

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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May 27, 1988

Docket No. 50-423

B12919

Re: SALP

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

- References:
- (1) W. T. Russell letter to E. J. Mroczka, "SALP Report No. 50-423/85-89," dated May 14, 1987.
 - (2) E. J. Mroczka letter to U.S. Nuclear Regulatory Commission, "Systematic Assessment of Licensee Performance," dated July 16, 1987.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Systematic Assessment of Licensee Performance (SALP)

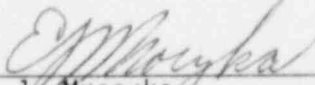
The NRC Staff forwarded the SALP Board Report (Reference (1)) for the 18-month period ending February 28, 1987 for Millstone Unit No. 3. After a meeting between members of the Staff and Northeast Nuclear Energy Company (NNECO) on June 18, 1987, NNECO submitted a response (Reference (2)) to the SALP Board recommendations for the individual evaluation categories.

The purpose of this letter is to provide an update on the implementation status of the corrective actions discussed in our July 16, 1987 response as well as providing additional relevant information. Attachment A provides the status of the corrective actions for Millstone Unit No. 3 which were incomplete as of our July 16, 1987 response. Items which were completed as of that response are not discussed in this letter.

We believe the actions presented in the attachment address the concerns of the Board, illustrate that these concerns are being adequately resolved, and will be useful to the NRC in conducting subsequent SALP evaluations. Please feel free to contact us if any questions arise on these matters.

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

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Attachment A
Northeast Nuclear Energy Company
Millstone Unit No. 3
Updated Status on SALP Functional Areas

May 1988

Functional Areas: PLANT OPERATIONS

Board Recommendation: Reduce unnecessary annunciators and reactor scrams.

Status Update:

A variety of improvements have been implemented or are ongoing at Millstone Unit No. 3.

In our response dated July 16, 1987, we committed to reduce unnecessary annunciators on a continuing implementation basis. Our commitment plan for implementation is divided into 3 phases linked to the completion of the first 3 refueling outages. Modifications to the main control board annunciators as delineated in the first phase, have been installed at the completion of the first refueling outage. Specifically, all but 18 of the identified annunciators have been permanently corrected.

Efforts on the reduction of reactor trips continue to progress. The steam generators water level indication condensate pots have been replaced and a dramatic improvement in indicated steam generated level stability and control has resulted. The valve positioners on the feedwater regulating bypass valves were replaced with upgraded positioners which has resulted in improved system control. The circulating water pump trip circuitry on low lubricating water pressure was modified with a time delay to prevent trips on momentary fluctuation in pressure and the screen wash system received significant material upgrades to increase reliability. Administratively, we have implemented a Reactor Trip Reduction Committee to perform root cause and corrective action assessment for every reactor trip.

It is to be noted that Northeast Utilities (NU) has acquired diesel engine performance monitoring equipment. The equipment is intended to provide detailed performance data which should provide important trending information. This self-initiated action should help to improve the reliability of the emergency diesels.

In the SALP Report, it is stated that a minor training weakness was a lack of operator knowledge in local manual control of feed regulating valves. This deficiency was immediately corrected by its inclusion in Cycle 2 of the 1987 requalification training program. This item is also a permanent component in the on-the-job training portion of the nonlicensed operator continuing training program.

A training program was specifically developed to address a positive moderator temperature coefficient. This program was given to all operating shifts and covered the reactor start-up, low-power operation, and selected malfunctions on the simulator.

We believe that the above-summarized corrective actions and/or self-initiated activities contribute positively towards improved performance in the area of plant operations.

Functional Area: RADIOLOGICAL CONTROLS

Board Recommendations: Improve technical oversight of radiological monitor calibration, and laboratory quality assurance/quality control activities.

Status Update:

In our response dated July 17, 1987, we stated that there is a plan to improve the chemistry's radiochemical QA/QC program.

NU has improved the laboratory radiochemical QA/QC program by participating in the Atomic Industrial Forum Cross-Check Program (Now being coordinated by U.S. CEA). The split sample program between Millstone Station and Connecticut Yankee has also been expanded to include liquid, gas, particulate, and iodine cartridges.

Several projects have been generated to add in-line monitoring versus grab samples in different areas or to upgrade existing in-line monitors. Recently in-line instrumentation (pH and conductivity) has been upgraded at the condensate pump discharge. Additionally, corrosion product samplers have been installed at the condensate pump discharge and at the first point feedwater heater.

Efforts continue to improve contamination control and achieve lower radiation exposure. To accomplish these aims, the health physics group has a number of programs such as:

- o Documentation of over 5,000 photographs has been developed along with video files of exposure intensive tasks.
- o A computerized videotape of the major components and areas has been constructed as a training and pre-job briefing tool.
- o A full scale mock-up of the Unit 3 RCP seal cartridge was purchased to accomplish effective pre-job training.
- o Video surveillance and radio communication equipment is used extensively in high radiation areas to increase effective worker supervision and reduce overall exposure.
- o The contamination control program encompasses a weekly management surveillance tour and trend monitoring of the total square footage of contaminated areas.

Functional Area: MAINTENANCE

Board Recommendation: Assure thorough testing after maintenance.

Status Update:

Efforts continue to ensure retests are effective. Areas such as the feedwater regulating valve packing where testing is difficult are reviewed to develop an alternative acceptable testing method. No further instances have been uncovered where maintenance activities have resulted in system performance degradation.

Maintenance activities continue to be reviewed for methods to avoid repetitive failures. Modifications of plant design and maintenance practices have been implemented to increase reliability and achieve ongoing improvements in radiation exposure. Items include:

- o Removal of the Reactor Coolant Loop RTD bypass lines to help achieve lower primary leakage and lower radiation exposure by eliminating high maintenance items and by achieving lower exposure rates.
- o Modification of the Feed Pump Seal cooling water supply improved system reliability and reduced challenges to the reactor protection system.
- o The Service Water strainer material has been upgraded for increased reliability and longer life.
- o An aggressive program to identify and correct primary leakage to minimize contamination has resulted the lowest primary leakage to date and improvement in containment airborne activity.
- o The Steam Generator primary side manways had the closure system redesigned to incorporate hydraulically tensioned studs instead of torqued bolts. This change is expected to yield results in reduced exposure due to elimination of bolt problems. Improved tensioning is expected to reduce the likelihood of flange leakage.
- o Live load packing has been instituted on valves where packing adjustments or retests are difficult, such as the feedwater regulating valves.
- o Snubber boots have been added to improve the reliability of snubbers that could be subjected to boric acid fouling.

Functional Area: SURVEILLANCE

Board Recommendation: Continue to emphasize procedure adequacy and give evaluation of procedure validation priority emphasis.

Status Update:

Surveillance upgrade continues to receive management oversight. A multidiscipline sampling of surveillance procedures has been completed with no programmatic problems found. With the completion of the first refueling cycle, all surveillances up to the 18 month surveillances have been exercised at least once. To minimize the potential for any remaining undiscovered administrative problems, a complete review of all Technical Specifications and their associated surveillance procedures will be completed in 1988.

Functional Area: ENGINEERING SUPPORT

Board Recommendation: Resolve issues requiring engineering attention.

Status Update:

The current status of these specific issues identified in our response dated July 16, 1987 is noted below:

1. Steam Generator Feedwater Flow Oscillation:

A change in the steam generator condensate pot design was implemented during the first refueling outage. Testing of the modified condensate pot design took place at the completion of the Cycle 1 refueling outage. All testing results have confirmed that the design change has corrected the oscillation problem and that no further design effort is required.

2. Elimination of Illuminated Control Board Annunciators:

A total review of illuminated annunciators during power operations was completed in 1987. This effort called the "Black Board" project has been a continuous review and implementation process since 1986. Forty-seven annunciators are in the process of being modified by setpoint changes, circuit redesign, and elimination where appropriate. Additionally, annunciators that have been determined to be desired for informational purposes but remained lighted during power operation have been changed to green windows. At the end of the Cycle 1 refueling outage, all but 18 of the identified annunciators have been permanently corrected, (61% of total). The remaining items are planned to be resolved during the second and third fuel cycles.

3. Main Steam Valve Building Heating Cooling:

This issue involves both overheating and overcooling of different parts of the main steam valve building and Electrical Environmental Qualification (EEQ) area monitoring. Five plant design modifications have been installed and are operating. Testing will continue over the summer for verification of design margin against a wide spectrum of outside temperatures.

Other examples of Engineering Support to improve safety and reliability are:

- o The redesign of the feed pump seal injection system to increase cooling to the pump seals for longer operating life;
- o The Reactor Cooling System RTD bypass loop removal to reduce high maintenance and high exposure items;
- o Service water discharge valves were changed from lined to corrosion resistant material; and
- o The gaseous chlorine system was replaced with hypochlorite for personnel safety, reliability and elimination of any chlorine accident possibility.

Functional Area: TRAINING AND QUALIFICATION EFFECTIVENESS

Board Recommendations: Continue training development to achieve accredited training and assure consistently good operator examination results.

Status Update:

In our response dated July 16, 1987, NNECO provided an update on training program accreditation, noting plans for the INPO Accreditation Self-Evaluation Report for the four operator training programs.

Material development was completed and the INPO Accreditation Self-Evaluation Report for the four operator training programs was submitted in November, 1987. An INPO accreditation team visit occurred in late January 1988 and Millstone Unit No. 3 programs achieved accreditation in April 1988. In addition, during the last SALP period, the Technical Training Programs received INPO accreditation in the areas of instrumentation, health physics, chemistry, mechanical and electrical maintenance, and technical staff and managers. Thus, accreditation is complete for Millstone Unit No. 3.

Cooperation between the plant staff and the training staff has led to development of programs to assist plant operating staff in the preparation for complex tasks. One example is the training program specifically developed to address a positive moderator temperature coefficient (PMTTC). This program was given to all operating shifts and covered the reactor start-up, low-power operation, and selected malfunctions on the simulator which permitted a successful PMTTC startup after refueling with no problems associated with PMTTC.

Functional Areas: LICENSING ACTIVITIES

Board Recommendations: Assure accuracy of submittals to the NRC.

Status Update:

During the past year, NU has strived to be very responsive to NRC Staff requests for information. We have endeavored to provide comprehensive, accurate and technically sound submittals. We believe a prime example of this has been our pursuit of NRC approval of three-loop operation. On November 16, 1987, the NRC removed a license condition which prohibited three-loop operation for Millstone Unit No. 3. The NRC's Safety Evaluation Report (SER) concluded that all safety concerns associated with three-loop operation were satisfied, thus making Millstone Unit No. 3 and the Haddam Neck Plant the only four-loop plants in the country authorized for three-loop operation. In addition, NU has provided information required to satisfy the following license conditions and SER commitments requiring submittal for additional information:

License Condition:

- 2.C.3 - Containment Average Temperature (January 21, 1988)
- 2.C.6 - Instrumentation for Monitoring Post-Accident Conditions R.G. 1.97, Revision 2 Requirements (November 17, 1986 and May 1, 1987)
- 2.C.8 - Moisture in Air Start System (January 21, 1988)
- 2.C.12 - SPDS (November 13, 1987, December 24, 1987 and January 14, 1988)
- 2.C.14 - Salem ATWS events Generic Letter 83-28 (March 24, 1987 and March 3, 1988).

SER Commitments:

1. Install Backup Protection Devices for Class 1E Containment Electrical Penetrations (May 20, 1987, August 28, 1987, October 30, 1987)
2. Natural Circulation Report (November 6, 1987)
3. Report on Qualification of the Engine-Mounted Instrumentation and Controls for Vibration (October 21, 1987 and January 18, 1988.)
4. Plant specific Submittal for Steam Generator Tube Rupture Accident (January 22, 1988)
5. Unnecessary Control Room Alarms (August 27, 1987 and April 5, 1988)
6. Report on Loss of Room Cooling (January 7, 1988)
7. Procedure - Earthquake-Induced Relay Chatter (January 15, 1988).

As of October 1987, office space has been designated at the Millstone Site for use by Licensing personnel to facilitate increased focus on plant activities and improve the interface between the plant and Generation Facilities Licensing on licensing-related issues. It is intended that this action will further improve the quality and timeliness of licensee responses and increase the frequency of prompt, personal communications with station personnel.

Regarding day-to-day licensing activities, our licensing staff works closely with the NRC Project Manager. Our belief is that our licensing and management personnel enjoy a very productive working relationship with the NRC. There is very good daily communication between the NRC and NU Licensing staff with frequent "face to face" meetings to maintain clear communications and reach agreement on outstanding information requests and other licensing issues. In addition, the NRC Project Manager and our lead licensing engineer for Millstone Unit No. 3 worked together to track various licensing issues via the NRC's Safety Issues Management Systems (SIMS).

In summary, we have continually strived to provide comprehensive, thorough and technically sound submittals. In cases where the NRC Staff has required additional information, we have been quick to respond to the request with follow up telephone conference calls, meetings or additional written submittals. Lastly, we will continue to place emphasis on the multidiscipline sign-off process associated with all correspondence with the NRC to ensure accuracy of submittals.

In addition NU personnel are playing a lead role in the development of the NUMARC/NSAC guidance document on 10CFR50.59 safety evaluations. The intent of this effort is to establish clear, unambiguous, uniform guidance in an area which is open to interpretation and confusion. NU personnel were heavily involved in a formal presentation of a draft of the document to designated NRC management personnel. NU's own guidance document on 10CFR50.59 safety evaluations was a key element in the development of the NUMARC/NSAC document, with additions and modifications from other utilities. We plan to continue supporting this NUMARC-coordinated effort until we reach a consensus between the industry and the NRC.