

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 27, 1989

Docket Nos. 50-245
50-336
B13411

Re: SALP

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

Gentlemen:

Millstone Nuclear Power Station, Unit Nos. 1 and 2
Systematic Assessment of Licensee Performance

The Staff recently forwarded the combined Systematic Assessment of Licensee Performance (SALP) Board Report⁽¹⁾ for Millstone Unit Nos. 1 and 2 covering the 18-month period of January 1, 1988 to June 13, 1989. Subsequently, a meeting was held on October 25, 1989 between members of the Staff and members of Northeast Nuclear Energy Company (NNECO) to discuss the assessments contained in the above-mentioned SALP Report.

The purpose of this letter is to respond to and comment on the findings of the SALP Board and on the Board recommendations for the individual evaluation categories. The responses to the Board's recommendations for Millstone Unit Nos. 1 and 2 are contained in Attachment A. NNECO takes very seriously the ratings and recommendations given by the Board as an input into the continuing process of evaluating and improving our overall performance. As reflected by our comments and observations during the October 25, 1989 meeting, we generally concur with the Board's observations and conclusions, and previously have taken or are taking steps to address the concerns identified. The only notable exception to our concurrence with the Board's conclusions is in the functional area of Safety Assessment/Quality Verification for Millstone Unit No. 2. Details can be found in Attachment A. It remains our objective to achieve Category 1 ratings in all functional areas for subsequent SALP evaluations, and the attachments to this letter describe some of the steps we will be taking to fulfill that objective.

(1) W. T. Russell letter to E. J. Mrocza dated October 2, 1989, Systematic Assessment of Licensee Performance (SALP) Report for Millstone 1 and 2 for the Period January 1, 1988 to June 15, 1989 (50-245/88-99; 50-336/88-99).

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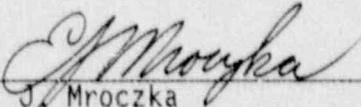
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We trust that the actions presented in the attachments addressing the concerns of the Board and our general comments will be considered in subsequent SALP evaluations. We will be updating you regarding the status of implementing the corrective actions discussed herein prior to the next SALP evaluation. In particular, we are aggressively pursuing improvements with respect to our nuclear concerns program and will be communicating with you separately on this topic. Please feel free to contact my staff if you have any questions regarding this matter.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



E. J. Mroczka
Senior Vice President

cc: W. T. Russell, Region I Administrator
M. L. Boyle, NRC Project Manager, Millstone Unit No. 1
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

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Attachment A

Northeast Nuclear Energy Company
Millstone Unit Nos. 1 and 2

Response to SALP Report

November 1989

FUNCTIONAL AREA: PLANT OPERATIONS

Millstone Unit No. 1

Board Recommendation:

Licensee: Aggressively pursue ongoing EOP improvements.

Response:

Millstone Unit No. 1 EOPs, upgraded to Revision 4 of the BWROG Emergency Procedure Guidelines, were implemented as of September 1, 1989.

The recent NRC SALP Report for Millstone Unit No. 1 identified prior EOPs as having poor usability. The EOP inspection in June 1988⁽¹⁾ identified a number of areas that needed attention relative to our EOP program. Some of the specific technical issues were addressed and resolved by October 1988. The usability issue is one that stems primarily from a human factors viewpoint, which can be a rather subjective evaluation. We recognized that improvements could be made to the EOPs and were in the process of developing new EOPs with the assistance of one of the BWR Owners' Group contractors. Our objective was to make future EOPs very usable. These EOPs, in our opinion, have improved significantly in this area.

We strongly believed that our operators could safely and effectively operate the plant in any transient situation using the EOPs in existence at the time of the June 1988 NRC inspection. They were and continue to be extremely knowledgeable and had been trained to effectively use the procedures. Although the SALP report specifically addressed usability, the above-mentioned NRC inspection audit report stated that "the inspection team was impressed with the knowledge level of the plant staff relating to accomplishment of the EOPs and concluded that the operators could adequately perform the procedures in spite of the procedural inadequacies." We agree with this statement and question the appropriateness of the NRC concern regarding EOP usability in the SALP Report. However, we acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

(1) S. A. Varga letter to E. J. Mroczka, "Emergency Operating Procedures Inspection (Inspection Report No. 50-245/88-200)," dated September 23, 1988.

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Millstone Unit No. 2

Board Recommendation:

None.

Response:

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

We would also like to offer the following clarification. The SALP Report states: "The facility applied for NRC certification of the plant simulator significantly ahead of the initially proposed schedule." NNECO believes that more appropriate wording would be "The facility certified its plant reference simulator to the NRC significantly ahead of the initially proposed schedule."

FUNCTIONAL AREA: RADIOLOGICAL CONTROLS

Millstone Unit No. 1

Board Recommendation:

None.

Response:

The SALP Report noted two areas of weakness; specifically, control of high radiation area doors and the release off-site of a contaminated hydrolazing rig. NNECO, without diminishing the significance of these two items in any way, believes that further consideration could have been given to some of the major health physics improvements made at Millstone Unit No. 1, as described below.

During the SALP period, Millstone Unit No. 1 continued an aggressive trend in lowering man-rem exposure and attained a cycle average exposure well below the BWR industry average. As noted in the SALP Report, this performance was accomplished by several modifications, decontamination, and management practices.

Even though Millstone Unit No. 1 had four incidents of high radiation area doors left unlocked during the SALP period (only one of which exceeded the criterion of 1000 mR/hr at 18 inches from the source), the unit did take aggressive and effective action to eliminate this problem. By changing the unit's Technical Specifications to incorporate the 18-inch criterion (locked high radiation area if greater than 1000 mR/hr at 18 inches from source), we were able to eliminate 14 high radiation area doors without compromising radiological safety. An additional three doors were eliminated from the turbine deck by establishing new barriers and collapsing the high radiation area. These three doors had been the source of the majority of noted unlocked high radiation area doors. Additionally, a design change which will ensure positive locking of the high radiation area doors prior to alarm silencing was developed and tested on select doors. This modification has proven very effective and will be expanded to additional doors. The elimination of 17 of the 59 high radiation area doors at Millstone Unit No. 1 is a major accomplishment, one which we believe to be underestimated by the NRC.

The release of the contaminated hydrolazer off-site indicated a programmatic weakness in the control of radioactive material, and is viewed seriously by NNECO. Appropriate corrective actions are being taken. Nonetheless, we believe that NNECO's aggressive and effective action in reducing man-rem, collapsing high radiation areas, decontaminating, along with other high quality aspects of our Health Physics Program, have been underemphasized in the SALP report due to the contaminated hydrolazer issue. However, we

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acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

Millstone Unit No. 2

Board Recommendation:

None.

Response:

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

FUNCTIONAL AREA: MAINTENANCE/SURVEILLANCE

Millstone Unit No. 1

Board Recommendation:

None.

Response:

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

At the October 25, 1989 SALP meeting, discussion took place regarding the torque switch for 1-LP-2B which was inadvertently worked on by a maintenance electrician. Additional information was requested to be provided in our 30-day response.

1-LP-2D had been tagged out for torque switch work when the maintenance electrician misidentified these two valves which are located in the same vicinity of the Reactor Building northeast corner room. The cause of this error was inadequate labeling of these components and the relative inexperience of the maintenance electrician. The insufficient labeling of these and similar valves has been corrected, and the electrician involved has received additional training. Additionally, all Maintenance Department electricians received training on the importance of properly identifying components to be worked.

Although this incident identified a clear deficiency in maintenance practice, this was an isolated event with no other similar instances.

Millstone Unit No. 2

Board Recommendation:

None.

Response:

One of the areas of concern was an NRC-perceived deficiency in the root cause analysis for the reactor vessel head O-ring leak which resulted in several unplanned forced outages. Preliminary indications showed a possible head

O-ring leak in late March; however, the data were neither consistent nor conclusive. More specific indications were from secondary-side sources because we had recently opted to utilize boric acid addition to the secondary side. The buildup of boric acid on the CEDM coolers was, therefore, originally thought to be from secondary sources, not the O-ring. In retrospect, had additional emphasis been placed on the original O-ring indications, plant management may have been able to deduce that the only major source of primary system leakage was the O-ring. While the need for more than one plant shut-down was unfortunate, we do not view this evolution to be indicative of inattentive management.

At the SALP management meeting, NNECO was also requested to explain some of the mechanisms we use to apply the lessons learned from one plant to all four of Northeast Utilities' nuclear units. Approximately once per month, superintendent staff meetings take place in which the three Millstone plant and two Millstone station superintendents meet with the Haddam Neck Plant superintendents and the Vice President of Nuclear Operations. These meetings place considerable emphasis on transfer of pertinent plant information between the units. Lessons learned at one plant are therefore passed on to the others. Also, telephone conversations between individuals at similar various organizational levels result in the transfer of information between meetings.

The plant personnel are kept abreast of the other units' activities at each morning meeting. Each plant has a counterpart at the other units and these individuals discuss pertinent events that occur at each unit.

FUNCTIONAL AREA: **EMERGENCY PREPAREDNESS**

Millstone Unit Nos. 1 and 2

Board Recommendation:

None.

Response:

The NRC identified a concern regarding an apparent lack of independence of the auditors performing emergency plan audits. This issue has been resolved in NEO 3.02, "Conduct and Format of Nuclear Review Board Audits," Rev. 4, dated November 1, 1988.

Previously, the individuals performing emergency plan audits worked for the corporate manager in charge of the corporate emergency plan, thus creating the NRC-perceived conflict of interest.

The Site Emergency Plan and Implementing Procedures are now audited at least once per 24 months by an audit team led by a certified lead auditor from the Quality Services Department.

The 1989 Emergency Plan Audit (A24015) was successfully performed by four individuals from the Quality Services Department. We believe the above actions to be responsive to the stated concern.

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

FUNCTIONAL AREA: SECURITY

Millstone Unit Nos. 1 and 2

Board Recommendation:

None.

Response:

The NRC noted that the turnover rate in 1988 was very high (approximately 47 percent), and that the overall experience level of the guard force was being reduced by this high turnover rate.

In evaluating this concern, a single root cause could not be determined. There are, however, several factors that may have contributed to the turnover figures.

- o At the present time, the region of southeastern Connecticut is experiencing a very low unemployment rate. Burns International Security Services has conducted a survey which shows that the young officers (age 18-30) account for the majority of the turnover figures. The low unemployment rate has permitted younger security officers to "job hop," thus adding to the termination totals.
- o In May of 1988 the contractor union guard force went on strike. As a result of this job action, many of the union security officers either resigned giving two weeks' notice, or quit without notice. Statistically, all of these officers appear as "terminations," and hence add to the turnover rate. In reality, some of these officers were rehired in the months following the strike. These rehires are then reflected as "new hires," although some have several years of experience.
- o Due to a shortage of security personnel through September 1988, many officers were required to work excessive overtime. In September, manpower was increased and the guard force returned to a normal work week. The Burns survey shows that terminations decreased in the months following September.

The Burns survey of terminations shows that the turnover figures are higher for the unarmed officers (the less experienced) and lower for armed officers and supervisors (the more experienced). With the turnover rate being concentrated among the younger and less experienced officers, the loss of overall experience is not as great as it appears. A review of the security force roster showed that more than half of all security personnel have been employed for two years or greater. In an effort to reduce the turnover rate, Burns has given training to supervisors on how to reduce turnover. Additionally, they

have enhanced their program of conducting exit interviews for terminating officers in an effort to identify problems or trends. The information on turnover is being entered into a computer data base that can be sorted on various fields of information. This program is maintained by Burns and will provide a means of better analyzing the reasons for turnover.

An analysis of the turnover for the period of January 1, 1989 to October 31, 1989, indicates that the rate has been reduced to 25 percent. Of the total number of personnel that have terminated their employment during 1989, approximately 37 percent were terminated for either violations of rules and regulations or attendance.

Both Burns and NNECO management are reviewing other incentive programs that will reward attendance and safety. Anticipated improvements in morale are expected to have a positive influence in this area.

In conclusion, NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

FUNCTIONAL AREA: **ENGINEERING/TECHNICAL SUPPORT**

Millstone Unit No. 1

Board Recommendation:

Licensee: Improve technical evaluations.

Response:

The Category 2 rating appears to be heavily influenced by four technical evaluations:

- o LER 88-13 Inadequate Seismic Anchorage on Bus 14D
- o LER 89-01 Clean-Up System EEQ
- o LER 89-12 LNP While Switching Out RSST
- o LER 89-13 Core Spray Flange Pressure Rating

Three of these four LERs resulted from evaluations made during the SALP period which were written to document corrective action taken for situations which occurred prior to this SALP period. For example, the Seismic Anchorage on Bus 14D LER (88-13) was the result of a thorough technical evaluation which corrected an oversight made in 1980. The Clean-Up System EEQ LER (89-01) was an example of an in-depth technical evaluation which corrected EEO determinations made in 1987. The Core Spray Flange Pressure Rating LER (89-13) resulted from an engineer's observation and technical support follow-up which corrected a situation which occurred during initial plant construction.

The three technical evaluations discussed above reflect a vigorous technical evaluation process which actively seeks to identify problem areas and effectively addresses them. These are examples of NNECO's positive attitude regarding nuclear safety ethic, which is a major corporate commitment. We believe this strong technical evaluation process should be reflected more favorably in the SALP Report, rather than being penalized for situations which occurred prior to this SALP period.

The LNP While Switching Out RSST LER (89-12) occurred during the scheduled refueling outage while installing major LNP modifications. Even though the LNP itself was an error, little credit appears to have been given to the complexity of this modification and its testing, and the commendable manner in which this project was designed, installed, and tested.

Also, included in the SALP Report was reference to "an instance that resulted in the emergency diesel generator being inoperable for 17 hours prior to discovery due to installation of a nondedicated commercial part." On the contrary, the diesel generator had been administratively logged as inoperable while the installed component was properly upgraded. This action became necessary after a safety determination (MEPL) made in 1986 for this component was questioned and found to be safety-related. This emergency diesel generator was actually operable throughout this 17-hour period. The installed component was ultimately found to be acceptable as is.

An NRC Emergency Operating Procedures (EOPs) team inspection of Millstone Unit No. 1 EOPs (Revision 2 of the BWROG EPGs) identified nonconservative errors and missing evaluations in the supporting calculations for the containment control procedures. Specifically, it was identified that the primary containment pressure limit and design pressure curves were nonconservative at suppression pool water levels greater than 25 feet. Although the curves depicted a nonconservative operating region when operating in very degraded containment conditions, it should be noted that the procedures did not allow entry into this region. The procedures limited the operator to a suppression pool level of less than 22.5 feet which corresponded to the upper limit of the only available level instrumentation. At the time of identification, the curves were properly amended. The lack of detail to the curves was nonconservative at very elevated pool levels; the guidance in the procedures assured that the plant would not be operated in a nonconservative condition.

At the SALP management meeting, NNECO commented that there seems to be an inconsistency in the SALP assessment regarding technical evaluations. Page RI-8 of the SALP Report appears to commend the discovery and correction of the deficiencies identified, while page 26 of the SALP Report appears to criticize the actions taken to detect these deficiencies. NNECO believes that this inconsistency warrants clarification.

The SALP Report contains a statement that "to assure top management involvement in the timely review and reporting of issues, a monthly status report listing all reportable evaluations was issued." As discussed during the SALP meeting, a clarification is appropriate to reflect that this report identified the potentially reportable issues being addressed at the corporate office, and it does not include issues dispositioned via the plant PIR processes.

In conclusion, NNECO believes that Millstone Unit No. 1 Engineering/Technical Support during the SALP period was thorough, professional, and appropriately focused on safety. We will continue our efforts to further improve the quality of technical evaluations, consistent with the Board recommendation.

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Millstone Unit No. 2

Board Recommendation:

None.

Response:

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

FUNCTIONAL AREA: SAFETY ASSESSMENT/QUALITY VERIFICATION

Millstone Unit No. 1

Board Recommendation:

None.

Response:

NNECO agrees with the Staff's assessment of our performance in this functional area. We acknowledge the need to address the issues identified as having room for improvement, and will continue to strive for better performance.

The NRC noted a concern that there were no Quality Assurance organization audits to verify corrective action commitments for NRC concerns, SALP Board recommendations, or LERs.

Northeast Utilities Quality Services Department audits, at least once per six months, those corrective action systems whose function is to identify and correct deficiencies occurring in unit equipment, structures, systems, and method of operation that affect nuclear safety.

We have identified the following as corrective action systems which are audited at least once during a two-year period:

- o Nonconformances
- o PIRs/LERs
- o Instrumentation Nonconformances
- o Corrective Action Requests

Contrary to the NRC statement, Northeast Utilities has audited and will continue to audit the adequacy, effectiveness, and timeliness of corrective action for LERs. Audits of the corrective action for LERs have been performed periodically, with the most recent, Audit A21019, being performed November 30, 1988.

Northeast Utilities believes that the responsibility for the verification of implementation of corrective action for NRC concerns and SALP recommendations rests with the respective line management and, as such, is not an audit item under the Technical Specification. Nonetheless, we have a high level of confidence that the administrative tracking mechanisms in place are effective in ensuring action items and commitments are appropriately addressed. These tracking systems are an administrative tool for tracking action items which include Appendix B-related items. Thus, these systems are maintained and reviewed to ensure the various types of action items are met.

Millstone Unit No. 2

Board Recommendation:

Licensee: Further emphasize solicitation and resolution of employee concerns.

Response:

The Northeast Utilities Nuclear Concerns procedure has recently been revised. The procedure continues to encourage employees to utilize the internal reporting system at Northeast Utilities. Employees who utilize this system are assured of a response to their concern (or a schedule of when a response will be provided) within a specific time interval. Additionally, employees are afforded an appeal provision at the vice presidential level if they believe that the initial response to their concern is not adequate.

The entire nuclear concerns program is also being evaluated for other enhancements which will make it more attractive for employees to report nuclear concerns within Northeast Utilities for resolution. Further communications on this subject will occur with the NRC Staff when the provisions of the program have been finalized.

Additional Comments:

NNECO has reviewed the specific concerns noted by the Staff in the functional area of Millstone Unit No. 2 Safety Assessment/Quality Verification and believes, after due consideration, that our understanding of some of the circumstances is different than that summarized by the Staff in the SALP report. NNECO offers the following comments and clarifications for consideration by the Staff. NNECO trusts that after review of these clarifying comments, depending on the individual significance the Staff placed on these circumstances in the assessment of the Category 2 rating, the Staff would revisit the Category 2 rating.

NRC Concern

The licensee had not established a mechanism to administratively control plant quality assurance activities. NRC inspection concluded that the Quality Assurance Audit Department was not sufficiently aggressive in ensuring timely station response to their surveillance findings on Millstone Unit No. 2. Management involvement in assuring quality could be improved in this regard.

NNECO Response

NNECO does have a well-defined mechanism to control plant quality assurance activities. These directions are basically found in two sets of procedures: Administrative Control Procedures (ACPs) governing plant activities, and

Quality Services Department (QSD) Procedures governing QSD activities. There are 93 ACPs covering quality assurance activities including topics such as procedure control, nonconformance reporting, and surveillance and audit response. There are 31 QSD procedures covering QSD activities including topics such as receipt inspection, audits, and surveillance performance.

The program in effect at the time of the NRC evaluation required surveillance reports to be categorized as either A, B, C, or D. "A" surveillance reports were required to be resolved prior to placing the equipment back into service. "B" surveillance reports were required to be resolved prior to the end of the outage. "C" surveillance reports were required to be resolved in accordance with the priority set by the applicable unit superintendent. "D" surveillance reports required no response.

The NRC concern on timely response focused on Category C surveillances. This category of surveillance does not have a specified response date. The program had intentionally allowed the unit superintendent to determine an appropriate response schedule. The status of responses to these surveillance reports was being periodically reviewed by both the unit and QSD and were being addressed in a manner acceptable to the unit superintendent, in accordance with the program. A number of the surveillances, in fact, were responded to during the week of the inspection on this issue.

NRC Concern

A request for operation at reduced RCS flow rate, however, was submitted at a late stage of the application review for Cycle 10 operation. This allowed the Staff a very short time to complete the review and created difficulty in combining the two license amendment applications into one amendment. Better planning on this long-expected need could have provided more timely Technical Specification changes and supporting analyses.

NNECO Response

In a letter dated October 27, 1986, NNECO submitted a request to amend the Technical Specifications for Millstone Unit No. 2 by reducing the minimum required RCS flow rate from 350,000 gpm to 340,000 gpm. This change was requested because of the reduced flow anticipated from potential plugging of steam generator tubes and the resulting potential operational restrictions. License Amendment #113, authorizing this change, was issued prior to Cycle 8 start-up. NNECO submitted the Start-Up Test report for Cycle 8 on March 16, 1987. This report showed the measured RCS flow at 100 percent power was 370,200 gpm. This was well above the then-recently approved minimum of 340,000 gpm. On April 20, 1988, NNECO submitted the Start-Up Test report for Cycle 9. This showed the measured flow at 100 percent power was 361,600 gpm; still well above the required minimum of 340,000 gpm. It was at this point in time that NNECO judged it prudent to assess RCS flow rate trends from previous cycles. A project assignment was initiated for this purpose. The preliminary recommendations from this project assignment were made in September 1988.

During the course of this project, it became apparent that in order to account for measurement uncertainties and potential degradation, a reduced flow amendment request would be a prudent contingency measure.

In a letter dated August 26, 1988, NNECO formally informed the Staff that all ongoing ANF analyses, which were well under way, will assume an RCS flow rate of 340,000 gpm (minimum Technical Specification RCS flow rate). It was too late in the ANF analysis effort to change assumptions for a reduced flow condition and still support the rigorous schedule NNECO had committed to the Staff to support NRC review of the Cycle 10 reload analysis. In this letter, we informed the Staff that the reduced flow analysis and supporting amendment request would be submitted in February 1989 as a supplement to the November 1988 Cycle 10 reload license amendment request. The ANF report to support reduced RCS flow was submitted to NNECO on January 18, 1989. (It is noted that a draft ANF report was given to the NRC approximately 1 month earlier to facilitate the review.) NNECO submitted the report on the docket on January 23, 1989, and submitted the supplemental license amendment request on February 1, 1989. This effectively provided the Staff 45 days to process the supplemental amendment. We acknowledge this interval to be less than ideal, but one that was very responsive under the circumstances.

During this period, we believe that the entire reload amendment request was appropriately coordinated with the NRC. We also believe the Staff was extremely cooperative and responsive to the conditions we were facing. In fact, it was the project manager who suggested that ongoing Cycle 10 analyses should continue based upon the 340,000 gpm value, and NNECO could simply supplement its original amendment request when the analyses for the reduced RCS flow were completed. Regarding the NRC statement concerning the difficulty in combining the two license amendment applications, we informally provided a copy of the merged Technical Specification pages assuming that both license amendment applications were approved simultaneously by the Staff as submitted. As such, we do not understand the basis for the Staff's comment. In summary, we believe that our approach to this transition reload and safety analysis was proper and timely. Upon more recent reflection, we continue to believe our approach was prudent. For your information, prior to the recent shutdown, RCS flow was 356,280 gpm at 100 percent power, with a measurement uncertainty of 13,000 gpm. This computes to 343,280 gpm, the minimum guaranteed RCS flow rate.

NRC Concern

Millstone Unit No. 2 fire protection licensing reviews continued to be a weakness. The two key difficulties were postfire ventilation requirements and restoration of electrical power.

NNECO Response

1. Ventilation:

- a. Contrary to the Staff's statement that "the licensee's position . . . changed substantially" and "subsequent NRC and licensee review indicated a need for temporary post-fire ventilation in several key safety-related plant locations," NNECO's position has not changed--no temporary ventilation was or is required. This is specifically stated in our submittals, and most recently in our September 27, 1989 submittal regarding information requested by the NRC on August 29, 1989. For all required areas, existing ventilation remains either intact and functioning, or its loss will not impact safe shutdown of the plant.
- b. The NRC Staff letter of May 18, 1989 indicated that additional licensee evaluation was required concerning postfire ventilation in additional areas identified by the Staff. In addition, the NRC requested more detailed information from what had been requested and included in our April 18, 1989 submittal, for both the previously identified areas of concern and the additional areas now identified by the Staff. In the SALP report, regarding this, the NRC found our submittals to be untimely and incomplete.

NU submitted the requested information in a letter dated July 10, 1989, within the required 45 days from receipt as specified in the NRC's May 18, 1989 letter. While it is true that a number of areas addressed in this submittal were not previously identified to the Staff, all our evaluations continued to support our original position that no temporary or interim ventilation would be required for any fire scenario. In addition, every NRC telephone request was verbally responded to in usually under a week, and all written responses with a specified due date were either submitted on or before that date. The one exception to this was our written response of April 18, 1989. The NRC verbally requested this information during a telephone conference on January 24, 1989, and although no specific due date was then established, the submittal took approximately 2½ months and not the expected "few" weeks. It is important to note that this information was verbally provided to the NRC in December 1988 during a telephone conference, and at that time the NRC was satisfied with our verbal response. It was not until the January 24, 1989 telephone conference that the NRC requested that this information be formally provided in a written submittal. In addition, the exact wording and content of this requested submittal was discussed verbally during this telephone conference, and our April 18, 1989 submittal reflected what had been verbally agreed upon. The NRC's characterization of "untimely and incomplete" does not appear to be appropriate in light of the above.

2. Restoration of Power

Contrary to the NRC's statement that "the licensee was initially unresponsive to the NRC Staff's attempt to resolve issues associated

with post-fire provision of power from Millstone 1 to Millstone 2" and that "the licensee appeared unwilling to demonstrate adequacy via a walkdown" NNECO's belief is that we were never unresponsive to the NRC's requests for a walkdown or to discuss this issue. We recognized then, and reiterate now, that the Staff has the right to ask us to demonstrate the efficacy of an approved procedure at any time, provided such demonstration can be done safely. NNECO's position, as documented in several submittals to the NRC Staff, was that our analysis can support the loss of AC power for up to four hours after initiation of a fire. This time interval could include extinguishing the fire, stabilizing the plant, and the physical connection of the plant to Millstone Unit No. 1 power supplies. In repeated discussions with the Staff, the Staff focused only on the time required to accomplish the physical connection of Millstone Unit No. 1's on-site power sources and showed no apparent interest in the other factors. The Staff stated that four hours was too long for the plant to be without AC power notwithstanding the results of our analysis.

During a telephone conference on September 29, 1988, as well as during several previous telephone conversations, NNECO made it clear that we had no reservation about validating the four hours via a walkdown. Our only concern was that the walkdown be realistic and include a walkdown of all evolutions required for this worst case fire scenario, and not just the actions required to perform the physical cross-connect of power supplies. NNECO and the NRC had difficulty reaching a consensus on this point and on the acceptability of the total four-hour time interval. The NRC chose to characterize this as "unwilling and unresponsive." Subsequently, on October 7, 1988 the NRC Staff observed a walkdown of this evolution including the actions and assumptions defined by NNECO as required to be performed in addition to the physical cross-connection of power supplies, and verified that all required actions could be performed in under four hours.

As of this writing, the Staff has not yet issued an SER on this matter, apparently in part due to this four-hour interval issue. Also, as of this writing, we are unaware of any unanswered NRC questions associated with an SER on Appendix R for Millstone Unit No. 2. We do observe that the NRC had previously issued an SER for Millstone Unit No. 1, concluding that the four-hour cross-connect duration is safe and acceptable (see the Millstone Unit No. 1, Appendix R SER, dated April 14, 1988). Further, in a conversation with the Staff on November 21, 1989, the Staff indicated that a favorable SER, including approval of the four-hour interval, should be issued shortly.

Chronology of Events - Appendix R Review

- May 29, 1987 NU submitted the 10CFR50, Appendix R Compliance Review to the NRC.
- July 13-17, 1987 NRC conducted Appendix R audit of Millstone Unit No. 2.
- September 25, 1987 NRC issued the inspection report from the July 13-17, 1987 team inspection. The report cited that NRR would be reviewing the May 29, 1987 shutdown analysis.
- Between September 1987 and February 1988 NRC project manager relayed several verbal questions concerning the Compliance Review from the NRC technical reviewer. All questions during this interval were verbally answered to the reviewer's satisfaction. The project manager requested that NNECO representatives and the technical reviewer continue to interface directly on all related questions with the exception of one issue, namely the potential minimum four-hour delay in restoring AC power. (In a real event, power would be restored as soon as practical. The four-hour interval is relevant in that it defines the maximum time available to perform the task and still achieve safe shutdown.) Additionally, after direct contact between the technical reviewer and NNECO was established, the technical reviewer would telephone almost weekly with additional questions. These interfaces continued with all questions being answered usually within a week of receipt.
- March 23, 1988 In an effort to finally resolve the continuing influx of NRC questions, a conference call was held between NNECO and the NRC. During this call, NNECO responded to 23 questions, of which the NRC requested that additional information on four (4) of them be provided in a formal submittal. This was the first requested submittal by the NRC Staff.
- April 22, 1988 NU submitted the information requested by the NRC from the March 23, 1988 telephone conference.
- May 1988 to
October 1988 NRC questions continued to be telephoned in on nearly a weekly schedule. At this time, the major questions were concerned with the plant's ability to deal with a four-hour loss of AC power. The NRC did not agree with this concept and requested that NNECO demonstrate that power could be restored in substantially less time. The NRC stated at this time that the major concern was the ability

to maintain RCS inventory without charging capability during this interval. NNECO maintained that we had demonstrated that a four-hour delay would be acceptable and that RCS inventory would be maintained. The NRC maintained that this position was unacceptable, unambiguous technical reasons were not provided, and insisted that NNECO reduce the four-hour interval to "something around one hour." At this point, this issue was the only outstanding issue to our knowledge.

October 7, 1988 The NRC observed a walkdown of the evolutions required to restore AC power after a worst-case fire scenario.

December 1988 The NRC verbally requested a clarification of the Compliance Review section on ventilation. Specifically, the NRC requested clarification of what the evaluation entailed, what equipment and areas were actually evaluated, and if all areas were within satisfactory bounds. These questions were answered verbally to the NRC's satisfaction and no written response was requested.

January 24, 1989 The NRC verbally requested that NU formally submit the information previously provided verbally in December and stated that this was the last remaining issue. The NRC also stated that the four-hour power question was still open and that the NRC was still reviewing this issue. No submittal date was established; however, a time frame of a "few" weeks was deemed acceptable.

January -
February 1989 The NRC requested information letter was drafted and was essentially ready to be submitted. However, a separate evaluation was ongoing on a new issue regarding containment habitability. Since the outcome of this evaluation could affect the response to the NRC, NNECO elected not to submit the letter until this issue was resolved.

February 17, 1989 NNECO submitted information voluntarily on the issue of the RCP seals, which was one stated NRC concern associated with the four-hour interval issue.

April 18, 1989 NNECO submitted the information the NRC had requested on January 24, 1989. This information also contained the resolution to the containment habitability issue. It was submitted approximately 2½ months after the initial request and not within the expected "few" weeks. It is important to note that the format and content of this information was specifically discussed with the technical reviewer, with the exception of the containment

habitability issue, and he had agreed that this was the specific information he required.

- April - May 1989 A number of telephone conversations with the NRC were held. The NRC now required additional information from what was provided in our April 18, 1989 submittal. Because of our interest in getting a clear understanding of Staff needs, NNECO requested the NRC to document the questions in a written letter.
- May 18, 1989 The NRC issued a Request for Additional Information as was discussed in previous telephone conversations. The agreed upon due date of the required response was 45 days from receipt, which was July 10, 1989.
- July 10, 1989 NU submitted the required response to the NRC request of May 18, 1989. This submittal provided all the information requested.
- August 29, 1989 The NRC requested still further specific information on our July 10, 1989 letter for four plant areas during a telephone call. It was agreed this information would be submitted by the end of September 1989.
- September 27, 1989 NU submitted the information requested by the NRC on August 29, 1989.
- November 21, 1989 NNECO received a telephone call from the NRC project manager asking to see specific responses to LER's submitted in regard to loss of RCP seal cooling events in 1985 for Millstone Unit No. 2. During this call, the NRC stated that the Appendix R review was completed with only a few items needing verification and that the Staff had decided to accept the 4-hour interval for power restoration as proposed by NNECO. The NRC Stated that an acceptable SER would soon be issued.

NRC Concern

An emergency request for an amendment for the operation of the spent fuel pool cooling system under limiting conditions during the refueling for Cycle 10 operation failed the emergency provisions criteria of 10CFR50.91 in that the application was not timely.

NNECO Response

On February 22, 1989, NNECO submitted to the Staff, pursuant to 10CFR50.90 and 91, a proposed emergency change to the Technical Specifications of Millstone Unit No. 2. Specifically, the change requested Staff approval to add a

footnote to the Limiting Condition for Operation (LCO) of Specification 3.9.3.2 which would have required, for Cycle 9 refueling only and with the spent fuel pool temperature being maintained below 140°F, only one train of spent fuel pool cooling being OPERABLE provided shutdown cooling is available within 6 hours for spent fuel pool cooling.

In discussions on the afternoon of February 23, NNECO informed the Staff that changing conditions involving the refueling schedule had obviated this proposed change. NNECO formally withdraw the emergency request in a letter dated February 28, 1989.

NNECO notes that the Staff expressed no concern over the technical validity of the proposed request, only the exigent circumstances issue governed by 10CFR50.91. NNECO acknowledges that there was insufficient written justification of exigent circumstances in the February 22 submittal. Following a conference call with the Staff, NNECO commenced preparation of additional information to document the presence of exigent conditions. Part of the justification involved the then recently issued Generic Letter 88-17 (Loss of Decay Heat Removal) and its associated impact on acceptable configurations for core and spent fuel pool cooling. This was the first instance of nonpower operation since the issuance of Amendment #114, which imposed the minimum 504 hours of decay time, and Generic Letter 88-17. During our conference call, the Staff by no means assured us that the amendment would be issued, but they expressed a willingness to evaluate a more detailed demonstration of compliance with 50.91. At this time, NNECO was reasonably confident that exigent conditions could be demonstrated. Shortly after the conference call, in light of increasing complications and schedular delays regarding the ongoing outage, NNECO opted to not submit the supplemental letter and subsequently withdrew the amendment.

NNECO reiterates that the amendment request was withdrawn, and not denied, because the motivation to process it no longer existed, and not because we were not prepared to justify the presence of exigent circumstances.