UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 16, 1994

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: UPDATED BRIEFING PACKAGE FOR VISIT BY NORTHEAST UTILITIES OFFICIALS WITH THE CHAIRMAN, THE COMMISSION, THE EDO, THE DIRECTOR, OI, AND THE DIRECTOR, OE - HADDAM NECK, SEABROOK, AND MILLSTONE UNITS 1, 2, AND 3

This is a revision to my memorandum to William H. Bateman dated February 15, 1994, regarding the planned visit by Northeast Utilities officials on February 23, 1994.

Enclosure 1 provides the revised proposed meeting schedule for the February 23, 1994 visit with the Chairman, the Commission, the EDO, the Director, OI, and the Director OE by Northeast Utilities. Enclosure 2 on the status of Haddam Neck, Seabrook and Millstone Units 1, 2, and 3 has been updated to reflect current changes for Haddam Neck, Millstone 3, and Seabrook.

Please replace Enclosures 1 and 2 in the February 15 package but retain the supporting documentation described in Attachment 1.

John F. Stolz

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

Enclosures:
1. Meeting Schedule
(Enclosure 1) revised
2. Briefing Package
(Enclosure 2) revised

cc w/enclosures:

T. Murley	F. Miraglia
ADPR/Acting	W. Russell
S. Varga	J. Calvo
A. De Agazio	D. Jaffe
A. Wang	J. Andersen
G. Vissing	V. Rooney
L. T. Doerflein, RI	
J. F. Rogge, RI	
V. McCree, OEDO	
B. Hayes	
J. Lieberman	

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ENCLOSURE 1 (Revision)

SCHEDULE OF COMMISSION/SENIOR STAFF VISITS

9:00 AM	Chairman Ivan Selin
10:00 AM	Mr. James Lieberman, Director OE
11:00 AM	Commissioner Forrest J. Remick
1:30 PM	Mr. James Taylor, EDO
2:30 PM	Commissioner E. Gail de Planque
3:30 PM	Mr. B. Hayes, Director OI

ENCLOSURE 2 (Revision)

BRIEFING PACKAGE FOR THE FEBRUARY 23, 1994, VISIT

NORTHEAST UTILITIES

Visiting Officials: Bernard Fox
President and CEO
Northeast Utilities

Robert Busch
President, Energy Resources Group and CFO
Northeast Utilities

Richard M. Kacich
Director - Nuclear Planning Licensing and Budget
Nuclear Engineering and Operations

PLANT: **MILLSTONE NUCLEAR POWER STATION, UNITS 1, 2 AND 3**

BACKGROUND

- The SALP Report for the period of February 16, 1992, to April 3, 1993, rated Millstone Units 1, 2 and 3 as Category 2 in all functional areas except Safety Assessment/Quality Verification (SA/QV) which was rated as a Category 3 improving and Radiological Controls which was rated as Category 1. During this SALP period, overall performance at the Millstone Station improved only marginally from that achieved during the previous period. Each unit was operated soundly with appropriate attention to operational and outage safety principles. Performance in the majority of SALP functional areas remained about the same during this period. The most noteworthy improvement was in the area of radiological controls which was rated as a SALP Category 1. Excellent management support and involvement, aggressive supervisory oversight and planning, and strong training and qualification programs were effective in maintaining low overall exposures and very good control of contamination. The SALP Report noted that the Performance Enhancement Program (PEP) represented a substantial commitment by Northeast Nuclear Energy Company (the licensee) to address the observed decline in performance. The staff determined that the PEP addresses the areas of concern identified to date. However, the current low degree of completion of PEP action plans has not yet yielded a significant performance improvement overall. The comprehensive nature of and management commitment to the PEP leaves the licensee poised for overall performance improvement. Notwithstanding the PEP, continuing performance concerns remain at the Millstone Station. The licensed operator requalification training program was found to be unsatisfactory at Unit 1 for the second consecutive year (all operators passed the examinations which were conducted September 1993). Long-standing performance problems remain, particularily in the areas of procedual adherence, event classification and reporting, and corrective action effectiveness at all three units. As a result, the SA/QV functional area was rated a SALP Category 3. An improving trend in this area indicates the significant

licensee effort devoted to the PEP initiative, and its significant potential to improve overall performance during the next SALP period.

- During the past several years, significant numbers of employee concerns continued to be relayed to the NRC. Northeast Utilities (NU) made improvements to the process for responding to and resolving employee concerns; however, the effectiveness of these changes also remains to be evaluated by the NRC. [redacted] EX 6

- The Millstone Unit 1 Licensed Operator Requalification (LOR) Program has been a concern and was found to be "Unsatisfactory" in 1991 and 1992. The licensee responded to this problem by assigning additional personnel to the operating shifts and improving training. During the week of September 13, 1993, the NRC staff conducted licensed operator requalification examinations and completed a program evaluation at Millstone Unit 1. All 15 licensed operators, which participated in the examination, passed the requalification examination and all three crews passed in the simulator. The NRC staff now considers the LOR program to be "Satisfactory".

- Several significant organizational changes were made by NU in an effort to improve engineering support and operational performance. As part of these changes, the role of the Station Director was strengthened by the removal of two levels of corporate management. The Millstone Station Director became a Vice President in 1992. The Unit 3 Director was replaced in March 1993, the Unit 2 Director was replaced in September 1993, and the Millstone Vice President was replaced in December 1993. On January 1, 1994, a reorganization divided NU into three Business Groups. Mr. R. Busch is President of the Energy Resources Group which includes all nuclear programs. The current organization chart is shown as part of Attachment 1.

- In response to NU and NRC identified declines in performance during the previous several years, NU initiated a number of evaluation efforts to assess their performance. The results of their efforts and the follow-on management actions to correct these deficiencies portrayed a strong commitment for improvement, but highlighted the inherent ineffectiveness of other established management programs (i.e., Quality Assurance (QA) and other quality functions) to identify and correct the performance weaknesses noted. NU's PEP represents the vehicle by which NU will address the recommendations of their internal task forces and other evaluation processes. These recommendations are aimed at improvements in such areas as procedural compliance, corporate culture, safety concern resolution, and employee job satisfaction. The PEP represents a substantial investment by NU with spending of approximately $12.2 million in 1992. Projected spending for PEP is $33 million for 1993 and $31.5 million for 1994.

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o In addition to substantial support staff increases, as part of PEP, NU is investing in facility improvements including a new on-site engineering and administrative building and a fire training facility.

o NU has a substantial investment in Probabilistic Risk Assessment (PRA) which is used in evaluation of plant improvements and changes in plant configuration including shutdown risk. NU has an Integrated Safety Assessment Program (ISAP) for Millstone Units 1 and 3 which is used to prioritize NRC and NU initiatives based upon such inputs as plant safety (based upon PRA), worker radiation exposure, productivity and cost. The Unit 2 ISAP is under development.

o Northeast Utilities has offered "early outs" for approximately 800 positions. 500 had accepted the offer, leaving 300 to be affected by layoffs.

CURRENT STATUS

o The NRC has completed a 2-week inspection of NU's PEP and has made positive findings. The staff found that the root cause assessment was acceptable, that the scope of the PEP was in agreement with NRC staff concerns, and that the schedule for completion of the various Task Action Plans was acceptable. The NRC staff also concluded that insufficient examples of Task Action Plan Verification/Validation (V&V) existed to judge this phase of the PEP.

o Millstone Unit 1 has operated well since January 1993. On April 26, 1993, the unit shutdown for 5 days when local leak rate tests of containment isolation valves revealed leakage greater than that allowed by Technical Specifications for an individual penetration. Following repairs to two isolation valves and satisfactory retests, the plant returned to full power. On October 5, 1993, the unit tripped from 100%. After an extensive post trip review, NU was not able to find a definitive cause for the trip. However, a mechanism involving jarring of redundant trip sensors was considered the most plausible cause. Comprehensive reactor protection system testing as well as replacement of a potentially slow electrical breaker which prevented fast transfer of one safety-related bus were completed prior to start-up. The plant returned to 100 percent power on October 11, 1993. On October 16, 1993, the unit was shutdown due to a service water leak downstream of the reactor building closed cooling water system heat exchangers. NU replaced the area of piping involved and returned to full power on October 20, 1993. Millstone Unit 1 is in a refueling outage and is expected to restart in March 1994.

o Millstone Unit 2 appeared to be performing well following replacement of its steam generators during the last refuel/maintenance outage. Two plant trips in February 1993, both involving feedwater transients, are believed by the NRC staff to be the result of subtle design/control differences between the old and new steam generators. However, as a result of a leak and potential failure of a letdown isolation valve on August 5, 1993, resulting in a forced unit shutdown, NU established an Independent Review

Team (IRT). The IRT report was candid and critical of NU's performance and recommended a change in attitude of management of the unit. The NRC issued a Level III Violation and a Civil Penalty of $237,500 on December 3, 1993, associated with the repeated, failed, attempts to repair the letdown isolation valve. NU made significant organization changes to improve plant safe operation. NU has issued management directives restricting work on valves during plant operation. They have produced and distributed a video emphasizing their commitment to a conservative operating philosophy. They have made additional enhancements to their control of work activities and have communicated management expectations for safe plant operation during face-to-face meetings with their employees. The next refueling outage is scheduled for Summer 1994.

- o Millstone Unit 3 has operated at, or near full power during the last year until shutting down for refueling on July 31, 1993. Problems continued with the supplementary leak collection and release system (SLCRS) which resulted in SLCRS inoperability LERs in June and September 1993. On October 16, 1993, the refueling outage was extended, because of new problems with SLCRS uncovered during testing. All of these problems with SLCRS stemmed from a failure to fully understand the system and its operating characteristics including the need for the auxiliary building filter system (ABFS) to provide necessary support to the SLCRS to achieve the required secondary containment drawdown under certain conditions following a postulated accident. A Level III Violation (and Civil Penalty of $62,500) was issued on December 28, 1992, regarding a failure of the ABFS to start automatically on demand. A subsequent Level III Violation (and Civil Penalty of $50,000) is currently proposed and under staff review involving a delayed start of the ABFS to support the SLCRS under certain conditions.

- o Millstone Unit 2 was the subject of public hearings regarding spent fuel storage. The contentions were related to fuel criticality calculations. The ASLB terminated the proceedings and granted NU a summary disposition on July 9, 1993. On September 17, 1993, the ASLB decision became the agency decision on this action.

- o As a result of NU's nuclear generating capability, NU has donated 10,000 unneeded Clean Air Phase 2 Sulfur Dioxide Emissions Allowances to the American Lung Association worth about 3 million dollars. The emission allowances, which each represents a permit to emit one ton of sulfur dioxide into the air, will be retired rather than commercially sold.

<u>CURRENT CONCERNS</u>

- o All three Millstone units are experiencing corrosion/erosion in their salt water cooling systems. A substantial number of temporary non-Code repairs (upgraded to Code repairs during outages) have been undertaken by NU.

o The performance concerns that led to the formation of the PEP are still being manifested at Millstone to some extent. While safety concerns (allegations) being brought directly to the NRC have sharply decreased, procedural noncompliance and inattention to detail are still observed, but at a decreasing rate. In addition, the inspection of the PEP seemed to indicate a lack of NU employee belief that PEP will resolve their concerns.

o NU is concerned regarding the economic impact of NRC regulatory activities, especially expensive "backfits" and programs. The current power generation situation in Connecticut is characterized by overcapacity as a result of significant cogeneration and public policy projects (e.g., refuse incineration/power generation). The Connecticut PUC has requested that NU conduct an economic analysis for Haddam Neck, Millstone Units 1, 2 and 3, and Seabrook. The economic analysis for Haddam Neck has been completed and is expected to be discussed with the Commission.

POINTS TO BE EMPHASIZED

o Northeast Utilities should maintain their commitment to the PEP and continue to communicate the goals of PEP to NU personnel.

PLANT: HADDAM NECK PLANT

BACKGROUND

- The NRC staff's SALP report for the period of July 14, 1991, through January 9, 1993, rated the plant Category 1 in all functional areas except in the area of maintenance and surveillance which the plant received a Category 2 improving rating. During the previous SALP period NU received the same rating except that declining trends in plant operations and Safety Assessment/Quality Verification were reversed and emergency preparedness was rated as declining for this period.

- NU continued to operate the plant safely and exhibited strong performance during power operations as demonstrated by the last three cycles. Maintenance and surveillance has been only average and NU has had problems with follow-up on Quality Service Department audits related to maintenance and surveillance and the work control program.

- The staff notes continued strong performance in the area of radiological controls, security and engineering/technical support. NU has completed work on several long-standing licensing issues including: Bulletin 88-02, Rapidly Propagating Cracks in Steam Generator Tubes, Generic Letter 90-06, PORV and Block Valve Operability and LTOP, 10 CFR 50, Appendix R and the new switchgear building, Zircaloy clad fuel conversion, auxiliary feedwater control and high energy line breaks in the Terry turbine building. These reviews entailed significant reviews in terms of resources and safety significance.

- NU has made significant efforts to close the Systematic Evaluation Program (SEP) topics. During the past year NU has closed eight topics including several difficult reviews in the areas of containment isolation, wind and tornado loads, and seismic design.

CURRENT STATUS

- The plant restarted on July 20, 1993, with no major problems. The plant had a mini-outage to replace a leaking atmospheric steam dump valve in November 1993. Currently the plant has been shutdown to replace suction service piping to Emergency Diesel Generators, and the RHR system due to MIC effects. Plant will be in the outage for about 35 days.

- The plant has made submittals to complete the two remaining SEP topics: Classification of Structural Components and Systems and Design Codes, Design Criteria and Load Combinations.

- NU has committed to install an air-cooled diesel and an electric auxiliary feedwater pump to resolve the SEP topic for wind and tornado loads. NU has also agreed to provide two barriers for the containment vent and purge lines to resolve the SEP topic for containment isolation.

- The plant is performing the last phase of the Reactor Protection System replacement which will convert the analog feedwater control system to a digital system. The safety-related portions of the feedwater system were replaced during the last outage and the feedwater control system for normal operation will be replaced during the next outage.

o NU has submitted the industry's first exemption request for the use of Thermo-Lag. This exemption was denied and NU is considering further action.

o NU has announced that they are changing fuel vendors from B&W to Westinghouse. This will require staff review of the new fuel as the design will change.

<u>CURRENT CONCERNS</u>

o The plant has found micro-biological induced corrosion in the service water system for the emergency diesel generator's heat exchangers. Connecticut Yankee Atomic Power Company (the licensee) has performed fracture mechanics analyses and inspected all accessable welds to determine operability. The staff is pursuing this issue as it may affect other systems and a long term plan needs to be provided to control microbiologically induced corrosion (MIC) at the Haddam Neck site. The plant has been shutdown to replace susceptible piping as noted in <u>CURRENT STATUS.</u>

o NU's performance in all SALP functional areas has been good. However, the staff has had concerns, as noted in the last two SALPs, in the area of maintenance and surveillance. In addition, the staff has stated in the last several SALP Reports that NU needs to be more timely with regard to the submittal of licensing actions.

o NU had stated that steam generator replacement is not an option and that alternate steam generator plugging criteria is critical to the economic survivability of the plant. However, because the plant has a partial roll in the tubesheet, NU has been able to re-roll tubes to keep them in-service. NU still proposes to pursue the alternate steam generator plugging criteria but its significance has been reduced because of the option for the plant to re-roll tubes.

o As a result of the loss of Motor Control Center (MCC)-5 and two loss-of-offsite power events, an augumented inspection team (AIT) was performed at the Haddam Neck Plant. The major concern of the team was the reliability of the automatic bus transfer (ABT) system for the MCC-5. With the loss of MCC-5 all ECCS would be lost at the plant. NU has reviewed the design and has proposed modifications. The staff is reviewing this report and proposed modifications to improve the automatic bus transfer reliability to decide if a backfit to the system needs to be pursued. As a result of a technical specification change commitment from an AIT finding, the licensee tested the original ABT on February 15, 1994. The ABT test failed the surveillance. The licensee will be implementing design modifications to the ABT during the current 35 day outage.

POINTS TO BE EMPHASIZED

- o NU needs to maintain their efforts in the area of improving maintenance and surveillance audits and documentation control. NU should maintain their efforts to complete the remaining topics associated with the SEP.

- o The use of new fuel will require a significant amount of review and NU needs be timely in submittal of their analyses.

- o NU needs to make the automatic bus transfer system as reliable as possible. While the staff agrees that the original safety evaluation issued in 1971 for the Full Term Operating License acknowledged the single failure vulnerability of MCC-5, its reliability is and has always been recognized as critical to plant safety.

PLANT: SEABROOK STATION, UNIT 1

BACKGROUND

- The SALP report for the period February 29, 1992, to August 29, 1993, rated the plant Category 1 in the functional areas of Plant Operations and Plant Support and Category 2 for the functional areas Maintenance/Surveillance and Engineering/Technical Support.

- North Atlantic continues to operate the station in a safe, conservative manner with strong effective management in most areas. Well trained, knowledgeable operations staff is a strength, but an increasing trend for personnel has captured management attention. Management established a task force to identify the issues related to personnel performance and to identify the causes for operator error.

- Performance in independent oversight and quality functions is mixed - good identification of problems but lack followup of implementation of recommendations and evaluation of the effectiveness of corrective actions. Thorough root cause analysis of trips and equipment problems but less effective with human performance issues.

- Knowledgeable, well trained maintenance staff and excellent surveillance program, but improvement is needed in procedural adherence and attention to detail.

- Engineering is a notable strength with continued effective management involvement. Excellent plant support except in radiological controls which needs to focus on developing broad, effective, and timely corrective actions for radiological occurrences.

CURRENT STATUS

- The plant tripped on January 25, 1994, during a surveillance test of a main steam isolation valve (MSIV) when the valve continued to fully close rather than stopping at the 10% close position. During the outage, North Atlantic Energy Service Corporation performed extensive refurbishing of the hydraulic control system for the MSIVs. There have been at least six events with the MSIV control system, and a similar event in May 1993, also resulted in a plant trip. The current extensive root cause evaluation findings reveal that prior root cause determinations for the MSIV events may have failed to accurately identify the problems with the MSIV hydraulic control system. These failures raise serious concerns regarding the adequacy and effectiveness of the licensee's corrective actions and quality programs. After completing a comprehensive series of tests on the MSIVs, the plant restarted from the January 25, 1994, forced outage on February 16, 1994.

- The plant has operated at full power most of the time since it went into commercial operation in August 1990 with few problems experienced since commercial operation began. Cumulative Unit Capacity Factor from the start of commercial operation through December 1993 is 79.0%. For the year 1993, the capacity factor was 90.0%.

- The station is currently in Cycle 3. The third refueling outage is rescheduled to start in mid April 1994.

- Effective June 29, 1992, North Atlantic Energy Service Corporation, a wholly owned subsidiary of Northeast Utilities, assumed the role of managing Agent for Seabrook Station from New Hampshire Yankee. At the same time, Northeast Utilities acquired ownership of Public Service Company of New Hampshire.

- On December 30, 1992, the Commonwealth of Massachusetts and the six Massachusetts communities within the EPZ assumed responsibility for emergency preparedness for a radiological emergency at Seabrook from NAESCO's Offsite Response Organization. Offsite planning and response for these communities are now conducted in accordance with the

- Massachusetts Radiological Emergency Response Plan (MAREP) with the full cooperation and resources of the Commonwealth and local emergency response organizations.

CURRENT CONCERNS

- The plant operated very well during the second operating cycle. The unit was on line continuously for 325 days. However, since the beginning of Cycle 3 on November 13, 1992, 8 plant trips have occurred. Management needs to focus on trip reduction.

- The licensee has responded to an increasing trend for personnel error, also noted by the NRC staff and several offsite oversight organizations, by establishing the Personnel Error Response Team. This team examined the underlying issues related to personnel performance. The PERT identified eight issues and developed twenty recommendations related to these issues. In December 1993, an NRC inspection group of human factors and quality assurance experts examined the results of the PERT and interviewed PERT members and plant personnel. The inspection report has not yet been issued.

- A recent Joint Utility Management Audit of Seabrook Quality Programs found morale and attitude problems with regard to the views of line management (in certain areas) on the value of quality programs.

- On December 31, 1993, the Massachusetts Highway Department facility at Wellesley, Massachusetts, which had been designated as the reception center for evacuees from the six Massachusetts communities within the 10-mile EPZ. became unavailable. A replacement for the Wellesley center at the Masconomet School District High School has been equipped and personnel have been trained. The replacement center was demonstrated on December 20, 1993, with FEMA representatives observing.

POINTS TO BE EMPHASIZED

- North Atlantic needs to focus upon
  - Problems existing in the quality programs and corrective actions areas.
  - Trip reduction
  - Personnel errors, procedural adherence, and attention to detail

ATTACHMENT 1

SUPPORTING DOCUMENTATION

MILLSTONE UNITS 1, 2, AND 3, HADDAM NECK AND SEABROOK

1. Biographical Data

2. Organization charts

3. SALP Reports

   - Millstone Units 1, 2, and 3
   - Haddam Neck
   - Seabrook

4. Plant Status Reports

   - Millstone Units 1, 2, and 3
   - Haddam Neck
   - Seabrook

Biographical Data

Northeast
Utilities System

Northeast Utilities Service Company
P.O. Box 270
Hartford, Connecticut 06141-0270

People Profile

BERNARD M. FOX

Bernard M. Fox is president and chief executive officer of Northeast Utilities system (NU).*

He is also a trustee of NU and president and chief executive officer and a director of the Connecticut Yankee Atomic Power Company.

Born in New York City, ***Fox*** was graduated from Regis High School in 1959, Manhattan College in 1963 with a bachelor of science degree in electrical engineering, and in 1964 from Rensselaer Polytechnic Institute with a master's degree in the same discipline. In 1979, ***Fox*** completed the Program for Management Development at the Harvard Business School. In 1982, he completed a special program of study in auditing, legal affairs and financing activities, including a three-month assignment with Morgan Stanley and Company in New York City.

Fox joined The Hartford Electric Light Company (HELCO) in 1964 as a cadet engineer. In 1966, after HELCO had become a subsidiary of NU, he was named an engineer in NU's System Planning Department, and senior engineer in 1971. He transferred to the utility's Nuclear Engineering and Operations group in 1973. In 1979, he was appointed system director—Engineering Management Services, and system director—Transmission Engineering and Construction in 1980. He was appointed to the post of vice president and general manager—Gas in 1981 and was elected to the position of vice president and chief financial officer in 1983. In 1986 he was elected executive vice president and chief operating and financial officer. In 1987 he became president and chief operating and financial officer, and relinquished the position of chief financial officer in 1990. He assumed his present position in 1993.

Fox is chairman of the board of the Institute of Living. He also serves on the board of directors of Shawmut Bank Connecticut, N.A., Shawmut Bank, N.A., and Shawmut National Corp., Dexter Corporation, the Connecticut Business and Industry Association, and GroupAmerica, a subsidiary of CM Alliance Companies. In addition, he is a member of The Mount Holyoke College Board of Trustees , a member of the Board of the 1995 Special Olympics World Summer Games organization, a member of The Hispanic Health Council's Capital Campaign Fundraising Committee, Dinner Chairman of the 1994 Manhattan College De La Salle Medal Dinner, Chairman of the Fidelco 1994 Walk-Run-Ride Event, and Ticket Sales Chairman of the 1994 Girl Scouts Woman of Merit Dinner. He is a senior member of the Institute of Electrical and Electronics Engineers (IEEE) and has held a number of IEEE state and national offices. In addition, he served as chairman of Leadership Greater Hartford from 1988-91, chairman of the Connecticut Special Olympics Hartford Corporate Advisory Committee from 1988-91, chairman of the 1992 United Way of the Capital Area Campaign, and is past chairman of the Open Hearth Capital Campaign. He is a fellow and founder of the American Leadership Forum and has taught graduate courses in electrical power systems analysis and related fields as an adjunct professor at the University of Connecticut.

Utilities System

P.O. Box 270
Hartford, Connecticut 0614:-0270

People Profile

ROBERT E. BUSCH

Robert E. Busch is president of the Energy Resources Group and chief financial officer for the Northeast Utilities system (NU).* He has overall responsibility for the company's nuclear and fossil/hydro operations, wholesale marketing, treasury, accounting, budget management, financial planning, and information resources.

Busch is a native of Cleveland, Ohio. He was graduated from Case Institute of Technology in 1968 with a bachelor of science degree in engineering. He earned a master of science degree in engineering from Rensselaer Polytechnic Institute in 1971 and a master of business administration degree, summa cum laude, from Northeastern University in 1981.

Prior to beginning his NU career, Busch worked on the Apollo Program and on research for the U.S. Navy in antisubmarine warfare. He joined NU in 1974 as a cost and schedule engineer and held various positions in the cost and scheduling area. In 1980 he became chief of cost and schedule control. In 1981 he became project manager of the Millstone Nuclear Power Station Unit 3 and brought the unit to completion. In 1986 he was named director—Special Financial Projects. In that capacity, he had a period of extensive training in corporate legal matters by Day, Berry & Howard, regulated utility accounting by Arthur Andersen & Co., and a four-month internship in public utility financing at Morgan Stanley & Company, Inc., of New York City, as well as completion of the Harvard Graduate School of Business Administration Program for Management Development. He was elected senior vice president in 1987 and, in 1990, was given the additional responsibility of chief financial officer. He was elected executive vice president in 1992, and he assumed his current position in January 1994.

He is a director of Connecticut Special Olympics. He is also a senior fellow of the American Leadership Forum, and a former member of the American Nuclear Society, from which he received a Certificate of Governance for his performance as chairman of the Connecticut chapter. He has received the Wall Street Journal Award for academic excellence in business education and has been elected to several honorary societies: Eta Kappa NU (for electrical engineering), Beta Gamma Sigma (for business) and Phi Kappa Phi (for academic performance).

Busch [redacted] EX 6

** NU is a registered holding company formed in 1966 whose principal operating-company subsidiaries are The Connecticut Light and Power Company, Holyoke Water Power Company, Public Service Company of New Hampshire, and Western Massachusetts Electric Company, and whose principal nonoperating subsidiaries are North Atlantic Energy Corporation, North Atlantic Energy Service Corporation, Northeast Nuclear Energy Company, and Northeast Utilities Service Company. In addition, Charter Oak Energy, Inc., and HEC Inc., are NU's nonutility subsidiaries.*

January 1994

PEOPLE PROFILE

NORTHEAST UTILITIES
THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

P.O. Box 270
Hartford, Connecticut 06141-0270

RICHARD M. KACICH

Richard M. Kacich is director of the Nuclear Licensing Department in Nuclear Engineering and Operations within Northeast Utilities (NU), a registered holding company formed in 1966 whose principal operating-company subsidiaries are The Connecticut Light and Power Company, Holyoke Water Power Company, Public Service Company of New Hampshire, and Western Massachusetts Electric Company, and whose principal service-company subsidiaries are North Atlantic Energy Corporation, North Atlantic Energy Service Corporation, Northeast Nuclear Energy Company, and Northeast Utilities Service Company. In addition, Charter Oak Energy, Inc., and HEC Inc., are NU's nonutility subsidiaries. He directs the planning, scheduling, and coordination of all licensing activities for NU's four nuclear generating units. These activities include the primary interface with the Nuclear Regulatory Commission.

Born in St. Louis, Missouri, he earned a bachelor of engineering degree in nuclear engineering from Rensselaer Polytechnic Institute (RPI) in Troy, New York, in 1974. The following year he received a master of engineering degree in nuclear engineering from RPI. While at RPI, he was an instructor at the RPI Critical Facility, wrote A Manual of Experiments for the Rensselaer Reactor Facility, and held a senior reactor operator's license. He joined NU in 1975 as an assistant engineer. He participated in the initial core loading and start-up testing of Millstone Unit 2 during his assignment to the Millstone Station in 1975-76. He subsequently served in various positions in the licensing organization and was promoted to licensing supervisor in 1982. In 1987, he was promoted to manager, Generation Facilities Licensing, which involved coordination of all licensing activities for NU's fossil, hydroelectric, and nuclear generating facilities. He assumed his current position in March 1992. In July, 1992, he earned an Executive MBA from the University of Hartford. He is a member of the American Nuclear Society and a registered professional engineer in the state of Connecticut.

Kacich has participated in numerous owners groups and industry activities, including the SEP Owners Group (chairman), the BWR Owners Group, the Nuclear Utility Fire Protection Group, the Nuclear Utility Group on Environmental Qualification, the Nuclear Utility Backfitting and Reform Group, and various Atomic Industrial Forum and NUMARC activities.

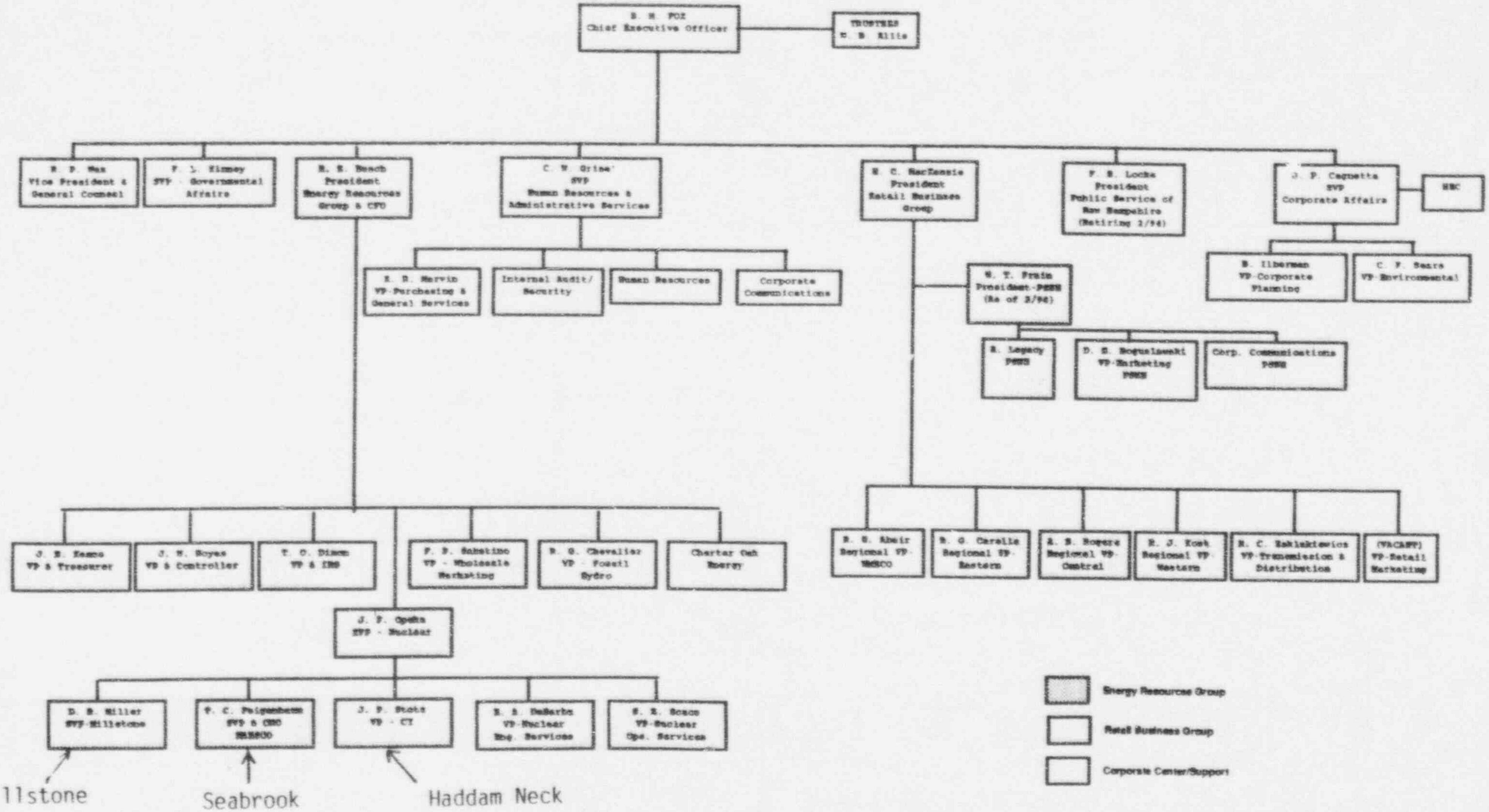
[[redacted]] Ex 6

September 1992

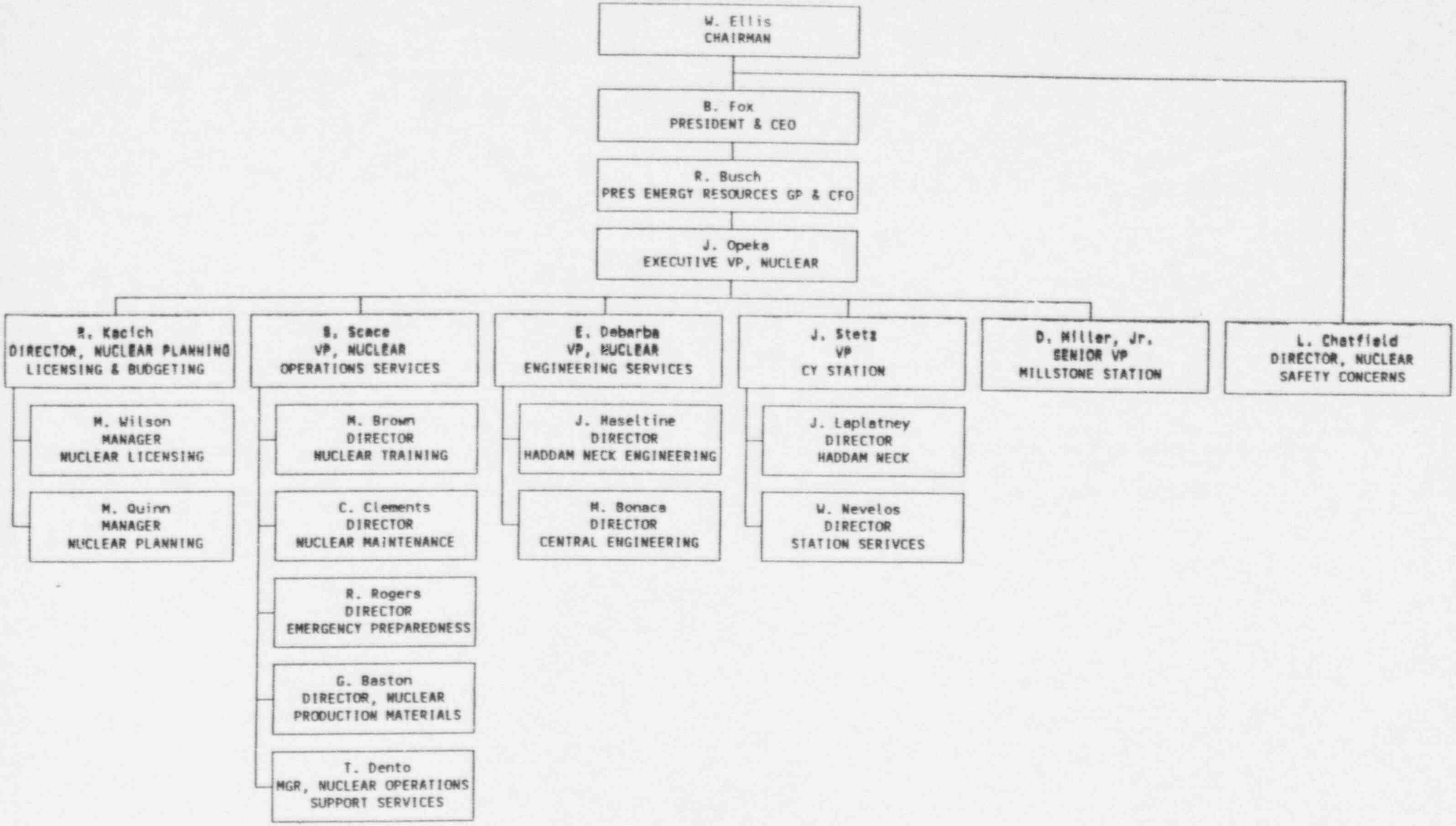
ADM5679 10-87

Organization Charts

NEW NU ORGANIZATIONAL STRUCTURE
(Effective 1/1/94)



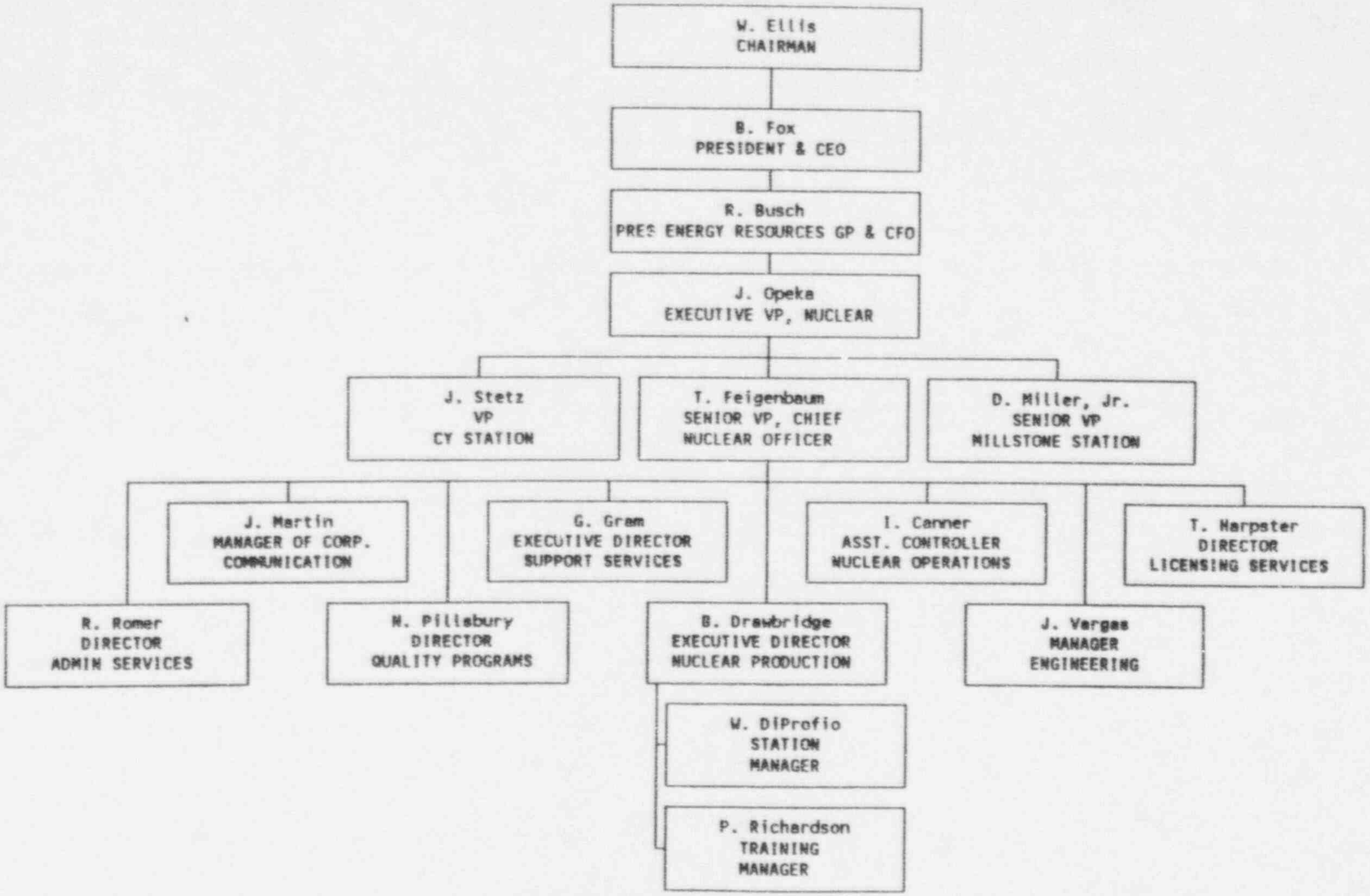
CONNECTICUT YANKEE ATOMIC ENERGY COMPANY
HADDAM NECK



NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE UNITS 1, 2, & 3

- W. Ellis, CHAIRMAN
  - B. Fox, PRESIDENT & CEO
    - R. Busch, PRES ENERGY RESOURCES GP & CFO
      - J. Opeka, EXECUTIVE VP, NUCLEAR
        - R. Kacich, DIRECTOR, NUCLEAR PLANNING LICENSING & BUDGETING
          - M. Wilson, MANAGER NUCLEAR LICENSING
          - M. Quinn, MANAGER NUCLEAR PLANNING
        - S. Scace, VP, NUCLEAR OPERATIONS SERVICES
          - M. Brown, DIRECTOR NUCLEAR TRAINING
          - C. Clements, DIRECTOR NUCLEAR MAINTENANCE
          - R. Rogers, DIRECTOR EMERGENCY PREPAREDNESS
          - G. Baston, DIRECTOR, NUCLEAR PRODUCTION MATERIALS
          - T. Dento, MGR, NUCLEAR OPERATIONS SUPPORT SERVICES
        - E. Debarba, VP, NUCLEAR ENGINEERING SERVICES
          - M. Bonaca, DIRECTOR CENTRAL ENGINEERING
          - H. Risley, DIRECTOR MILLSTONE 1 ENGINEERING
          - R. Necci, DIRECTOR MILLSTONE 2 ENGINEERING
          - G. Pitman, DIRECTOR MILLSTONE 3 ENGINEERING
          - J. LaPlatney, DIRECTOR CY ENGINEERING
        - D. Miller, Jr., SENIOR VP MILLSTONE STATION
          - H. Haynes, DIRECTOR MILLSTONE UNIT 1
          - G. Bouchard, DIRECTOR MILLSTONE UNIT 2
          - F. Dacimo, DIRECTOR MILLSTONE UNIT 3
          - R. Factora, DIRECTOR UNIT SERVICES
          - G. Bregg, DIRECTOR SITE SERVICES
        - J. Solymossy, DIRECTOR QUALITY SERVICES
  - L. Chatfield, DIRECTOR, NUCLEAR SAFETY CONCERNS

NORTH ATLANTIC ENERGY SERVICE CORP.
SEABROOK



SALP Reports

- Millstone Units 1, 2, and 3
- Haddam Neck
- Seabrook

NRC SENIOR MANAGEMENT (SMM) SUMMARY
January 18-19, 1995
Region IV

Following the June 1985 loss of feedwater event at Davis-Besse, one resulting NRC action was that senior NRC managers periodically meet to discuss the plants of greatest concern to the agency and to plan a coordinated course of action. On January 18-19, 1995, the NRC senior managers held their eighteenth such meeting in Region IV. The last meeting was held in Region III in June 1994. The meeting in Region IV was structured to review the status of the problem plants identified at the last meeting and to review the performance of other plants to determine if any changes should be made to the list of problem facilities which require close monitoring by [illegible]

In preparation for the meeting, NRR and NMSS, in conjunction with the four regional offices, AEOD, OE, and RES, prepared background documents on the plants and licensees to be discussed. Inputs for each operating reactor plant included a summary of the most recent SALP and SALP history, a discussion of current operating experience, current NRC and licensee activities, and performance indicator data. Data pertaining to safety significant hardware issues at the plants were also provided. This information was distributed to meeting attendees prior to the meeting. It provided the basis for review and discussion of each plant's performance and for senior management identification of those plants warranting increased NRC attention.

In reviewing the reactor plants that have experienced significant performance problems, the NRC managers have set the following categories of performance based upon plant actions to date to correct the problems and to achieve improved operations.

1. Plants removed from the list of problem facilities.

   Plants in this category have taken effective action to correct identified problems and to implement programs for improved performance. No further NRC special attention is necessary beyond the regional office's current level of monitoring to ensure improvement continues.

2. Plants authorized to operate that the NRC will monitor closely.

   Plants in this category have been identified as having weaknesses that warrant increased NRC attention from both headquarters and the regional office. A plant will remain in this category until the licensee demonstrates a period of improved performance.

3. Shutdown plants requiring NRC authorization to operate and which the NRC will monitor closely.

   Plants in this category have been identified as having significant weaknesses that warrant maintaining the plant in a shutdown condition until the licensee can demonstrate to the NRC that adequate programs have been established and implemented to ensure substantial improvement.

I/3

The following chart lists conclusions reached by the senior managers at this meeting and from the previous meeting for nuclear power plants:

Meeting Dates	Category 3	Category 2	Category 1
Jan. 18-19, 1995	Browns Ferry 1&3	Dresden 2&3 Indian Point 3	South Texas 1&2
June 7-8, 1994	Browns Ferry 1&3	Dresden 2&3 Indian Point 3 South Texas 1&2	Brunswick 1&2

The following chart lists conclusions from this meeting and from the previous meeting for materials licensees:

Meeting Dates	Facilities for Priority Attention
Jan. 18-19, 1995	None
June 7-8, 1994	None

NRC senior management plans to continue to review the status of all reactor and other licensees on an approximate six-month frequency. Determinations will then be made to add or delete licensees from this list based on demonstrated performance. This program represents a concerted effort by the NRC senior management to focus NRC resources on those plants and issues of greatest safety significance and risk.

Specific Discussion of Problem Facilities

Category 1: Plants That Have Been Removed from the List of Problem Facilities

SOUTH TEXAS PROJECT

South Texas Project (STP) was first discussed at the January 1991 Senior Management Meeting (SMM) and subsequently at the January and June 1993 meetings. Both units were shut down in February 1993 under a Confirmatory Action Letter (CAL) and a Diagnostic Evaluation Team inspection was conducted in April 1993. STP was placed on the Watch List in Category 2 at the June 1993 SMM.

After verifying that STP had adequately addressed all restart issues and following lifting of the respective CALs, Unit 1 restarted on February 18, 1994, and Unit 2 restarted on May 17, 1994. In August 1994 a 10-member team, with little or no previous experience with STP, performed a pilot Customized Inspection Planning Process team inspection. The team found that performance at STP had improved in virtually all functional areas. The commitment and support of STP managers to resolve problems was evident and an atmosphere had been established to encourage the identification of problems. The self-assessment activities to ensure readiness for restart of the units was also noteworthy.

The NRC issued its Systematic Assessment of Licensee Performance (SALP) report on October 21, 1994. The extended assessment period resulted from suspension of the normal SALP process during the plant shutdown. As usual, the assessment focused on the last 6 months of plant operation, which included the startup of unit 2 and the more recent dual unit operation. Although the SALP board noted several continuing challenges, performance in all functional areas was evaluated as good (category 2).

In November 1994, the NRC evaluated the licensee's annual Emergency Preparedness exercise. No weaknesses were identified and the overall performance was excellent. This represented a significant improvement over prior graded exercises.

Based on an overall improvement in site performance and confidence that the improvements will continue, STP was removed from the problem plant category that requires increased attention from both NRC headquarters and Region IV.

Category 2: Plants Authorized to Operate that the NRC Will Monitor Closely

DRESDEN 1, 2, & 3

Dresden was first placed on the NRC Watch List in June 1987 (removed December 1988) and then again in January 1992. Significant contributors to Dresden being placed on the Watch List a second time included weaknesses in: procedure quality and adherence, communications, execution of management expectations, plant material condition, supervision and control of work activities, work performance, and engineering and licensing support.

In the first three months following the last Senior Management Meeting (SMM), performance improvement stagnated. The Unit 3 refueling outage was extended because of a large amount of rework and an inefficient work process; however, the licensee did complete the planned outage work. In August 1994 Unit 3 scrammed during startup due to operator inattention which resulted in a loss of control over reactor vessel water level, and Unit 2 was shut down because of equipment problems with HPCI. Based on the causal factors of the Unit 3 scram and other plant deficiencies associated with procedure quality and adherence, equipment reliability, and operator training and standards, the licensee elected to maintain both units shut down while improvement initiatives were initiated. These two events also triggered substantial changes in the station's management and organizational alignment.

During the unit shutdowns, improvement initiatives were identified in several focus areas including operator standards, operator work-arounds, HPCI system performance, foreign material exclusion practices, and plant decontamination. Over the 3 month shutdown period, the station achieved some success in addressing these issues. However, personnel errors associated with procedural adherence, corrective actions, and engineering support activities continued. In November 1994 both units were restarted. Operator performance during restart of the units was good with conservative decisions made when problems arose.

Significant material condition problems continue to adversely affect operating performance. Some improvement has been made, particularly with respect to large rotating equipment. However, a large and growing backlog of maintenance work exists, and the plant is nearly 100 percent reactive in responding to material condition issues. This is compounded by significant problems in the work control process.

Dresden was continued on the Watch List as a Category 2 plant.

INDIAN POINT 3

The Indian Point 3 (IP3) Nuclear Power Plant was first discussed at the June 1992 Senior Management Meeting (SMM). Many of the problems identified during the Diagnostic Evaluation Team (DET) inspection at FitzPatrick in the Fall of 1991 were found to exist at IP3, particularly in the quality of management oversight and the effectiveness of its corrective action programs.

In January 1993, the licensee (NYPA) submitted a Performance Improvement Plan to address weaknesses at IP3. In February 1993, the NRC questioned the operability of the anticipated transient without scram mitigation system (AMSAC). In March 1993, NYPA responded to this concern as well as other performance issues by taking the plant to cold shutdown. A special inspection in May 1993 confirmed the existence of significant fundamental weaknesses at IP3, and it was placed on the Watch List in June 1993.

In 1993 and 1994 there were a number of changes in site and corporate management. On January 25, 1994, the Governor of New York announced the appointment of S. David Freeman as President and CEO of NYPA, effective March 1, 1994. Freeman then announced that Les Hill would become the

Resident Manager of IP3, effective March 18, 1994. On June 16, 1994, NYPA named Robert Deasy as the Vice President of Appraisal and Compliance Services and Thomas Dougherty as the Vice President of Nuclear Engineering. On July 26, 1994, former Syracuse Mayor Thomas Young was elected the new NYPA Chairman of the Board, replacing Richard Flynn, who had resigned effective February 1, 1994. William Cahill, Jr., former Vice President of Nuclear Production for Texas Utilities, now NYPA Executive Vice President and Chief Nuclear Officer, assumed his duties full-time beginning September 1, 1994. Mr. Cahill formed a new department, Regulatory Affairs and Special Projects, reporting directly to him, and named John Kelly its Vice President. The Resident Managers at both FitzPatrick and IP3 report directly to Mr. Cahill as well. In late August 1994 Les Hill announced that James Zach, formerly a Point Beach Plant Manager and a Vice President with Wisconsin Power, was selected as the General Manager of Operations and James Comiotes was named the General Manger of Support Services. By September 1, 1994, the full management team was in place.

Management has made a significant effort to instill an attitude fostering attention to detail and a questioning approach in conducting activities. However, NYPA continues to experience personnel performance problems at IP3. Recent examples include: (1) failure to identify leaking joints in the auxiliary feedwater system; (2) failure to identify inoperable EDG room cooling fans; (3) failure to question dual indication of PORV position; (4) improper installation of a solenoid operated valve; and (5) performing maintenance on the wrong diesel generator.

In October 1994, NYPA performed an independent assessment of its activities and determined that there had been significant improvement in areas such as plant operations, problem identification and resolution, work control, and physical plant readiness. The assessment team also noted that a number of areas still needed improvement, especially procedural adherence and human performance.

In early December 1994, NYPA conducted their Startup Evaluation for Readiness Team (SERT) assessment. The SERT concluded that the plant was not currently ready for startup, but would be ready in mid-February pending completion of several restart action plans and other planned activities. Some of the major areas that were not yet complete were physical readiness, plant status control, operations procedures and documents, work control process and work rate, and control room deficiencies. NYPA will present the results of the SERT to the NRC in a public meeting prior to commencement of the RATI. NYPA estimates that plant heatup and readiness for the RATI will be February 20, 1995.

Based on discussions at the January 1995 SMM, Indian Point 3 remained on the NRC Watch List as a Category 2 facility. The NRC will continue to closely monitor activities at the Indian Point 3 Nuclear Power Plant.

Category 3: Shutdown Plants Requiring NRC Authorization to Operate and which the NRC will Monitor Closely

BROWNS FERRY 1 AND 3

All three Browns Ferry units were placed on the NRC Watch List as Category 3 plants during the October 1986 SMM because of a history of poor performance, significant enforcement actions, several operational events, equipment failures, and the inability of management to identify and correct problems. TVA implemented an improvement program to address the corporate weaknesses identified in TVA's nuclear program. Browns Ferry Unit 2 restarted in May 1991 and was removed from the NRC's Watch List in June 1992, while Units 1 and 3 remain defueled and continue to require NRC authorization to operate (Category 3). The SALP process remains suspended for Units 1 and 3.

In 1991 TVA submitted to the NRC its corrective action plan for returning Browns Ferry Units 1 and 3 to service, and in April 1992 NRR determined TVA's plan was acceptable. TVA began implementing this plan almost immediately for Unit 3. Construction activities continue to increase on Unit 3. Major activities include conduit installation and support, cable pulling, large and small bore support hangers, and control room design review. In general, TVA adopted for Unit 3 the same methods, criteria, and technical positions that were approved by previous SERs for Unit 2 restart. Only a small number of individual TVA programs deviated from the Unit 2 precedents and have required additional NRC review.

On September 15, 1994 the main turbine was placed on the turning gear, well in advance of the scheduled completion date. In addition, the licensee has completed decontamination efforts on the Unit 3 drywell. Unit 3 has a current fuel load date of October 1995. Criticality is scheduled for December 1995, with power ascension expected to be complete in February 1996. The licensee has committed to the TVA Board to begin Unit 3 operation according to this schedule.

Browns Ferry Units 1 and 3 will remain on the Watch List as Category 3 plants.

MILLSTONE 1, 2, AND 3

This is the seventh SMM since June 1991 during which Millstone has been discussed. It was not discussed during the June 1993 SMM. The station has never been placed on the Watch List. In early 1992, in response to an overall decline in performance, the licensee implemented a Performance Enhancement Program (PEP) as a long-term effort to ensure the effective use of resources and implement the recommendations of four internal performance assessment task forces. The PEP did not have specific indicators to measure effectiveness and it has had only limited impact on improving operational performance, particularly at Unit 2. In October 1994, the PEP was absorbed into the utility's overall "business plan," though the licensee is still implementing PEP action plans.

In response to the August 1993 Unit 2 forced shutdown caused by a non-isolable reactor coolant leak, and other indications of declining performance, NU made a number of programmatic and management changes. A substantial reorganization of the corporate and Millstone site management structure was initiated in November 1993. More recently, changes to the site and corporate engineering organization resulted in corporate engineers moving to the sites. This is intended to enhance engineering's accountability and responsiveness to site issues, and incorporate a system engineering concept at the Millstone site. It is not yet evident that substantial performance improvements have resulted from these efforts.

The NRC remains concerned about the number of allegations at Millstone. The NRC has received an increasing number of allegations since the spring of 1993. Though a number of allegations are related to work processes, supervisor/peer competence, training deficiencies, et. al., the NRC is concerned with the continuing allegations of employee harassment, intimidation and discrimination (HI&D). In response, NU has made changes in the management and practices of the Nuclear Safety Concerns Program (NSCP) and provided training and performance assessments of plant managers and supervisors. These changes have been too recent for the NRC to assess their long-term impact. The NRC intends to conduct a special inspection of the NSCP in April 1995.

The most recent Millstone SALP covered the period of April 4, 1993, through July 9, 1994. It noted significant weaknesses in the areas of plant operations and maintenance at Millstone Unit 2. Unit 2 was rated separately in these areas as category "3" in order to highlight the degraded performance at Unit 2, despite various PEP and other initiatives intended to improve performance. The SALP report also noted weaknesses in performance common to all three units such as continuing problems with procedures, informality in several maintenance and engineering programs, and failure to resolve several longstanding problems.

Problems that have occurred at Unit 2 since the last SMM include a forced shutdown in July to effect modifications to the reactor coolant pump oil collection system in order to meet the requirements of 10 CFR 50 Appendix R, and several events during the current refueling outage, which eventually resulted in two separate work stand-downs, followed by a continuing, very

cautious work schedule. The licensee has committed to meet with the NRC before authorizing Unit 2 criticality in order to discuss their corrective actions and why they believe performance has improved enough to support plant operation.

Based on lingering performance problems at Unit 2, despite significant changes in management and processes, and the conduct of several long term, broad based performance improvement programs, it was decided to request a meeting with Northeast Utilities' Board of Trustees to better understand the board's view on the need for continued performance improvement at Millstone Unit 2.

Status Plants

BRUNSWICK 1 AND 2

Brunswick has been discussed at each Senior Management Meeting (SMM) since June 1988, except for the June 1990 SMM. Prompted by an overall decline in performance in 1988, NRC conducted a Diagnostic Evaluation (DE) in May 1989. Based on the DET report and licensee self-assessment findings, CP&L implemented an Integrated Action Plan (IAP) in September 1989. Although the IAP brought some improvements, they were overshadowed by continuing equipment failures, personnel errors and work control problems. In February - April 1992, a special NRC inspection effort revealed that the causes of continuing performance problems included management's failure to: (1) set high standards for plant material condition, (2) provide the leadership and support for continued improvement, and (3) recognize problems due to a lack of critical self-assessment. The licensee shut down both units in April 1992 due to diesel generator building structural concerns, an issue that was mishandled by the licensee and extended significantly beyond the diesel building walls. The facility was placed on the NRC Watch List as a Category 2 plant during the June 1992 SMM.

At the request of the Region II Administrator, CP&L submitted performance improvement plans which addressed both short-term (pre-startup) and long-term (post-startup) issues. These improvement plan actions were affirmed on December 18, 1992, in a Confirmatory Action Letter. Following completion of the short-term actions, Unit 2 restarted on April 29, 1993.

Just prior to the January 1994 SMM, NRC conducted a Unit 1 Readiness Assessment Team (RAT) inspection. Overall operational readiness was acceptable to support restart. NRC concurrence for Unit 1 restart was given on January 31, 1994, after verifying that all remaining restart issues had been appropriately resolved. Unit 1 successfully completed a comprehensive power ascension/ testing program (February 1-24, 1994) after short-term/pre-startup actions, vessel shroud repairs, digital feedwater and other major modifications, and refueling operations were completed. Unit 1 has operated continuously and has performed well since restart.

Since the April 1993 restart, Unit 2 operated continuously until the licensee commenced a scheduled refueling outage on March 25, 1994. The licensee has demonstrated sustained, relatively trouble-free performance of Unit 2, as well as good dual unit operational performance since the Unit 1 restart.

CP&L's management of the Brunswick Three-Year Plan Implementation has been good. In addition to the excellent short-term/restart efforts on both units, significant progress has been observed in licensee efforts to improve expectations and performance standards, senior management involvement, overall site management control and communications. Self-assessment has improved considerably and issues are being identified, prioritized and corrected.

Based on an overall improvement in site performance and confidence that the improvements would continue, Brunswick was removed from the Watch List as a Category 2 plant at the June 1994 SMM. The licensee has continued to demonstrate sustained improvement since that time.

FITZPATRICK

The James A. FitzPatrick Nuclear Power Plant received a Diagnostic Evaluation (DE) in September and October 1991, in light of declining performance at the facility. As a result of fire protection and 10 CFR Part 50, Appendix R deficiencies and a high failure rate of penetration seal inspections, the licensee decided to not restart the plant in December 1991 following a forced outage. In January 1992, the NRC placed FitzPatrick on the NRC Watch List.

FitzPatrick remained on the Watch List until January 1994. At that time, NRC Senior Managers concluded that the plant had demonstrated sustained improvement sufficient to warrant removal from the list. The licensee had improved performance in all previously identified problem areas and had demonstrated safe operation for a sustained period. Management oversight of day-to-day activities had been good and the licensee had provided sufficient resources, programs, and management oversight to carry out long-range performance improvements.

Since the June 1994 NRC Senior Management Meeting, the plant operated at full power until July 5, when reactor power was reduced for a problem with a turbine control valve. Reactor power was increased on July 16 and remained at 100% until August 1, when end of cycle coastdown operations began. However, indications of a fuel leak led to the plant operating at 75% power until mid-October, when coastdown of reactor power recommenced. A refueling outage (scheduled to last until early February) began on November 30, 1994. Performance during this outage has been generally good. A core shroud inspection was conducted, and though flaws were not significant, repairs were effected by installing tie rods.

On April 21, 1994, the NRC SALP Board met to assess FitzPatrick's performance during the period April 18, 1993 - April 9, 1994. General improvement was noted in all functional areas, with a "2" rating provided in each area. Improved problem identification, outage planning, and management oversight have contributed to the enhanced performance. Effective independent oversight and self-assessment programs and initiatives have also been significant contributors. There are some areas that still require management attention, such as housekeeping, longstanding equipment problems, plant material condition, outstanding fire protection deficiencies, a large engineering backlog and radiation protection program weaknesses. Overall, NRC concludes that the licensee is continuing to make performance improvements and has a strong safety ethic.

<u>Additional Topics Discussed</u>

1. EDO's Opening Remarks

The EDO briefly reviewed the history of the Senior Management Meeting (SMM) and discussed the benefits of SMM discussions. He discussed the potential impact of proposed federal budget cuts and cautioned that, if levied, the cuts would have a significant impact on NRC programs beginning as early as FY97. The EDO commented on the recent bill introduced by Senator Johnson, indicating that it may prompt major staff activity in the area of high level waste. He

also observed that work with EPA will continue in the area of risk harmonization. Regarding the Towers Perrin Regulatory Review Study (Towers Perrin report), the EDO discussed an initiative to respond to the reported concerns involving inappropriate conduct by members of the NRC staff. He stated that a letter will be sent to licensee officials encouraging them to inform the NRC when such concerns are perceived to exist. The letter will also inform them that a Management Issues Group has been formed within the Office of the EDO to receive, act on and resolve concerns involving inappropriate staff conduct.

2. Chairman's Opening Remarks

The Chairman discussed the current and future status of agency programs and shared his thoughts on the transformation of the NRC from a licensing organization to an efficient regulatory organization. His specific comments were as follows:

Reactor Programs:

- The staff should be commended for identifying areas in which reactor regulation can be improved. We should continue to look for ways to reduce the cost of regulation.

- The Commission has scheduled a meeting in March 1995 on our progress in the area of regulatory reform. We need to ensure that regulatory reform is institutionalized and continued.

- Given what we know on reactor vessel embrittlement, core shroud cracking, steam generator tube cracking, it is apparent that plant aging continues to be a significant issue; it also impacts our efforts in the area of decommissioning and license renewal. The challenge is to find ways to get out ahead of other possible aging issues before they arise.

- With regard to the NEI report we need to look at the big picture. There is room for improvement in how we handle our day to day with licensees. Nuclear safety must be the reason for our actions and we should find ways to ensure that risk significance is used more to focus and change our activities.

- Although it is important to continue our focus on the weak performers, the staff should integrate information and data to address issues at other sites to prevent large scale problems before they occur. Also, as we continue to move toward more systematic evaluation of licensee performance through the SALP process, we need to develop a more objective feedback mechanism, including how enforcement can provide feedback on performance and the effectiveness of SALP evaluations.

- It is important that the superior performers be recognized and receive some benefit from their efforts. The Chairman submitted a proposal to the Commission that would recognize superior performers through the SALP process.

Materials:

- The materials program should be evaluated to ensure that the focus is on factors that are significant to health and safety. We should identify and disengage from those activities that have little to no value-added in terms of providing adequate protection of the public and workers. In addition, the uniformity of NRC standards for radiation protection (e.g., design basis accident dose limits) across different regulations and various applications should be systematically assessed to ensure equal levels of protection.

- Comparable programs for materials safety exist in Agreement States and NMSS. Significant benefit to both programs can be derived from the cross-pollination resulting from a closer working relationship.

- When considering the NMSS management structure, focus should be on three programmatic areas: Materials Safety (Agreement State and non-Agreement State Programs), HLW, and all other nuclear materials applications (e.g. gaseous diffusion plants).

The New Congress:

- Although the activities of the new Congress may result in additional external pressure, our job is to focus on doing the right thing; to continue to be technically correct in dealings with licensees, the public, allegers, and Congress.

- A number of bills could affect us (e.g. Job Creation and Wage Enhancement, High Level Waste). Our challenge will be to identify points of contact and sponsors due to the significant turnover that has occurred. The staff should be prepared for a more difficult financial environment. We must practice sound financial management and make decisions that assure the health and safety of the public, and that are consistent with established agency priorities.

3. Continuation of Pilot Program for Recognition of Good Performance by Nuclear Power Plants:

The senior managers discussed the Pilot Program for Recognition of Good Performance by Nuclear Power Plants and reviewed the changes to the program currently being considered by the Commission. It was observed that, as directed by the Commission, in the Fall of 1994 the staff solicited comments from the industry and public on the program. Although some licensees commented that being removed from the good performer list had adverse effects, the overall comments received by the staff indicated uncertainty in industry and public support for the program. A Commission paper was developed based on this information, including alternatives to improve the program.

The senior managers reviewed a recent proposal developed by the Chairman that offers a different approach to recognizing licensees who attain superior (as opposed to the term "good") levels of safety performance. The Chairman's

proposal, which is under review by the Commission, would more closely align the recognition of superior performance with the SALP program. The proposal would continue the staff's use of SALP information and current plant performance to address the evaluation factors for recognizing superior safety performance. The proposal would also retain existing provisions for extending the SALP cycle and reducing planned inspection resources based on demonstrated superior performance.

The senior managers concluded that the staff would evaluate and implement, as appropriate, the changes to the program as directed by the forthcoming Commission SRM on this subject.

4. NRR Evaluation of Towers Perrin Study

The senior managers discussed NRR's evaluation of the Towers Perrin report. As requested, the NRR staff evaluated the numerous examples of NRC/Licensee regulatory interaction contained in the study and, based upon comments provided by the Regions and other offices, identified underlying themes (problem statements). The senior managers reviewed and discussed the problems statements, identified issues where minor changes were needed and considered actions for several problem areas. It was agreed that NRR will develop proposed actions, where appropriate, to address the problem statements and incorporate the Evaluation of the Towers Perrin Study and recommendations in a paper to the Commission.

The senior managers also reviewed and discussed draft guidance that would establish an additional mechanism (the Management Issues Group) within the Office of the EDO to respond to senior licensee officials who observe, what they perceive to be, inappropriate conduct by members of the NRC staff. The senior managers agreed that, in addition to the internal guidance and correspondence needed to implement this initiative, a proposed Commission policy statement would also be developed. It is envisioned that a policy statement would serve to encourage and emphasize the importance of open and frank discussions between the NRC and licensee officials. It would also complement the Management Issues Group initiative and enhance the credibility of the existing processes within headquarters and the Regions for receiving and managing such concerns.

5. Inspection Planning

NRR reported on the Integrated Performance Assessment Process (IPAP) (formerly the Customized Inspection Program). The process aims to improve the evaluation of licensee performance by enhancing the NRC's assessment of plants in the middle range of performance and by placing additional emphasis on risk significant activities. It is also envisioned that the process will be used to evaluate regional implementation of the inspection program.

Recent trial (pilot) assessments of this program have been completed at Point Beach, McGuire, Salem and South Texas involving staff from headquarters and the regions. A pilot assessment at Beaver Valley incorporated a risk profile process to evaluate how well the licensee managed risk. Several additional

trials of the risk profile process will be performed to further evaluate this concept.

NRR has evaluated the insights gained from the IPAP pilot assessments and is incorporating them in a paper to the Commission. A public workshop on IPAP has been proposed for March 1995 and a final paper requesting Commission approval is scheduled for May 1995.

The senior managers also discussed concerns involving the consistency and effectiveness of regional implementation of the inspection program. The Regional Administrators agreed to reflect on this issue and develop recommendations to improve the process for inspection planning and scheduling and integration of inspection findings.

6. Security

The senior managers discussed the Physical Security Program and agreed that NRR would lead an examination of the program with a focus on improving efficiency and effectiveness.

7. Management and Personnel Issues

The following topics were briefly discussed:

- Resident Inspector Study

  Senior management reviewed the initiatives proposed by the Resident Inspector Review Team to enhance the reactor resident inspector program. The major program changes include the Resident and Senior Resident Inspector Development programs, group relocation bonuses for residents, saved pay if laterally reassigned to headquarters or a Regional office, career development and advancement initiatives, and the establishment of a resident oversight panel. The pay savings and relocation bonus provisions received the Commission's endorsement and have already been implemented.

  The senior managers reiterated their support for the initiatives. The staff will develop a paper to inform the Commission of the remaining program initiatives. If there are no objections from the Commission, the initiatives will be implemented.

- Status of Regional Streamlining Study

  Senior management reviewed the regional restructuring plans. The major features of the plan include achieving a supervisory-to-employee ratio of 1:8, the retention of four divisions, the elimination of one layer of management (i.e., section chiefs), and the phase out of regional Teal Leader positions. The schedule supports implementation of the plans by October 1, 1995.

- Use of VSIP Authority

rapid "buy-in" by the licensee, reduced NRC resources and decreased regulatory impact on licensees. Limitations of the SE/DSA process include the added importance of the qualifications and leadership of the DSA team, the potential for SE and DSA conflicts, and the public perception of NRC's partial reliance on the licensee's DSA. AEOD indicated that the SE/DSA approach will be programmatically established as an alternative to a DE.

AEOD discussed an event that occurred at Wolf Creek in September 1994 involving the accidental loss of 9200 gal from the reactor coolant system to the refueling water storage tank. The event, which has been given a preliminary accident sequence precursor CCDP on the order of 10^{-4}, was caused by a failure to maintain configuration control during multiple parallel activities while transitioning to shutdown (mode changing). The safety importance of the event is the potential common mode disabling of RHR and all ECCS due to the same act that caused the loss of RCS inventory. AEOD has prepared a report and will continue to evaluate the generic implications of the event in coordination with NRR. NRR has transmitted an information notice summarizing the event.

10. Date and Location of Next Senior Management Meeting

The next SMM will be held June 6-7, 1995 in Region I.

Appendix D: January 1995 SMM Narrative Summary

[redacted]

MILLSTONE

I. HISTORY

This is the seventh SMM during which Millstone has been a full discussion plant. The station was not discussed during the SMM in June 1993 due to indications of improved performance, but was discussed at the four prior meetings and the January and June 1994 meetings. This station has never been placed on the Watch List.

During the previous SMMs, information was provided that detailed the performance decline at Millstone Station, Northeast Utilities' (NU's) Performance Enhancement Program (PEP), recent escalated enforcement actions, and the history of allegations. In early 1992, the licensee developed the PEP to ensure the effective use of resources, and to implement the recommendations of four internal performance assessment task forces. The PEP was a long-term effort (five-years) that provided substantial additional staff and budgetary resources. The PEP action plans attempted to address the root causes of NU's performance problems and the program did contain measures to verify and validate the completion of these action plans. However, the PEP did not have specific indicators to measure effectiveness and did not significantly contribute to improved operational performance. In October 1994, the PEP was absorbed into the overall utility "business plan".

Prior to 1992, the frequency of allegations received from Millstone employees was very high. Principally, employee concerns were provided to the NRC by three individuals. The focus of these allegations was procedure adherence and work control, as well as harassment, intimidation and discrimination (H&ID).

The NRC has received an increasing number of allegations from the Millstone site since the spring of 1993. Six Millstone employees and three former employees are the source of most of the allegations. More than half of the allegations are related to work processes such as processing and control of work at the site, supervisor/peer competence, tagging, unauthorized work, improper storage and handling of materials, training deficiencies, operability calls, timeliness of engineering findings, access and control of fitness for duty computer records, and effectiveness of the licensee's Nuclear Safety Concerns Panel (NSCP — one of the completed areas for improvement in the PEP). The staff has concerns with the NSCP review of concerns brought to the program and whether corrective actions initiated by the licensee to improve this program have been effective. In addition, a number of the allegers have filed 10 CFR 2.206 petitions to express their concerns. During the latter part of 1993, the NRC received six such petitions; two have been received in 1994.

In July 1994, the NRC issued two Severity Level II violations to NU for events which took place in the 1989 — 1990 timeframe; one event was the licensee's failure to take prompt corrective action concerning the operability of the Unit 1 feedwater coolant injection system (FWCI), and the other event involved discrimination against the engineer who had raised these operability concerns.

In response to the August 1993 Unit 2 forced shutdown caused by a non-isolable reactor coolant leak and other indications of declining performance, NU made programmatic and management changes at Unit 2. A substantial Millstone site and corporate management change and engineering reorganization also occurred in November and December 1993. The magnitude of these changes reflected a strong commitment on the part of NU senior management to improve performance at Millstone. However, it is not yet evident that substantial performance improvements have resulted from these efforts. Some areas of improvement have been noted.

II. CHANGES SINCE LAST SMM

Site-Wide

The site and corporate engineering organizations have been restructured under Eric DeBarba, Vice President — Nuclear Engineering Services. Most of the corporate engineers were relocated to the new administration building at the Millstone site during July and August 1994, and the engineers were aligned in separate unit organizations. The reorganization was designed to enhance engineering accountability and responsiveness to site technical issues, as well as to enhance their personnel access to the units. The reorganization incorporated the implementation of the systems engineering concept at the Millstone site.

Other changes included the replacement of the Unit 2 and Unit 3 Operations Managers. In both instances, the new Operations Manager had previously served as Operations Manager at a different Northeast Nuclear Energy Company (NNECO) facility.

The licensee's implementation of the PEP has continued since the last SMM. The licensee has completed over two-thirds of the PEP action plans and has begun the verification and validation phase for many of those issues. It appears that the licensee is meeting most of the Action Plan target dates, but has been slow with the verification and validation phase of PEP. The licensee validation of certain action plans has identified the need for continued effort in order to achieve the expected improvement. These additional activities have been incorporated in the 1995 Business Plan. The effectiveness of the PEP program in achieving performance improvement has been limited. Plant operational performance at Millstone, particularly at Unit 2, has not significantly improved.

An engineering inspection by the Special Inspection Branch of NRR was conducted on June 6-24, 1994. The purpose of the inspection was to evaluate the effectiveness of the engineering organization in performing routine and reactive activities to support plant operations. The team found that the performance of the engineering staff demonstrated good technical capability which could provide necessary technical support to plant operations. However, the team noted deficiencies in the areas of: implementation of engineering programs and procedures; inadequate closeout of plant design change records; instances of modifications to plant equipment without proper plant design change documentation; ineffective management attention to timely resolution of engineering issues; and a lack of formality in addressing action items.
Site management lacks effectiveness in addressing significant performance issues such as procedural adherence problems, ineffective communications and teamwork

between the sites and corporate organizations, continued weaknesses in identifying and correcting performance problems, and poor self-assessment and quality verification effectiveness. Correction of these weaknesses are the focal point of the new management team, but improvements have yet to be realized. The NRC cited five violations in the areas of inadequate corrective actions and procedural adherence in the final inspection report of the last SALP period. A management meeting was held with the licensee in Region I on October 21, 1994, to discuss NU's additional steps to further resolve these specific issues.

The Millstone site has had an unusually high number of requests for Notices of Enforcement Discretion (NOED). In the last 6 months, Millstone 2 was granted 3 NOEDs and Millstone 3 was granted 1 NOED. In each case, the staff determined that the NOED involved a temporary and nonrecurring condition and that the course of action proposed involved minimal or no safety impact. Several NOEDs were the result of engineering reviews of plant systems. The high frequency of need for NOEDs indicates, in some instances, a lack of adequate management planning and attention to deficiencies in the past.

The most recent SALP at Millstone, covering the period from April 4, 1993, to July 9, 1994, indicated significant weaknesses in the areas of plant operations and maintenance at Millstone Unit 2. The SALP report rated Millstone Units 1 and 3 as Category 2 in all functional areas. Millstone Unit 2 was rated as Category 3 in operations and maintenance and was rated Category 2 in engineering and plant support. Despite attempts to achieve consistent improvements, such as through the PEP, the Procedure Upgrade Program and other programs, lasting performance improvements at the site have not been achieved in several areas. In fact, performance at Unit 2 has significantly degraded. Longstanding programmatic and staff performance weaknesses adversely affected the unit staff's response to several challenges during the SALP period. Several weaknesses in performance, common to all three units, were also noted. These include continuing problems with procedures, the informality in several maintenance and engineering programs, and the failure to resolve several longstanding problems at the site. In contrast, performance in radiological controls at all three units and in the plant operations area at Unit 3 has been very good.

Unit 2

Since the end of the last SALP period, overall performance at Unit 2 has not improved. On July 27, 1994, the unit was shut down for 38 days when the licensee determined their reactor coolant pump oil collection system did not meet the requirements of 10 CFR 50 Appendix R. On September 24, 1994, the licensee was granted enforcement discretion associated with the timeliness for conducting containment local leak rate tests. A subsequent review by the staff determined that several penetrations had not been aligned, drained and vented to perform a valid integrated leak rate test. The Unit 2 cycle 12 refueling outage began on October 1, 1994, and experienced several problems. On October 19, spent fuel pool cooling was temporarily lost when operators drained the fuel pool level below the suction of the system pump. On October 20, an Unusual Event was declared when approximately 150 gallons of service water overflowed from an open room cooler vent in the upper vital 4160 Vac switchgear room. The event was caused by a shift supervisor who did not verify system isolation and did not use the required work control process to drain the system.

Following the service water event, licensee management placed a hold on all non-essential work activities pending the outcome of an evaluation. A conference call was held between licensee management and the NRC on October 21 to discuss the event. NRC management reiterated concern about overall poor performance during the Unit 2 outage. The licensee subsequently allowed select jobs to proceed with caution prior to completion of the event evaluation but only after the work scope and boundaries were closely evaluated to be correct. On October 24, however, the licensee attempted to remove a pressurized main hydrogen supply spool piece that was not within an existing tagout boundary. As a result of that event, a broader work stand-down was ordered by licensee management pending their review and assessment of the work control issues. On October 31, the licensee began working a limited work scope of core off-load, steam generator wet lay-up, and maintaining essential equipment. The Millstone Senior Vice President estimated that the work stand-down had delayed the Unit 2 outage schedule by a minimum of one month.

On November 2, 1994, an NRC Millstone Assessment Panel meeting was held at the site. The MAP discussed possible NRC actions given the recent work stand-down by the licensee at Unit 2 and other NRC inspection issues. As a followup to one of the MAP meeting recommendations, a meeting between the NRC and Unit 2 management was held in Region I on November 17, 1994. At that meeting, the licensee presented the current status of Unit 2 and what performance issues they would resolve prior to unit restart. The NRC requested that the licensee document their corrective actions in a letter and that a second management meeting be held, prior to Unit 2 achieving criticality, to discuss the results of those corrective actions. This second meeting is intended to focus on why NU believes they have improved performance sufficiently to support plant operation.

III. FUTURE ACTIVITY

The next refueling outages are scheduled for October 1995 at Unit 1, refueling currently in progress at Unit 2, and May 1995 at Unit 3.

Five resident inspectors are currently assigned to the site (1 SRI, 4 RIs). Two region-based Project Engineers are currently devoted full-time to Millstone and Haddam Neck to provide timely followup and management of allegations and to support the Millstone inspection program.

Due to concerns with the performance of the NSCP and its ability to satisfactorily resolve employee concerns, an inspection of the effectiveness of licensee controls in identifying, resolving, and preventing problems is scheduled for April 1995. In the past, the staff has observed that NU frequently takes unique positions regarding the operability and reportability of technical issues, implying that they are willing to live with degraded equipment for extended periods of time and resolve issues on a near-term basis with licensing evaluations versus equipment repair or redesign. These positions, which are often nonconservative, are the basis for an operability/reportability inspection scheduled for December 1994. A 40500 inspection (Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems) is planned for May 1995.

MILLSTONE [redacted]

DATA SUMMARY

I. OPERATIONAL PERFORMANCE

A. Scram Summary

Unit 1

None.

Unit 2

None.

Unit 3

On September 8, 1994, the reactor was manually tripped when one of the main steam isolation valves inadvertently closed during surveillance testing. The unit was restarted on September 21.

B. Significant Operator Errors

Unit 1

On April 10, 1994, during a refueling outage, twelve thousand gallons of reactor coolant were drained from the reactor vessel and sprayed into the drywell. The engineered safeguards logic test provided instructions that aligned the discharge of the operating shutdown cooling system to the dry well spray header. The procedure had been recently changed and the procedure review and approval process failed to correct the inserted error.

Unit 2

On April 23, 1994, a control element assembly became immoveable during a reactor shutdown, and the licensee failed to properly diagnose the condition for several hours. Following recognition of the immoveable rod, operators failed to ensure that the shutdown margin requirements were met. An analysis by the fuel vendor (Siemens) was required to verify that adequate shutdown margin was available during the immoveable rod event.

Between April 20 and 23, 1994, operators failed to properly assess and report three Unusual Events.

On October 20, 1994, an Unusual Event was declared after the 4160 volt switchgear was sprayed with service water. The cause of this event was determined to be a shift supervisor failing to follow both the system operating procedure and the tagout system.

Unit 3

No noteworthy operator errors occurred since the last SMM.

C. Procedures

Improvement in the adequacy and use of procedures and in training were noted at Units 1 and 3. However, lapses did occur in procedure adherence and compliance with Technical Specifications, principally at Unit 2, where longstanding problems with operator attention to detail and procedural adherence were evident. Licensee management demonstrated a tolerance for deficient conditions at Unit 2.

II. CONTROL ROOM STAFFING

A. Number of Licensed Operators

	SRO	RO	LSRO	TOTAL
Unit 1	29	16	0	45
Unit 2	31	13	0	44
Unit 3	27	16	0	43

B. Number and Length of Shifts

Six, 8 hour shifts for each unit

C. Role of STA

The shift supervisors for all three units serve as dual role SROs/STAs, with the exception of two crews on Unit 3 which have an on-shift STA. This STA is considered a technical support person for the shift crew and is not licensed.

D. Requalification Program Evaluation

In October 1994, the NRC conducted a requalification program evaluation at Millstone Unit 1. The program was determined to be effective and operator performance was considered satisfactory.

In June 1994, the NRC conducted a requalification program evaluation at Millstone Unit 2. The program was determined to be effective and operator performance was considered to be satisfactory following resolution of two program concerns: (1) non-challenging written examinations, and (2) facility evaluation of operator performance during the simulator scenarios did not match the NRC evaluation. As a result of these concerns, a followup examination was conducted. Two additional crews were evaluated and demonstrated satisfactory performance on a dynamic simulator operating test. Each crew was administered one NRC-developed scenario and one facility-developed scenario.

In September 1994, the NRC conducted a requalification program evaluation at Millstone Unit 3. The program was determined to be effective and operator performance was considered to be satisfactory. The program continues to show improvement when compared with previous years.

III. PLANT-SPECIFIC INFORMATION

A. Plant-Specific Information

Plant	Millstone 1	Millstone 2	Millstone 3
Owner	NNECO	NNECO	NNECO
Reactor Type	BWR-3 GE	2-Lo CE PWR	4-Loop W PWR
Capacity, MWe	660	860	1150
AE/Constr.	Ebasco	Bechtel	Stone & Webster
Comm. Oper.	3/1/71	12/26/75	4/23/86

B. Unique Design Information

Unit 1

Containment: BWR 3 with Mark I containment (hardened vent added during the cycle 14 refueling outage)

ECCS: Feedwater coolant injection (FWCI) system provides high pressure injection for small-break LOCA (no HPCI or RCIC); isolation condenser provides cooling when reactor is isolated from the main condenser; capacity for 105% bypass of steam to the main condenser.

AC Power: Unit 1 has three sources of offsite power and the capability to receive power from a Unit 2 diesel generator tied to a Unit 1 4160 Vac safety bus. One Class 1E emergency diesel generator (2.7 MWe) and one non-1E gas turbine (11.5 MWe) generator provide emergency AC power. The gas turbine is not credited in accident analyses.

DC Power: The unit has an 8-hour station blackout rating.

Unit 2

Containment: Dry, prestressed concrete with steel liner.

Steam Generators: Both steam generators replaced in 1992 due to chronic and excessive tube leakage problems.

ECCS: Four safety injection tanks; three high pressure injection pumps (also used as charging pumps); two low pressure injection pumps.

AC Power: Offsite AC power supplied via four 345 kV lines, the main and reserve station service transformers and associated power buses;

two independent diesel generators and two radial distribution systems.

DC Power: Two vital DC distribution systems with two spare battery chargers (full capacity).

Unit 3

Containment System: Subatmospheric (operated at about 1 psi below atmospheric versus 5 psi as originally designed) dry containment with steel lined reinforced concrete and an enclosure building.

ECCS: Four accumulator tanks; three charging pumps; two safety injection pumps; and two RHR pumps.

AC Power: Two independent 345 kV offsite power lines; two 100% capacity diesel generators (4986 kWe), one SBO diesel (2260 kWe).

DC Power: Four Class 1E batteries.

Shared Systems

Heat Sink: Long Island Sound.

Manual cross-tie of Unit 2 diesel generator to Unit 1 emergency bus.

Station Blackout: The Millstone site has a minimum blackout coping duration. Unit 3 installed an additional air-cooled diesel generator for alternate AC power; Units 1 and 2 have adequate alternate AC power sources to meet SBO requirements.

IV. SIGNIFICANT MPAs OR PLANT-UNIQUE ISSUES

Unit 1

MPA-B113 — Safety Implications of Control Systems: Complete; licensee's TS submittal under review.

MPA-F71 — Detailed Control Room Design Review: The SER was issued 7/10/90. The modifications are scheduleu to be completed during the next refueling outage.

Unit 2

MPA-B111 — Individual Plant Examination: The licensee's submittal is currently being reviewed with a scheduled completion date of 3/95.
MPA-B113 — USI A-47 Safety Implications of Control Systems: Currently waiting for licensees response to the staff position. Target completion date 3/95.

MPA-B122 — Loss of Fill Oil in Rosemount Transmitters: The licensee's submittal is currently being reviewed.

MPA-B115 — Low Temperature Overpressure Protection: Proposed TS amendment currently under staff review.

Unit 3

MPA-B118 — IPEEE: The licensee's submittal is currently under staff review. The target completion date is April 1, 1995.

Steam Generator Tube Rupture: The licensee is preparing an analysis to show that operator response time demonstration runs with various operating crews supports the assumed operator response tim-s in the SGTR analysis. The target completion date is February 1, 1995.

V. STATUS OF THE PHYSICAL PLANT

A. Problems Attributed to Aging

None.

B. Other Hardware Issues

Unit 1

During the 1994 refueling outage, General Electric performed a visual inspection of the core shroud using remotely operated closed circuit video equipment. The inspection revealed several small cracks on both the inner and outer side of the shroud. After analyzing the results, the licensee concluded that the indications were well below the screening criteria prepared by GE and that they do not pose a concern for plant operation. The licensee plans to inspect the core shroud again during the next refueling outage.

Units 1 and 2

Significant hardware issues at Millstone station include the calculated stress levels experienced by some MOVs at Units 1 and 2 under certain transient scenarios. The licensee is following industry technical concerns with BWR core shroud cracking, control element drive mechanism penetration cracking, and Boraflex degradation.

Unit 3

On September 8, 1994, while the licensee was performing a monthly MSIV partial stroke test, the MSIV unexpectedly closed. Reactor startup on September 22 followed repair of the MSIV and minor RCS leaks. Because of difficulties in meeting the TS-required 5 second MSIV closure time, the licensee requested a TS change to 10 seconds. The staff is currently reviewing the submittal as well as NU's technical review and corrective actions for the slow operation of the MSIV solenoid control valves.

The containment structure of Unit 3 was designed and constructed with an under-containment drainage system imbedded in a thin porous concrete layer to collect water from the foundation of the structure and transport it outside the building. The licensee has determined that apart from normal drainage water, the piping has, since 1986, been transporting significant amounts of particulate and carbonated sludge from the degraded and eroding porous concrete. NRC inspection has determined there is not an immediate concern regarding the stability of the containment structure; licensee investigation and NRC followup is ongoing.

Site

Chronic service water leaks require frequent attention. The licensee is replacing piping using different material in some cases and is studying long-term corrective actions.

VI. PRA

A. PRA Insights

Unit 2

Millstone 2 is an early Combustion Engineering NSSS plant. If all feedwater is lost at a PWR, the plant must depend on bleed and feed to prevent core damage. The two turbine-driven main feedwater pumps have low suction pressure trips. The auxiliary feedwater system (AFW) has good redundancy (two motor driven AFW pumps and one turbine driven pump). However, should all feedwater be lost, the bleed and feed capability at this unit is minimal. The Safety Injection (SI) pumps (used for high pressure injection) have a shutoff head of 1205 psig. The three positive displacement charging pumps, which would have to be aligned manually, have low capacities (44 gpm each) and provide little feed and bleed assistance. Since the two PORVs are small, operator action probably must be very rapid to assure success in the event that bleed and feed is needed.

Station blackout is considered to be an important contributor to estimated core damage frequency for many plants. As reported in the FSAR, the station batteries have only a one hour capacity. The alternate AC power source is the crosstie to either one of the Unit 1 emergency AC power sources. The alternate AC source can be made available within 1 hour from the onset of an SBO. During refueling outage 11, which ended in January 1993, weather protection was installed to the alternate AC components in order for Unit 2 to fully comply with the SBO rule. The Millstone site has been subject to several extended losses of offsite power due to hurricanes. The licensee has taken the position that it will shut down the reactor if a hurricane is in proximity.

Service water/component cooling system failure is considered to be a potentially significant contributor to core damage frequency at many plants. At Unit 2, in the event of an accident, non-safety

Reactor Building Closed Cooling Water system loads must be isolated from the safety loads. Also, temperature control valves on the associated heat exchangers must go to the full open position to assure system success. The Unit 2 service water system piping has experienced significant corrosion/erosion. The licensee has replaced most of the large piping with plastic lined piping and is continuing its ongoing surveillance program and replacement of piping, as necessary.

The licensee uses PRA insights in reviews of conceptual design changes. To a lesser extent, the PRA is used for support of engineering and operations. Millstone 2 is considering joining Millstone 1 and Haddam Neck in the ISAP program.

B. PRA Profile

A Level 1 PRA was completed by Millstone 2 in the fall of 1991. The licensee submitted their IPE, which consisted of an updated Level 1 PRA coupled with Level 2 PRA, dated December 30, 1993 in response to GL 88-20. The IPE review commenced on November 8, 1994, and is expected to be completed in June, 1995. The IPE reported that the core melt frequency (CMF) due to internally initiated events is 3.4E-5/yr. The contributions to CMF by initiating event group are listed below:

Initiating Event Group	CMF/yr	% of Total CMF
Loss of Offsite Power	8.4E-06	24.6
Transients	6.1E-08	17.8
Loss of DC Bus A	3.9E-06	11.4
Loss of DC Bus B	3.9E-06	11.4
Steamline Break	2.9E-06	8.5
Large LOCA	1.7E-06	4.8
Small LOCA	1.6E-06	4.8
Small-small LOCA	1.5E-06	4.3
Medium LOCA	1.3E-06	3.7
Loss of Service Water	9.7E-07	2.8
Loss of Vital AC Panels 10&30	8.4E-07	2.5
SGTR	5.2E-07	1.5
Main Feedline Break	2.4E-07	0.7
Internal Flooding	2.0E-07	0.6
Intersystem LOCA	6.6E-08	0.2

No single accident sequence or class of initiators was identified as a risk outlier. The results from the original Level 1 PRA lead to several plant changes designed to decrease the overall CMF, and these changes have been reflected in the updated Level 1 PRA. Some of the changes resulted in a decrease of AFW unavailability by increasing the ability to isolate an intact SG from a faulted SG. Another change required additional testing of LPSI check valves for reverse flow, thereby increasing their availability and reducing the possibility of failing LPSI cold leg piping due to overpressurization.

The IPE identified a potential vulnerability sequence. The sequence involves reactor coolant pump thermal barrier failure leading to possible overpressurization of reactor building closed cooling water and a small intersystem LOCA.

The Level 2 analysis found that the conditional probability of early containment failure is approximately 9.7 percent, and is dominated by direct containment heating. The conditional probability of late containment failure is approximately 33.1 percent, and dominated by the basemat melt-through failure. The conditional probability that the containment remains intact is 57.2 percent.

The licensee has indicated that the IPEEE will be submitted in December, 1995.

C. Core Damage Precursor Events

On the basis of the precursors identified by ORNL for 1992 and 1993 (NUREG/CR-4674, vols. 17 thru 20), the staff did not identify any precursor events for the site that have a conditional core damage probability of 1E-5 per year or greater.

The following two events have been classified as "Significant Events" for the Performance Indicator Program:

During a refueling outage on July 6, 1992, the unit experienced a loss of normal power. In assessing the event, the licensee identified a situation where failure of two inverters on the same bus could affect the ECCS availability and open pressurizer PORVs at the same time. This situation was a previously unidentified core melt accident sequence which the licensee estimated would increase the core melt frequency by 1.0E-4/year. Significant plant modifications were implemented prior to plant restart as a result of this event finding. These changes have been reflected in the IPE submittal. The modifications include a change of the Sump Recirculation Actuation Signal (SRAS) system logic to a selective logic, such that no single failure of a safety related component causes an inadvertent SRAS. This modification improved LPSI pump availability. Also, the changes included the modification of the PORV control circuit logic such that de-energization of any two of four vital 120V AC panels will not result in the PORVs opening on a false high pressure signal. This decreases the potential for a LOCA due to PORV opening. The conditional core damage probability of this event was estimated at 1.0E-4.

On August 5, 1993, an unisolable 5 gpm RCS leak developed while the unit was at 100% power. Repeated applications of leak sealant caused one of four body-to-bonnet studs to shear on an unisolatable manual letdown isolation valve which created the 5 gpm RCS leak. If the other three studs had sheared, a non-isolable small LOCA would have ensued. The Conditional Core Damage Probability for the event was preliminarily estimated to be [7.1E-4] X [probability of inducing a small LOCA after the first bolt sheared]. Long term

cooling concerns of the potential small LOCA were raised since the centerline of the valve is 8 to 10 inches below the centerline of the cold leg. If the small LOCA had occurred, HPSI would have had to continue while the plant entered and maintained RHR mode until the break was fixed. The conditional core damage probability of this event was estimated at 7.1E-4

VII. ENFORCEMENT HISTORY

5/93 CIVIL PENALTY — The action was taken based on one Severity Level II violation related to the harassment, intimidation and discrimination by management above first-line supervisors against an instrumentation and control supervisor for raising safety issues. A Severity Level III violation was also noted related to the destruction of an original Safety Evaluation and modification of a document in order to conceal safety concerns. A civil penalty was issued for the Severity Level II violation to emphasize the importance of licensees providing a work environment that is free of harassment, intimidation and discrimination against those who raise safety issues. A civil penalty was not issued for the Severity Level III violation because the licensee reported the matter and a "Director or Responsible Officer," as defined in 10 CFR Part 21, was not involved in the violation. The civil penalty for the Severity Level II violation was escalated because of significant management involvement in the violation. ($100,000)

8/93 ENFORCEMENT CONFERENCE — The staff considered enforcement action involving: (1) partial loss of normal electrical power and subsequent Spent Fuel Pool drain-down which occurred July 6, 1992, and (2) the possible failure to take prompt action to correct single failure design discrepancies identified by the licensee. The staff concluded that escalated action for failure to take prompt corrective action for the Spent Fuel Pool drain-down was not warranted. In addition, the staff decided not to cite violation for the design discrepancies due to the age of the violation (the original modification occurred in 1978) and the licensee's corrective actions.

9/93 CIVIL PENALTY — The action was based on a Severity Level III problem consisting of two violations. The violations involved: (1) the failure of numerous licensed operators in Units 1 and 2, to complete the licensed operator requalification training (LORT) program for the 1991 and 1992 requalification training period that ended December 31, 1992, and (2) the failure of the facility Nuclear Review Board (NRB), for the last six years, to either perform, or perform adequately, audits of training, retraining, qualification, and performance of the operations staff in Units 2 and 3 as required by the facility Technical Specifications and the Quality Assurance Plan commitment to ANSI 18.7-1976. A civil

penalty was issued to emphasize the importance of adequate and continuing management attention to the LORT, so as to assure all training requirements are completed in a timely manner, and appropriate audits are performed to verify completion. The civil penalty was escalated because of NRC identification of the deficiencies but mitigated based on the licensee's prompt and comprehensive corrective actions. ($50,000)

12/93 CIVIL PENALTY — The action was based on three violations that, in the aggregate, were classified as one Severity Level III problem. The first violation concerned the licensee failing to perform a safety evaluation, in accordance with the requirements of 10 CFR 50.59, prior to performing a leak repair of an unisolatable letdown line valve. The second violation of this action consisted of 10 examples of the licensee failing to provide workers adequate and appropriate instructions and license personnel failing to follow existing procedures. All of these 10 examples were associated with the attempted leak repair of the letdown line valve. The third violation identified the licensee's failure to perform adequate inspection of activities affecting quality, and this violation also stemmed from the licensee's attempt to repair the letdown line valve. The civil penalty that was issued for this action was escalated due to the problems being identified by the NRC, weak corrective actions taken by the licensee, poor past performance, and the extended duration of the problem. ($237,500)

3/94 CIVIL PENALTY — The action was based on two violations that constituted one Severity Level III problem. The first violation concerned design deficiencies in the auxiliary building filter system (ABFS) and the ability of that system to maintain negative pressure inside the secondary containment following a postulated accident. Under certain conditions, this design deficiency caused the ABFS to be inoperable and this resulted in a violation of the requirements of the technical specifications. The second violation consisted of the licensee failing to take adequate measures to ensure that the adverse condition that existed with the ABFS was identified and corrected in a manner that would preclude recurrence. The civil penalty for this case was mitigated due to the licensee identifying the problem and taking prompt and comprehensive corrective action, and escalated because of poor past performance such that, on balance, no adjustments were made to the base civil penalty. ($50,000)

7/94 CIVIL PENALTIES AND DEMAND FOR INFORMATION — The action was based on an investigation by the Office of Investigations and an inspection conducted by Region I, concerning two violations consisting of: (1) the deliberate delay in taking corrective actions for a condition adverse to quality (specifically a deliberate delay in the determination of the operability of the feedwater coolant injection system) that continued from

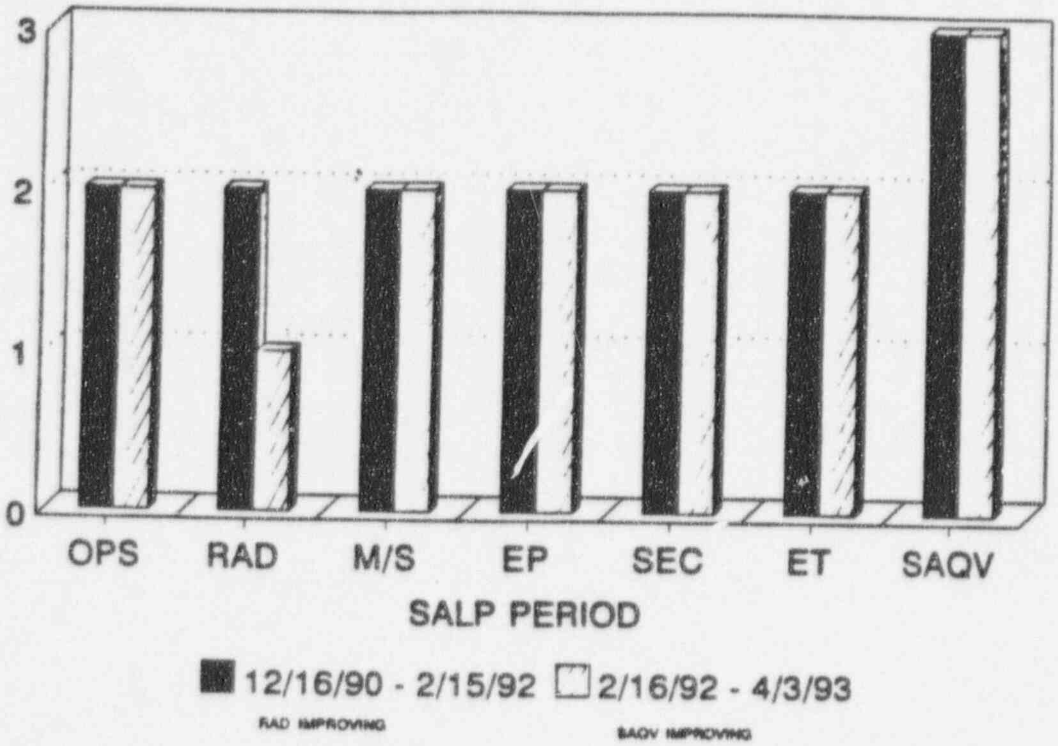
June 1989 to November 1989, and (2) discrimination by an unit Engineering Manager against an engineer who was involved in the operability determination. Civil penalties were issued to emphasize the importance of prompt resolution of potential safety concerns when they exist, as well as ensuring that appropriate controls exist to preclude discrimination of employees who raise such concerns. In addition, a Demand For Information was issued to the licensee demanding an explanation why the NRC should not issue an Order to modify their license to preclude the Engineering Manager from any involvement in future licensed activities at any of the licensee's facility. For the first violation, the civil penalty was escalated to $120,000 due to the continuing nature of the violation when spanned a number of months in 1989. ($220,000)

8/94 CIVIL PENALTY — This action was based on two violations. The first violation consisted of three examples of failure to classify and notify NRC of events at Unit 2 that constituted Unusual Events under the licensee's Emergency Plan and Procedures. The second violation involved the failure to ensure that adequate shutdown margin requirements existed following the identification of an immovable control rod assembly. These violations have been categorized in the aggregate as a Severity Level III problem. To emphasize the importance of appropriate classification and notification to the NRC of an Unusual Event and maintaining adequate shutdown margin to protect health and safety of the public, a civil penalty was issued after escalation of 50% for both identification and licensee performance and mitigation of 25% for the licensee's corrective actions. Enforcement discretion was exercised for a third violation that involved the compromise, since 1987, of the automatic primary containment isolation function for a postulated reactor water cleanup system line break. Discretion was exercised because the problem originated more than seven years ago, it was not a willful violation, adequate corrective actions have been taken by the licensee, and it was licensee-identified. ($87,500)

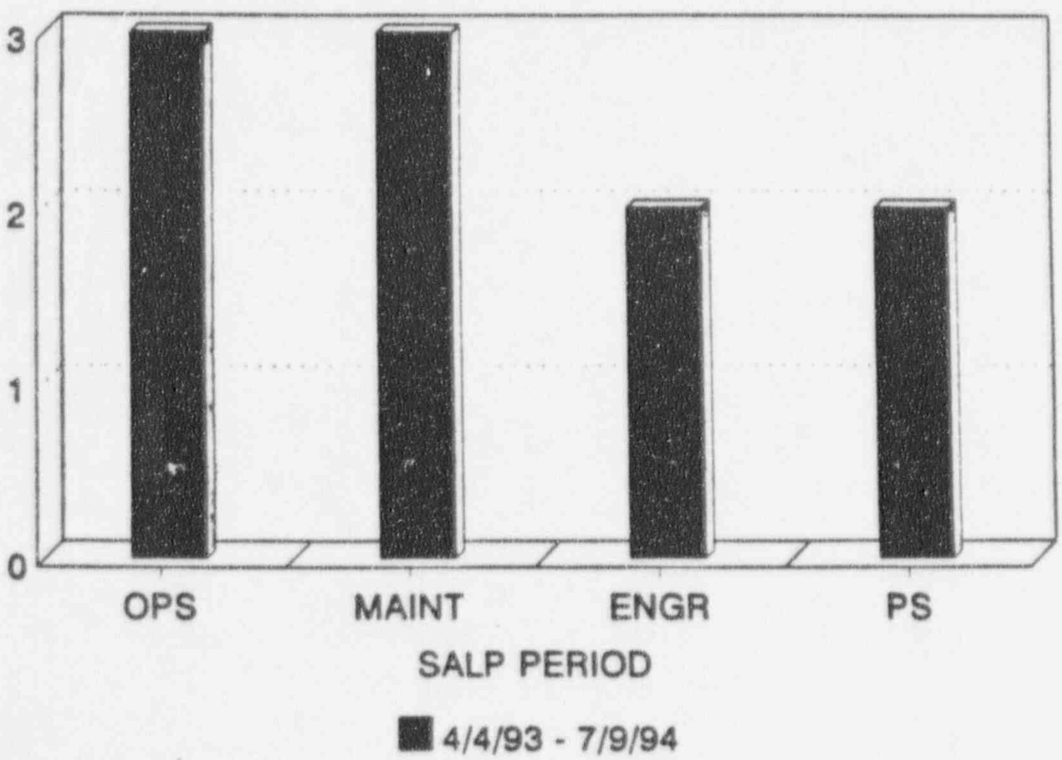
[redacted] [redacted]

MILLSTONE 2

MOST RECENT SALP RATINGS

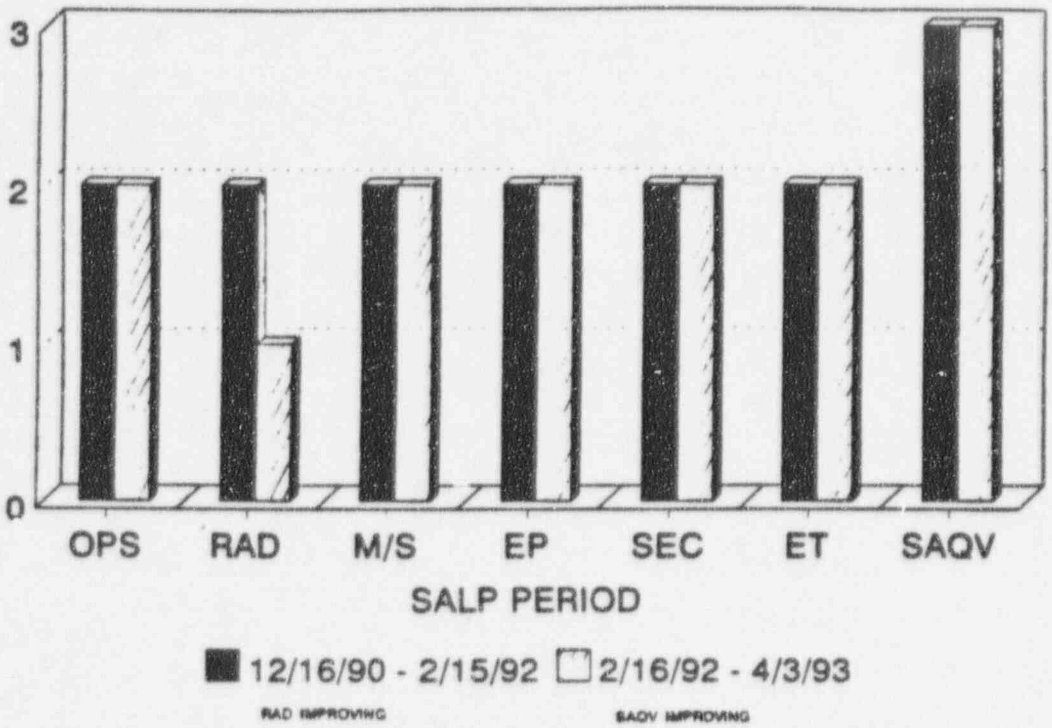


REVISED SALP PROGRAM RATINGS

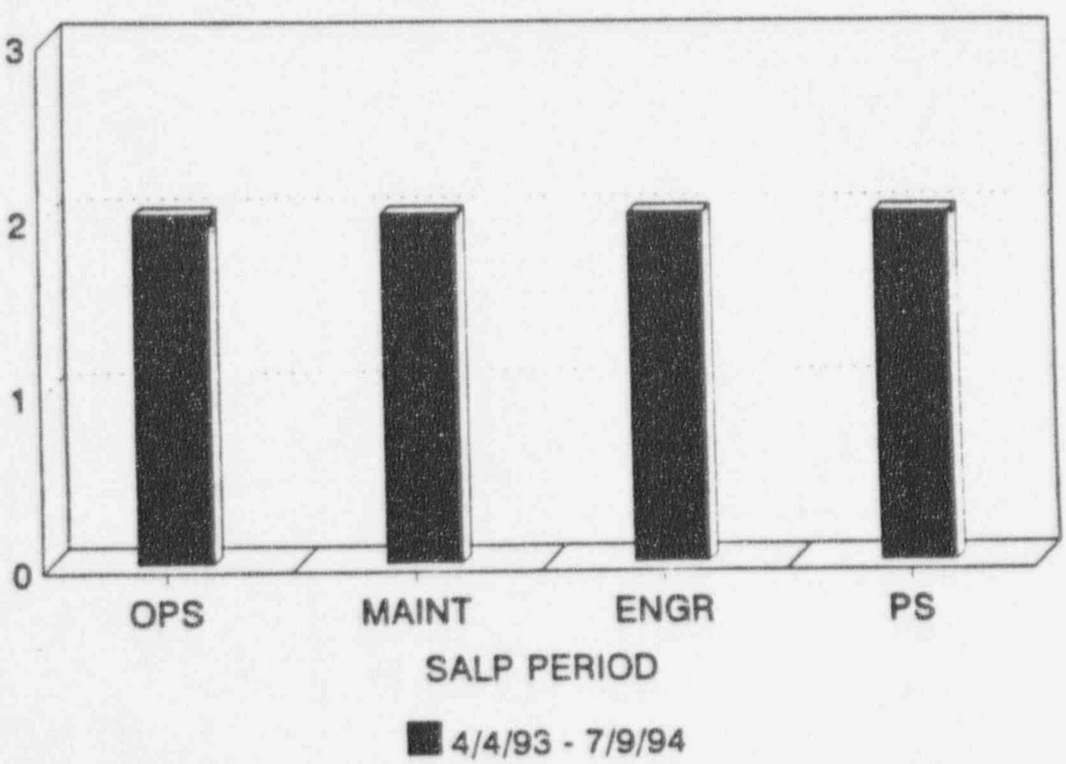


MILLSTONE 1 & 3

MOST RECENT SALP RATINGS



REVISED SALP PROGRAM RATINGS



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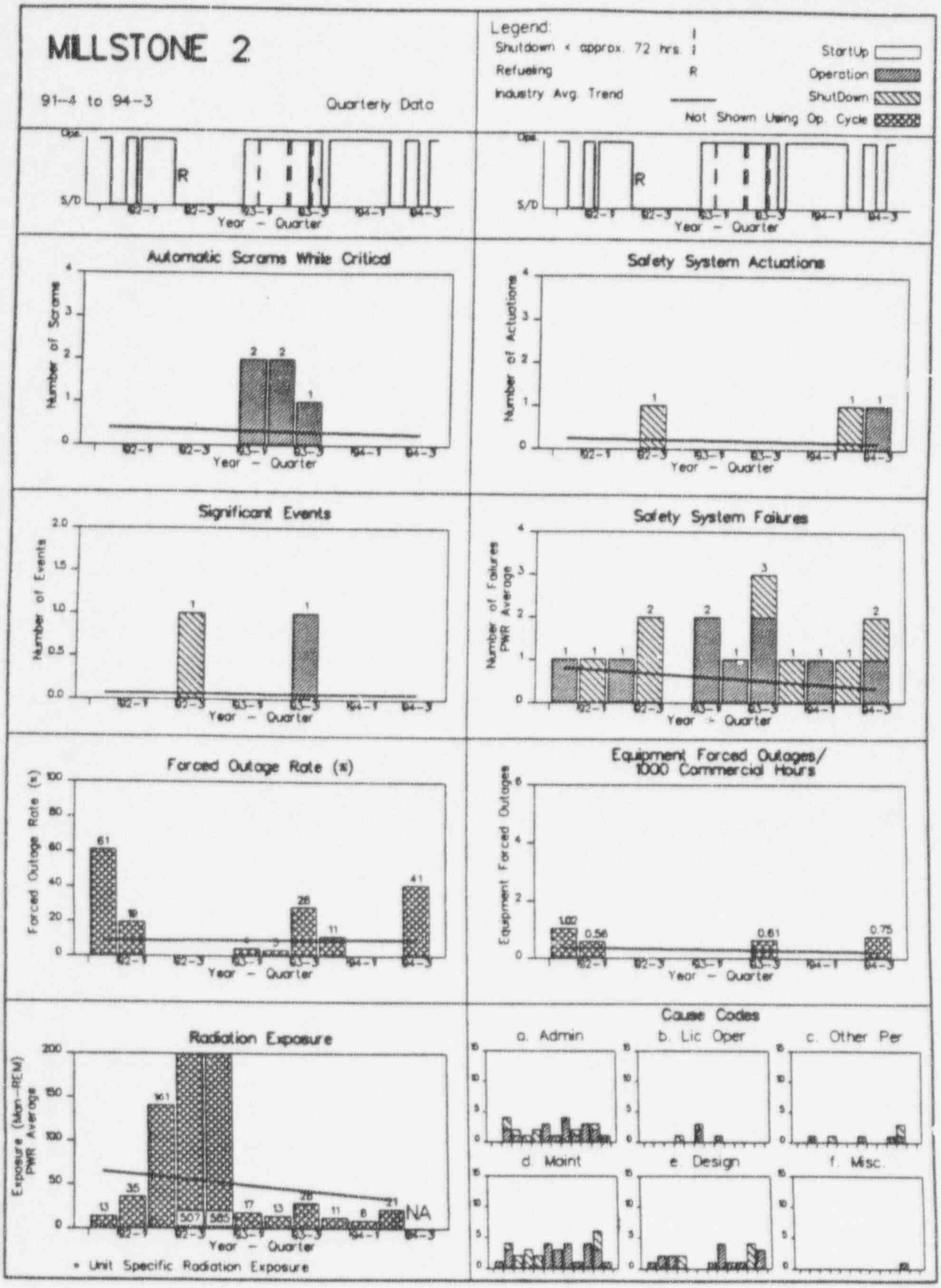
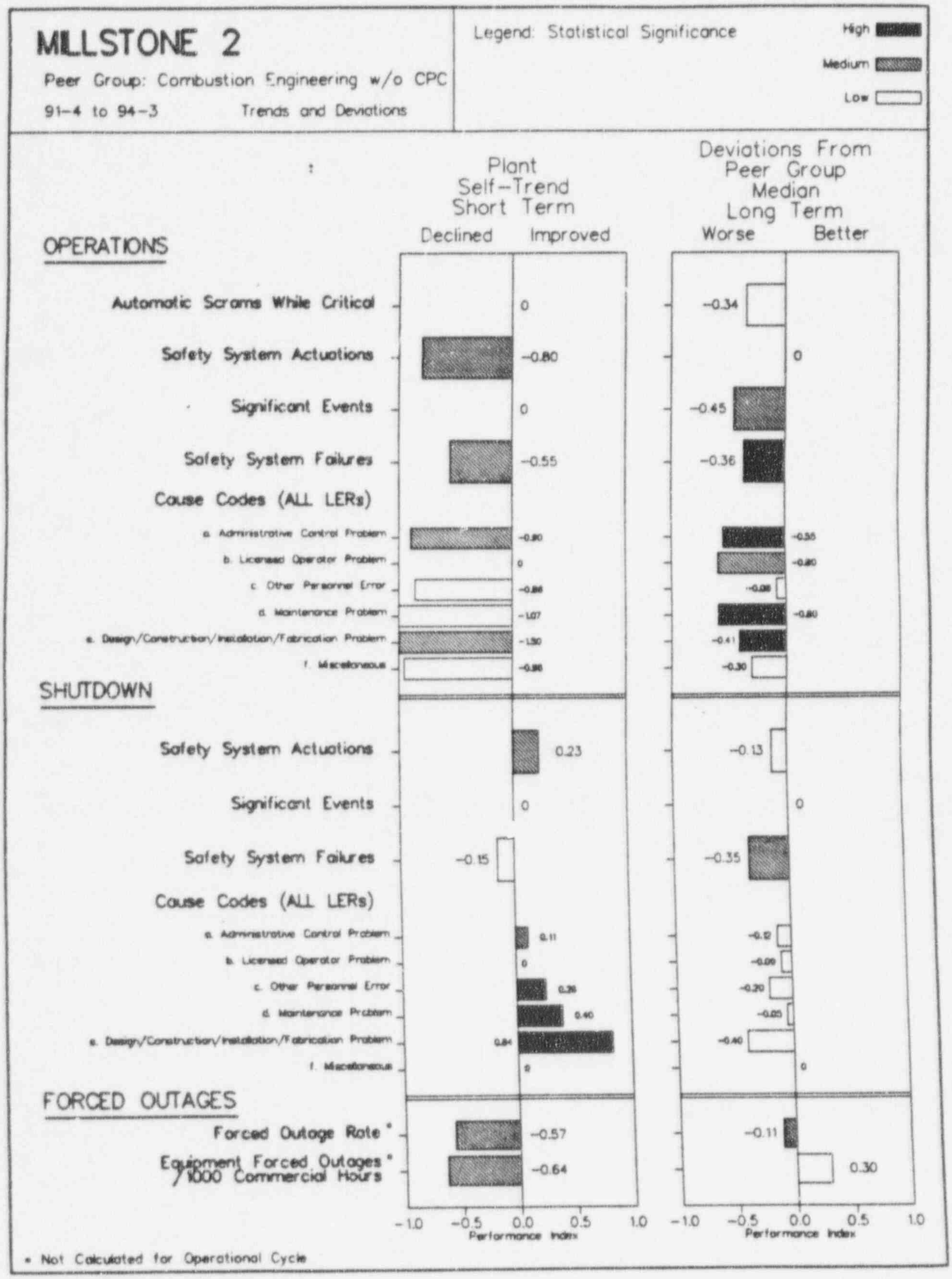
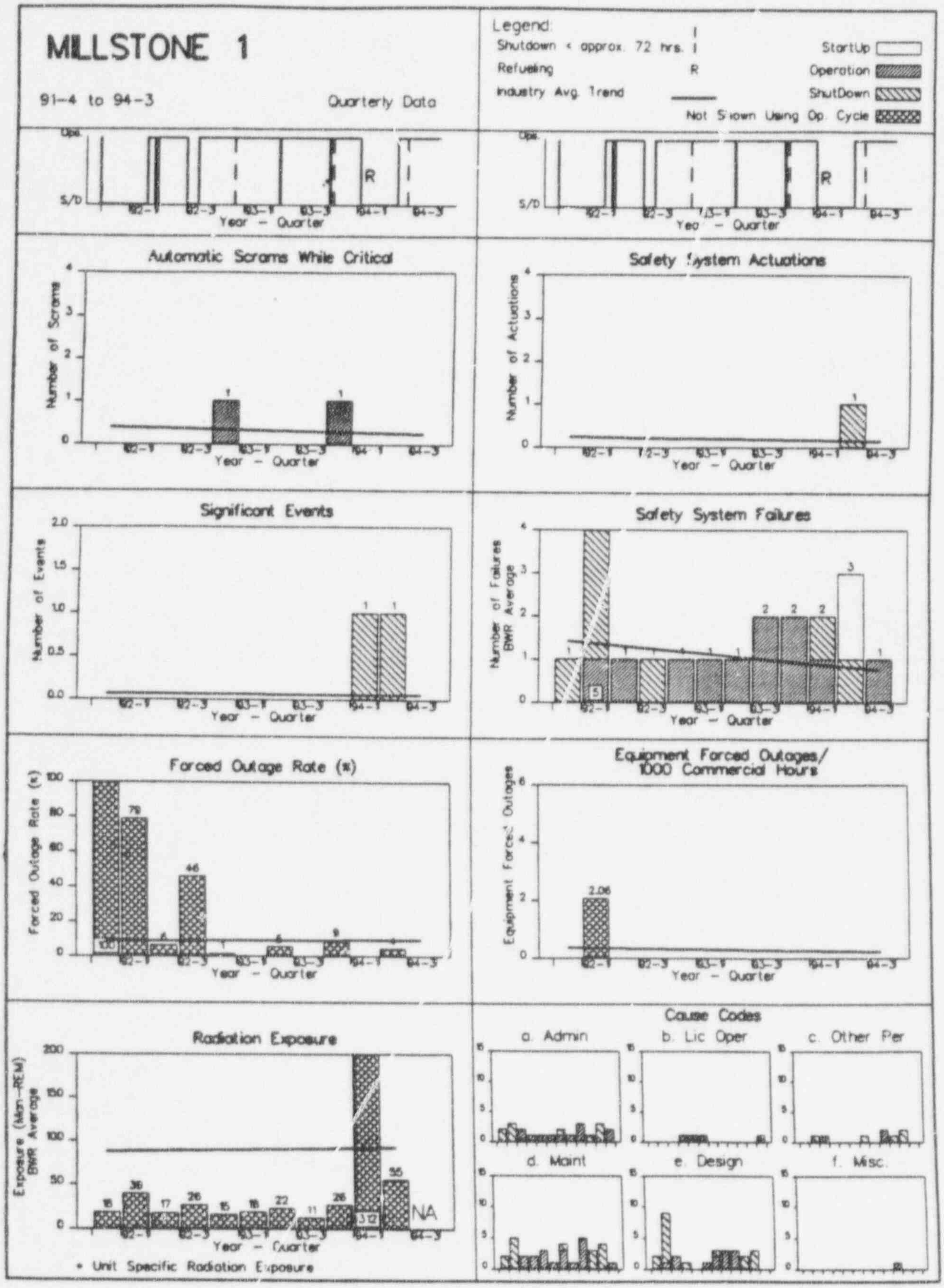

MILLSTONE 2
91-4 to 94-3
Quarterly Data
Legend:
Shutdown < approx. 72 hrs.
Refueling R
Industry Avg. Trend
StartUp
Operation
ShutDown
Not Shown Using Op. Cycle
Ops.
S/D
R
Year - Quarter
Automatic Scrams While Critical
Number of Scrams
Safety System Actuations
Number of Actuations
Significant Events
Number of Events
Safety System Failures
Number of Failures PWR Average
Forced Outage Rate (%)
Forced Outage Rate (%)
Equipment Forced Outages/ 1000 Commercial Hours
Equipment Forced Outages
Radiation Exposure
Exposure (Man-REM) PWR Average
NA
* Unit Specific Radiation Exposure
Cause Codes
a. Admin
b. Lic Oper
c. Other Per
d. Maint
e. Design
f. Misc.

[redacted]

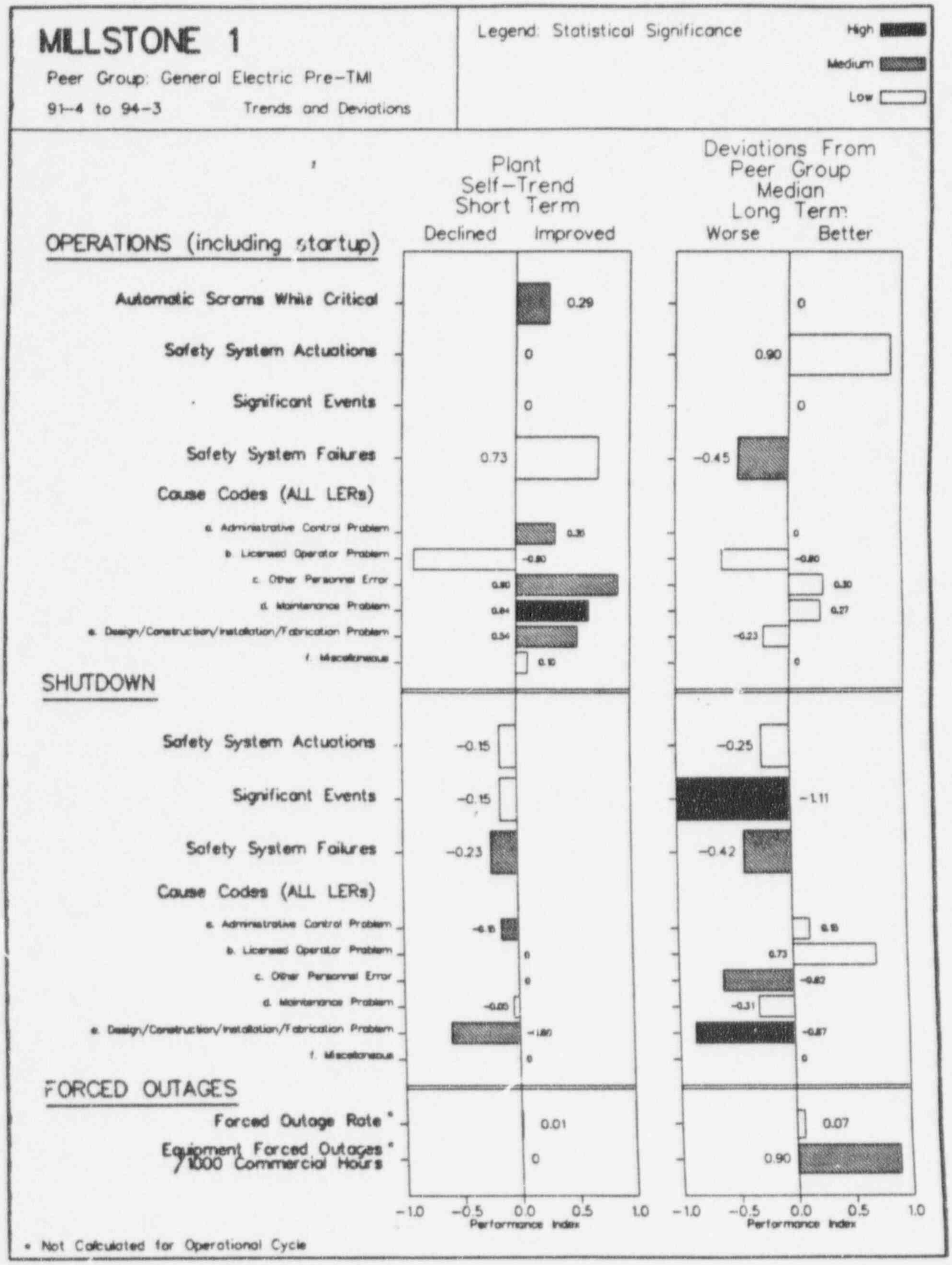


MILLSTONE 2
Peer Group: Combustion Engineering w/o CPC
91-4 to 94-3
Trends and Deviations
Legend: Statistical Significance
High
Medium
Low
Plant Self-Trend Short Term
Declined
Improved
Deviations From Peer Group Median Long Term
Worse
Better
OPERATIONS
Automatic Scrams While Critical
Safety System Actuations
Significant Events
Safety System Failures
Cause Codes (ALL LERs)
a. Administrative Control Problem
b. Licensed Operator Problem
c. Other Personnel Error
d. Maintenance Problem
e. Design/Construction/Installation/Fabrication Problem
f. Miscellaneous
SHUTDOWN
Safety System Actuations
Significant Events
Safety System Failures
Cause Codes (ALL LERs)
a. Administrative Control Problem
b. Licensed Operator Problem
c. Other Personnel Error
d. Maintenance Problem
e. Design/Construction/Installation/Fabrication Problem
f. Miscellaneous
FORCED OUTAGES
Forced Outage Rate *
Equipment Forced Outages * /1000 Commercial Hours
0
-0.80
0
-0.55
0
-1.07
-1.30
0.23
0
-0.15
0.11
0
0.40
0.84
0
-0.57
-0.64
-0.34
0
-0.45
-0.36
-0.41
-0.30
-0.13
0
-0.35
-0.20
-0.40
0
-0.11
0.30
-1.0 -0.5 0.0 0.5 1.0
Performance Index
* Not Calculated for Operational Cycle

[redacted]

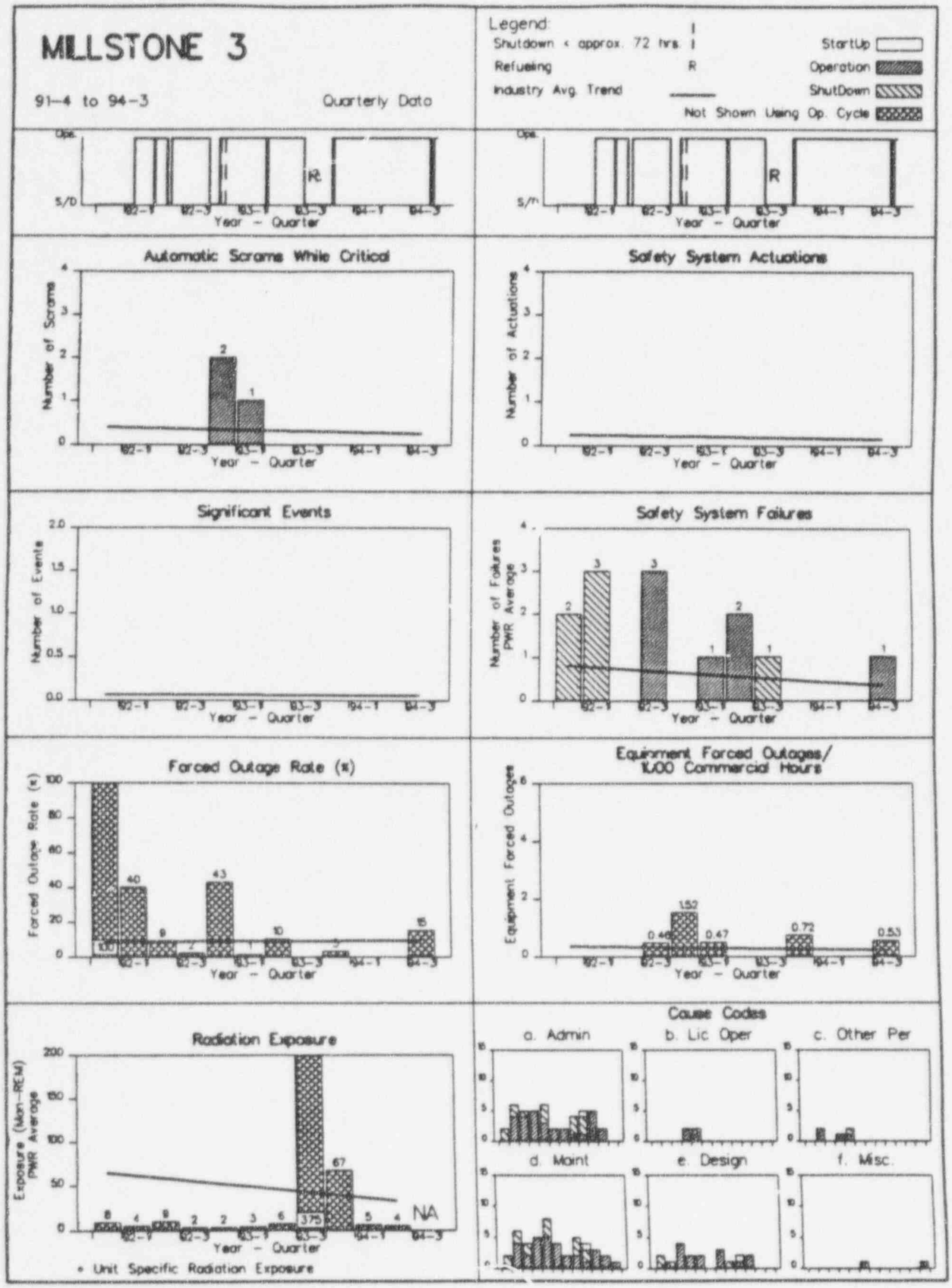

MILLSTONE 1
91-4 to 94-3
Quarterly Data
Legend:
Shutdown < approx. 72 hrs.
Refueling R
Industry Avg. Trend
StartUp
Operation
ShutDown
Not Shown Using Op. Cycle
Ops.
S/D
R
Year - Quarter
Automatic Scrams While Critical
Number of Scrams
Safety System Actuations
Number of Actuations
Significant Events
Number of Events
Safety System Failures
Number of Failures
BWR Average
Forced Outage Rate (%)
Forced Outage Rate (%)
Equipment Forced Outages/
1000 Commercial Hours
Equipment Forced Outages
Radiation Exposure
Exposure (Man-REM)
BWR Average
NA
* Unit Specific Radiation Exposure
Cause Codes
a. Admin
b. Lic Oper
c. Other Per
d. Maint
e. Design
f. Misc.

[redacted]

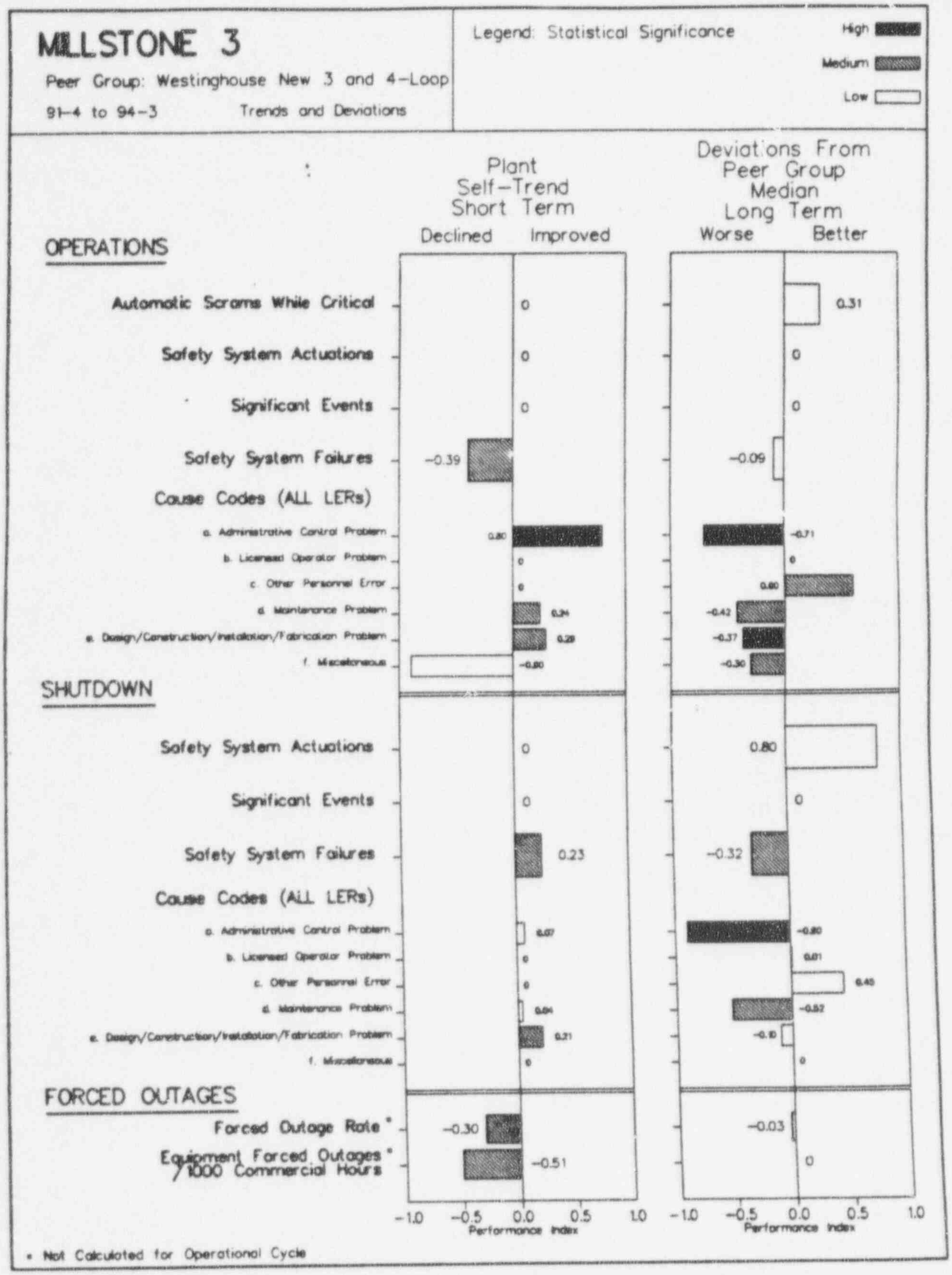


MILLSTONE 1
Peer Group: General Electric Pre-TMI
91-4 to 94-3
Trends and Deviations
Legend: Statistical Significance
High
Medium
Low
Plant Self-Trend Short Term
Declined
Improved
Deviations From Peer Group Median Long Term
Worse
Better
OPERATIONS (including startup)
Automatic Scrams While Critical
0.29
0
Safety System Actuations
0
0.90
Significant Events
0
0
Safety System Failures
0.73
-0.45
Cause Codes (ALL LERs)
a. Administrative Control Problem
0.35
0
b. Licensed Operator Problem
-0.80
-0.80
c. Other Personnel Error
0.80
0.30
d. Maintenance Problem
0.64
0.27
e. Design/Construction/Installation/Fabrication Problem
0.54
-0.23
f. Miscellaneous
0.10
0
SHUTDOWN
Safety System Actuations
-0.15
-0.25
Significant Events
-0.15
-1.11
Safety System Failures
-0.23
-0.42
Cause Codes (ALL LERs)
a. Administrative Control Problem
-0.15
0.15
b. Licensed Operator Problem
0
0.73
c. Other Personnel Error
0
-0.82
d. Maintenance Problem
-0.05
-0.31
e. Design/Construction/Installation/Fabrication Problem
-1.80
-0.87
f. Miscellaneous
0
0
FORCED OUTAGES
Forced Outage Rate *
0.01
0.07
Equipment Forced Outages * /1000 Commercial Hours
0
0.90
-1.0 -0.5 0.0 0.5 1.0
Performance Index
-1.0 -0.5 0.0 0.5 1.0
Performance Index
* Not Calculated for Operational Cycle

[redacted]

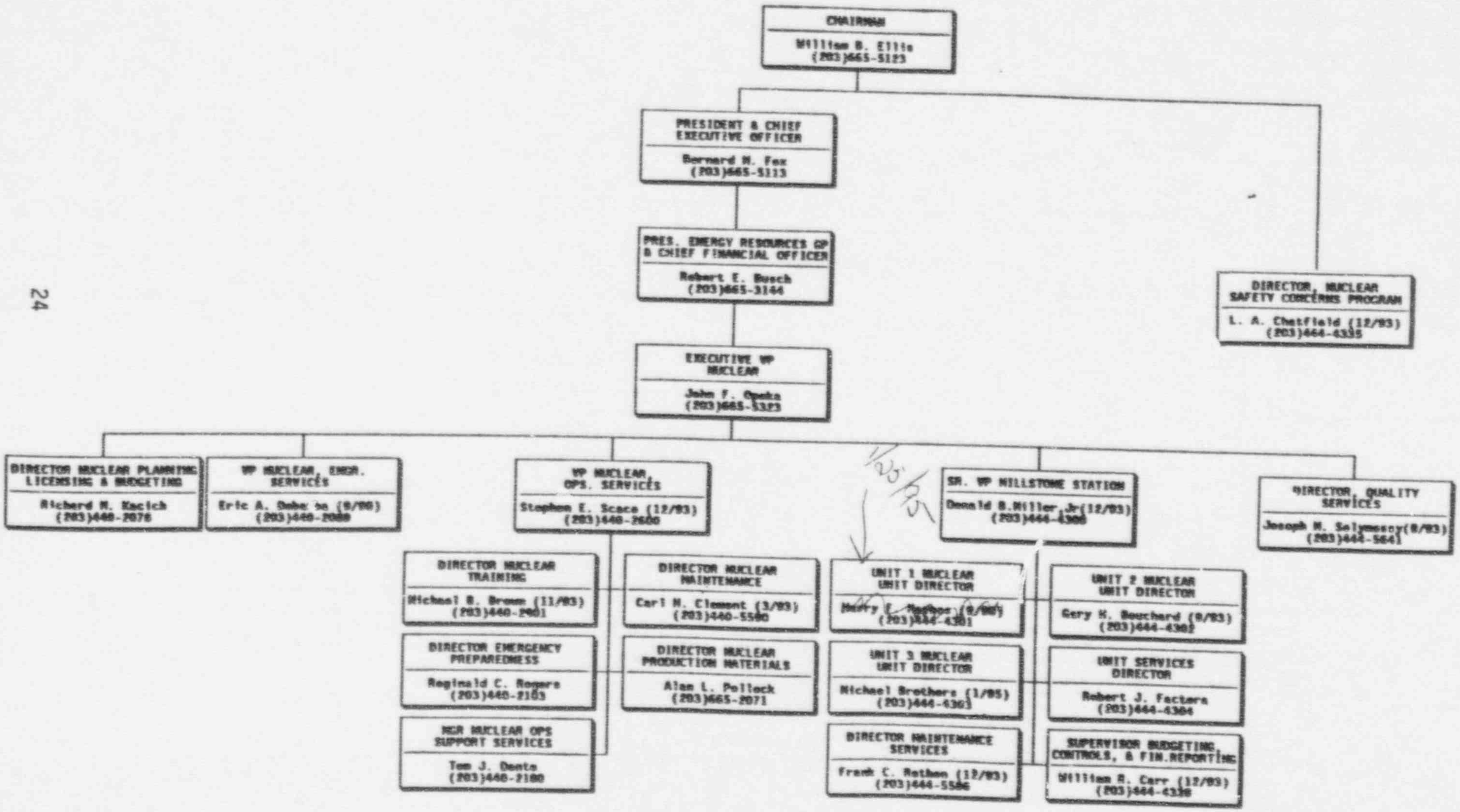

MILLSTONE 3
91-4 to 94-3
Quarterly Data
Legend:
Shutdown < approx. 72 hrs.
Refueling R
Industry Avg. Trend
StartUp
Operation
ShutDown
Not Shown Using Op. Cycle
Ops.
S/D
Year - Quarter
Automatic Scrams While Critical
Number of Scrams
Safety System Actuations
Number of Actuations
Significant Events
Number of Events
Safety System Failures
Number of Failures PWR Average
Forced Outage Rate (%)
Forced Outage Rate (%)
Equipment Forced Outages/ 1,000 Commercial Hours
Equipment Forced Outages
Radiation Exposure
Exposure (Man-REM) PWR Average
NA
* Unit Specific Radiation Exposure
Cause Codes
a. Admin
b. Lic Oper
c. Other Per
d. Maint
e. Design
f. Misc.

[redacted]



MILLSTONE 3
Peer Group: Westinghouse New 3 and 4-Loop
91-4 to 94-3
Trends and Deviations
Legend: Statistical Significance
High
Medium
Low
Plant Self-Trend Short Term
Declined
Improved
Deviations From Peer Group Median Long Term
Worse
Better
OPERATIONS
Automatic Scrams While Critical
0
0.31
Safety System Actuations
0
0
Significant Events
0
0
Safety System Failures
-0.39
-0.09
Cause Codes (ALL LERs)
a. Administrative Control Problem
0.80
-0.71
b. Licensed Operator Problem
0
0
c. Other Personnel Error
0
0.60
d. Maintenance Problem
0.24
-0.42
e. Design/Construction/Installation/Fabrication Problem
0.29
-0.37
f. Miscellaneous
-0.90
-0.30
SHUTDOWN
Safety System Actuations
0
0.80
Significant Events
0
0
Safety System Failures
0.23
-0.32
Cause Codes (ALL LERs)
a. Administrative Control Problem
0.07
-0.90
b. Licensed Operator Problem
0
0.01
c. Other Personnel Error
0
0.45
d. Maintenance Problem
0.04
-0.52
e. Design/Construction/Installation/Fabrication Problem
0.21
-0.10
f. Miscellaneous
0
0
FORCED OUTAGES
Forced Outage Rate *
-0.30
-0.03
Equipment Forced Outages * /1000 Commercial Hours
-0.51
0
-1.0
-0.5
0.0
0.5
1.0
Performance Index
-1.0
-0.5
0.0
0.5
1.0
Performance Index
* Not Calculated for Operational Cycle

NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE 1, 2, & 3



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[redacted]

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 5, 1994

MEMORANDUM TO: William Dean, Regional Coordinator
Office of the Executive Director
for Operations

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

SUBJECT: BRIEFING PACKAGE FOR VISIT BY NORTHEAST UTILITIES, WITH THE COMMISSIONERS AND JAMES TAYLOR

Enclosed is the briefing package on the status of Millstone Nuclear Power Station, Units 1, 2, and 3, the Haddam Neck Plant, and Seabrook Station, Unit No. 1 as background for the visit with the Commissioners and James Taylor by Northeast Utilities on December 9, 1994.

Docket Nos. 50-213, 50-245, 50-336
50-423, 50-443

Attachment: As Stated

cc w/atts: J. Taylor
J. Milhoan
W. Russell
F. Miraglia
R. Zimmerman
S. Varga
P. McKee
J. Andersen
G. Vissing
V. Rooney
A. Wang
A. DeAgazio

9412080275 XA

I/2

[redacted]

[redacted]

SCHEDULE OF COMMISSION/SENIOR STAFF VISITS

9:30 a.m.- 12:00 p.m.	Open meeting with James Taylor, EDO, to discuss employee concerns issues
1:15 p.m.	Commissioner Kenneth C. Rodgers
2:00 p.m.	Commissioner E. Gail de Planque
3:00 p.m.	Chairman Ivan Selin

[redacted]

Briefing Package for Visit by Northeast Utilities

with the Commissioners and James Taylor

Visiting Officials:	Robert E. Busch	President - Energy Resource Group Northeast Utilities
	John F. Opeka	Executive Vice President - Nuclear Northeast Utilities
	Richard Kacich	Director, Nuclear Planning, Licensing, and Budgeting Northeast Utilities
Date of Visit:	December 9, 1994	
Plants:	Millstone Nuclear Power Station, Units 1, 2, and 3 Haddam Neck Plant Seabrook Station, Unit No. 1	

Note: Northeast Utilities (NU) is a holding company whose subsidiaries include: the Northeast Nuclear Energy Company (NNECO), the licensee for Millstone Nuclear Power Station, Units 1, 2, and 3; the Connecticut Yankee Atomic Power Company (CYAPCO), the licensee for Haddam Neck; and the North Atlantic Energy Service Corporation (NAESCO), licensee for Seabrook Station, Unit No. 1.

MILLSTONE NUCLEAR POWER STATION, UNITS 1, 2, AND 3

BACKGROUND

o The SALP Report for the period of April 4, 1993, to July 9, 1994, found that performance at all three units was generally good; however, performance at Unit 2 indicated significant weaknesses in the areas of plant operations and maintenance. The SALP report rated Millstone Units 1, 2 and 3 as Category 2 in the engineering and plant support areas. The plant operations area was rated Category 2 at Units 1 and 3, and Category 3 at Unit 2. The maintenance area was rated Category 2 at Units 1 and 3, and Category 3 at Unit 2. During this SALP period, weaknesses in performance, common to all three units were noted, including continuing problems with procedures, the informality in several maintenance and engineering programs, and the failure to resolve several longstanding problems at the site. The staff noted that licensee management must pay closer attention in these areas. In contrast, performance in radiological controls at all three units and Unit 3 plant operations area have been very good.

[redacted]

[redacted]

o In response to licensee and NRC identified declines in performance during the previous several years, the licensee initiated a number of evaluation efforts to assess their performance. The results of their efforts and the follow-on management actions to correct these deficiencies portrayed a strong commitment for improvement, but highlighted the inherent ineffectiveness of other established management programs to identify and correct the performance weaknesses noted. The licensee's Performance Enhancement Plan (PEP), which was submitted in June of 1992, represented the vehicle by which the licensee addressed the recommendations of their internal task forces and other evaluation processes. In response to the PEP, the NRC formed a Millstone Assessment Panel (MAP) to evaluate the effectiveness of PEP. To date, the effectiveness of the PEP program in achieving performance improvement has been limited, as evidenced in plant operational performance at Millstone, particularly at Unit 2. Earlier this year, the licensee informed the NRC that it plans to integrate the remaining PEP action items into the 1995 and beyond Business Plans.

o Prior to 1992, the number of allegations received from Millstone employees was high. The number decreased to industry norms from 1992 until early 1993. Since the spring of 1993, the number of allegations has again increased. There are approximately 47 open allegations which includes about 84 total when considering subsets of the allegations. More than half are related to work processes such as processing and control of work at the site, supervisor/peer competence, tagging, unauthorized work, improper work orders, improper storage and handling of materials, training deficiencies, operability calls, timeliness of engineering findings, access and control of fitness for duty computer records, and effectiveness of the Nuclear Safety Concerns Program. Approximately [redacted] Northeast Utilities employees and [redacted] employee are the source of most of the allegations. [redacted]

o Several significant organizational changes were made by the licensee in an effort to improve engineering support and operational performance. The Millstone Site Vice President was replaced in December 1993. The site and corporate engineering organizations were restructured under Eric DeBarba, Vice President - Nuclear Engineering Services. Most of the corporate engineers were relocated to the site and aligned in separate unit organizations. The reorganization was made to enhance engineering's accountability and responsiveness to site technical issues, as well as to enhance their personnel's access to the units. The reorganization incorporated the implementation of the systems engineering concept at the Millstone site. In January 1994, a reorganization divided NU into three Business Groups. Mr. R. Busch is President of the Energy Resources Group which includes all nuclear programs. The latest changes included the replacement of the Unit 2 and 3 Operations Managers. In both instances, the new Operations Managers had previously served as Operations Manager at a different NNECO facility. The current organization chart is included at the back of this attachment.

[redacted]

[redacted]

- o The licensee has a substantial investment in Probabilistic Risk Assessment (PRA) which is used in evaluation of plant improvements and changes in plant configuration including shutdown risk. NU has an Integrated Safety Assessment Program (ISAP) for Haddam Neck and Millstone Unit 1 which is used to prioritize NRC and licensee initiatives based upon such inputs as plant safety (based upon PRA), worker radiation exposure, productivity and cost. The Unit 2 and 3 ISAPs are under development.

<u>CURRENT STATUS</u>

- o The NRC completed a 3-week inspection of the Millstone engineering organization in June. The team found that performance of the engineering staff demonstrated good technical competence and familiarity with the operation of the plants and the capability to provide necessary technical support to plant operations. However, the team noted deficiencies in the areas of implementation of engineering programs and procedures, inadequate closeout of plant design change records, ineffective management attention to timely resolution of engineering issues, and a lack of formality in addressing action items.

- o Millstone Unit 1 - Major work accomplished during the cycle 14 refueling outage beginning January 14, 1994, included main condenser tube replacement, service water pipe replacement, and motor-operated valve upgrades. The outage extended past the scheduled completion date of April 9, 1994, due to: two engineered safety feature actuations caused by personnel error and procedure inadequacies; the required resolution of planned and emergent engineering issues, including recovery from a reactor vessel draindown event; and delays in the turnover of plant systems. The unit reached full power following the refueling outage on May 27, 1994, but the licensee shut the unit down on June 14 in order to repair steam leaks which had developed on a turbine control valve and a main feedwater block valve. A plant startup was conducted on June 16, and the unit remained at power until November 24 when the licensee shut it down due to a leaking safety relief valve (SRV). The licensee replaced all 6 SRVs and restarted on December 2, 1994.

- o Millstone Unit 2 - Prior to the start of the cycle 12 refueling outage which began on October 1, 1994, Unit 2 experienced an unusually high number of licensing actions. On March 27, 1994, the NRC granted orally the licensee's request for enforcement discretion not to enforce compliance with technical specifications relating to the automatic actuation of the Millstone Unit 2 auxiliary feedwater (AFW) system. A subsequent emergency amendment was issued to allow the licensee to depend upon operator action to operate the auxiliary feedwater system if it did not operate in the automatic mode until the refueling outage which was scheduled for September 1994. On April 15, 1994, the NRC granted orally the licensee's request for enforcement discretion

[redacted]

associated with the Limiting Conditions for Operation for the Millstone Unit 2 Control Room Emergency Ventilation System and the Enclosure Building Filtration System. Subsequently, an amendment was issued relating to the testing of the charcoal filters. During the shutdown on April 22, 1994, for reactor coolant pump (RCP) seal maintenance, the licensee failed to declare on a timely basis three unusual events. These events resulted in escalated enforcement action. Because of these events, the Unit 2 Director put a hold on startup until retraining, of both the operators and unit management, was completed. The licensee implemented an augmented strategy for management oversight/mentoring of operations staff.

Unit 2 was shutdown from June 19 to July 29, 1994, to make modifications to the RCP oil collection system which the licensee determined did not meet the requirements of 10 CFR Part 50, Appendix R.

On September 24, the licensee was granted enforcement discretion associated with the timeliness for conducting containment local leak rate tests.

The Unit 2 cycle 12 refueling outage which began on October 1, 1994, experienced several problems. On October 19, 1994, spent fuel pool cooling was temporarily lost when operators, because of failed level indication, drained the fuel pool to a level below the suction of the system pump. On October 20, 1994, an Unusual Event was declared when approximately 150 gallons of service water overflowed from an open room cooler vent in the upper vital 4160 volt switchgear room. The event was caused by a shift supervisor who did not verify system isolation and did not use their required work control process to drain the system. On October 24, 1994, maintenance personnel inadvertently began removing a spool piece that was part of a pressurized main hydrogen supply line. As a result of these events, a broad work stand-down was ordered by licensee management pending their review and assessment of the work control issues. On October 31, the licensee began working a limited work scope of core off-load, steam generator wet lay-up, and maintaining essential equipment. The Millstone Vice President estimated that the work stand-down had delayed the Unit 2 outage schedule by a minimum of 1 month.

On November 2, 1994, an NRC Millstone Assessment Panel (MAP) meeting was held at the site. The MAP discussed possible NRC actions given the recent work standdown by the licensee on Unit 2 and other inspection issues. As a followup to one of the MAP meeting recommendations, a

meeting between the NRC and Unit 2 management was held on November 17, 1994. At the November 17, 1994, meeting, the licensee presented the current status of Unit 2 and what issues they would resolve prior to restart. The staff agreed with the issues and requested the licensee docket the commitments. A meeting with Unit 2 management will be held prior to restart to discuss the resolution of the issues.

- Millstone Unit 3 - The unit was continuously online for 382 days until problems encountered during main steam isolation valve (MSIV) testing caused a reactor trip. The unit restarted on September 21, 1994. Because of a history of difficulty in meeting the 5 second MSIV closure requirement, the licensee provided supporting analysis and a proposed TS change which would replace the existing 5 second MSIV closure time TS with 10 seconds. Staff review of this proposal is expected to be completed by the end of the year.

CURRENT CONCERNS

- General licensee performance at Unit 2.
- The performance concerns that led to the formation of the PEP are still being manifested at the Millstone site to some extent. Safety concerns (allegations) brought directly to the NRC have increased as of late and procedural noncompliance and inattention to detail are still observed.
- All three Millstone units have experienced corrosion/erosion in their salt water cooling systems. A substantial number of temporary non-Code repairs (upgraded to Code repairs during outages) have been undertaken by the licensee. During the last refueling outage, Unit 1 replaced a substantial amount of piping in the service and emergency service water systems.
- The licensee is concerned regarding the economic impact of NRC regulatory activities, especially expensive "backfits" and programs. The licensee has been actively involved in several programs to help reduce costs including: ISAP, the commitment management pilot program, and cost beneficial licensing actions.

POINTS TO BE EMPHASIZED

- The licensee should maintain their commitment to the problem areas identified in PEP and continue to communicate the goals of PEP to NU personnel.
- The licensee should enhance their efforts in order to reduce the frequency of procedural violations, improve the quality and timeliness of corrective action programs, and to address employee concerns.

[redacted]

HADDAM NECK PLANT

BACKGROUND

- o The NRC staff's SALP report for the period of January 10, 1993, through September 10, 1994, rated the plant Category 2 in all functional areas except in the area of plant support which the plant received a Category 1 rating. During the previous SALP period the licensee received a Category 1 rating in the areas except maintenance and surveillance. The staff has noted a decline in performance but has not identified any particular reason.

- o The licensee continued to operate the plant safely and exhibited strong performance during power operations. Maintenance and surveillance has been only average and the licensee has had problems with follow-up on Quality Service Department audits related to maintenance and surveillance and the work control program. Even though the operators were very effective, the staff is concerned by the increased number of challenges to the operator (trips, power reductions, forced outages, etc.).

- o The staff notes continued strong performance in the area of radiological controls and security. The licensee has completed or made significant progress on several long-standing licensing issues including: SEP Topic III-1 (Classification of Structures, Components, and Systems) and III.7.B (Design Codes, Design Criteria, Load Combinations, and Reactor Cavity Design Criteria); Generic Letter 88-20 (Individual Plant Examination); and Generic Letter 87-02 (Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue A-46). These reviews entailed significant reviews in terms of resources and safety significance.

- o The plant shutdown in January 1994, to replace suction service piping to emergency diesel generators, and the residual heat removal system due to microbiologically induced corrosion (MIC) effects. The plant outage lasted for about 35 days.

CURRENT STATUS

- o On July 11, 1994, a fire developed inside containment caused by leaking oil from the RCP dripping onto the hot reactor coolant piping. The plant went to cold shutdown to modify the RCP oil collection system. This work and several other modifications including replacing four solenoid valves to the feedwater regulator valves, changing the seat material in the eight pilot valves for the atmospheric steam dump valves, replacing a pressurizer spray valve, fixing a steam generator manhole leak, and repairing various problems with the hydraulic control system to the AFW system were completed on August 18, 1994. The plant was back on-line on August 20, 1994.

[redacted]

[redacted]

- o The site vice president (VP), John Stetz, left the company on July 22, 1994. No replacement has been named. This will be the third site VP change since 1991. In addition, there have been 3 site director changes and 4 station services director changes the last 18 months. These changes have a domino effect in the station management as in general the site director has been replaced with the station services director, who has been replaced by the operations manager, who has been replaced with the I&C manager. The site VP has been replaced by NU headquarters or Millstone site people in the past. The staff is closely monitoring the effects of the these management changes.

- o The licensee has committed to install an air-cooled diesel and an electric AFW pump to resolve the SEP topic for wind and tornado loads. The licensee has also agreed to provide two barriers for the containment vent and purge lines to resolve the SEP topic for containment isolation.

- o The plant is performing the last phase of the Reactor Protection System replacement which will convert the analog feedwater control system to a digital system. The safety-related portions of the feedwater system were replaced during the last outage and the feedwater control system for normal operation will be replaced during the next outage.

- o The licensee has announced that they are changing fuel vendors from B&W to Westinghouse. This will require staff review of the new fuel as the design will change.

CURRENT CONCERNS

- o The plant has had three notices of violation and two shutdowns within the last 9 months, which may have been avoided if a better root cause and corrective action had been taken.

- o The plant has found MIC in the service water system for the emergency diesel generator's heat exchanger. The licensee has performed fracture mechanics analyses and inspected all accessible welds to determine operability. The staff is pursuing this issue as it may affect other systems and a long term plan needs to be provided to control MIC at the Haddam Neck site.

- o The licensee's performance in all SALP functional areas has been good. However, the staff has had concerns, as noted in the last two SALPs, in the area of maintenance and surveillance. In addition, the staff has stated in the last several SALP Reports that the licensee needs to be more timely with regard to the submittal of licensing actions.

- o The licensee had stated that steam generator replacement is not an option and that alternate steam generator plugging criteria is critical to the economic survivability of the plant. However, because the plant has a partial roll in the tubesheet, the licensee has been able to re-roll tubes to keep them in-service. The licensee still proposes to pursue the alternate steam generator plugging criteria but its significance has been reduced because of the option for the plant to re-roll tubes.

[redacted]

- o As a result of the loss of Motor Control Center (MCC)-5 and two loss-of-offsite power events, an augmented inspection team (AIT) was performed at the Haddam Neck Plant. The major concern of the team was the reliability of the automatic bus transfer (ABT) system for the MCC-5. With the loss of MCC-5 all ECCS would be lost at the plant. Following a failed ABT surveillance test conducted on February 15, 1994, during the 35 day service water outage, the licensee found the direct cause of the problem to be a mispositioned snap ring on a breaker. In addition, the licensee implemented modifications to the design during the outage to improve ABT reliability which were reviewed and approved by the staff.

POINTS TO BE EMPHASIZED

- o The licensee needs to maintain their efforts in the area of improving maintenance and surveillance audits and documentation control. Staff is concerned about the root cause process and the corrective action plan at the site because of recent events concerning MIC and the RCP fire. The licensee should maintain their efforts to complete the remaining topics associated with the SEP.

- o The use of new fuel will require a significant amount of review and the licensee needs be timely in submittal of their analyses.

SEABROOK STATION, UNIT NO. 1

BACKGROUND

- o The SALP report for the period February 29, 1992, to August 29, 1993, rated the plant Category 1 in the functional areas of Plant Operations and Plant Support and Category 2 for the functional areas Maintenance/Surveillance and Engineering/Technical Support.

- o The licensee continues to operate the station in a safe, conservative manner with strong effective management in most areas. Well trained, knowledgeable operations staff is a strength, but an increasing trend for personnel has captured management attention. Management established a task force to identify the issues related to personnel performance and to identify the causes for operator error.

- o Performance in independent oversight and quality functions is mixed - good identification of problems but lack followup of implementation of recommendations and evaluation of the effectiveness of corrective actions. Thorough root cause analysis of trips and equipment problems but less effective with human performance issues.

- o Knowledgeable, well trained maintenance staff and excellent surveillance program, but improvement is needed in procedural adherence and attention to detail.

o Engineering is a notable strength with continued effective management involvement. Excellent plant support except in radiological controls which needs to focus on developing broad, effective, and timely corrective actions for radiological occurrences.

<u>CURRENT STATUS</u>

o The station currently is operating at 100%. The station has operated at full power most of the time since it went into commercial operation in August 1990 with few operational problems experienced since commercial operation began (but see comments later regarding personnel error). Cumulative Unit Capacity Factor from the start of commercial operation through July 31, 1994 is 72.5%.

o The station completed the third refueling outage (3RFO) on August 1, 1994. The outage was scheduled for 59 days but actually lasted 115 days. The extended outage was due to two unforeseen circumstances.

o Part of the 3RFO delay was due to the need to retube both primary component cooling water heat exchangers (PCCWHx). Both PCCWHx were completely retubed during 1RFO because of extensive pitting of the Cu-Ni tubes. The PCCWHx were fully examined during 2RFO and no pitting was found. However in 3RFO, extensive pitting again was found. The PCCWHx and inlet piping were redesigned somewhat to prevent reoccurrence, but tube material may be changed in a future outage.

o The remainder of the 3RFO delay was caused by a problem with the RCPs. As the plant was preparing to reload the core, a loose part, later identified to be a locking device from a RCP turning vane cap screw, was discovered in the pressure vessel. Further examination for loose parts revealed a 5 lb 1¼ inch cap screw (from the RCP turning vane) in the vessel. The cap screws (28 in each pump) and retaining devices were replaced with a new design.

o Effective June 29, 1992, NAESCO, a wholly owned subsidiary of Northeast Utilities, assumed the role of managing Agent for Seabrook Station from New Hampshire Yankee. At the same time, Northeast Utilities acquired ownership of Public Service Company of New Hampshire.

o On December 30, 1992, the Commonwealth of Massachusetts and the six Massachusetts communities within the emergency planning zone (EPZ) assumed responsibility for emergency preparedness for a radiological emergency at Seabrook from NAESCO's Offsite Response Organization. Offsite planning and response for these communities are now conducted in accordance with the Massachusetts Radiological Emergency Response Plan (MAREP) with the full cooperation and resources of the Commonwealth and local emergency response organizations.

o On December 31, 1993, the Massachusetts Highway Department facility at Wellesley, Massachusetts, which had been designated as the reception center for evacuees from the six Massachusetts communities within the 10-mile EPZ, became unavailable. A replacement for the Wellesley center at the Masconomet School District High School has been equipped and personnel have been trained. The replacement center was demonstrated on December 20, 1993, with FEMA representatives observing.

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- In late April 1994, the Salem, NH, Fire Department, which operated one of four reception centers for evacuees from the New Hampshire portion of the EPZ, requested $1.07 million for additional equipment, indicating that the requested resources would be needed for continued participation. Subsequent negotiations during May and early June between NH Office of Emergency Management and Salem did not resolve the issue. In late June, a site in Manchester, NH, was selected as the replacement for the Salem center. By the end of July, the new Manchester site was operational.

- On August 10, 1994, a mechanic mispositioned a flow control valve in the spent fuel pool cooling system. A low flow alarm was acknowledged in the control room but the operator failed to followup on the cause. The low flow condition went uncorrected for more than 24 hours.

- A routine underwater inspection of the cooling tower service water pumps led to the discovery of a number of severely corroded column flange and impeller bolts. The licensee's investigation revealed that the bolts supplied by the pump manufacturer had not been properly solution heat treated following fabrication and so were sensitized and susceptible to IGC. All bolts were replaced with properly heat treated bolts.

<u>CURRENT CONCERNS</u>

- The plant operated very well during the second operating cycle. The unit was on line continuously for 325 days. However, 8 plant trips occurred during Cycle 3. Management has been implementing a trip reduction/trip avoidance program. The plant has operated at full power since restart from the last refueling outage.

- The licensee has responded to an increasing trend for personnel error, also noted by the NRC staff and several offsite oversight organizations, by establishing the Personnel Error Response Team. This team examined the underlying issues related to personnel performance. The PERT identified 8 issues and developed 20 recommendations related to these issues. In December 1993, an NRC inspection group of human factors and quality assurance experts examined the results of the PERT and interviewed PERT members and plant personnel. The inspectors concluded that the program was reasonable but that the licensee must develop an assessment plan to monitor the effectiveness of the program.

- The high rate of personnel error that captured management's attention seems to be declining somewhat, but the rate of personnel errors and occurrences that involve failure to follow procedures are still unacceptably high.

- A recent Joint Utility Management Audit of Seabrook Quality Programs found morale and attitude problems with regard to the views of line management (in certain areas) on the value of quality programs.

- Management has instituted a cost-control program focused to assure that the station remains economically viable in the emerging competitive electric utility environment. As conditions to NRC approval of the transfer of the Seabrook license from Public Service of NH to North Atlantic Energy Service Corporation, a subsidiary of Northeast

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Utilities, North Atlantic presently is required to inform the NRC of any changes affecting the Capital and O&M budgets, or employee compensation arrangements. The staff monitors these changes, and has concluded that there has been no adverse effects upon operational safety to date.

POINTS TO BE EMPHASIZED

o North Atlantic needs to focus upon:

  - Problems existing in the quality programs and corrective actions areas.

  - Trip reduction

  - Reducing the rate of personnel errors and improving procedural adherence and attention to detail

[redacted]

SUPPORTING DOCUMENTATION

MILLSTONE NUCLEAR POWER STATION UNITS, 1, 2, AND 3
HADDAM NECK PLANT AND
SEABROOK STATION, UNIT NO. 1

1. Biographical Data

2. Organization charts

[redacted]

Biographical Data

Northeast
Utilities System

Northeast Utilities Service Company
P.O. Box 270
Hartford, Connecticut 06141-0270

People Profile

ROBERT E. BUSCH

Robert E. Busch is president of the Energy Resources Group and chief financial officer for the Northeast Utilities system (NU).* He has overall responsibility for the company's nuclear and fossil/hydro operations, wholesale marketing, treasury, accounting, budget management, financial planning, and information resources.

Busch is a native of Cleveland, Ohio. He was graduated from Case Institute of Technology in 1[illegible] with a bachelor of science degree in engineering. He earned a master of science degree in engineering from Rensselaer Polytechnic Institute in 1971 and a master of business administration degree, summa cum laude, from Northeastern University in 1981.

Prior to beginning his NU career, Busch worked on the Apollo Program and on research for the U.S. Navy in antisubmarine warfare. He joined NU in 1974 as a cost and schedule engineer and held various positions in the cost and scheduling area. In 1980 he became chief of cost and schedule control. In 1981 he became project manager of the Millstone Nuclear Power Station Unit 3 and brought the unit to completion. In 1986 he was named director—Special Financial Projects. In that capacity, he had a period of extensive training in corporate legal matters by Day, Berry & Howard, regulated utility accounting by Arthur Andersen & Co., and a four-month internship in public utility financing at Morgan Stanley & Company, Inc., of New York City, as well as completion of the Harvard Graduate School of Business Administration Program for Management Development. He was elected senior vice president in 1987 and, in 1990, was given the additional responsibility of chief financial officer. He was elected executive vice president in 1992, and he assumed his current position in January 1994.

He is a director of Connecticut Special Olympics. He is also a senior fellow of the American Leadership Forum, and a former member of the American Nuclear Society, from which he received a Certificate of Governance for his performance as chairman of the Connecticut chapter. He has received the Wall Street Journal Award for academic excellence in business education and has been elected to several honorary societies: Eta Kappa NU (for electrical engineering), Beta Gamma Sigma (for business) and Phi Kappa Phi (for academic performance).

[redacted] EX 6

NU is a registered holding company formed in 1966 whose principal operating-company subsidiaries are The Connecticut Light and Power Company, Holyoke Water Power Company, Public Service Company of New Hampshire, and Western Massachusetts Electric Company, and whose principal nonoperating subsidiaries are North Atlantic Energy Corporation, North Atlantic Energy Service Corporation, Northeast Nuclear Energy Company and Northeast Utilities Service Company. In addition, Charter Oak Energy, Inc., and HEC Inc., are NU's nonutility subsidiaries.

January 1994

Northeast Utilities System

Northeast Utilities Service Company
P.O. Box 270
Hartford, Connecticut 06141-0270

People Profile

JOHN F. OPEKA

John F. Opeka is executive vice president--Nuclear for Northeast Utilities system (NU).* He is responsible for overall technical support and operation of NU's nuclear facilities.

A native of Forest City, Pennsylvania, ***Opeka*** received a bachelor of science degree in electrical engineering from Pennsylvania State University and a master's degree in business administration from Rensselaer Polytechnic Institute at the Hartford Graduate Center. He also completed the Program for Management Development course at the Harvard Business School. He served in the United States Navy from 1962 to 1967.

Opeka began his utility career with NU in 1970 as an engineer in the Nuclear Production Department at Berlin. He was assigned to the company's Millstone Nuclear Power Station in that capacity in 1972 and was made senior engineer there in 1973. He obtained a senior reactor operator's license in 1975 and later that year was named Millstone plant services superintendent. In 1977 he became assistant station superintendent and was named station superintendent in 1978. In this position, ***Opeka*** was responsible for the overall operation and maintenance of Millstone Units 1 and 2. He was named system superintendent--Nuclear Operations, in 1980, becoming responsible for the overall operation and maintenance of both Millstone units and the Connecticut Yankee nuclear plant. He was elected vice president--Nuclear Operations in June 1981, was named senior vice president--Nuclear Engineering and Operations in 1985, and executive vice president of Engineering and Operations in 1986. He assumed his present position in November 1991.

He is a member of the American Nuclear Society and the Pennsylvania State University's Alumni Association, and is a fellow of the American Leadership Forum. He is also on the board of directors for the Opportunities Industrialization Center of New London County and on the board of trustees for the Thames Science Center.

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January 1994

Northeast
Utilities System

Northeast Utilities Service Company
P.O. Box 270
Hartford, Connecticut 06141-0270

People Profile

RICHARD M. KACICH

Richard M. Kacich is director of the Nuclear, Planning, Licensing, and Budgeting Department at Northeast Utilities system (NU).* He is responsible for the planning, budgeting, and financial analysis functions for the Nuclear Group. He directs the planning, scheduling, and coordination of all licensing activities for NU's four nuclear generating units. These activities also include the primary interface with the Nuclear Regulatory Commission.

Born in St. Louis, Missouri, he earned a bachelor of engineering degree in nuclear engineering from Rensselaer Polytechnic Institute (RPI) in Troy, New York, in 1974. The following year he received a master of engineering degree in nuclear engineering from RPI. While at RPI, he was an instructor at the RPI Critical Facility, wrote <u>A Manual of Experiments for the Rensselaer Reactor Facility</u>, and held a senior reactor operator's license. He joined NU in 1975 as an assistant engineer. He participated in the initial core loading and start-up testing of Millstone Unit 2 during his assignment to the Millstone Station in 1975-76. He subsequently served in various positions in the licensing organization and was promoted to licensing supervisor in 1982. In 1987, he was promoted to manager, Generation Facilities Licensing, which involved coordination of all licensing activities for NU's fossil, hydroelectric, and nuclear generating facilities. In March 1992, he was promoted to director, Nuclear Licensing. He assumed his current position in December 1993. In July, 1992, he earned an Executive MBA from the University of Hartford. He is a member of the American Nuclear Society and a registered professional engineer in the state of Connecticut.

Kacich has participated in numerous owners groups and industry activities, including the SEP Owners Group (chairman), the BWR Owners Group, the Nuclear Utility Fire Protection Group, the Nuclear Utility Group on Environmental Qualification, the Nuclear Utility Backfitting and Reform Group, and various Atomic Industrial Forum and NEI activities.

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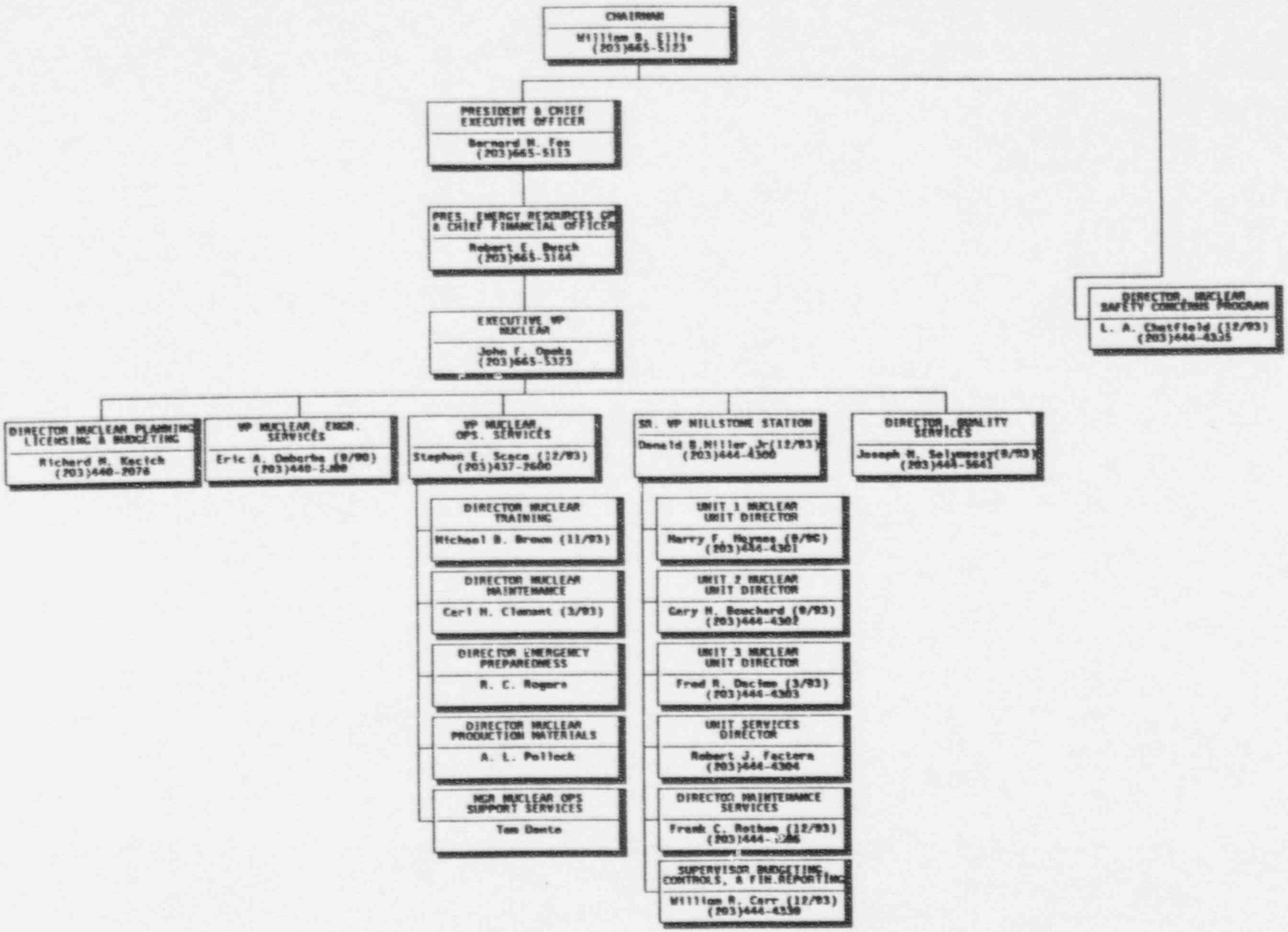
June 1994

Organization Charts

NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE 1, 2, & 3



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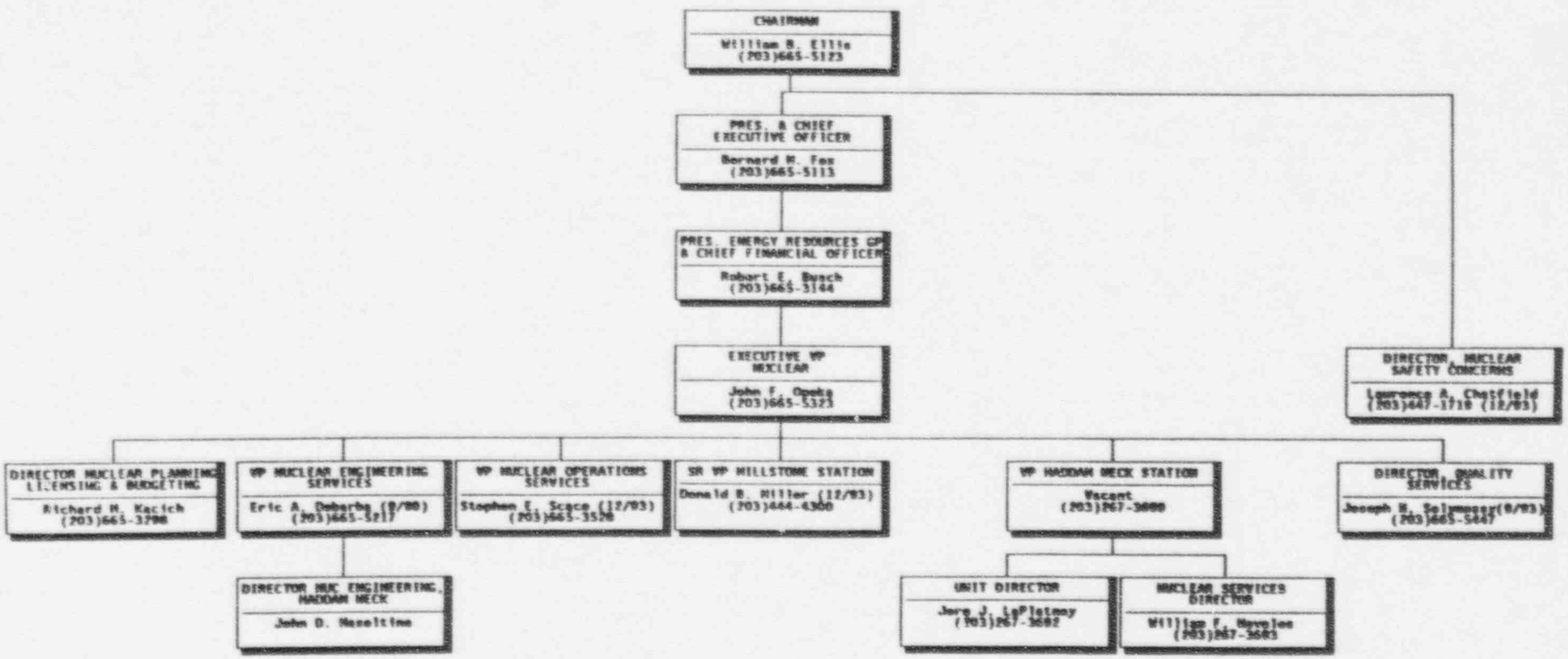
CONNECTICUT YANKEE ATOMIC POWER COMPANY
HADDAM NECK



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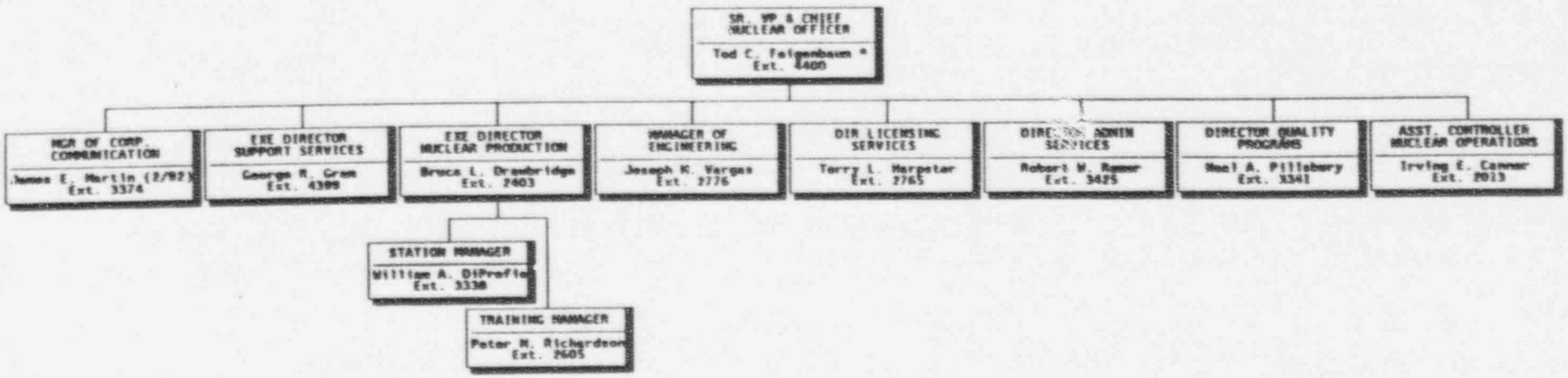
NORTH ATLANTIC ENERGY SERVICE CORP.
SEABROOK



* T. Feigenbaum will be attending Harvard Business School (9/6-11/14/94). During this time B. Drawbridge will assume the duties of this position.

Switchboard Phone
(603)474-9521

10/94

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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January 27, 1995

MEMORANDUM TO: The Chairman
Commissioner Rogers
Commissioner de Planque

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: RESULTS OF THE NRC SENIOR MANAGEMENT MEETING
HELD JANUARY 18-19, 1995

The purpose of this memorandum is to provide the Commission with (1) a summary of discussions held at the January 18-19, 1995, NRC Senior Management Meeting, (2) copies of letters to be sent to the licensees of plants on the problem plant list that will be discussed at the February 3, 1995, Commission Meeting, (3) copies of followup letters to be sent to plants whose performance was trending downward, and (4) copies of letters to be sent to plants to recognize superior performance in accordance with the program described in SECY-94-291.

As the Commission is aware, NRC senior managers meet approximately biannually to review the performance of operating nuclear power plants licensed by the NRC. These meetings are conducted to assure NRC is focusing its resources on plants and related issues of greatest safety significance.

Nuclear power plant performance was a major topic of discussion at this latest NRC Management Meeting. A summary of the results of this discussion is presented in Attachment 1.

On February 1, 1995, the Regional Administrators will place a telephone call to the licensee of each plant in Category 1, 2, and 3, and each licensee whose performance was trending downward informing them of the staff's assessment of their plants, the basis for the conclusions made by the NRC Senior Managers, and of the February 3, 1995, Commission meeting. On February 1, 1995, the staff will transmit by facsimile the letters in Attachment 2 to the Chief Executive Officer of each Category 1, 2, and 3 plant. The time of these notifications is provided to give licensee management an opportunity to attend the Commission Meeting if they should so choose. Also, on February 1, the letters in Attachment 3 will be sent to the licensees of those plants identified as trending performers. You will note that a single letter has been prepared to summarize NRC discussions related to the Commonwealth Edison Company plant in Category 2 and those plants whose performance was trending downward. The letters, which recognize those plants who have exhibited

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superior safety performance, will be forwarded to the Commission in a separate memo. Attachment 4 is a draft management meeting summary of the January 18-19, 1995, NRC Senior Management Meeting, and Attachment 5 is a list of attendees at that meeting.

NRC senior managers reviewed the events and performance problems at Millstone Nuclear Power Station, Unit 2, and Salem Nuclear Generating Station. While it is clear that the licensees of these plants have directed resources and management attention to address their concerns, I intend to request a meeting with the Board of Trustees of Northeast Utilities and a meeting with the Board of Directors of Public Service Electric and Gas Company to discuss the need for further improvement in performance at Millstone and Salem, respectively.

Please note that the information contained with this memorandum is sensitive and will be first discussed publicly at the February 3, 1995, Commission Meeting.

Following the meeting, letters to licensees will be placed in the Public Document Room.

Attachments:
1. Summary of Senior Management Meeting Results
2. Problem Plant List Letters to Licensees
3. Trending Letters to Licensees
4. Draft Management Meeting Summary
5. List of Attendees

cc w/attachments:
SECY
OGC
OCA
OPA

[redacted]

[redacted]

outside scope [redacted] EX. 5

MILLSTONE 1, 2, AND 3

This is the seventh SMM since June 1991 during which Millstone has been discussed. It was not discussed during the June 1993 SMM. The station has never been placed on the Watch List. In early 1992, in response to an overall decline in performance, the licensee implemented a Performance Enhancement Program (PEP) as a long-term effort to ensure the effective use of resources and implement the recommendations of four internal performance assessment task forces. The PEP did not have specific indicators to measure effectiveness and it has had only limited impact on improving operational performance, particularly at Unit 2. In October 1994, the PEP was absorbed into the utility's overall "business plan," though the licensee is still implementing PEP action plans.

In response to the August 1993 Unit 2 forced shutdown caused by a non-isolable reactor coolant leak, and other indications of declining performance, NU made a number of programmatic and management changes. A substantial reorganization of the corporate and Millstone site management structure was initiated in November 1993. More recently, changes to the site and corporate engineering organization resulted in corporate engineers moving to the sites. This is intended to enhance engineering's accountability and responsiveness to site issues, and incorporate a system engineering concept at the Millstone site. It is not yet evident that substantial performance improvements have resulted from these efforts.

The NRC remains concerned about the number of allegations at Millstone. The NRC has received an increasing number of allegations since the spring of 1993. Though a number of allegations are related to work processes, supervisor/peer competence, training deficiencies, et. al., the NRC is concerned with the continuing allegations of employee harassment, intimidation and discrimination (HI&D). In response, NU has made changes in the management and practices of the Nuclear Safety Concerns Program (NSCP) and provided training and performance assessments of plant managers and supervisors. These changes have been too recent for the NRC to assess their long-term impact. The NRC intends to conduct a special inspection of the NSCP in April 1995.

The most recent Millstone SALP covered the period of April 4, 1993, through July 9, 1994. It noted significant weaknesses in the areas of plant operations and maintenance at Millstone Unit 2. Unit 2 was rated separately in these areas as category "3" in order to highlight the degraded performance at Unit 2, despite various PEP and other initiatives intended to improve performance. The SALP report also noted weaknesses in performance common to all three units such as continuing problems with procedures, informality in several maintenance and engineering programs, and failure to resolve several longstanding problems.

Problems that have occurred at Unit 2 since the last SMM include a forced shutdown in July to effect modifications to the reactor coolant pump oil collection system in order to meet the requirements of 10 CFR 50 Appendix R, and several events during the current refueling outage, which eventually resulted in two separate work stand-downs, followed by a continuing, very

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cautious work schedule. The licensee has committed to meet with the NRC before authorizing Unit 2 criticality in order to discuss their corrective actions and why they believe performance has improved enough to support plant operation.

Based on lingering performance problems at Unit 2, despite significant changes in management and processes, and the conduct of several long term, broad based performance improvement programs, it was decided to request a meeting with Northeast Utilities' Board of Trustees to better understand the board's view on the need for continued performance improvement at Millstone Unit 2.