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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December 7, 1992

Docket No. 50-245
B14316

Re: 10CFR55

Mr. T. T. Martin
Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Martin:

Millstone Nuclear Power Station, Unit No. 1
1992 Licensed Operator Requalification Examinations

During the week of September 21, 1992, requalification examinations were administered to 15 Millstone Unit No. 1 NRC licensed operators. The results of this examination are that five license holders, including one crew, failed. Per NUREG 1021, Operator Licensing Examiner Standards, these results constitute an unsatisfactory Licensed Operator Requalification (LOR) Training Program rating for Millstone Unit No. 1.

On October 7, 1992, an LOR examination exit meeting was held with the Staff to discuss the final examination results, the reasons for failure, and the status of various corrective actions. The commitments made at the exit meeting, the basis for the continued operation of Millstone Unit No. 1, and a description of Northeast Nuclear Energy Company's (NNECO) completed short-term actions were documented in our letter dated October 8, 1992.[1]

Your understanding of the completed and planned actions was the subject of a confirmatory action letter (CAL) dated October 9, 1992.[2] In the CAL, you requested that NNECO submit to the Staff short- and long-term corrective actions for weaknesses identified from the 1992 NRC and facility administered requalification examinations, and provide the status of previously committed

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(1) J. F. Opeka letter to T. T. Martin, "Millstone Nuclear Power Station, Unit No. 1, 1992 Licensed Operator Requalification Examinations," dated October 8, 1992.

(2) T. T. Martin letter to J. F. Opeka, "Confirmatory Action Letter (CAL) 1-92-014, Millstone Unit 1 Unsatisfactory Licensed Operator Requalification Training Program," dated October 9, 1992.

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long-term corrective actions from the 1991 NRC evaluation. In response to the CAL, Attachment 1 provides NNECO's short- and long-term corrective actions. Attachment 2 details the status of NNECO's previously committed long-term corrective actions.

In a letter dated November 2, 1992,[3] the Staff provided NNECO the final results of the September 1992 Millstone Unit No. 1 LOR Training Program evaluation. In that letter, NNECO was requested to respond to three NRC-identified programmatic weaknesses by providing our perspective, including root cause and corrective actions. NNECO's assessment of these deficiencies and corrective actions are included in Attachment 1.

On December 3, 1992, NNECO presented in a meeting with the Staff the information contained in Attachment 1. We described in some detail the aggressive and comprehensive actions being taken by NNECO to strengthen the Millstone Unit No. 1 LOR Training Program. We believe these actions are true indication of NNECO's commitment to excellence in this area, and are responsive to the Staff's level of concern.

We found the December 3, 1992, meeting to be very productive. As stated at the meeting, we expect that the Staff will be following closely our progress in effecting programmatic improvements. To that end, NNECO would like to meet with the Staff in approximately six months in a forum similar to our December 3, 1992, meeting, to provide a progress report. We will discuss this proposal with the Staff in more specific terms as we implement various improvement actions and monitor our progress.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Executive Vice President

cc: M. W. Hodges, Director, Division of Reactor Safety, Region I
J. W. Andersen, NRC Acting Project Manager, Millstone Unit Nos. 1, 2, and 3
R. J. Conte, Chief, BWR Section, Operations Branch, Division of Reactor Safety, Region I
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

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(3) M. W. Hodges letter to J. F. Opeka, "Requalification Examination and Program Evaluation Report 50-245/92-23(OL)," dated November 2, 1992.

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Attachment 1

Millstone Nuclear Power Station, Unit No. 1
1992 Licensed Operator Requalification Examinations

Short- and Long-Term Corrective Actions and
Programmatic Weakness Assessment

December 1992

I. RESPONSE TO CONFIRMATORY ACTION LETTER

In response to the recent Millstone Unit No. 1 Licensed Operator Requalification (LOR) examination failures, NNECO conducted several assessments to determine the cause of the failures and to identify necessary corrective actions. These assessments include:

- A root cause analysis for the failures of the NRC-administered examinations.
- An examination assessment of the recently-completed annual examinations.
- The administration of a confidence weighted examination to approximately 25 percent of the Millstone Unit No. 1 licensed operators.

The results of these assessments have resulted in the identification of both programmatic and individual knowledge and performance deficiencies. We believe that the short-term and long-term corrective actions listed below will serve to correct these deficiencies and prevent their recurrence.

A. Short-Term Actions

1. A project team has been established to manage, oversee and implement the action necessary to elevate the Millstone Unit No. 1 LOR training program to a position of excellence. This project team includes director-level oversight and a dedicated project manager. Additional resources including supervisory level personnel, instructors, and administrative support personnel, have been added to the project team. The project team will implement advanced and accelerated learning strategies that we believe will improve mastery of learning objectives and facilitate retention.

2. Remediation training programs have been developed for ten of the individuals who failed the examination and have been submitted to the Staff for review. The remaining remediation training programs are being developed and will be submitted to the Staff.

3. Four Job Performance Measures (JPMs) were failed by more than one license holder. Specific training on these four JPMs will be completed by the end of the first LOR training cycle in 1993.

4. Certain generic deficiencies in system knowledge associated with various systems have been identified. Training will be

conducted to correct these deficiencies during the first LOR training cycle in 1993.

5. To improve mastery and retention of system knowledge, the use of Advanced Classroom Training, as described at the December 3, 1992 meeting, will be incorporated into the LOR training program beginning with the first cycle in 1993.

6. In-plant knowledge of selected systems will be reinforced with JPM training during the first LOR training cycle in 1993.

7. Confidence weighted testing will be used as input to the design of future LOR training cycles. We believe confidence weighted testing more accurately identifies knowledge deficiencies than traditional examination methods, thereby making it a superior diagnostic tool.

8. All operators will be trained on the contents of INPO SOER 92-1, Reducing the Occurrence of Plant Events Through Human Performance, during the first LOR training cycle in 1993. Included in this SOER is the topic of self checking.

B. Long-Term Corrective Actions

1. The project team will remain in place through the recovery effort. Our initial estimate is that this will be for one year.

2. Examination materials will be upgraded to meet the standards of NUREG 1021, Operator Licensing Examiner Standards, revision 6 until revision 7 is implemented. This will include the use of the NRC-reviewed written examination question assessment tool which ensures examination at the appropriate cognitive level. The rate of written examination question revising will be consistent with the requirements of NUREG 1021, Revision 6.

3. The Millstone Unit No. 1 Job Analysis for the Operator Training programs is being revised. The LOR training schedule will incorporate systems training based on the revised job analysis information.

4. The LOR training program will be structured to include formal JPM training. JPMs will be selected based on revised job analysis information.

5. Simulator Exercise Guides will be revised, as necessary, to include additional instructional strategies and standards.

6. On a periodic basis, the Millstone Unit No. 1 LOR training program will undergo independent review to ensure that any programmatic deficiencies are identified so that corrective actions can be implemented.

7. Millstone Unit No. 1 licensed operators will be assessed in the third quarter of 1993 to determine the effectiveness of the LOR training program improvement efforts. Additionally, an INPO assist visit has been requested to obtain independent feedback on our progress.

8. Millstone Unit No. 1 Emergency Operating Procedures (EOPs) are being revised into a flow chart format. Training on the revised EOPs will be completed by July 1, 1993.

C. At the December 3, 1992, meeting, the Staff requested that NNECO indicate which of the short- and long-term corrective actions would also be implemented at Millstone Unit Nos. 2 and 3 and the Haddam Neck Plant. The following is responsive to that request.

Short-Term Actions

- The advanced and accelerated learning strategies which are shown to be effective will be implemented, as appropriate, at the other units. This includes confidence weighted testing and the advanced training classroom. It should be noted that the advanced training classroom has been used at Millstone Unit No. 2 and the Haddam Neck Plant.

- The contents of SOER 92-1, Self Checking, will be assessed in accordance with existing NNECO procedures to determine necessary training or training material revision.

Long-Term Actions

- Operator Training Branch Instructions (OTBI) have been or will be developed to govern the development of examination and training materials. These OTBIs apply to all units.

- The LOR training programs for Millstone Unit Nos. 2, 3, and the Haddam Neck Plant currently include formal JPM training.

- The independent, periodic review of the LOR training program will be conducted on all units.

II. INSPECTION REPORT PROGRAMMATIC WEAKNESSES

A. Failure to substantially correct or enhance the overall level of operator proficiency since the 1991 NRC requalification examinations, and poor operator performance on all parts of the examination.

The causes of these two programmatic weaknesses are the same. They are:

- NU self-assessment following the 1991 LOR examination failures focused only on observed weaknesses and did not explore the possibility of other program or process weaknesses.

- The low cognitive level of written examinations bank items failed to expose existing operator knowledge deficiencies.

- The 1992 LOR training program content centered on the simulator, emphasizing crew skills and EOP implementation to the detriment of system knowledge.

- JPM training was not formally scheduled into the requalification program. Therefore, absent individual operator initiative to maintain JPM proficiency, JPM performance declined.

- The complement of experienced qualified LOR instructors remained below acceptable levels for extended periods of time.

NNECO believes that the short- and long-term corrective actions described in Part I of this attachment will serve to correct the causes of these two deficiencies. Regarding the staffing deficiency, NNECO has aggressively pursued attracting qualified personnel to Operator Training. The results are that NNECO expects that all positions within Unit No. 1 Operator Training will be filled by the end of February 1993. Contract instructors are currently augmenting the NNECO training staff.

B. The Millstone Unit No. 1 written examination banks were weak evaluation tools.

The causes for this deficiency are as follows:

- NNECO focused primarily on corrective simulator performance deficiencies, rather than on written examination question improvements.

- NNECO did not fully understand the staff's expectation regarding the cognitive level of the examination bank.

NNECO believes that corrective actions described in Part I to this attachment, and in Part II.A, will fully address this deficiency.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 1

1992 Licensed Operator Requalification Examinations

Corrective Actions and Results — 1991 Examination Failures

December 1992

Corrective Actions and Results

Commitment:

Improve the overall training process.

Status:

Improvement of the overall training process is ongoing and is encompassed by the planned improvements initiated as a result of the 1992 requalification evaluations.

Commitment:

Incorporate advanced simulator scenarios into licensed operator training programs prior to implementation to these programs.

Status:

Advanced scenarios were incorporated into the licensed operator training programs. In addition, the need for investigating more complex scenarios will be assessed routinely within the training program.

Commitment:

Update NRC examination bank materials to present NRC standards by October 31, 1992.

Status:

Updating of NRC examination bank materials to present standards is ongoing and will be completed on a schedule consistent with the guidance of NUREG-1021, Revision 6. The written examination bank will be upgraded using the NRC-reviewed model for determining the appropriate cognitive level.

Commitment:

Develop training strategy to ensure high level of proficiency can be maintained.

Status:

Training strategy development is a key element of the current planned corrective actions resulting from the 1992 requalification evaluations. As such, this activity is ongoing.

Commitment:

Review, assess, and change, as necessary, the Training Program Implementing Procedure (TPIP) to ensure that a high level of proficiency is maintained. These actions will be completed by January 31, 1992.

Status:

Necessary enhancements to the TPIP were identified and incorporated by January 31, 1992, as committed. Additional revisions stemming from corrective action implementation described in Attachment 1 are planned.

Commitment:

Conduct crew evaluations weekly during simulator requalification training.

Status:

Crew evaluations were conducted weekly during 1992 simulator requalification training.

Commitment:

Complete requalification training and evaluations.

Upgrade the two crews who passed the NRC evaluation to the new standards, utilizing 3 reactor operators (RO). These crews will complete their training prior to assuming the watch in the RUN, STARTUP/HOT STANDBY, or HOT SHUTDOWN conditions.

Pending successful completion of operational evaluations and meeting both NNECO and NRC expectations relative to performance, complete the annual operator requalification evaluations for 7 individuals who have not yet been evaluated during 1991. This action will be completed by the end of the year or appropriate regulatory relief will be sought.

Assess the need to maintain staff licenses and train those who retain their licenses to the new standards using 5 person Control Room teams. These licenses will not be upgraded to active status until completion of training.

Complete annual staff requalification evaluations for individuals who will retain their licenses and have not yet been evaluated during 1991. This action will be completed by the end of the year or appropriate regulatory relief will be sought.

Identify, prepare, and implement training plans in accordance with the Northeast Utilities' Nuclear Training Manual for the license holders who failed the NRC administered evaluation. The training plans will address both

generic and specific weaknesses observed during the requalification evaluation process. These actions will be completed by January 31, 1992.

Status:

The activities associated with requalification training and evaluations resulting from the 1991 requalification program evaluation have been completed.

Commitment:

Review simulator training modules and simulator performance to assess the potential concern that "negative training" may exist. The overall process will be completed by January 31, 1993, but items that are discovered, if any, will be promptly corrected.

Status:

Simulator models were reviewed and several changes were made to enhance training activities as well as increase the capability to exercise EOPs (e.g., stuck rod malfunctions, ability to drive individual rods). Additionally, training materials were reviewed and changes made to lesson materials to reflect simulator capabilities.

Commitment:

Assess the need to continue the requalification training programs during refueling outages and implement a policy by January 31, 1992.

Status:

Assessment of the need to continue the requalification training programs during refueling outages was completed and additional administrative controls were placed on requalification training program implementation during outages.

Commitment:

Formalize policy to require management observation of operating crews on simulator to reinforce standards and demonstrate support of training objectives at all Northeast Utilities' units by February 28, 1992.

Status:

A formal policy requiring line and training management observation of simulator training has been implemented.

Commitment:

Develop written standards for roles and responsibilities, command and control, and communications for all Northeast Utilities' units by February 28, 1992.

Status:

The Millstone Unit No. 1 Operations Department developed a standard of expectations and philosophies. A common "Conduct of Operations," document for Millstone Unit Nos. 1, 2, and 3 and the Haddam Neck Plant has been drafted and will be issued following review and concurrence by each unit.

Commitment:

Evaluate whether current Emergency Operating Procedures are optimum from human factors and implementation perspectives, or whether flowchart format would be a significant improvement. This action will be completed by January 31, 1992.

Status:

A decision was made to implement flowchart based EOPs. Implementation status was provided to the Staff in a letter dated December 2, 1992.

Commitment:

Review and assess all Millstone Unit No. 1 Operations Department procedures to ensure that there are no conflicts and that procedures are usable. Rewrite procedures as necessary. These actions are expected to be completed by November 30, 1992.

Status:

Millstone Unit No. 1 Operations Department procedures were reviewed and assessed to identify procedural conflicts and deficiencies. Procedure changes were made to resolve identified discrepancies.

Commitment:

Process and submit license amendment request to increase minimum number of ROs in shift-crew composition to 3. Ensure, through administrative controls, that minimum shift-crew composition is maintained until license amendment is issued by the NRC. This license amendment request will be submitted by January 31, 1992.

Status:

NNECO continues to maintain the minimum number of ROs in the shift-crew complement at 3 through administrative controls. Consistent with the

discussions on December 3, 1992, we plan to advise the Staff concerning our intention to submit a license amendment in separate correspondence.

Commitment:

Increase the attention given to human factors and operational concerns during implementation of plant modifications and/or procedure changes.

Status:

An appropriate level of attention is given to human factors and operational concerns during implementation of plant modifications by following the guidance of procedure NEO 5.25, Performance of Control Panel Design Reviews.

Commitment:

The need for additional shift manning at the senior reactor operator level has been under evaluation by Northeast Utilities for some time. Although not related to the Millstone Unit No. 1 experience, the decision has been made to add personnel to each shift for all of our nuclear units. For Millstone Unit No. 1, this increase is in addition to the third RO previously discussed.

The exact nature of responsibilities for this position have not been finalized. However, one of the major objectives of the addition is to relieve the shift supervisor of some of his current responsibilities.

Status:

Six additional positions have been authorized at the SRO level for Millstone Unit No. 1. This will add a SRO licensed individual to each operating shift. Efforts to fill the authorized positions are in the early stages of development.