



**Northeast
Utilities System**

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September 19, 1994

Docket No. 50-336
B14966

Re: 10CFR2.201

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 2
Reply to a Notice of Violation and Proposed Civil Penalty
NRC Combined Inspection Report Nos.
50-245/94-01, 50-336/94-01, and 50-423/94-01; and
50-245/94-20, 50-336/94-18, and 50-423/94-17

In a letter dated August 15, 1994 (EA 94-045 and 94-091)⁽¹⁾, the NRC Staff referred to the results of NRC inspections conducted from January 5 through February 22, 1994, and May 2 through 6, 1994, at Millstone Nuclear Power Station. The results of these inspections and the cited violations were discussed during enforcement conferences in June 1994. The violations cited involved failure of the Millstone Unit No. 2 operators to (1) properly assess and classify Unusual Events (UEs) on three occasions between April 20 and 23, 1994; and (2) ensure adequate shutdown margin within one hour, as required by the technical specifications, on April 23, 1994. Northeast Nuclear Energy Company (NNECO) hereby provides the NRC Staff with the reply to the enforcement action relating to the issues resulting from the April 20-23, 1994, operational and unusual events at Millstone Unit No. 2. The reply to the Millstone Unit No. 1 Notice of Violation will be submitted under separate cover. During discussions with NRC Staff, it was agreed that this reply would be submitted on September 19, 1994.

From April 20, 1994, through April 23, 1994, operational events occurred at Millstone Unit No. 2 which involved failure to properly implement the requirements of the Millstone Unit No. 2 Technical

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- (1) T. T. Martin letter to J. F. Opeka, "Notice of Violation and Proposed Imposition of Civil Penalty - \$87,500 (NRC Combined Inspection Report Nos. 50-245/94-01, 50-336/94-01, and 50-423/94-01; 50-245/94-20, 50-336/94-18, and 50-423/94-17)," dated August 15, 1994.

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Specifications (TS) and the emergency action level (EAL) tables related to classifying events. Our investigations, including a formal root cause evaluation, have identified two root causes and a number of associated factors leading to these violations. Both completed corrective actions and those in progress are discussed in Attachment 1. We have attempted to evaluate these events globally in order to implement comprehensive actions to improve the EAL tables, operator training, operator performance and management oversight.

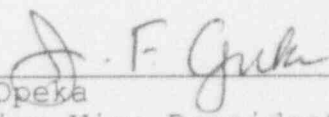
Attachment 1 provides NNECO's reply to the Millstone Unit No. 2 violations. Also, a check is enclosed for the full amount of the proposed civil penalty.

NNECO has concluded a very critical self-assessment of these April 1994 operational events. We have looked at these events comprehensively, to identify both short-term corrective actions and long-term corrective actions that address relevant performance areas. NNECO believes that the issues associated with the operational events and classification difficulties have been determined and that appropriate corrective actions have been taken. We will remain vigilant to verify the effectiveness of our corrective actions and will take any additional corrective actions that are deemed necessary.

If you have any questions regarding these issues, please contact Mr. M. J. Wilson at (203) 440-2081.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2
P. D. Swetland, Senior Resident Inspector, Millstone Unit
Nos. 1, 2, and 3

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

Director, Office of Enforcement
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Subscribed and sworn to before me

this 19 day of September, 1994

Lorraine J. D'Amico

Date Commission Expires: 3/31/98

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Reply to a Notice of Violation and Proposed Civil Penalty

NRC Combined Inspection Report Nos.
50-245/94-01, 50-336/94-01, and 50-423/94-01;
and 50-245/94-20, 50-336/94-18, and 50-423/94-17

September 1994

Millstone Nuclear Power Station, Unit No. 2
Reply to a Notice of Violation
NRC Combined Inspection Report Nos.
50-245/94-01, 50-336/94-01, and 50-423/94-01; and
50-245/94-20, 50-336/94-18, and 50-423/94-17

Restatement of Violation:

I. Violation Assessed a Civil Penalty

- A. 10CFR50.54(q) states, in part, "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in 10CFR50.47(b) and the requirements in Appendix E of this part."

The licensee's Emergency Plan Implementing Procedure (EPIP) 4400, Revision 2, "Event Assessment, Classification and Reportability," (written to satisfy the requirements in 10CFR50.47(b) and 10CFR Part 50, Appendix E) requires, in part, the immediate declaration of an Unusual Event for: a) unidentified reactor coolant system (RCS) leakage in excess of one gallon per minute (gpm), b) the initiation of any nuclear plant shutdown required by the plant's Technical Specifications (TSs), and c) any failure to meet the requirements of a TS ACTION statement.

Contrary to the above, the licensee failed to declare an Unusual Event, as required, for events at Unit 2, as evidenced by the following three examples:

1. On April 20, 1994, at 4:23 p.m., the licensee determined that unidentified RCS leakage was approximately eight gpm and failed to declare an Unusual Event until 9:48 a.m. on April 21, 1994, seventeen hours and twenty-five minutes after the event occurred, and after being prompted by an NRC inspector.
2. On April 23, 1994, at 1:15 a.m., the licensee was required by TS 3.1.3.1.a to shutdown the plant due to a Control Element Assembly (CEA) being immovable, and the licensee failed to declare an Unusual Event until 5:50 a.m. on April 23, 1994, four hours and thirty-five minutes after the event occurred.

3. On April 23, 1994, at 2:15 a.m., the licensee failed to comply with the ACTION statement of TS 3.1.3.1.a, which requires that within one hour of a CEA being declared inoperable, the shutdown margin requirements of TS 3.1.1.1 be satisfied. After failing to comply with the requirements of the ACTION statement of TS 3.1.3.1.a, the licensee failed to declare an Unusual Event until approximately 2:35 p.m. on April 23, 1994, twelve hours and twenty minutes after the event occurred, and after an NRC inspector informed the licensee, at approximately 8:00 a.m. on April 23, 1994, that they had failed to meet the requirements of the ACTION statement of TS 3.1.3.1.a.

1. **Admission or Denial of the Alleged Violation (Violation A):**

Northeast Nuclear Energy Company (NNECO) admits this violation.

2. **Reasons for the Violation (Violation A):**

The first example of failure to properly classify an unusual event (UE) occurred during an incident involving RCS leakage that occurred on April 20, 1994. The second and third examples of failure to properly classify UEs occurred during a unit shutdown initiated on April 22, 1994, which continued into April 23, 1994. A chronology of these two separate incidents is provided below, followed by a discussion of the reasons determined to have contributed to the classification problems.

A. Unidentified RCS Leakage Chronology:

On April 20, 1994, at 1623 hours, the Degasifier System was placed in service to remove non-condensable gases from the RCS in preparation for a planned reactor shutdown to support the repair of a degraded reactor coolant pump seal. During the lineup of the Degasifier System from the Clean Liquid Radioactive Waste System (CLRWS) to the Volume Control Tank (VCT), decreasing VCT level was observed. Investigation of the leak's source was performed over the next three hours by the operating crew, and the leak was isolated at 1930 hours. The operators conservatively logged into TS Action Statement (TSAS) 3.4.6.2.b (unidentified RCS leakage greater than 1 gallon per minute), because the source of the leak was unknown. The TSAS allows four hours to reduce the leakage rate to within allowable limits.

When starting the Degasifier System, the effluent goes initially to the Coolant Waste Receiver Tank until boron concentration is such that it can be directed to the VCT. After isolating the leak, the Shift Supervisor (SS) discussed the classification and reportability of the leak with the Duty Officer, On-Site Director of Station Emergency Operations (ODSEO), and the Operations Manager. Following a review of the TS and event-based EAL Tables, the decision was made to not report the event. The judgement was that this event did not involve RCS leakage greater than TS because the four hour limit was not exceeded and the leakage was not RCS leakage. Subsequent management review at the next day's morning meeting determined that the EAL Tables call for a UE for unidentified RCS leakage greater than 1 gpm. An emergency notification (Unusual Event) was issued at 0954 hours on April 21, 1994 (approximately 16 hours late).

B. Chronology of Shutdown of April 22, 1994

On April 22, 1994, at 2105 hours, a plant shutdown was commenced in preparation for a planned maintenance outage to repair a degraded reactor coolant pump seal. At 2113 hours, while inserting Group 7 control rods for axial shape index (ASI) control, a Group 7 Control Element Assembly (CEA) #65 indicated no movement by reed switch indication. The reactor power decrease was stopped and the Instrument and Controls (I&C) Department was contacted to assist in determining the problem with CEA #65. Subsequently, trouble shooting by an I&C technician provided indications that CEA #65 was moving and that the CEA reed switch position indicator for CEA #65 was inoperable. At approximately 0056 hours on April 23, 1994, the Reactor Engineer was contacted by the Shift Supervisor (SS) to provide assistance concerning anomalous readings among the Reactor Protection System (RPS) Channels. Subsequent comparison of ASI and nuclear instrumentation power among RPS Channels led the control room operators to declare CEA #65 inoperable at 0115 hours, when TSAS 3.1.3.1.a, "Inoperable CEA" was logged.

TSAS 3.1.3.1.a for one inoperable CEA requires that the plant be placed in Hot Standby within six hours. A shutdown required by technical specifications is listed in the EAL Tables as a UE. The shift did not recognize that, although the plant was already in the process of being shutdown (for the pump seal repair), the EAL Tables now required a UE classification at this time. This

issue is discussed in more detail later in the reply to Violation B.

TSAS 3.1.3.1.a also requires that compliance with the shutdown margin requirements of TS 3.1.1.1 be determined within one hour. TS 3.1.1.1 specifies that if the available shutdown margin is not within limits, operators must initiate boration to achieve required shutdown margin. However, as discussed in a separate violation, the operating staff failed to ensure that this TS requirement was met. It was determined that shutdown margin could not be determined because of the inoperable CEA and lack of any procedural guidance. Shortly thereafter, at 0248 hours, the plant was put in a known condition by removing power to CEA #65, which inserted fully (verifying that it was in fact trippable). This was followed at 0250 hours by a Manual Reactor Trip. With all CEAs fully inserted, shutdown margin was verified.

An Unusual Event was reported for the TS-required shutdown at 0600 on April 23, 1994 (approximately 4.75 hours late). Further discussions regarding shutdown margin resulted in a report of another Unusual Event at 1436 hours on April 23, 1994 (approximately 12.25 hours late) for the missed TSAS 3.1.3.1.a. This report was made based upon the inability to determine shutdown margin within one hour as required by TSAS 3.1.3.1.a.

C. Root and Contributing Causes:

The reasons for this violation were discussed in NNECC's information letter dated May 26, 1994⁽²⁾, and discussed extensively during the June 9, 1994, Enforcement Conference. The Root Cause Evaluation Team (RCET), utilizing the Tap Root Evaluation System, concluded that the global root causes for the events of April 20-23, 1994, were: (1) failure to recognize the significance of safety related events, and (2) failure to perform a comprehensive review of the Emergency Plan Emergency Action Level (EAL) event-based tables deemed necessary to correct previously identified classification deficiencies.

(2) J. F. Opeka to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 2, Operational Events and Classification Information Letter," dated May 26, 1994.

As discussed during the June 9, 1994, Enforcement Conference, the following issues related to the UE Classifications were also identified:

- Misinterpretation of the EAL event-based table as it relates to the TS requirements contributed to the late UE classification for the RCS leakage event. This issue was evident in post-event training and the HPES and RCET evaluations.
- The RCET concluded that NNECO failed to perform a comprehensive review of Millstone EAL event-based tables, as committed to at the February 1992 Enforcement Conference on EAL classification issues. NNECO subsequently reviewed the timeliness and effectiveness of the prior review of EAL and barrier failure table, as well as the commitments made in the February 1992 Enforcement Conference presentation and response to the associated Notice of Violation. NNECO concluded that a review of barrier failure reference tables (the source of the 1992 classification drill deficiencies) was completed in May 1992. With respect to the event-based EAL tables (the source of the present problem), a review was completed in conjunction with a transition to revised NUMARC tables. However, no table changes had been implemented by April 1994 because the transition to NUMARC tables necessitated an expanded scope of effort. Routine annual changes to the EAL tables have occurred.
- The communication process between those who develop and those who use the EAL Tables may not be effective.
- SROs had knowledge weaknesses with respect to UE classification. The RCET attributed these weaknesses to simulator training that is not sufficiently effective to reinforce UE classifications.

3. Corrective Steps That Have Been Taken and the Results Achieved (Violation A):

In response to this violation, NNECO implemented a number of actions to evaluate the performance issues associated with the events and to address their implications.

A. Initial Assessment

Beginning on April 25, 1994, NNECO emergency preparedness personnel conducted assessment activities related to the

EAL classification issues. Reports were issued to the Directors of Training and EP on May 1 and 4, 1994.

B. Human Performance Enhancement System (HPES) Evaluation

An HPES analysis was performed to provide an objective assessment of the cause. The review was commenced on April 29, 1994. Preliminary results were discussed with the NRC on May 5, 1994. A final report was issued to the Unit Director on May 26, 1994, addressing causal factors and opportunities for consideration.

C. EAL Training

Four EAL refresher training sessions were conducted on April 28 and 29, 1994, to reinforce proper use of the UE portion of the tables. These sessions were attended by Duty Officers, ODSEOs, and Operations Senior Reactor Operators (SROs). Attendees completed a worksheet of five classification scenarios. A number of questions and suggestions were also received from attendees. Answers to the questions were provided to SRO license holders. As a result of these questions, an EAL Table change was implemented to provide additional clarity to four UE categories. The Unit Director also attended these refresher sessions and made clear his expectations regarding conservative classification determinations.

D. Independent Emergency Preparedness (EP) Assessment

The EP Director requested a staff member of the North Atlantic Energy Service Corporation to provide an independent assessment of the events. His report, dated May 3, 1994, included observations and recommendations related to event classifications, reportability determinations, technical specification verifications, and communication of lessons learned.

E. TS Application Diagnostic

An assessment was administered to Millstone Unit No. 2 Operations senior licensed personnel focusing on TS application, event classification, and reportability. Significant weaknesses were individually remediated and reexamined. The results will also be factored into future training cycles.

F. RCE Team

On May 10, 1994, the Unit Director formally assembled an RCET to review the emergency preparedness aspects of the events (including recurring classification issues, the operational aspects of the events, and the adequacy of the response to the events (including an assessment of root cause evaluation capability). The RCET included independent peer evaluators at the Unit, Operations, and Training management level. The RCET conducted new interviews and evaluations and issued a report on May 24, 1994. The status of the RCET long-term (LT) actions, discussed during the enforcement conference are provided by number (e.g., LT-1 through LT-16) in appropriate sections of this attachment.

G. Pre-Startup Actions

NNECO management decided to maintain Millstone Unit No. 2 shutdown until the implications of these events were fully considered.

NNECO management also committed to additional short-term resources for Unit No. 2. These personnel were drawn to the extent possible from outside the Unit No. 2 organization to enhance capabilities and performance during completion of the operating cycle and to prepare for the upcoming refueling outage. This includes additional personnel to assist on-shift crews (one advisor per shift crew) and to assist key unit management personnel.

H. Additional Actions Completed

In addition to or in conjunction with the immediate actions taken as described above, the following corrective actions have been completed:

- Prior to startup, all SRO licensed Operations Department personnel, Duty Officers, and ODSEOs reviewed the EAL tables to ensure that they each understood the types of events that constitute a UE classification.
- EAL classification refresher training and testing was completed prior to startup, as discussed above. Questions and suggestions were received as part of this training.

- Following the preceding action, additional EAL table training on the needed clarifications was conducted (LT-8: completed).
- As part of the refresher training and testing effort, and consistent with a short-term recommendation of the RCET, NNECO performed, prior to unit startup, a multi-disciplinary review of the Millstone Unit No. 2 EAL tables. The review group included an Operations SRO, a Training representative, and an EP representative.
- An EAL table change has been implemented to clarify TS time limits for the RCS leakage criterion and to clarify shutdowns required by TS. AOP-2556, as revised, also incorporates guidance for EAL classifications.
- NNECO has, as recommended by the RCET (LT-1), established a process to address future Unit No. 2 EAL Table clarifications arising during training and studies/reviews. An additional long-term action formalized this process across the other units (LT-1: completed).
- Consistent with an RCET recommendation (LT-2), the EP Director encouraged commonality between Haddam Neck and Millstone EAL tables. A lessons-learned review of EAL Tables for Millstone Unit No. 1 and Unit No. 3, and Haddam Neck, was completed (LT-2: completed).
- NNECO has modified, as recommended by the RCET (LT-9), the quarterly scenario classification testing schedule from four scenarios per quarter to at least eight scenarios per quarter (LT-9: completed).

We believe that these actions were sufficient to provide increased assurance that unusual events can and will be properly classified at Millstone Unit No. 2.

4. **Corrective Steps That Will Be Taken To Avoid Further Violations (Violation A):**

The following long term corrective actions are on-going or remain to be conducted:

- Expectations of SSs have been and will be reinforced (LT-11: due 12/31/95).
- NNECO previously identified the need to enhance the performance of the operating shifts and, specifically,

shift management. Ongoing improvement initiatives were already in place that will help to address the types of performance issues raised here. These include, for example, the Advanced Requalification Training (ART) program and the Unit No. 2 SRO supervisory skills development program.

The ART program was developed to improve the overall performance of Operations Department on-shift personnel. This three-week program was developed and implemented prior to the events of April 20-23, 1994, in recognition of the need to provide additional, concentrated training on communications, integrated plant operations, mental data processing, procedure effectiveness, self-verification, and teamwork. The implementation of the ART program will continue until all operating crews have completed the program (ongoing).

In 1993, Millstone Unit No. 2 management identified the need for supervisory skills training. To target training needs, a highly respected and experienced contractor was selected to help design a comprehensive development process. Evaluation instruments were chosen to determine a participant's (SSs and SCOs) knowledge of supervisory areas, his ability to demonstrate these skills in a controlled setting, and information on how the supervisor applies these skills on the job. The results of these evaluation instruments included a feedback session and the formation of an individual development plan to be executed with the assistance of the individual's direct supervisor. Both individual and group training needs were identified and individual development plans are in various stages of implementation (on-going).

- The transition to NUMARC event-based EAL tables is now expected to be implemented by January 1995. This date is contingent upon NRC approval of the revised EAL tables.
- No later than the requalification training cycle to be conducted after startup from the next refueling outage, simulator training and testing will be conducted to verify that SS's can correctly recognize and classify UEs and correctly apply TSAS 3.0.3 and the resulting classification requirements (LT-3: due 11/25/94).
- NNECO will ensure that all simulator lesson plans to be used for future training include cues so that instructors can reinforce emergency plan classifications during simulator training (LT-4: due 11/15/94).

- An ENRS terminal is available for use on the simulator and will be used on a periodic basis (LT-5: on-going).
- The Operations Manager will ensure that new SSs complete the NU Shift Supervisor initial training program. This training will include the lessons learned from the events of April 20-23, 1994. Incumbent SSs will continue to attend the shift supervisor continuing training program (LT-6: on-going).
- In accordance with an RCET recommendation (LT-7), the Training and Operations Departments will evaluate lessons-learned from these events for training impact using established processes (i.e., the Training System Development process) (LT-7: due 11/25/94). Lessons-learned training will be conducted no later than the first requalification cycle to be conducted after the startup from the next refueling outage.

5. **Date When Full Compliance Will Be Achieved (Violation A):**

NNECO is presently in full compliance with the requirements of 10CFR50.47(b) and 10CFR50, Appendix E pertinent to this violation. NNECO was in compliance with these requirements prior to returning Millstone Unit No. 2 to service following the events of April 20-23, 1994.

Restatement of Violation (Violation B):

- B. Millstone Unit 2 TS 3.1.3.1.a requires that if a CEA is immovable or untrippable, the shutdown margin requirement of TS 3.1.1.1 must be satisfied within one hour.

Contrary to the above, on April 23, 1994, at 1:15 a.m., CEA #65 was found to be immovable, and the licensee failed to ensure the shutdown margin requirement of TS 3.1.1.1 was satisfied until the control rods were manually tripped at approximately 2:50 a.m., thus exceeding the one hour requirement of TS 3.1.3.1.a. (01023)

1. **Admission or Denial of the Alleged Violation (Violation B):**

NNECO admits this violation.

2. **Reasons for the Violation (Violation B):**

- A. Immovable CEA (EAL Classification)/Failure to Comply with Shutdown Margin Requirements Chronology

On April 22, 1994, at 2105 hours, a plant shutdown was commenced in preparation for a planned maintenance outage to repair a degraded reactor coolant pump seal. At 2113 hours, while inserting Group 7 Control Rods for Axial Shape Index (ASI) control, a Group 7 Control Rod (CEA #65) indicated no movement by reed switch indication. The reactor power decrease was stopped and the Instrumentation & Controls (I&C) Department was contacted to assist in determining the problem with CEA #65. Subsequent troubleshooting by an I&C technician provided indications that CEA #65 was moving and that the CEA reed switch position indicator for CEA #65 was inoperable.

Accordingly, TSAS 3.1.3.3.b for the inoperable reed switch indicator was entered at 2143 hours, and the plant shutdown recommenced using boration only to 70% power in accordance with the TS requirements. The operators performed a core map of reactor flux distribution at 2250 hours, which appeared to confirm that the rod was not out of position. (The initial core map, in fact, did not and could not reveal a rod misalignment because the CEAs were not low enough in the core at this time to affect the results.)

Following shift turnover, the Group 7 control rods were inserted for ASI control over the next two hours as reactor power was reduced. At approximately 0056 hours

on April 23, 1994, the Reactor Engineer was contacted by the SS to provide assistance concerning anomalous readings among the Reactor Protection System (RPS) Channels. Subsequent comparison of ASI and nuclear instrumentation power among RPS Channels led the control room operators to declare CEA #65 inoperable at 0115 hours, when TSAS 3.1.3.1.a, "Inoperable CEA" was logged.

TSAS 3.1.3.1.a also requires that compliance with the shutdown margin requirements of TS 3.1.1.1 be determined within one hour. TS 3.1.1.1 specifies that if the available shutdown margin is not within limits, operators must initiate boration to achieve required shutdown margin.

The Duty Officer was contacted by the Control Room at about 0130 hours. The Reactor Engineer entered the Control Room at approximately 0135 hours and began reviewing applicable computer printouts and instrumentation. At 0150 hours, the Reactor Engineer confirmed that CEA #65 was still fully withdrawn and informed the SS of this condition. At approximately 0230-0235, the Duty Officer and the Operations Manager arrived in the Control Room from their homes. A discussion regarding shutdown margin then took place in the SS's office between the SS, the Operations Manager, the Duty Officer, and the Reactor Engineer, and it was determined that shutdown margin could not be determined because of the inoperable CEA and lack of any procedural guidance. They decided to trip CEA #65 and the reactor manually. Shortly thereafter, at 0248 hours, the plant was put in a known condition by removing power to CEA #65, which inserted fully (verifying that it was in fact trippable). This was followed at 0250 hours by a Manual Reactor Trip. With all CEAs fully inserted, shutdown margin was verified.

B. Root and Contributing Causes:

The reasons for this violation were discussed in NNECO's information letter dated May 26, 1994. The RCET concluded that a global root cause applicable to this event was failure to recognize the significance of safety related events. As discussed during the June 9, 1994, Enforcement Conference, the following additional issues and contributing factors related to the CEA movement/Technical Specification violation have been identified.

- During the immovable CEA event, the effectiveness of shift management and SS ownership of the plant were questionable.
- A lack of guidance contributed to inaccurate I&C troubleshooting of CEA #65 on April 22, 1994.
- A lack of procedural guidance for an immovable rod and determination of shutdown margin contributed to the inability of the shift to analyze and correct the stuck rod/shutdown margin event.
- An apparent deficiency in SRO licensed operator knowledge of reactor theory was noted during the CEA event.
- Plant management representatives did not fully appreciate the implications of the immovable CEA event and did not provide sufficient oversight support.
- The failure mechanism for CEA #65 should be determined to ensure that a similar failure mechanism is not likely to affect other CEAs.
- SROs had specific knowledge weaknesses in reactor theory.
- SROs had knowledge weaknesses in shutdown margin and rod operability TS requirements.

3. **Corrective Steps That Have Been Taken And The Results Achieved (Violation B):**

In response to this violation, NNECO implemented a number of actions to evaluate the performance issues associated with this event (and the previously discussed events), and to address their implications prior to unit restart. Most significantly, the Unit Director formally assembled an RCET on May 10, 1994. The RCET issued a report on May 24, 1994, with a number of recommendations for short term and long term corrective actions. As discussed in connection with the event classification violation, management decided to maintain the unit shutdown until the implications of the event were fully considered. All short-term recommendations of the RCET were implemented prior to unit entry into Mode 2. As also discussed above, management additionally committed augmented short-term resources for Unit No. 2 to enhance performance during completion of the operating cycle and to prepare for the refueling outage.

In addition to the immediate actions, and based upon the completed evaluations of the event, the relevant departments at Millstone Unit No. 2 have taken the following specific corrective actions.

- A troubleshooting plan has been developed for I&C personnel for use in troubleshooting CEA position problems.
- A review of the Section 3.0 TS Action Statements was completed to identify that adequate procedural guidance exists. A review of all Section 4.0 TS Surveillance Requirements was already in progress and is expected to be completed prior to startup from the 1994 refueling outage.
- Abnormal Operating Procedure AOP-2556 has been revised to provide actions to be taken for CEA malfunctions, and immovable and untrippable CEAs. The procedure addresses shutdown margin determinations with an immovable CEA, TS Action Statement requirements, and event classifications.
- Training was conducted on the revised AOP-2556 discussed above. This training included shutdown margin determination and rod operability issues. These topics will be reinforced in future Licensed Operator Regualification Training (LORT) cycles.
- Diagnostic evaluations and refresher training in the area of reactor theory and TS knowledge were completed. NNECO intends to continue reactor theory training as part of LORT.
- NNECO determined that the failure of CEA #65 was due to the failure of a silicon control rectifier in the power switch in the coil power programmer. This failure is considered to be of very low probability. No additional actions beyond normal surveillance were warranted.
- Consistent with one of the RCET's long-term recommendations (LT-16: completed), a copy of the RCET report has been sent to the Manager of Nuclear Safety Engineering for an evaluation of the generic implications of the lessons-learned. This evaluation was completed and the results have been provided to NNECO management, with action recommendations. Copies of the RCET report have also been sent to the Unit Directors at Unit Nos. 1 and No. 3, and Haddam Neck.

4. **Corrective Steps That Will Be Taken To Avoid Further Violations (Violation B):**

The following long-term corrective actions are on-going or remain to be completed.

- The RCET recommended positive and public recognition by management of critical self-assessment and questioning attitudes (LT-10: due 6/30/95). This is a statement of philosophy that NNECO management fully supports. Reinforcing these behaviors and attitudes will continue as a means to establish a quality culture. Among other outlets, NNECO will, to this end, utilize the station newsletter "To The Point," as well as "Spot Recognition" awards.
- The Unit Director will continue to meet frequently with SSs to reinforce expectations of the SS position (LT-11: due 12/31/95). NNECO believes the RCET recommendation in this regard is already being satisfied and management will continue this approach. The Unit Director already visits the control room frequently. Open, candid communications with unit management will be encouraged.
- NNECO plans to add a dedicated Shift Technical Advisor to each shift (LT-12: due 12/31/95).
- The RCET recommended an assessment of root cause assessment capabilities and an on-the-job training program in this area (LT-13: on-going). NNECO is considering measures for improvements in this area and is not yet prepared to commit to details. However, NNECO management agrees with the thrust of the recommendation. At this time, NNECO is considering, for example, establishing an event evaluation team concept.
- The RCET recommended clear guidance be developed addressing issues of removal from licensed duties (LT-14: on-going). NNECO will evaluate this recommendation.

5. **Date When Full Compliance Will Be Achieved (Violation B):**

NNECO is presently in full compliance with the requirements of Technical Specification 3.1.3.1.a and Technical Specification 3.1.1.1. pertinent to this violation. Compliance was restored prior to returning Millstone Unit No. 2 to service following the events of April 20-23, 1994.