

MEMORANDUM TO: RECORD

FROM: James M. Taylor *JM. Taylor*

SUBJECT: DROP-IN VISIT -- NORTHEAST UTILITIES
MILLSTONE, HADDAM NECK AND SEABROOK

On May 2, 1995, at 1:00 p.m., Messrs. Robert Busch, President, Energy Resource Group and Chief Financial Officer, John Opeka, Executive Vice President-Nuclear, and Richard Kacich, Director, Nuclear Planning, Licensing and Budgeting, met with Messrs. J. Taylor, F. Miraglia, S. Varga, S. Burns, and J. Grobe of the NRC.

The following topics were discussed:

- EX. 4 [
- The licensee is implementing a supervisor training program in "soft skills" to improve supervisor/employee interaction. 230 supervisors have been trained with approximately 5 not passing the course examination requiring remedial action.
 - The licensee summarized the facility status at Millstone, Unit 2. The licensee expects restart of the unit in mid-June.
 - The licensee indicated that the EDO meeting with the Board had positive impact and the Board will conduct its own restart readiness assessment, receives status updates directly from senior site management and will meet with INPO to discuss their evaluation results.
 - The licensee indicated that it would be proceeding with the adoption of Improved Technical Specifications for Unit 1 with Unit 2 scheduled for next year.
 - The licensee described its commitment to re-engineering with a task force comprised of 18 of its best personnel recently formed to perform the organizational evaluation.
 - The licensee described its continuing good relationship with Region I and Tim Martin and indicated that they have also developed a relationship with the Region I Field Office of the Office of Investigations.
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The meeting adjourned at approximately 1:45 p.m. No regulatory decisions were requested or made.

United States
Nuclear Regulatory Commission



NORTHEAST UTILITIES

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

HADDAM NECK PLANT

SEABROOK STATION, UNIT 1

DROP IN VISIT

MAY 2, 1995

JAMES M. TAYLOR

EDO

NORTHEAST UTILITIES

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

HADDAM NECK PLANT

SEABROOK STATION, UNIT 1

DROP IN VISIT

DATE: May 2, 1995

VISITING OFFICIALS:	Robert E. Busch	President - Energy Resource Group & Chief Financial Officer Northeast Utilities
	John F. Opeka	Executive Vice President - Nuclear Northeast Utilities
	Richard Kacich	Director, Nuclear Planning, Licensing, and Budgeting Northeast Utilities

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.

SCHEDULE:

9:45 a.m.	Commissioner Kenneth C. Rogers
11:00 a.m.	Commissioner E. Gail de Planque
1:15 p.m.	James Taylor, EDO William Russell, NRR James Lieberman, OE
3:00 p.m.	Chairman Ivan Selin

SUMMARY

ANTICIPATED LICENSEE FOCUS OF VISIT

This is the first drop in visit since Mr. Taylor met with the Northeast Utilities Board of Directors and senior management in early 1995 to emphasize the seriousness of the problems at Millstone and need for systemic and lasting improvements. It is expected that the licensee's goal will be to assure the NRC that they were pursuing appropriate improvement initiatives.

NRC MANAGEMENT POINTS TO BE EMPHASIZED

These issues particularly deal with the Millstone and Haddam Neck Units. There are no significant issues to raise regarding Seabrook.

The licensee needs to implement more incisive self evaluations and improve the depth, effectiveness and timeliness of root cause evaluations and corrective action determinations.

Licensee management needs to effectively communicate its expectations to station employees particularly in the area of improved personnel performance to reduce the trend of high rates of personnel errors and procedural violations.

CURRENT PERFORMANCE - MILLSTONE

Systematic Assessment of Licensee Performance (period ending July 1994)

Unit 1

- Operations - Category 2
- Maintenance - Category 2
- Engineering - Category 2
- Plant Support - Category 2

Unit 2

- Operations - Category 3
- Maintenance - Category 3
- Engineering - Category 2
- Plant Support - Category 2

Unit 3

- Operations - Category 2
- Maintenance - Category 2
- Engineering - Category 2
- Plant Support - Category 2

Site management still has not demonstrated effectiveness in addressing significant performance issues such as procedural adherence, work control and tagging problems, ineffective communications and team work between organizations, continued weaknesses in identifying and correcting performance problems, and poor self assessment and quality verification effectiveness.

Performance improvement efforts for Unit 2 are centered in the areas of work control, reductions in operator burdens, corrective action identification and implementation, and improving supervisory skills. The licensee's formal program for implementing these long-term improvements for the Millstone site are detailed on the Millstone "Improving Station Performance" matrix. The effectiveness of these improvement efforts are still under evaluation by the resident inspectors and will be the subject of a Unit 2 Readiness Assessment Team Inspection (RATI) prior to the Unit 2 restart.

Safety concerns (allegations) brought directly to the NRC are still above industry norms and procedural noncompliance and inattention to detail are still observed. A recent licensee event report (LER) review by the NRC's Human Factors Assessment Branch showed that Millstone 1 had more than twice and Millstone 2 had more than three times the national average of human performance LERs. For both units, the mechanical and electrical maintenance departments were associated with the majority of the events.

CURRENT PERFORMANCE - HADDAM NECK

Systematic Assessment of Licensee Performance (period ending September 1994)

- Operations - Category 2
- Maintenance - Category 2
- Engineering - Category 2
- Plant Support - Category 1

The licensee has had problems with follow-up on quality assurance audit findings related to maintenance and surveillance and the work control program. Even though the operators were effective, the staff is concerned by the increased number of challenges to the operator (trips, power reductions, forced outages, etc.).

The site vice president (VP) left the company in July 1994. This is 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. The staff is closely monitoring the effects of these management changes.

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.

CURRENT PERFORMANCE - SEABROOK

Systematic Assessment of Licensee Performance (period ending January 1995)

- Operations - Category 2
- Maintenance - Category 2
- Engineering - Category 1
- Plant Support - Category 1

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 implemented a trip reduction/trip avoidance program and a personnel error reduction program. Management needs to continue to focus efforts on these programs to assure further reductions in the personnel error rate.

Management has instituted a cost-control program focused to assure that the station remains economically viable in the emerging competitive electric utility environment. The staff has been monitoring these efforts, and has concluded that there has been no adverse effects upon operational safety to date.

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

BACKGROUND

- 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 the 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 was assessed to be very good.
- In response to licensee and NRC identified declines in performance in the late 80s and early 90s, 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 in achieving performance improvement has been limited, as evidenced in plant operational performance at Millstone, particularly at Unit 2. The licensee has integrated the remaining PEP action items into the 1995 and beyond Business Plans. The MAP has extracted the salient issues and developed a MAP problem list; the MAP no longer plans to address PEP as a separate effort but plans to monitor the licensee's corrective action efforts regarding the issues on the problem list.
- 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, coming mostly from 5 NU employees and 2 former employees. 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. In addition, a number of the allegeders have taken the 10 CFR

2.206 petition route to express their concerns. Since the beginning of the year, the NRC has received 4 such petitions.

- 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. The current organization chart is included at the back of this attachment.
- The licensee has a substantial investment in Probabilistic Risk Assessment which is used in evaluation of plant improvements and changes in plant configuration including shutdown risk. The licensee 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, worker radiation exposure, productivity and cost. The Unit 2 and 3 ISAPs are under development.

CURRENT STATUS

- Site management still has not demonstrated effectiveness in addressing significant performance issues such as procedural adherence, work control and tagging problems, ineffective communications and team work between 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 significant changes have yet to be seen. Management meetings were held with the licensee in October, November, and February to discuss additional steps the licensee planned or took to further resolve these issues, particularly at Unit 2. NU's formal program for implementing these long-term improvements are detailed on the Millstone "Improving Station Performance" matrix which was published in February 1995.
- Millstone Unit 1 - The unit was restarted on May 18, 1994, following the cycle 14 refueling outage and operated mostly at power until November 24 when the licensee shut the plant down due to leaking safety relief valves (SRVs). The licensee replaced all 6 SRVs and restarted on December 2, 1994. The historical performance of the SRVs has been poor and the licensee's engineering department is further evaluating possible modifications to the valves. The plant has operated at power since the December 2, 1994, startup. The next refueling outage is scheduled for October 1995.
- Millstone Unit 2 - The Unit 2 cycle 12 refueling outage, which began on October 1, 1994, has 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. After a work stoppage by management, 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.

On November 2, 1994, a 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 performance issues they would resolve prior to unit restart. The NRC requested that the licensee document their planned 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 the licensee believes they have improved performance sufficiently to support plant operations.

On January 26, 1995, the licensee discovered the potential for pressure locking of the containment sump suction isolation valves. Engineering calculations performed as part of the licensee's motor operated valve (MOV) program determined the potential for pressure locking of containment suction valves used for post-loss of coolant accident recirculation which could prevent the valves from opening. This is a potential common mode failure. The licensee has corrected the problem.

On February 21, 1995, the MAP met with licensee management to ascertain licensee corrective actions for past performance problems and readiness for Unit 2 startup. During this meeting the licensee detailed a plan for improving total Millstone Station performance in the areas of Operations, Work Planning, Procedure Development, and Effective Employee Communications. The licensee has also initiated the Adverse Condition Report which is an universal deficiency reporting system and the Action Item Trending and Tracking System.

Performance improvement efforts for Unit 2 are centered in the areas of work control, reductions in operator burdens, corrective action identification and implementation, and improving supervisory skills. The licensee's formal program for implementing these long-term improvements for the Millstone site are detailed on the Millstone "Improving Station Performance" matrix. The effectiveness of these improvement efforts are still under evaluation by the resident inspectors and will be the subject of a Unit 2 Readiness Assessment Team Inspection (RATI) prior to the Unit 2 restart. Other changes made to enhance Unit 2 performance included the transfer of a former Unit 3 Operations Manager to become the Unit 2 Operations Manager and the temporary assignment of select managers to support the Operations

Manager during their restart recovery efforts. Senior licensee management has also employed the use of four organizational consultants since mid-1994 to help elicit employee involvement in improving performance as well as assessing and helping to improve the organizational culture. The results of their work are not yet evident as much of their efforts are in progress.

Unit 2 is currently scheduled to enter Mode 4 on May 18, 1995, and to have the turbine on-line June 13, 1995. The RATI is currently scheduled to begin on May 22, 1995.

- Millstone Unit 3 - The unit was continuously on-line for 382 days until problems encountered during main steam isolation valve testing caused the licensee to manually trip the reactor. The unit restarted on September 21, 1994, and operated at power until the licensee shut the plant down on April 14, 1995, for a scheduled refueling outage. Major activities scheduled for the outage include: completing MOV testing, service water erosion/corrosion inspections and replacements, 10 year plant inservice inspections - including core barrel inspection, and steam generator eddy current testing for two steam generators (two were inspected in 1993).

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 are still above industry norms and procedural noncompliance and inattention to detail are still observed.
- A recent licensee event report (LER) review by the NRC's Human Factors Assessment Branch showed that Millstone 1 had more than twice and Millstone 2 had more than three times the national average of human performance LERs. For both units, the mechanical and electrical maintenance departments were associated with the majority of the events.
- 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 current refueling outages, Units 2 and 3 are replacing a portion of piping in their respective service water (SW) 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 that

led to the formation of PEP, and should continue to communicate management's goals 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.

HADDAM NECK PLANT

BACKGROUND

- 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.
- 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.).
- 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.
- The plant shutdown in January 1995, for a refueling outage.

CURRENT STATUS

- The plant restarted on April 18, 1995, after an 81-day refueling outage. The outage was slightly longer than expected as the licensee encountered problems with microbiologically induced corrosion (MIC) in the containment air recirculation (CAR) fan system and problems with thermal binding and pressure locking in several safety related MOVs. The plant essentially replaced all welds in the service water to CAR fan system and had to modify 17 MOVs to prevent thermal binding and pressure locking.
- The site vice president (VP), John Stetz, left the company on July 22, 1994. Fred Dacimo has been named as the vice president. 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 these management changes.

- The licensee has committed to install an air-cooled diesel next outage and has installed an electric auxiliary feedwater (AFW) pump this outage to resolve the SEP topic for wind and tornado loads. The licensee has also provided two barriers for the containment vent and purge lines this outage to resolve the SEP topic for containment isolation. The licensee has added pressure interlocks to the core deluge valves to complete Event V concerns.
- The plant has completed the last phase of the Reactor Protection System replacement which converted 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 was replaced during this outage.
- The licensee has changed fuel vendors from B&W to Westinghouse. This required significant staff review of the new fuel as the design changed.

CURRENT CONCERNS

- 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.
- In June 1993, the plant 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 welds in the service water to diesel system were replaced and an inspection was performed to determine all piping that was susceptible to MIC. Some other stagnant SW piping was replaced. During the current outage MIC was discovered in SW piping to the CAR fans. This piping was not considered to be susceptible to MIC and therefore was not inspected during the January 1994, SW outage. The staff is concerned as to why this was not identified earlier.
- 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.
- The licensee had stated that steam generator replacement is not an option. The plant has a partial roll in the tubesheet and the licensee has been able to re-roll tubes to keep them in-service. The licensee is considering withdrawing alternate steam generator plugging criteria as its significance has been greatly reduced because of the option for the plant to re-roll tubes.

- 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, emergency core cooling system 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.
- The plant has started reviews for 24 month refueling cycles and spent fuel pool rerack. The plant considers both these issues to be critical to their economic viability. The 24 month cycle would eliminate two refuelings before the end of life and the rerack would allow full-core-off-load capability until end of life.

POINTS TO BE EMPHASIZED

- 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 reactor coolant pump fire.
- The review to support 24 month cycles will require a significant amount of review and the licensee needs to be timely in submittal of their analyses and amendments. In particular the review of the Westinghouse Best Estimate Loss of Coolant Accident models and its application to Haddam Neck needs to be timely.
- The staff has noted a declining trend in personnel errors affecting routine operations. Operations management has actions in progress to address this problem but licensee needs to reverse trend in this area.

SEABROOK STATION, UNIT NO. 1

BACKGROUND

- The SALP report for the period August 29, 1993, to January 7, 1995, rated the plant Category 1 in the functional areas of engineering and plant support and Category 2 for the functional areas maintenance and plant operations. These ratings are unchanged from the previous SALP.
- 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. Management's efforts to reduce personnel errors has been productive.
- Knowledgeable, well trained maintenance staff and excellent surveillance program, but generally excellent performance was marred by occasional failures to adhere to procedures and by some weaknesses in work control programs.
- Engineering is a notable strength with continued effective management involvement. Excellent plant support programs in radiological protection, plant chemistry, radiological effluent and environmental monitoring, emergency preparedness, and security.

CURRENT STATUS

- 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). The plant has operated at 100% since startup from the third refueling (3RFO) outage on August 1, 1994 (262 days to April 20, 1995)
- The third refueling outage was scheduled for 59 days but actually lasted 115 days. The extended outage was due to two unforeseen circumstances.
- 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.
- 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 1½ 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.

- 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 emergency planning zone, 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 (during 3RFO) of the cooling tower service water pumps led to the discovery of a number of severely corroded column flange and impeller bolts. 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 intergranular stress corrosion cracking. All bolts were replaced with properly heat treated bolts.

CURRENT CONCERNS

- 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 implemented a trip reduction/trip avoidance program and a personnel error reduction program. Management needs to continue to focus efforts on these programs to assure further reductions in the personnel error rate. The plant has operated at full power since restart from the last refueling outage.
- Management has instituted a cost-control program focused to assure that the station remains economically viable in the emerging competitive electric utility environment. The staff has been monitoring these efforts, and has concluded that there has been no adverse effects upon operational safety to date.
- The licensee has reexamined the susceptibility of all safety-related motor operated valves to thermal binding or pressure locking and has concluded that there are no operability problems associated with the phenomena. However, during the next refueling outage, some valve modifications will be made to preclude the possibility of pressure locking.

POINTS TO BE EMPHASIZED

- None

INTERNATIONAL NUCLEAR ENERGY COMPANY
SHELLTONE 1, 2, & 3

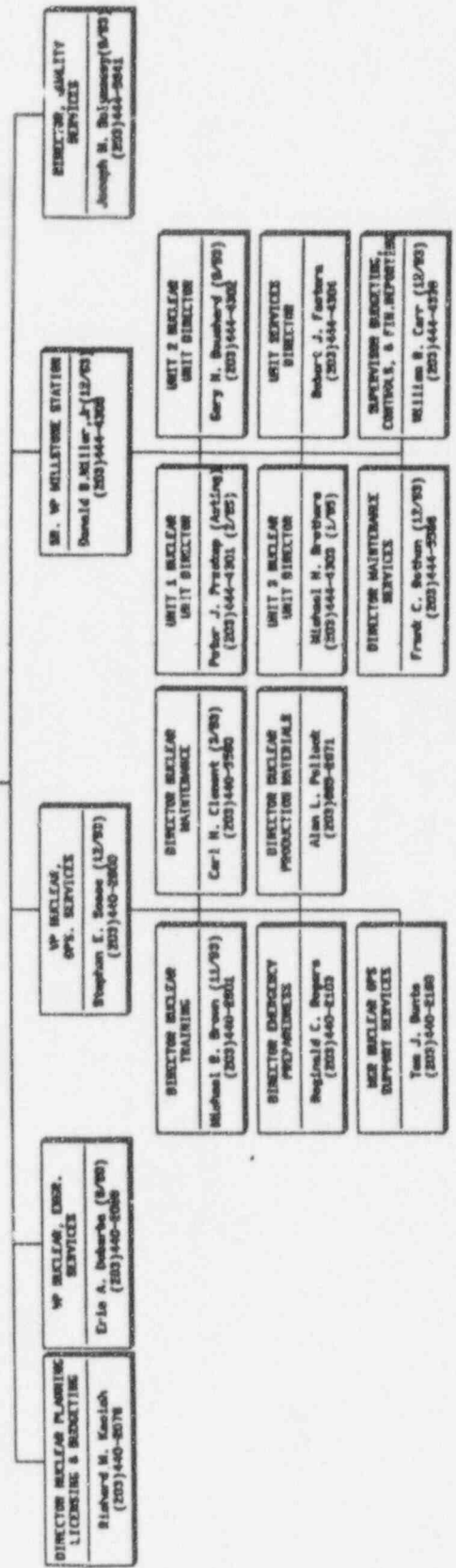
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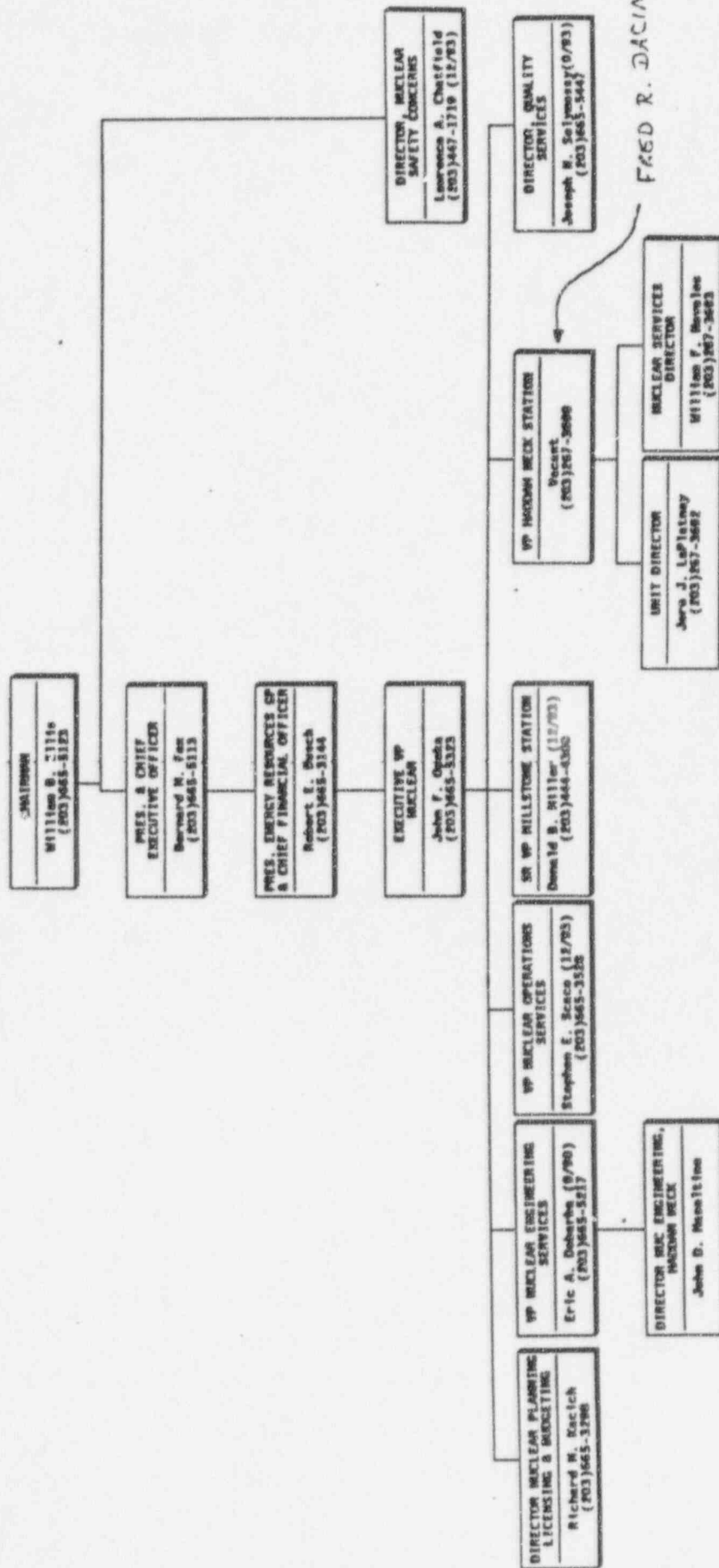
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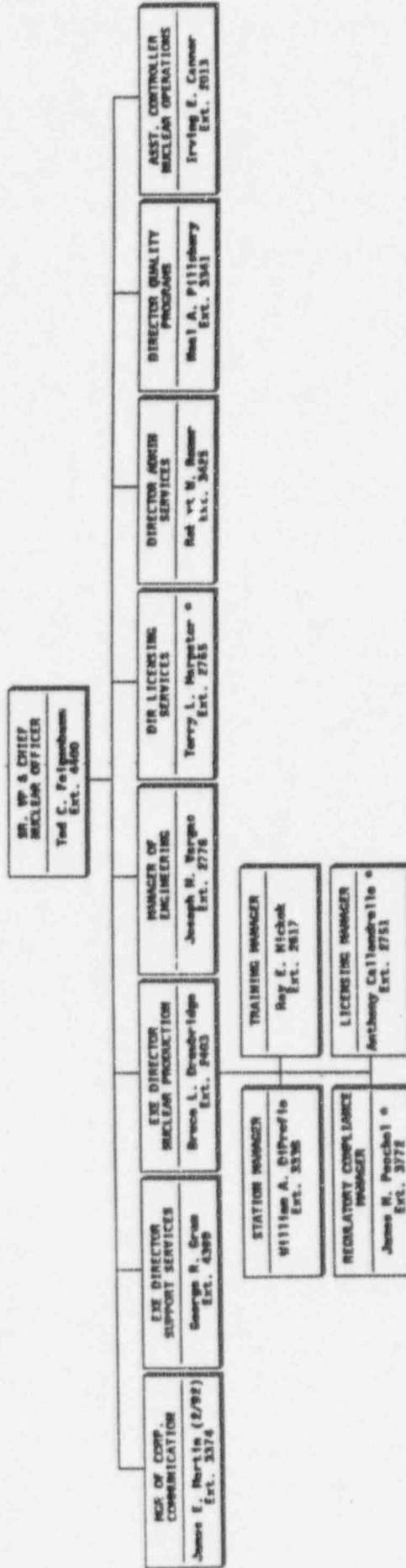


CONNECTICUT VALLEY ATOMIC POWER COMPANY
HADDAM BECK



FRED R. DACIMO

HEATH ATLANTIC ENERGY SERVICE CORP.
SEABROOK



Mr. Harpster is detailed (March 1995) to work on the corporate engineering effort. In his absence, J. Piliashery and A. Callandrellis report to S. Drenth.

Switchboard Phone
(603) 474-8521



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 and his wife Elva have one daughter and live in Higganum, Connecticut.

^{*} 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.



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.

Opeka and his wife Jacqueline have two daughters and live in Old Lyme, Connecticut.

* 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.



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 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. 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.

Kacich is active as an instructor in pre-cana conferences for engaged couples. *Kacich* and his wife Barbara and daughters Michelle and Bethany live in East Hampton, Connecticut.

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