



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 24, 1993

MEMORANDUM FOR: William H. Bateman, Chief
Regional Operations Staff
Office of the Executive Director
for Operations

FROM: John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

SUBJECT: BRIEFING PACKAGE FOR THE DECEMBER 9, 1993 COMMISSION
BRIEFING BY NORTHEAST UTILITIES OFFICIALS -
SEABROOK, AND MILLSTONE UNITS 1, 2, AND 3

Enclosure 1 is background material for the December 9, 1993, Commission briefing by Northeast Utilities (NU). As requested, we are supplementing the material presented in our previous briefing package dated November 3, 1993. The material contains slides to be presented by NU and staff views as appropriate. Each section identifies NU's material and staff material related to the subject. Enclosure 2 contains updated profiles for B. M. Fox, J. F. Opeka, and T. C. Feigenbaum.

John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Briefing Package
2. Updated Profiles

cc w/enclosures:

T. Murley	A. De Agazio
F. Miraglia	D. Jaffe
L. J. Callan	A. Wang
W. Russell	J. Andersen
S. Varga	G. Vissing
J. Calvo	V. Rooney

L. T. Doerfflein, RI
W. Dean, OEDO

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ENCLOSURE 1

**MATERIAL RELATING TO THE
DECEMBER 9, 1993, COMMISSION
BRIEFING
NORTHEAST UTILITIES
SEABROOK AND
MILLSTONE UNITS 1, 2, AND 3**

PROPOSED AGENDA

COMMISSION MEETING WITH NORTHEAST UTILITIES

DECEMBER 9, 1993

(PROJECTED TIME - 10 MINUTES PER "BULLET")

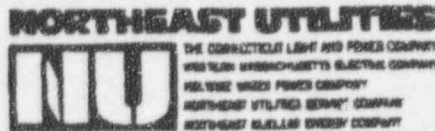
- o SAFETY PERSPECTIVE VS. COST B. M. Fox
- o LESSON'S LEARNED FROM PERFORMANCE ISSUES J. F. Opeka/T. C. Feigenbaum
 - MILLSTONE 1 - LICENSED OPERATOR REQUALIFICATION
 - MILLSTONE 2 - LETDOWN VALVE AND PLANT TRIPS
 - MILLSTONE 3 - SUPPLEMENTAL LEAK COLLECTION
AND RELEASE SYSTEM
 - SEABROOK - PLANT TRIPS
- o PERFORMANCE ENHANCEMENT PROGRAM J. F. Opeka
 - OVERALL PROGRESS
 - VERIFICATION/VALIDATION
- o REORGANIZATION J. F. Opeka
 - PERSONNEL CHANGES
 - ENGINEERING INTEGRATION
- o EMPLOYEE CONCERNS J. F. Opeka
- o BUDGET (O&M AND CAPITAL COSTS/TRENDS) J. F. Opeka
- o NORTHEAST UTILITIES ELECTRICAL DEMAND FOR THE B. M. Fox
 - NEXT 10 YEARS AND PLANS TO MEET THIS DEMAND
 - (PLANT CLOSINGS, ETC.)

SAFETY PERSPECTIVE

- NOT ADDRESSED IN THE NOVEMBER 3, 1993, BRIEFING PACKAGE
- FIRST PAGE IS NORTHEAST UTILITIES' PRESENTATION SLIDE
- THE NEXT DOCUMENT IS THE CORPORATE POLICY (J. OPEKA)
- THE LAST DOCUMENT IS A PRESENTATION BY B.M. FOX TO AN INPO MEETING ON NOVEMBER 4, 1993

SAFETY PERSPECTIVE

- **We have always believed that safety is the only number 1 priority; our communication regarding the relationship between safety and economic issues has not always been clear**
 - **The 2-CH-442 event was caused, in part, by not clearly communicating this relationship**
- **Safety and economic performance are not competing goals, they are linked and dependent**
 - **Conservative decision making will lead to better economic performance**
- **This message is being sent via many channels, and is being practiced:**
 - **Executive Vice President morning meeting focus**
 - **Operability determination process changes**
 - **Revisions to the Management Incentive Program**
 - **B. M. Fox speech to Industry CEOs**
 - **Multi media communication throughout the Nuclear Group**



September 10, 1993
JFO-93-G-231

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TO: Nuclear Group Vice Presidents, Directors, Managers, and Supervisors
FROM: *John G. O'Neil*
J. G. O'Neil
(Ext. 5323)
SUBJECT: Millstone Unit No. 2 Independent Review Team Results

Most of you are no doubt aware of recent events at Millstone Unit No. 2 which indicate a negative trend in overall Millstone Unit No. 2 performance. These events include multiple instances of valve mispositioning, preventable automatic reactor trips, actuation of the reactor protection system while shutdown, and a reactor coolant system leak from an unisolable valve in the letdown system. This valve had been the subject of ongoing maintenance activity over several months to repair a leak. The leak rate increased significantly when one of the body-to-bonnet studs broke. This one event is particularly serious because the potential existed for an unisolable loss of coolant accident if additional studs had failed.

In response to these events, I commissioned an Independent Review Team (IRT), chaired by Eric DeBarba, to assess, independent of the Millstone Unit No. 2 organization, this event and whether the basis for continued operation of Millstone Unit No. 2 is sound, and also to develop recommendations to improve performance. The review focused on the appropriateness of management actions, root cause evaluations, and corrective actions to determine their appropriateness.

The IRT presented the results of their assessment to the nuclear group vice presidents and directors and Millstone Unit No. 2 managers on Friday, September 3, 1993, and has since completed its report. The report is being sent today to the NRC. The transmittal letter and report are attached to this memorandum.

The IRT found the basis for continued operation of Millstone Unit No. 2 to be sound given the actions taken to date. However, the IRT also found deficiencies in several areas, including operational philosophy, management oversight, and root cause determinations. Recommended actions, immediate, short-term, and long-term, were developed by the IRT and are included in the report. These recommendations are being implemented.

The seriousness with which I take these events and the report cannot be overstated. I am giving this report wide distribution. Each of you should read this material carefully and take to heart the lessons we must learn as an organization from this event. Each of you also should discuss these lessons with your subordinates, peers, and management. I encourage you to discuss openly the IRT's assessment, and I expect that you will bring any questions you may have to the attention of your management.

Nothing is more important than the safe, conservative operation of our nuclear units. The events which have occurred at Millstone Unit No. 2 indicate that this philosophy has not, at all times, guided our actions. Let me be very clear: **WE WILL OPERATE OUR NUCLEAR UNITS SAFELY OR NOT AT ALL. OUR STANDARDS OF PERFORMANCE MUST BE CONSISTENT WITH THIS PHILOSOPHY.**

cc: T. C. Feigenbaum

BERNARD M. FOX
PRESIDENT AND CHIEF EXECUTIVE OFFICER
NORTHEAST UTILITIES

INPO CEO CONFERENCE

INPO OFFICES
ATLANTA, GEORGIA
NOVEMBER 4, 1993

There's no question that the subject of this plenary session--"Actions to Improve Economic Performance and Results"--is critical to the entire nuclear-power industry.

The electric utility industry is being challenged as never before by a growing array of fierce competitors--our own customers, neighboring utilities, independent power producers, and adjoining states and even other countries trying to lure away our customers.

We find ourselves responsible today for a nuclear technology which accounts for about 22 percent of all the electricity generated in the United States. This issue is critical to us, not only in our role as nuclear-power executives, but, more significantly, in our role as major suppliers of a vital resource, namely, electricity.

Many of us have already had to deal with the management and leadership challenges posed by these powerful competitive forces.

We've found that floodgates opened to competition are requiring us to become more flexible and quick-acting, to offer customers more options, and to realize that a satisfied customer is the key to our survival. This is as it should be, in my opinion. However, we're also finding that we must succeed even as we're required to provide a growing number of subsidies and programs which public policymakers place on our shoulders, with no similar burden being placed on our competitors.

As an industry, we're responding to these challenges with new marketing initiatives, new rate designs, and extremely aggressive restructuring of our companies. In restructuring, Northeast Utilities, for instance, has reduced its total work force over the past five years by almost 15 percent, and we expect to complete an additional 8-to-10 percent reduction by early next year. And we've accomplished this overall corporate reduction even as we've increased the size of our nuclear work force by nearly 15 percent.

Unquestionably, the future of nuclear energy will be determined by fundamental economics. Nuclear energy's clearly demonstrated societal values--the extraordinary air-quality benefits and the extraordinary strategic benefit of reduced dependence on imported oil--will help but cannot ensure the survival of the industry. In an energy-supply industry where competitors of all shapes and sizes lurk around every corner, the single most compelling key to longevity will be sound economics; in a word, a busbar price that's competitive!

The 64-dollar question is--"What strategy provides the greatest likelihood of success in such an environment?"

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The approach we're pursuing at NU begins with safe and conservative operating decisions as the primary priorities. Clearly, the approach can result in cost increases in the short term, but, just as clearly, we believe this strategy is the only one offering a hope of long-term success. We believe that a zealous commitment to safe and conservative practices will lead to excellence in operations, which translates into the best possible plant economics.

Now, let's not kid ourselves about the difficulty of implementing this strategy. Our employees know we live in a competitive world. They know that no business or facility will survive unless it meets the test of good economics, and that nuclear-power units are no exception. They've seen utilities shut down nuclear units in the recent past. They're clearly aware that nuclear O&M and capital costs have grown at an unsettling pace in the 1980s and 1990s. They've read and heard in the local media about public utility commissions demanding economic justification for continued operation of these units. They understand that their careers and their livelihoods are at stake.

That leaves management with an extraordinarily difficult job. We must inculcate an inviolate and unbendable commitment in our work force to conservative decision-making, even if there may be some short-term erosion of nuclear economics, in the face of deeply felt employee concerns about their futures. We must overcome the perceived--and I emphasize, perceived--notion that an intense focus on production goals alone will enhance the survivability of a specific unit. We're working mightily at Northeast Utilities to deal with this dilemma.

As CEOs and senior managers of nuclear facilities, it's our responsibility to use every available forum to keep hammering at the absolute need to place safety and conservative operating philosophy above all other targets. It's our responsibility to deal with what might be a natural tendency of employees to worry that conservatism is the problem, rather than the solution, in the competitive world we face today.

This is an extremely difficult, but absolutely unavoidable leadership challenge. Our role is defined by the ethical demands that have been placed upon all of us as managers of the nuclear technology, a technology which is incredibly valuable but extraordinarily exacting. But our role in demanding an unerring commitment to a conservative operating philosophy also flows from what I believe to be the simple economic realities of the nuclear-power industry. It's possible that the nuclear-power industry won't survive in this highly competitive horse race. But I can almost guarantee that it won't survive unless every operating decision and program is approached with nuclear safety as the first priority.

Without such a conservative philosophy, I'm certain that we'll see errors made which will surely lead to further loss of public and political support for our beleaguered industry. Such a loss would then erode the economics of running these facilities to such an extent that their demise becomes inevitable.

We must do everything in our power to make sure this does not occur!

Recently we had an experience at Northeast Utilities, which I believe captures the essence of the dilemma facing each and every one of us and which demonstrates clearly how well-meaning people could allow a potentially dangerous situation to unfold.

On August 5 of this year, our Millstone 2 unit was taken off line after experiencing an increase in reactor coolant-system leakage to about four gallons per minute. The leakage occurred when one of four studs broke in a letdown-system isolation valve, which could not be isolated. The valve had been leaking over a period of about two months at generally less than one gallon per minute, and a number of repairs relying upon both liquid-seal injection and peening had been attempted.

Following the unit's shutdown, we formed an Independent Review Team (IRT) and undertook a retrospective review of the entire two-month period leading up to the stud failure. The IRT was made up of some of our best personnel who conducted the review with extreme intensity because of the recognition that failure of additional studs could have resulted in a small-break loss-of-coolant accident.

Although there were a number of important conclusions and recommendations on this event, which we're following up on, the underlying, clearly emphasized issue was the lack of a sufficiently conservative operating philosophy at Unit 2. Over a ten-week period, the valve had been injected 30 times with sufficient success that we sometimes went a couple of weeks with little, if any, leakage. A number of people in the organization knew of the abnormally large number of injecting and peening efforts.

What we did not know then, but what we do know now as a result of intensive testing, is that the studs can be stressed--more significantly than was generally thought in the past--by peening with less than adequate controls. In other words, too much peening on the outside of the valve can lead to failure of studs on the inside.

We've already shared these preliminary test results with the industry through another Nuclear Network Update and with the NRC. I urge all of you, my CEO colleagues, to make sure that our network update is being properly communicated in your organization.

Our brutally candid Independent Review Team underscored that a properly conservative operating philosophy would have done a number of things, which would have dramatically reduced the risks involved in this activity.

First, the inability to isolate this valve should have been considered more fully in our maintenance decisions.

Second, it would have recognized that such a large number of repair attempts is inordinately high and that a shutdown for valve replacement was indicated.

And third, a safety evaluation should have been performed to prompt us to explicitly address the relevant safety issues.

The full report is available to anyone who'd like to request it from me. I could say much more, but--in a nutshell--we concluded that the Unit 2 staff was too focused on production goals with a consequent loss of conservatism in decision-making.

You might well ask, "How could this have happened? In retrospect, these things are quite obvious." The question is a fair one, particularly in light of a major initiative called PEP--"Performance Enhancement Program"--that we've had under way for more than a year to improve nuclear operations.

Unit 2 and our other Millstone units have been recovering from a tough couple of years. We've worked hard to focus people's attention on those Key Performance Indicators (KPIs) identified by the NRC and INPO as critical. And we've been seeing progress in almost every one of the key areas of performance being monitored. I believe this focus on KPIs was at least a contributor to our failure to recognize the significance of extensive peening and injection of a leaking valve.

We were being "eternally vigilant" on the items we were measuring--since they were very important items--but we subsequently found that we were not as "eternally vigilant" on the overall operating philosophy of the unit.

We've now initiated aggressive corrective actions--immediate, short-term, and long-term--to address these and other conclusions of the Independent Review Team. We've stressed again and again the basics of a healthy nuclear-safety ethic. And I'm pleased to report that we've already seen progress!

I'm responding to one of the team's conclusions today. They felt strongly that the lessons we learned from this experience should be shared widely, not only within the company, but with the entire industry as well. I want to thank Zack Pate for providing me with this opportunity to take this step to help carry out the team's recommendation.

To be sure, cost containment and production goals will remain essential to our success as individual companies and as an industry. But, at NU, we've been reminded, quite painfully, of an extremely valuable lesson.

We need to communicate our vision and our expectations regarding nuclear safety and their relationship to economics, and we need to communicate them again and again and again. We need to celebrate and enjoy our successes, like improving KPIs, but we must also be eternally vigilant that improving indicators don't become a substitute for sound, conservative management.

As I've recalled this event, I've been reminded of the slogan used many years ago by a famous manufacturer--"Better Living Through Chemistry." Maybe we should adapt that slogan for our industry, so that it says, "Better Performance and Economics Through Conservative Decision-Making."

It's a bit wordy, but it gets the point across.

I hope you'll find that our experience is useful to share with your organizations. We all need to work together to learn and relearn the lesson that a safe and conservative operating philosophy forms the only viable path to the economic survival and success of nuclear electric generation.

Thank you.

PERFORMANCE ISSUES

- PERFORMANCE ISSUES WERE ADDRESSED IN THE NOVEMBER 3, 1993, PACKAGE AS FOLLOWS:

MILLSTONE 1 - PAGE 2

MILLSTONE 2 - PAGE 3

MILLSTONE 3 - PAGE 4

SEABROOK - PAGE 2 OF THE
SEABROOK SECTION

- THE FIRST NINE PAGES HEREIN ARE NORTHEAST UTILITIES' PRESENTATION SLIDES
- THE NEXT DOCUMENT (2 PAGES) IS FROM A NOVEMBER 8, 1993, PRESS BRIEFING BY T. MARTIN
- THE LAST PAGE IS A STAFF SUMMARY OF THE SEABROOK, CYCLE 3, OPERATING HISTORY

Millstone Unit 1 Licensed Operator Requalification

- **Issue**
 - September 1991 Unsatisfactory program rating
 - September 1992 Unsatisfactory program rating
 - April 1993 NRC Team Inspection: Millstone requalification program weaknesses and violations cited
- **Current Status**
 - The effectiveness of the Millstone Unit 1 requalification program has been restored: 100% pass rate and no program weaknesses identified during recent NRC examinations
 - Personnel and Nuclear Training Department organization changes are designed to ensure the continued improvement and success of all units' training programs

Millstone Unit 1 Licensed Operator Requalification (Cont.)

- **Lessons Learned**
 - **Critical, comprehensive self-assessment and management monitoring and oversight of the training function are necessary for success**

PERFORMANCE ISSUES AND LESSONS LEARNED

Millstone Unit 2 2-CH-442 Valve Repair

- **Issue**
 - Repeated on-line repair efforts resulted in increased, unisolable leakage with significant potential consequences (small break LOCA)
- **Current Status**
 - Progress toward implementing Independent Review Team recommendations is on schedule
 - Newly appointed Unit Director is communicating expectations, including a conservative operating philosophy
 - Experience and lessons learned have been widely communicated within NU and at the highest levels in the industry
 - Recent appointment of a new Senior Vice President at Millstone Station

Millstone Unit 2 2-CH-442 Valve Repair (Cont.)

- **Lessons Learned**

- **Management expectations regarding conservative operating philosophy must be continually stressed and effectively implemented**
- **Performance monitoring has its limitations**
 - **Small changes in performance indicators may be indicative of significant performance issues**
 - **Not a substitute for management oversight and rigorous self-assessment**

PERFORMANCE ISSUES AND LESSONS LEARNED

Millstone Unit 3 Supplemental Leak Collection and Release System (SLCRS)

- **Issues**

- In September 1992, the SLCRS was determined to have been inoperable
 - Millstone Unit 3 was manually shut down
 - Corrective measures were identified and implemented
 - Escalated NRC enforcement action was taken
- In September 1993, certain SLCRS features were identified via enhanced testing which rendered the system inoperable
 - Enforcement discretion was justified, requested, and issued
 - License amendment was requested to obviate enforcement discretion

**Millstone Unit 3 Supplemental Leak Collection and
Release System (SLCRS) (Cont.)**

- **Current Status**
 - License amendment request is being processed
 - Comprehensive independent assessment of SLCRS issues has been performed
- **Lessons Learned**
 - Integrated testing is an important tool to confirm system operability or reveal deficiencies
 - Any further changes should reflect the low safety significance of the system

**[Additional (as appropriate) to be provided upon completion of
Yankee SLCRS assessment]**

PERFORMANCE ISSUES AND LESSONS LEARNED

Seabrook Plant Trips and Personnel Error [To be Modified]

- **Issue**
 - A repetitive pattern of personnel errors has recently been experienced
 - An unacceptably high number of reactor trips have occurred this fuel cycle
- **Current Status**
 - The recommendations of the Personnel Error Response Team are being implemented; recommendations deal with cultural, programmatic, and management oversight issues
 - A trip reduction plan has been developed and is being implemented; plan includes the identification of situations where a single failure will cause a plant trip.

Seabrook Plant Trips and Personnel Error (Cont.)

- **Lessons Learned**

- **An attitude that regards personnel error as unacceptable must be instilled**
- **Senior Management must monitor and critically assess organizational performance to ensure that underlying issues are being effectively addressed**
- **Management must be provided effective tracking tools that are used consistently across the organization**
- **External sources of information e.g. NRC, INPO, are equally valuable as internal sources when assessing organizational performance**
- **Management must not only identify corrective actions, but must also design methods to follow up and measure the effectiveness of those corrective actions**

Seabrook Plant Trips and Personnel Error (Cont.)

- Long-term procedure compliance can only be achieved if management reinforces its expectations and if the quality of procedures is enhanced to ensure ownership by the operators/workers
- A plant reliability program must be instituted which sensitizes all personnel to those components and activities which have the potential to cause a trip
- The technical specifications (surveillance intervals) must be modified to reduce the amount of time the plant is placed in a condition where it is vulnerable to a trip during surveillances
- Design changes must be implemented to install redundant components or special bypass test equipment to minimize trip vulnerability during surveillance activities
- The same aggressiveness must be applied in resolving human performance issues as hardware issues

Tim Martin News Media Briefing Transcript
Seabrook Issues
November 8, 1993
Page 1 of 2

Seabrooks' overall performance is mixed with some recent signs of declining. The personnel are generally well trained and they respond to events very well. There has been signs of a large number of plant shutdowns and trips precipitated by hardware [inaudible] much more than we've seen in the past.

Further, their operators and maintenance personnel error rate is excessive, much higher than it used to be. The problems in the plant are being identified but we've not seen effective corrective action. They have generally good management but they have missed some trends that have been spotted by the NRC.

To give you a feel for this, the last cycle, between refuelings, they only had one trip...one of the record runs in terms of the plant staying on line and working well.

During this cycle though, they had seven different reactor trips. Now the majority of those were hardware associated. Three of them were associated with personnel errors. But there were a number of other personnel errors that they and we identified and it is pretty clear to us that they have not gotten on top of these problems and as a result we have had some pretty serious dialogue with them.

Recently the licensee has again engaged in some significant efforts to turn this performance around. SALP for this facility is due in the very near future in fact probably next week you'll see it issued.

But that plant is not performing as well as it had been in the past.

Questions: I was just wondering how you would explain given the five plants NU operates, the differences between Millstone 1, 2 and 3, and Seabrook, versus CY, which you've given higher grades to? And second, Seabrook has had some problems on the heels of NU takeover, whether or not you've had any second thoughts on the transfer of the license?

Answers: First, to explain the differences, that is something we continually search for, but to be quite frank they're not unlike five different football teams. There is a certain interest in them competing against each other in trying to do better. Some licensees, some management teams, some staff might carry it off better than others.

Tim Martin News Media Briefing Transcript
Seabrook Issues
Page 2 of 2

There's a lot of effort going on to take some of the best people from one facility and to spread them to others to begin some new good ideas to the other facilities but these are human endeavors and not all humans are equal, and therefore, the performance of these organizations will say something about the quality of how they perform.

One of the things that you will see after management changes are made, performance changes won't immediately follow. It takes a while for a team to gain respect and confidence of the organization.

Back to the Seabrook Station issue, we're disappointed that Seabrook is not performing as well this cycle as it did the previous cycle but senior management there is again engaged in efforts.... I think they will pull out of it, and then we'll watch [inaudible]

They particularly have had a problem... overassignment of responsibility to individuals without having a robust oversight. All these plants are built on defense in depth. You don't count on one person.

Basically, if one person falls, the next person will spot it and will help to avoid it. You start getting that defense-in-depth thin, not spending time in the field, not watching the operators, not giving them feedback -- the organization is not putting together the trends... a lot of the this is being in the middle of a forest and not recognizing that you are taking a change in direction, so when you can't see the forest for the trees [inaudible]

Am I disappointed in Seabrook, yes. Do I believe that it has its roots in the NU takeover, No I don't.

They were working really hard to convince us as an organization that it was right to license them, that it was right to allow them to operate. With that pressure off them, I think they got complacent. And with time I think their performance did change in the wrong direction.

But if you look at the organization up there, there is very little impacted by NU. They basically left them intact. There was really very little change to the organization as a result of the takeover.

I have confidence in the senior management team up there once the problem gets to them. Unfortunately, they were not aware of some of these problems until very recently. They've identified their problem, they have been very critical of themselves and I think they are starting to get it in the right direction.

row/martin-transcript

CYCLE 3 OPERATING HISTORY

1. 11/13/92 Restart from second refueling outage
2. 11/27/92 Unit trip due to a failed resistor on overpower delta T (OPDT) setpoint card which caused setpoint to drift lower. When another channel was surveillance tested, the trip logic was madeup.
3. 12/13/93 Unit trip on trip of circulating water pumps due to high differential pressure on the travelling screens. The screens clogged with seaweed stirred up by an ocean storm. The screen motors were cycling between low and high speed. The resulting thermal overload trip of the motors on one screen resulted in the pump trip.
4. 01/03/93 Manual reactor trip. A high level in the 26A feedwater heater isolated the heater. The AO was directed to restore the heater. Because of inadequate procedures and training of the operators on an infrequently performed evolution, the AO failed to open the discharge valve on a heater before closing a bypass valve. This error was repeated two more times causing an isolation of all feedwater.
5. 01/14/93 A louvre on an air cooling system for the generator output busses came loose and introduced a ground fault on the bus causing the generator breaker to open resulting in a Unit trip.
6. 05/20/93 Automatic reactor trip. During a routine surveillance test of an MSIV, the valve failed to stop stroking at the 10% position. The closure resulted in a Unit trip. The valve failed to stop due to a stuck solenoid valve in the control system. During the cooldown, an unnecessary EFW actuation occurred because of poor control room communications. The operator failed to unisolate feedwater causing a low SG level ESF actuation when the EFW pump was secured.
7. 07/27/93 Automatic reactor trip. While performing surveillance testing of the SSPS train A, the I&C technician tested an unlit lamp as per to procedure. When the technician pushed the lamp socket, a short to ground resulted because of socket terminals having rotated. The short caused a transistor to fail on the test card which in turn drew down the power supply voltage to the cabinet. Numerous spurious signals were produced.
8. 08/22/93 The collector brush assembly on the station exciter failed (disintegrated) causing a trip of the station generator output breakers and trip of the RCPs on undervoltage resulting in a reactor trip. About four hours after the trip, the D RCP tripped on a ground fault when the pump was restarted. The fault was due to an insulating bushing being mispositioned on the containment penetration.

PERFORMANCE ENHANCEMENT PROGRAM (PEP)

- O THE PEP IS ADDRESS ON PAGE 1 AND
PAGE 3 OF THE NOVEMBER 3, 1993
BRIEFING PACKAGE**
- O THE MATERIAL HEREIN IS
NORTHEAST UTILITIES' PRESENTATION
SLIDES**

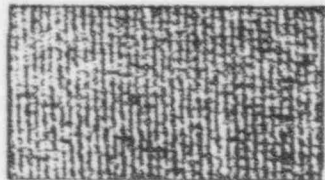
PERFORMANCE ENHANCEMENT PROGRAM STATUS

- Milestone and deliverable schedules continue to be met
- Program continues to proceed as planned with less-than-budgeted expenditures required
- Ongoing PEP activities
 - Engineering Design Backlog Reduction
 - Millstone 2: Complete
 - Millstone 1: Due 12/93
 - Haddam Neck: Due 12/94
 - Millstone 3: Due 1996
 - Procedure Upgrade
 - [Later] of 4176 (%) Procedures upgraded (X% upgraded during phase 1)
 - Design Basis Reconstruction
 - On schedule for completion in December 1994

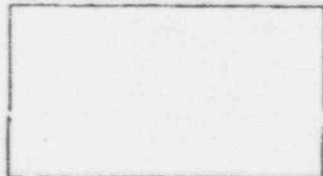
PEP STATUS (Cont.)

- **Significant Accomplishments**
 - **New Engineering Program Manuals**
 - **MOV:** Complete
 - **Erosion/Corrosion:** Complete
 - **EEQ:** Complete
 - **HELB:** Due 12/93
 - **Process Mapping of Design Change Process is complete (new Design Change Manual is in development)**
 - **Shutdown Risk Management procedures are in place**
 - **Root Cause Determination training has been enhanced**

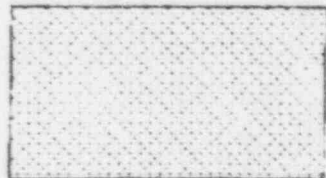
Action Plan Status



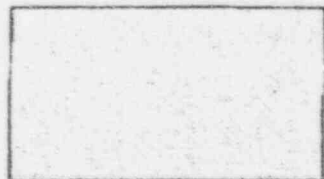
Action Plan will be completed by January 1994



Action Plan will be completed after January 1994



Action Plan has been completed



Action Plan has been completed and validated

ROOT CAUSE

Management Practices

Contributor Level

Management Style

Leadership

Policy

Cultural/ Professional

Action Plans

1.1.1 Management Skills Development (Completed)

1.2.1 Vision (Completed)

1.3.1 Recruitment (Completed)

1.4.1 Cultural Analysis (12/97)

1.1.2 Objectivity (1/94)

1.2.2 Empowerment (Completed)

1.3.2 Standardization (Completed)

1.1.3 Motivation (12/93)

1.2.3 Management Development (Completed)

1.3.3 Training & Development (Completed)

Status:

7 Action Plans Completed

4 Action Plans Scheduled for Completion by 1/94

1 Action Plan Scheduled for Completion After 1/94

93 Expenditures \$.6 M

93 Budget \$ 1.3 M

ROOT CAUSE

Programs & Processes

Contributor Level

Strategic Planning

Operational Planning & Budgeting

Work Programs & Processes

Action Plans

2.1.1 Strategic Planning (Validated)

2.2.1 Business Plan (Validated)

2.2.2 Budget (12/93)

2.3.1 Configuration Management (2/95)

2.3.2 Design Control Processes (1/94)

2.3.3 Engineering Programs (6/95)

2.3.4 Plant System Engineering (12/95)

2.3.5 Procedures (6/96)

2.3.6 Maintenance Rule & Reliability Centered Maintenance (3/97)

2.3.7 Licensing Basis (12/95)

2.3.8 IRG / HRG (Completed)

2.3.9 Engineering Backlog Reduction (Validated)

2.3.10 Design Consolidation (Validated)

Status: 4 Action Plans Completed & Validated
 1 Action Plans Completed
 1 Action Plan Scheduled for Completion by 1/94
 7 Action Plans Scheduled for Completion After 1/94

93 Expenditures \$ 16.3 M

93 Budget \$ 19.3 M

These Action Plans have developed to address other issues not identified by Root Cause Analysis

Functional Programs

Contributor Level

Nuclear
Operation
Services

Millstone
Point

Connecticut
Yankee

Corporate

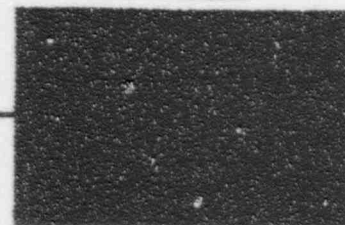
Action
Plans

4.1.1 MEPL / 3OM
(12/95)

4.2.1 Station
Organization
(4/94)

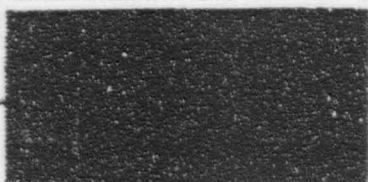


4.3.1 Station
Organization (12/93)



4.4.1
Site
Compliance
Licensing
(1/94)

4.1.2 Shutdown
Risk Management
(12/93)



4.2.2 Chemical /
Hazardous
Material Control
(1/95)

4.4.2 Measures of
Performance
(Completed)

4.1.3 Nuclear
Training
Enhancement
(1/95)

4.4.3 Employee
Concerns
Program
(Validated)

4.1.4 Emergency
Preparedness
Organization
(1/95)

Status:

1 Action Plan Complete & Validated
1 Action Plan Complete
3 Action Plans Completed by 1/94
5 Action Plans Scheduled for
Completion after 1/94

93 Expenditures \$ 3.9 M
93 Budget \$ 5.2 M

ROOT CAUSE

Performance Assessment

3.3.1 Assessment Philosophy (12/93)

Contributor Level

People/
Organizational

Assessment
Implementation

Management
Policies

Data
Analysis

Action
Plans

3.1.1 Reporting Relationship Validated

3.1.2 Assessment Personnel Enhancement (4/94)

3.2.1 Communications (Validated)

3.2.2 Finding Significance (Completed)

3.3.2 Corrective Action Execution (Completed)

3.4.1 Nuclear Tracking & Trending System (11/94)

3.4.2 Root Cause Evaluation & Assessment (Completed)

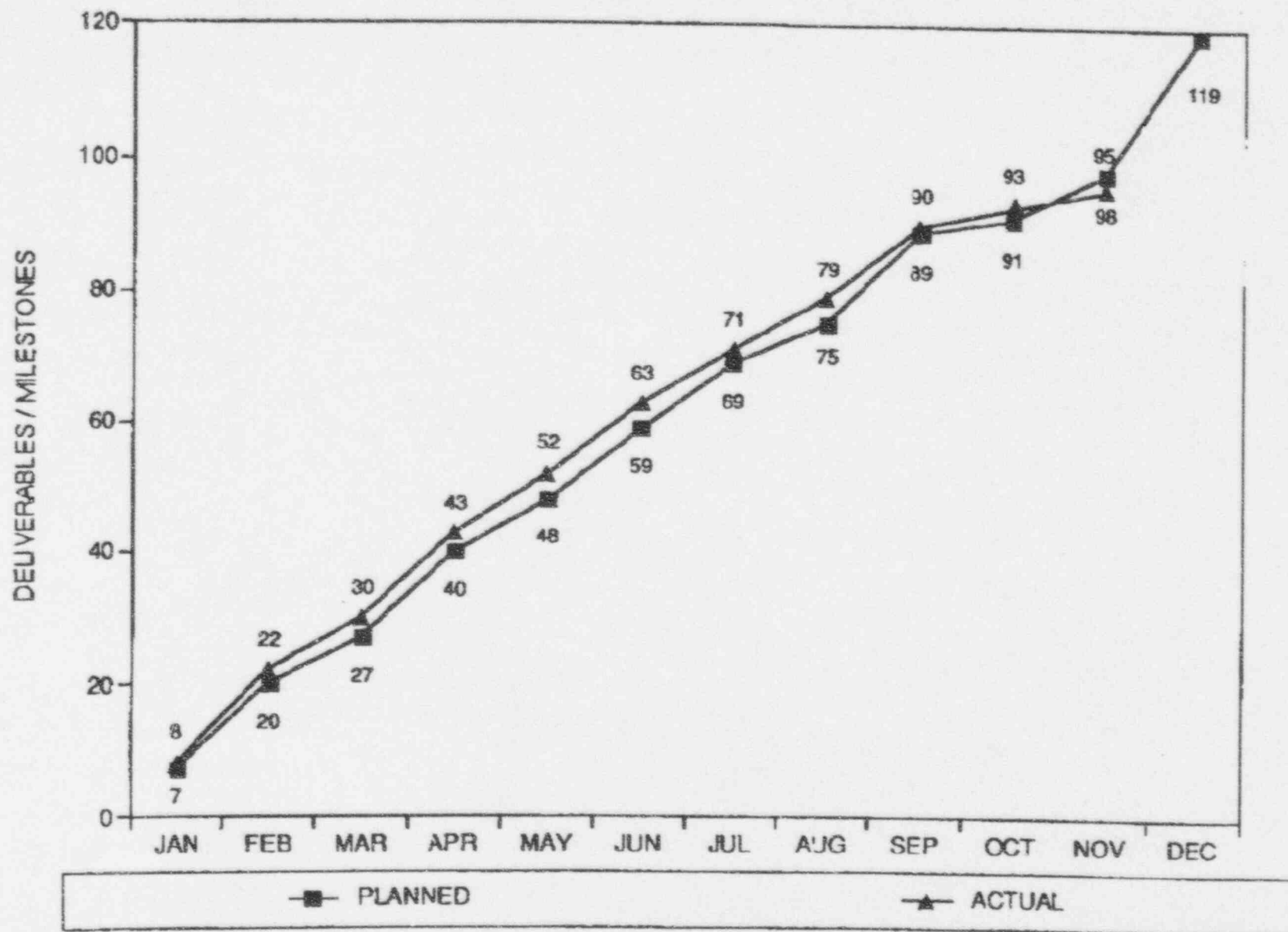
3.4.3 Integration of Assessment Results (Completed)

Status:

2 Action Plans Completed & Validated
4 Action Plans Complete
1 Action Plan Scheduled for Completion by 1/94
2 Action Plans Scheduled for Completion After 1/94

93 Expenditures \$.4 M
93 Budget \$.7 M

PEP 1993 DELIVERABLES / MILESTONES PERFORMANCE CHART



PEP Update

<u>STATUS</u>	<u>NO./%</u>
• Action Plans Completed and Validated	7 (17%)
• Action Plans Completed, to be Validated	11 (26%)
• Action Plans to Be Completed by 1/31/94	9 (21%)
• Action Plans Remaining	<u>15</u> (36%)
Total	42 (100%)

REORGANIZATION

- O THIS SUBJECT WAS NOT ADDRESSED IN THE NOVEMBER 3, 1993 BRIEFING PACKAGE**
- O THE FIRST TWO PAGES ARE NORTHEAST UTILITIES' PRESENTATION SLIDES**
- O THE NEXT DOCUMENT IS A CORPORATE ANNOUNCEMENT (J. OPEKA) OF PERSONNEL CHANGES**
- O THE NEXT DOCUMENT IS A STAFF "DAILY HIGHLIGHT" (J. ANDERSEN) EXPLAINING NORTHEAST UTILITIES PERSONNEL CHANGES**
- O THE LAST DOCUMENT IS NORTHEAST UTILITIES' DESCRIPTION OF ENGINEERING INTEGRATION**

ENGINEERING INTEGRATION AND PERSONNEL CHANGES

- **Engineering Integration**
 - Undertaken to improve the effectiveness, efficiency, and productivity of the engineering function
 - Current levels of safety and quality will be maintained or improved
- **Four unit specific and one centralized engineering departments under one Vice President**
- **Unit Engineering Departments:**
 - Improved accountability and decision-making
 - System engineering being accelerated
 - Unit Director focus directed toward operations and maintenance
 - More clearly defined roles and responsibilities
 - Reduced handoffs in accomplishing work

ENGINEERING INTEGRATION AND PERSONNEL CHANGES (Cont.)

- **Corporate Engineering Department**
 - Strategic issues (program development)
 - Specialized expertise (PRA, Nuclear Fuels, Radiological Assessment, etc.)
 - Reduced size
- **Net effect is a reduction of approximately 100 positions - half contractors and other half unfilled, previously authorized positions**
- **Personnel Changes**
 - 94 management positions remain unchanged from previous organizational structure
 - 41 new management positions complete the current integrated organizational structure
 - Appointments to management positions influenced by corporate assessment model (PEP Action Plan) to identify appropriate placement



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(203) 865-5323

JOHN F. OPEKA
EXECUTIVE VICE PRESIDENT - NUCLEAR

SYSTEM BULLETIN BOARD NOTICE

As part of the engineering integration and restructuring within the Nuclear Group and as we prepare our organization for the future, I am pleased to announce the following appointments. Except as noted, all appointments are effective December 5, 1993.

Donald B. Miller Jr. - Senior Vice President, Millstone Station. Since 1990, Don has been Vice President - Peach Bottom at Philadelphia Electric. Before that, Don worked for NU for almost twelve years at Millstone Station during the startup of Units 2 and 3 and at CY as Station Director. I am particularly pleased to have Don rejoin us as part of our new management team.

Steve E. Scace - Vice President, Nuclear, Operations Services. Since the effective date for Steve's appointment is December 5, 1993, I will assume the responsibility for the Vice President, Nuclear, Operations Services position, as well as my own position, from today to December 5, 1993.

All the following appointments are effective December 5, 1993.

<u>POSITION</u>	<u>UNIT</u>			
	<u>MP-1</u>	<u>MP-2</u>	<u>MP-3</u>	<u>CY</u>
Director, Unit	H. F. Haynes	G. H. Bouchard	F. R. Dacimo	D. J. Ray
Manager Ops	P. J. Przekop	J. D. Becker	J. A. Ruttar	M. H. Brothers
Manager I&C	J. J. Festa	M. P. Bain	J. R. Beckman	J. Stanford
Manager Maint.	N. G. Bergh	B. J. Duffy	D. L. Hoisington	T. J. McDonald
Manager Outage	M. J. Boss	R. R. Goldsmith	M. E. Gentry	D. C. Heffernan
Director Eng	H. P. Risley	R. P. Necci	G. R. Pitman	J. J. LaPlatney
Mgr Tech Support	P. A. Blasioli	J. W. Riley	D. C. Gerber	R. J. Palmieri
Manager Design	J. H. Ferguson	M. F. Ahern	R. A. Andren	C. J. Gladding
Supv Cost & Sch	R. F. Benzinger	E. F. Murphy	H. H. Wong	J. B. Overbaugh
Supv Rx Eng	J. A. Chunis	R. C. Bonner	D. T. McDaniel	W. M. Herwig
Supv Programs	K. E. Murphy	J. M. Bergin	T. W. Lyons	J. L. DeLawrence
Supv Syst NSSS	J. M. Quinn	J. G. Resetar	S. A. Sudigala	T. J. Galloway
Supv Syst BOF	D. S. Cleary	R. W. Bates	P. J. Parulis	P. F. L'Heureux
Supv Syst Aux.	N/A	N/A	R. N. Keller	N/A
Supv Sys Elec/I&C	N/A	N/A	S. I. Stricker	N/A
Supv Mec/Civ Eng	W. J. Briggs	R. W. Wells	R. E. LeFebvre	P. D. Mason
Supv Mec/Civ Eng	C. D. Maxson	S. W. Wainio	T. J. Mawson	J. F. Bibby
Supv Mec/Civ Des	P. P. Couvertier	W. A. Price	R. W. Standish	R. E. Bellucci
Supv Elec Eng	W. H. Becker	J. B. Regan	R. J. Young	G. R. Townsend
Supv Elec Des	G. A. Tardif	J. P. Padden	D. E. Deane	G. W. Loftus
Supv Mec/Civ Eng	N/A	N/A	C. J. Ashton	N/A
Supv Mec/Civ Des	N/A	N/A	L. Meyers	N/A
Supv Elec Eng	N/A	N/A	G. M. Olsen	N/A

Bold = No change

N/A = Not Applicable; no position exists

BULLETIN BOARD NOTICE

Except as noted, all appointments are effective December 5, 1993.

M. V. Bonaca	- Director Nuclear Engineering
J. R. Guerçi	- Manager Nuclear Fuel Engineering
R. J. Schmidt	- Manager Radiological Assessment
D. A. Dube	- Manager Safety Analysis
M. Kupinski	- Manager Engineering Support
A. L. Pollock	- Director Nuclear Production Materials (Effective November 8, 1993)
M. B. Brown	- Director Nuclear Training (Effective November 8, 1993)
R. W. Heidecker	- Manager Operator Training (Effective November 8, 1993)
J. F. Smith	- Manager Operator Training (Effective November 8, 1993)
P. S. Strickland	- Manager Technical Training (Effective November 8, 1993)
P. M. Austin	- Manager General Nuclear Training (Effective November 8, 1993)
B. W. Ruth	- Supervisor Operator Training (MP-3) (Effective November 8, 1993)
J. A. Blaisdell	- Manager Nuclear Safety Engineering
R. M. Kacich	- Director Nuclear Planning, Licensing & Budgeting
M. J. Wilson	- Manager Nuclear Licensing
M. D. Quinn	- Manager Nuclear Planning
L. A. Chatfield	- Director Nuclear Safety Concerns Program
D. G. Diedrick	- Director Special Projects
G. G. Goncarovs	- CY Chemistry Manager
J. J. Parillo	- Supervisor Nuclear Analysis
R. L. Bigelow	- Supervisor Nuclear Fuel Supply
E. A. Oswald	- Supervisor PRA
B. A. Tuthill	- Supervisor Electrical Engineering
B. M. Pokora	- Supervisor Mechanical Engineering
N. F. Azevedo	- Supervisor Structural Engineering

A great deal of thought and effort was given towards creating this part of the new nuclear organization to ensure that from a people and structural standpoint we are well prepared to lead the group to success now and in the future.

