979-1980 refueling outage. There were approximately 430 such modifications distributed among all systems.

At this time there are approximately 1,800 supports in the scope of Bulletin 79-14. This shows a decrease in scope due to system reclassification and overlap with the Mark I torus reanalysis. To date, we have reviewed 1,250 supports for SSE loads and thus have 550 supports left to evaluate for the SSE event.

The outstanding work items now include the installation of 129 accessible and 172 inaccessible modifications and evaluation of the remaining 550 supports. The analysis effort is now geared to support the construction progress. In other words, the expenditures for engineering services are being minimized in order to allow installation of the maximum number of modifications during the current outage.

The present construction program involves five distinct phases. Each phase consists of an outage or non-outage period of time.

Phase I: This is the period of time from January 1, 1982 to the start of the 1982 outage, which began September 11, 1982. In this phase, 115 accessible supports were scheduled for modification.

Phase II: This phase is the 1982 outage and should include the installation of 70 inaccessible area modification.

Phase III: This phase starts January 1, 1983 and will run to the start of the 1984 refueling outage. In this time, all remaining accessible modifications will be completed. It is estimated that this will encompass approximately 204 supports.

Phase IV: This phase will be the next (1984) outage and could potentially see the completion of all inaccessable modifications. If we assume a failure rate consistent with our experience, there would be approximately 292 modifications to complete. This represents a work scope which may be larger than can be accommodated in one outage; hence, Phase V may be required.

Phase V: This phase will be the 1986 refueling outage and will complete those supports (if any) which could not be completed in Phase IV.

The schedule, as described above, will complete the seismic reanalysis and SSE qualification at a projected cost in excess of $57 million. The near-term effort is complicated by budget considerations for 1982 and a very high demand for the pipefitter craft. In an attempt to minimize the impact of this project upon other projects either underway or required, the work was levelized over a reasonable period of time.

The analysis of all piping systems is complete, and all supports have been reviewed to assure operability in an OBE event. It is this analysis, which demonstrates operability along with the resource limitations in the area of labor and money, that has necessitated this construction schedule. NNECO concludes that this approach is the optimum method to implement such a large scale upgrade and is proven safe by analyses completed to date.

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Attachment 2

SEP Topic III-6, Seismic Design Considerations

SEP Topic III-11, Component Integrity

Qualification of the Condensate Transfer Line

September, 1982

At this time NNECO has redefined the scope of the condensate transfer piping supply to the isolation condenser. The new scope will include the piping from the isolation condenser upstream to the first normally closed isolation valve. This will ensure that the shell side of the isolation condenser will remain intact during an SSE event. The basis for this redefinition is based on a probabilistic risk assessment.

In order to determine the potential reduction in core melt frequency that might be realized by upgrading the alternate makeup supply, it was necessary to use data from the Millstone Unit No. 1 Interim Reliability Evaluation Program (IREP). Core melt sequences developed for the IREP were reevaluated using Millstone site specific seismic data and equipment fragility curves from the Zion PRA. Specifically those core melt sequences involving failure of the isolation condenser makeup system (ICMUP) were reevaluated for a seismic initiating event. This event was assumed to cause failures of both the ICMUP system and offsite AC power, since failure of the ICMUP by itself will not lead to core melt.

The results of this analysis show that upgrading the alternate makeup supply to withstand the seismic event could only reduce core melt frequency by a maximum of 1.9%.

NNECO does not consider this increased reliability significant enough to warrant substantial modifications to the subject systems. These changes would include qualifying 500 feet of 8, 10 and 4 inch piping and installing approximately 60 pipe supports. In addition, the installation of two eight-inch automatic isolation valves would be required. Therefore, the only modifications intended are those needed to seismically qualify the isolation condenser shell side pressure boundary.