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NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Selden Street, Berlin, Connecticut

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

January 15, 1993
Docket No. 50-423

B14347

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
Proposed Revision to Technical Specifications
Snubber Functional Testing

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend its Operating License, NPF-49, by incorporating the attached change into the Technical Specifications of Millstone Unit No. 3. Also, NNECO is requesting that the NRC Staff process this license amendment request on an emergency basis in accordance with 10CFR50.91(a)(5) in that failure to act on this proposed license amendment would result in a reactor shutdown. In parallel, the Staff may wish to consider whether it is advisable to prepare a temporary waiver of compliance[1] from the subject Technical Specifications, to be effective until the amendment is issued, allowing Millstone Unit No. 3 to continue plant operation. The proposed change to the Millstone Unit No. 3 Technical Specification, Section 4.7.10.e, will extend the surveillance requirement frequency for the snubber functional tests by allowing a one-time extension to the current 18-month surveillance, plus the additional 25 percent allowed by Technical Specification 4.0.2. The functional tests of snubbers are currently required to be performed no later than January 22, 1993. The proposed change will defer the functional tests until the 1993 (fourth) refueling outage, but not beyond September 30, 1993.

Background

On Wednesday, January 13, 1993, NNECO determined that surveillance requirement 4.7.10.e, "Functional Tests" is required to be performed no later than January 22, 1993. The proposed change will defer this surveillance until the 1993 refueling outage, but no later than September 30, 1993. NNECO has

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(1) NNECO acknowledges that this nomenclature may be changed to "exercise of enforcement discretion," pending issuance of changes to 10CFR Part 2 which are anticipated shortly.

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concluded that this is acceptable from a safety standpoint, as detailed further in this letter.

At Millstone Unit No. 3, snubbers are inspected, tested, and maintained to provide very reliable dynamic supports. Typically, the snubbers are inspected and tested on a refueling frequency. Snubber functional tests are used to ensure (with a 95 percent confidence factor) that 90 percent to 100 percent of the snubbers are operable. The tests are performed on a 10 percent random sample of the safety-related snubbers. Also, during refueling outages, various snubbers are replaced with fully-tested units based on service life and manufacturers' recommendations. Snubber visual inspections, functional tests, and replacement activities are mandated by Technical Specifications and Section XI of the ASME B&PV Code.

At Millstone Unit No. 3, per Technical Specification Section 4.7.10.e, at least once per 18 months during plant shutdown, a representative sample of 10 percent of each type of safety-related snubber is functionally tested. For each snubber that fails, an additional 5 percent of the total installed population of that type of snubber are functionally tested. There are four types of snubbers installed at Millstone Unit No. 3. Type 'A', 'B', 'C', and 'D' signify small mechanical, medium mechanical, large mechanical, and large hydraulic snubbers, respectively. During Millstone Unit No. 3's third refueling, functional tests of different type of snubbers were completed as follows:

- The last snubber of Type 'A' was functionally tested on March 21, 1991.
- The last snubber of Type 'B' was functionally tested on March 16, 1991.
- The last snubber of Type 'C' was functionally tested on March 7, 1991.
- The last snubber of Type 'D' was functionally tested on March 21, 1991.

Based on the above, the next surveillance interval for Type 'C' snubbers began on March 7, 1991. As a result of an unusually long maintenance outage (service water system work and erosion/corrosion outage) during 1991, NNECO has rescheduled the Millstone Unit No. 3 refueling outage from November 1992 to approximately September 1993. Increasing the interval between refueling outages will cause Millstone Unit No. 3 to exceed the 18-month surveillance interval, plus the additional 25 percent allowance allowed by Technical Specification 4.0.2. It is noted that the next functional test for Type 'C' snubbers is currently required to be performed no later than January 22, 1993. The proposed change, if approved, will allow NNECO to perform the required functional tests for all snubbers, including Type 'C', during the fourth refueling outage.

Description of the Proposed Change

The proposed change to the Millstone Unit No. 3 Technical Specification 4.7.10.e will extend the surveillance requirement frequency for functional tests of snubbers by allowing a one-time extension to the current 18-month surveillance interval plus the additional 25 percent allowed by

Techical Specification 4.0.2. Specifically, the proposed change will defer the functional tests until the 1993 (fourth) refueling outage, but not beyond September 30, 1993. The existing 18-month surveillance plus the additional 25 percent allowed by Technical Specification 4.0.2 would require functional testing of snubbers to be completed for Type 'C' snubbers by January 22, 1993, necessitating an unscheduled plant shutdown.

It is our understanding that the Technical Specification changes related to the snubber functional testing interval (extending the 18-month interval) have been accepted by the NRC on Indian Point 3 (Docket No. 50-286, Amendment No. 125, dated September 23, 1992). The changes proposed herein are similar in nature to those approved by the NRC on the Indian Point 3 docket.

Safety Assessment

NNECO has reviewed the proposed change to assess the impact on the accidents previously evaluated, the potential for creation of a new unanalyzed event, and the impact on the margin of safety.

It is our judgment that the increased functional test interval, from the maximum existing interval of 22.5 months (18 months plus the 25 percent) to the proposed interval of approximately 30 months, will have a negligible effect upon the overall reliability of the snubber population. This judgment is based, in part, upon the results of functional testing performed during Millstone Unit No. 3's third refueling outage. During that testing, a total of 19 functional test failures were identified. All of the failures occurred in small mechanical snubbers (Pacific Scientific PSA-¼s and PSA-½s); no functional failures were identified for other types of snubbers. Subsequent inspections of the snubbers, followed by root cause analysis of the failures, indicated that a majority failed due to external loadings. External loadings are normally caused by factors such as excessive side loadings during installation, impact loadings due to rough handling, or inadvertent side loadings caused by personnel working in the general area. These small Pacific Scientific snubbers are particularly sensitive to external loadings due to their internal design.

Further, nearly all of the failed snubbers were located in the steam generator cubicles. These are areas which are extremely congested and, normally, the subject of numerous maintenance activities likely contributing to unintentional external loadings. In addition, major modification activities took place in these areas in 1987 when RTD piping was removed. These facts reinforce previous determinations that external loadings were the likely cause of most of the failures.

As a result of these failures during the third refueling outage, the entire population of small mechanical snubbers was tested. All which failed the functional testing were replaced with spare units. In this respect, we are confident that our population of small snubbers was essentially 100 percent functional subsequent to the completion of testing. This fact, combined with

the favorable results of testing performed on all other types of snubbers, indicates that our overall level of confidence in the reliability of the snubber population exceeded the minimum levels required by the Technical Specifications. As such, we conclude that an extension of approximately 7.5 months in the functional test interval does not compromise the attainment of a 95 percent confidence level that 90 to 100 percent of all snubbers will remain operable.

It should be noted that, where required, piping stress analyses have been performed upon systems affected by past snubber functional failures. Failures in mechanical snubbers are normally associated with high drag loads or complete snubber locking. Results of analyses performed to date have shown neither piping system functionality nor structural integrity have ever been compromised.

Visual inspections performed on the population of small snubbers (numbering 231), in November 1991 and May 1992, have provided us with an increased level of confidence in the reliability of those snubbers. No visual inspection failures were identified during either of those inspections.

An additional consideration with respect to the reliability of the snubber population, between functional testing phases, involves provisions set forth by ASME O&M-4 (1990), entitled "Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints (Snubbers)." Section 7.4 sets the in-service operability testing of snubbers at refueling outages, rather than at an 18-month interval. Although the ASME O&M-4's provisions are, in some cases, more extensive than those of Millstone Unit No. 3's Technical Specifications, their intent is to provide a similar level of confidence in the reliability of the snubber population. This being the case, it is an indication that minor deviations to the test inspection interval are not significant contributors to confidence and reliability levels. In other words, test intervals of 18 months (+25 percent) or 24 months (+25 percent), the latter representing the refueling cycle for an increasing number of operating nuclear plants, provide comparable and acceptable levels of confidence in the reliability of snubber populations.

The shutdown of Millstone Unit No. 3 in January 1993 to perform functional inspections would result in a significant accumulation of radiation exposure, as well as posing an industrial safety risk in performing these additional maintenance activities. The small safety benefit which would be realized by performing testing, as per the existing Technical Specification schedule, would be more than offset by the increased radiation exposure and industrial safety risks.

In summary, it is our determination that the proposed change in the functional test interval still results in an adequate level of confidence in the reliability of the snubber population.

Justification for Emergency License Amendment

Pursuant to 10CFR50.91(a)(5), NNECO hereby requests NRC Staff emergency approval of the proposed amendment to its Operating License, NPF-49. Emergency approval is appropriate because "an emergency situation exists, in that failure to act in a timely way would result in ..... shutdown." At present, Millstone Unit No. 3 is at full power and emergency approval is required by Friday, January 22, 1993, to avoid a shutdown of Millstone Unit No. 3. From a nuclear safety perspective, a plant shutdown is not the appropriate course of action.

We acknowledge that we were not more timely in recognizing the fact that the 18-month functional tests of snubbers would expire on January 22, 1993. A contributing factor to the timing of this application was due to NNECO's historical practice of interpreting a surveillance interval for surveillances which are required to be done once per 18-months during plant shutdown. It has been NNECO's understanding and practice that the intervals begin upon change of modes, in this case from Mode 5 to Mode 4. Under this interpretation, the snubber functional test surveillance can be performed at any time during plant shutdown without affecting the start of the applicable surveillance interval. One example of this historical practice is reflected in a previous license amendment request[2] for Millstone Unit No. 1. A contributing factor is that we failed to track the surveillance due date effectively. As a result, NNECO promptly assigned a task force to investigate and verify that all the 18-month surveillances that are required to be performed during plant shutdown are properly identified. NNECO will keep the NRC informed of the results of this investigation. In addition, the Quality Services Department has been assigned to independently investigate the event, determine the root cause, and recommend any appropriate corrective actions. At this time, we are aware of two other 18-month surveillance intervals that will expire before the currently scheduled start of the 1993 refueling outage. NNECO is committed to addressing those instances, which may involve seeking any justified regulatory relief, in a timely fashion.

Following identification of this problem, NNECO promptly informed the Staff of the status and planned course of action for resolution of this issue. Two options available to resolve this issue were to either plan a shutdown of the plant on January 23, 1993 and perform the surveillance, or seek an extension for the subject Technical Specification surveillance. Discussion with the Staff culminated in an understanding reached on Thursday, January 14, 1993 that the Technical Specification should be modified to extend the surveillance requirement for functional tests of snubbers. Since its identification, this matter has been pursued on an extended-hour basis as a top corporate priority.

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(2) E. J. Mroczka letter to the U.S. NRC, "Millstone Nuclear Power Station, Unit No. 1, Proposed Revision of Technical Specifications, Removal of the 3.25 Limit on Extending Surveillance Intervals," dated August 22, 1990.

Further, the requested emergency authorization is appropriate because this amendment request does not involve a significant hazards consideration. Based on the significant hazards consideration (SHC) discussion provided later, we have determined that the increase in the functional test interval will not result in a substantive decrease in the reliability of the snubber population. Also, we are confident in maintaining a 95 percent confidence level that 90 to 100 percent of the snubber population will remain operable. Importantly, this is the underlying objective of the surveillance requirement. In addition, any benefits that would be gained by testing during the present interval would be more than offset by the increased radiation exposure and industrial safety risks. Therefore, we have concluded that this license amendment request is acceptable and thoroughly justified from a safety standpoint.

Significant Hazards Consideration

In accordance with 10CFR50.92, NNECO has reviewed the attached proposed change and has concluded that the change does not involve an SHC. The basis 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 would not:

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

   This Technical Specification change will have a negligible effect upon the probability of occurrence of accidents previously evaluated in the Safety Analysis Report. Although the snubber functional test cycle is being lengthened, nearly the same level of confidence as that associated with the Technical Specification required schedule will be maintained. The testing of 100 percent of the small snubbers population, along with replacement of failed units, provided a significantly improved baseline with which to gauge the reliability of the snubber population.

   Increasing the functional test interval for snubbers will neither have an effect upon the consequences of an accident evaluated in the Safety Analysis Report, nor will it cause new consequences to occur. As stated previously, an adequate level of confidence in the reliability of the snubber population will be maintained.

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

   The snubber failure modes neither increase beyond required confidence levels relating to snubber population reliability, nor change due to the variation in the functional test interval. Therefore, there is no possibility of a new accident being created. Also, an increase in the functional test interval will not create a malfunction of a different type than previously evaluated. No new equipment is being added to the plant and no change is being made in the way existing equipment is being operated and maintained.

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

The type of testing performed and the actions taken if a snubber were to fail its functional test remain unchanged. The margin of safety, inherent to the Technical Specifications and relating to snubber surveillance requirements, will remain virtually unchanged. This conclusion is based upon the fact that the proposed testing schedule defined in the Technical Specifications provides nearly the same level of confidence as the present schedule. The Technical Specification margin of safety remains unchanged. In addition, there is no impact on the consequences of any accident, there can be no impact on any of the protective boundaries, and therefore, no impact on the safety limits.

Moreover, the Commission has provided guidance concerning the application of standards in 10CFR50.92 by providing certain examples (March 6, 1986, 51FR7751) of amendments that are considered not likely to involve an SHC. Although the proposed change is not enveloped by a specific example, the proposed change would not involve a significant increase in the probability or consequences of an accident previously analyzed. The increased functional test interval, from the maximum existing interval of 22.5 months (18 months plus 25 percent) to approximately 30 months, will have a negligible effect upon the overall reliability of the snubber population. This conclusion is based, in part, upon the results of the functional testing performed during the third refueling outage in which the only failures occurred in small mechanical snubbers (Pacific Scientific PSA-¼ and PSA-½). As a result of these failures, the entire population of small mechanical snubbers was tested during the third refueling outage, and all those snubbers that failed the functional inspection were replaced. NNECO is confident that the entire population of small snubbers was functional subsequent to the completion of testing. This fact, combined with the favorable results of testing performed on all other types of snubbers, provide reasonable assurance of the overall reliability of the snubber population with an increased surveillance interval to approximately 30 months with the surveillance being completed during the fourth refueling outage.

Request for Temporary Waiver of Compliance

NNECO is providing the justification below which demonstrates that continued operation during the duration of the requested waiver is consistent with protecting the health and safety of the public. This is being provided should the Staff opt to utilize this vehicle in responding to this application.

1. Requirement for Which a Waiver is Requested

NNECO hereby requests a temporary waiver of compliance (TWOC) (or an equivalent) from the Millstone Unit No. 3 Technical Specifications, Section 4.7.10.e, "Functional Tests" until the proposed license amendment is issued by the NRC.

2. Discussion of Circumstances Surrounding the Situation/Need for Prompt Action

As stated in the Background section of this letter, on January 13, 1993, NNECO determined that surveillance requirement 4.7.10.e, "Functional Tests," is required to be performed no later than January 22, 1993. Functional tests could be performed only during a plant shutdown. Therefore, current Technical Specification requirements will necessitate a plant shutdown on January 23, 1993.

We acknowledge that we did not recognize that the 18-month functional test of snubbers would expire on January 22, 1993, until January 13, 1993. However, following identification of the condition, NNECO promptly informed the Staff of the status and planned course of action for resolution of the issue. Discussion with the Staff resulted in an understanding that NNECO would prepare an amendment request and submit it to the NRC for review and approval by January 15, 1993.

Prompt action is appropriate because failure to act in a timely manner will impose an unnecessary plant shutdown for a condition that has little, if any, safety significance associated with it and, as previously discussed, does not involve an SHC.

3. Discussion of Compensatory Actions

There are no compensatory actions required during the time frame this TWOC would be in effect. No compensatory measures are necessary since approval of this change would result in a condition no different than if there had been no shutdowns during this operating cycle.

4. Safety Significance and Potential Consequences of Request

NNECO believes that there is little to no safety significance associated with this proposed change. As discussed in the Safety Assessment section of this letter, the proposed change does not result in any substantive decrease in the reliability of the snubber population. An adequate level of confidence in the reliability of the snubber population will be maintained. Therefore, NNECO has judged that operation of the plant with a one-time extension to the current 18-month surveillance plus the additional 25 percent allowed by Technical Specification Section 4.0.2 is safe and justified for Cycle 4. Therefore, NNECO also judges operation to be acceptable for the few days that any waiver might be in effect.

5. Duration of Requested Waiver

The TWOC is being requested for the period until the license amendment is approved by the NRC. This will allow Millstone Unit No. 3 to continue to safely operate.

6. Basis for No Significant Hazards Consideration

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

7. Basis for No Irreversible Environmental Consequences

The requested waiver involves no environmental consequences. The one-time extended surveillance interval for functional tests of snubbers does not affect any accident analyses or the associated radiological consequences, nor does it affect systems associated with the control of radiological or nonradiological effluents. The shutdown of Millstone Unit No. 3 to perform functional tests of snubbers would result in a significant accumulation of radiation exposure, as well as posing an additional industrial safety risk in performing these additional maintenance activities. Any benefits which would be gained by performing testing during the present interval would be more than offset by the increased radiation exposure and industrial safety risks.

Compensatory Actions

The proposed amendment request, if approved, will allow NNECO to perform the required functional test for each type of snubber during the fourth refueling outage. During the timeframe this amendment will be in effect, the following compensatory actions will be taken. NNECO will perform a visual inspection of all accessible (i.e., recognizing both physical and ALARA considerations) snubbers outside containment to gain an increased level of confidence in the operability of the snubbers. In addition, if an unplanned cold shutdown of the plant of sufficient duration occurs, and, if the outage schedule permits, NNECO will perform a limited number of functional tests of snubbers.

Environmental Consideration

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not increase the types and amounts of effluents that may be released 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.

Conclusion

In summary, NNECO is requesting an emergency license amendment that would allow the 18-month (plus 25 percent) surveillance requirement for snubber functional inspection to be performed during the fourth refueling outage. Current snubber functional surveillance requirements in Technical

Specification 4.7.10.e (due no later than January 22, 1993) would force the unit to shut down for this purpose. Therefore, NNECO hereby requests the NRC Staff to process and issue this proposed amendment prior to January 22, 1993, to be effective upon issuance. We acknowledge and apologize for the short time available to process this request on an emergency basis. We will, of course, promptly provide any additional information the Staff may need to respond to this request.

We also 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 continued 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 Nuclear Review Board has reviewed and approved the proposed change and has 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.

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 McCarthy, Director
Radiation Control Unit
Department of Environmental Protection
Hartford, CT 06116

Subscribed and sworn to before me

this 15 day of January, 1993

Notary Public

Date Commission Expires: March 31, 1996