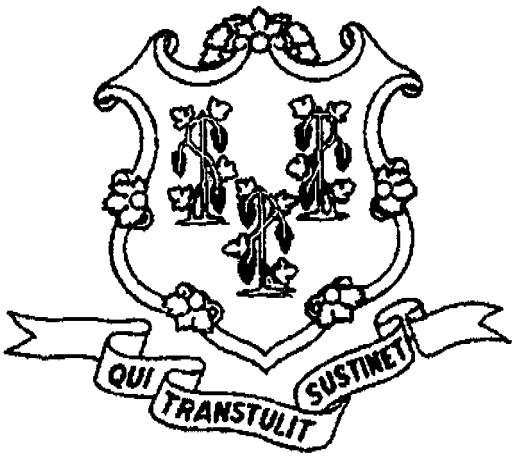
STATE OF CONNECTICUT



THE NUCLEAR ENERGY ADVISORY COUNCIL REPORT

2001

Established Pursuant to Public Act 96-245

Evan W. Woollacott, co-chairperson
John Markowicz, co-chairperson

February 19th, 2002

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CHARGE TO THE COUNCIL

Section 17 of Public Act 96-245 created the Nuclear Energy Advisory Council (NEAC) and requires it to:

1. **Hold regular public meetings to discuss issues relating to the safety and operations of nuclear power plants and to advise the governor, legislature, and municipalities within a five-mile radius of the plants on these issues;**

2. **Work with federal, state and local agencies and the companies operating such plants to ensure public health and safety;**

3. **Discuss proposed changes in, or problems arising from, the operation of the plants;**

4. **Communicate, through reports and presentations, with the plants' operators about safety or operational concerns at the plants;**

5. **Review the current status of the plants with the Nuclear Regulatory Commission (NRC).**

COUNCIL MEMBERS

The council has 14 members appointed by the leadership, the Governor, and the executive bodies in the towns in which the state's nuclear power plants are located. (**Appendix 1**)

EXECUTIVE SUMMARY

This is the sixth annual report presented by the Nuclear Energy Advisory Council. This year was significant because of the change of ownership of the Millstone plants. The transition from Northeast Utilities to Dominion Nuclear Connecticut was carefully monitored by NEAC. The assumption of responsibilities by Dominion proceeded according to plan. Millstone personnel were appreciative of the new owner's management approach and its emphasis on safety. Six meetings were held in 2001 to monitor the key issues faced in 2001. One of the meetings was a joint meeting with NRC.

Of significance was that the report on cancer risk in Connecticut was presented to the Council in early January by the Connecticut Academy of Science and Engineering (CASE). As a result of its study, CASE concluded that atmospheric emissions from the Connecticut Yankee Nuclear plant have not had a detectable influence on cancer incidences in Connecticut.

NEAC continued to support the distribution of Potassium Iodide (KI) to families in the emergency preparedness zone. It was pleased that the NRC saw fit to make KI available to the states.

As a result of the September 11 events, the NEAC looked at the security measures at the Connecticut nuclear plants. Of direct concern were the spent fuel pools that are not part of the containment buildings.

NEAC member John "Bill" Sheehan, who maintains the qualifications necessary to permit him unescorted access into the nuclear plants, continued monitoring Millstone 2 and 3 operations. His reports permit us to have strong understanding of plant operations relative to the NEAC responsibility to monitor health and safety issues.

Decommissioning activities at both Millstone 1 and Connecticut Yankee were carefully reviewed by NEAC. Millstone 1 is in a modified SAFESTOR mode, while Connecticut Yankee is proceeding with the plant dismantling activities.

Our activities in 2002 will continue to monitor both the Millstone plant operations and the decommissioning of Connecticut Yankee and Millstone 1. We will again support the removal of spent fuel to a federal high level waste facility.

REPORT ON ISSUES

CANCER RISK STUDY

In July of 1997, the NEAC asked the Connecticut Academy of Science and Engineering (CASE) to conduct a study on cancer incidence in regions with relatively high exposures from the Connecticut Yankee Nuclear Power Plant (CYN). The formal report was completed by the Academy on December 6, 2000. The official report was presented to NEAC at a public meeting held in Haddam on January 25, 2001.

As a result of its findings, the CASE committee concluded "that atmospheric emissions from CYN have not had a detectable influence on cancer incidence." The Committee also concluded that "additional study of this topic is unlikely to produce any positive correlation." The executive summary of the CASE report may be found in **Appendix 2.**

The NEAC initiated this study request in response to public concern raised at its meetings. NEAC expressed its sincere appreciation to CASE and its leadership for this important study which clearly demonstrated that nuclear plant emissions had not had a detectable influence on cancer incidence in the State of Connecticut. As the CASE report used data from the Connecticut Tumor registry, a like study of Millstone emissions would provide a similar result.

POTASSIUM IODIDE

NEAC continued monitoring the status of potassium iodide issues. During the year, the NEAC presented testimony in support of Senate Bill 211, an Act Regarding the Supply of Potassium Iodide. A copy of its testimony is included in **Appendix 3**. NEAC was pleased to learn that the NRC has agreed to make KI available to the states. It will continue to monitor the KI distribution plan to insure that it is readily available in the Emergency Planning Zone (EPZ)

MILLSTONE OPERATIONS

During 2001, the NEAC spent considerable time monitoring the transition process from Northeast Utilities to Dominion Nuclear Connecticut. The transition was effectively made on March 31, 2001. The assumption of responsibilities by Dominion proceeded smoothly. The control room watchstanders were pleased with Dominion's management of the operations.

The operating performance over the year was excellent. Millstone 3 set a record by operating for 565 consecutive days prior to shutting down for a refueling outage. Millstone 2 operated for 330 consecutive days.

A safety milestone was reached in December 2001 when Dominion employees at Millstone surpassed 3 million work hours without a lost time accident.

During 2001, workers at Millstone 2 received the lowest-ever radiation exposure in the history of the unit.

The NEAC continued to monitor the Employee Concerns Program (EPC) at the Millstone facility. The following graph prepared by Dominion shows a markedly improved trend in 2001 as compared with prior years.

EMPLOYEE CONCERNS PROGRAM STATISTICS – 1999 – 2001

	1999	2000	2001	% REDUCTION
Cases Received	197	139	81	56%
Full Investigations (NEI Cases)	120	64	26	78%
Average Age Of Cases	32 days	27 days	18 days	44%
Allegations Received by the NRC	33	13*	4*	88%
Alleged 10CFR50.7	20	17	2	90%
Fear of Retaliation as Reason to Use ECP	5	7	4*	20%
% Confidentiality Waivers	69%	76%	60%**	13%
ECP Staffing Levels	13	6FTEs	4FTEs***	69%

*The NRC industry median is 3 allegations. The NRC threshold for increased focus is three times the median, or allegations. Millstone is well below that.

**This 60% number is an estimate and also an expected downward trend as the total number of ECP cases declines.

***There are actually 5 FTEs in ECP, one is on long term rotational assignment to Maintenance, thus explains the 4 FTE count working on EDP

Millstone Monitor

A member of NEAC, John "Bill" Sheehan, continued to maintain his 'badged' status throughout 2001 and monitored the control room watch-standers at Millstone 2 and Millstone 3 with emphasis on items relating to Public Health and Safety.

Over twenty monitors were conducted. Most were at Millstone 3 due to the refueling outage, but there were ten monitors of Millstone 2. Copies of the reports may be found in **Appendix 4.**

Each visit took an hour or more. Besides observing the conduct of watchstanders, the monitor reviewed pertinent logs, turnover check offs, outstanding Condition Reports (CR), status sheets and procedures in use during the observation period.

The year's observations may be summarized as follows:

- Watchstanders' performance continued to improve. There is a vigorous training program to permit individual development and advancement.
- Shift turnover procedures improved markedly over the year. The "Board walk" and individual relief are now staggered to permit improved plant monitoring.
- The closing of the sale to Dominion Nuclear Connecticut had a positive effect on operations. One unit supervisor noted that he had an easy position relating to plant safety. "The safety of the public is paramount" and he would shut down the reactor if necessary.
- Watchstanders were not afraid to draft Condition Reports (CRs), when required by plant or equipment conditions.
- Millstone 2 seemed to have more material problems than Millstone 3. Although fixed right away, the steam driven emergency feed pumps (Terry Turbine) for both plants are a recurring problem. The introduction of the "Event Free Tool Card" has appeared to help the MP2 operators.

- Site performance during the MP3 outage was outstanding. Lessons learned from MP2 outage were applied and new lessons were learned for the next outage. One weakness, according to a shift manager, was scheduling of surveillances required during the outage.
- Planning and execution of the repairs to LCV460 in the MP3 containment were impressive.
- Watchstanders continue to be health and safety conscious and have the open support of upper management.
- Five monitor visits were "no comment" visits.

Although there is always room for improvement, the operators have shown real professional growth during the past year.

HOMELAND SECURITY

The events of September 11, 2001 caused us all to look at the security measures at nuclear facilities. A NEAC representative attended two security status briefings at Millstone, and Dominion provided a special report to NEAC on plant security measures at the November public meeting. The NRC will also be asked to provide a similar report in 2002. NEAC is particularly concerned about the vulnerability of spent fuel pools that are not enclosed and protected by containment buildings, the timely opening of the federal repository at Yucca Mountain, and the availability of Potassium Iodide to residents within the Emergency Planning Zone (EPZ). A general letter addressing these issues was sent to the Governor and our congressional representatives. A copy of this letter may be found in **Appendix 6.**

DECOMMISSIONING

MILLSTONE 1

The Millstone decommissioning activities continued into 2001. On March 24, 2001, Unit 1 was placed in a modified SAFESTOR decommissioning mode. On March 31, 2001, all three Millstone reactors were sold to Dominion Nuclear Connecticut, Inc.

It is important to note that the Millstone Unit 1 Spent Fuel Pool Island and auxiliary systems must be maintained as long as spent fuel remains in the pool. The US Department of Energy (DOE) has been and is obligated to accept the spent fuel as high level radioactive waste. As a result of very substantial delays in siting the ultimate repository for spent fuel, Millstone 1 is not able to ship the spent fuel off-site for disposal. Spent fuel storage continues to be an operational expense.

With MP1 in a SAFESTOR decommissioning mode, NEAC has stopped its monitoring activities. However, NEAC continues to follow the continuing investigation regarding the apparent loss of two spent fuel pins from the MP1 spent fuel pool. Although the loss occurred over 20 years ago, it was only noted during the final decommissioning process as NU prepared for the transfer of ownership to Dominion. NU did not report the fuel pin loss in a timely fashion to the NRC. The investigation continues with the expectation of a final NRC report being issued early in 2002. NEAC will continue its review into 2002.

Millstone 1 Decommissioning Advisory Committee (MIDAC)

The Millstone 1 Decommissioning Advisory Committee met in 2001 on the first Thursday of the month through May for the purpose of monitoring decommissioning activities at Millstone Unit 1. Meetings were held at Waterford Town Hall, East Lyme High School, and Millstone's simulator foyer. All meetings were open to the public. Meetings were attended regularly by personnel from the state DEP and Northeast Utilities. Representatives from NRC Region 1 attended meetings as appropriate to report their findings on scheduled inspections of Unit 1.

At each meeting, updates were provided by personnel from Entergy, Inc., the company selected by Northeast Utilities to conduct the decommissioning, and included an overview of the separation projects, spent fuel pool cooling system, building ventilation system, fuel monitoring, miscellaneous electrical work, and spent fuel storage options. Entergy personnel also provided updates on pending insurance and security modifications. In addition to familiar decommissioning topics, progress toward locating Millstone Unit 1's spent fuel rods discovered missing during an inventory audit of the spent fuel pool was also discussed.

A special topic of concern for the M1DAC was the lack of any definitive decommissioning regulations. As such, the committee recommended that NEAC write a letter to the NRC in support of specific rulemaking for decommissioning.

Two important events occurred at Millstone during the year that had a profound effect on future activities of the M1DAC – attainment of "Cold and Dark" status for Unit 1 and the sale of Millstone Power Station to Dominion.

"Cold and Dark" status was achieved on March 24, 2001, and the transfer of all Unit 1 functions was completed on March 30, 2001. With no significant work or major activities planned for the remainder of 2001, the M1DAC suspended all remaining meetings after May 3, 2001. Any major activities at Unit 1, or any change in decommissioning status, will most likely be scheduled for a time in the distant future when such action is more favorable to overall operations at the Millstone site.

On March 31, 2001, the Millstone Power Station was sold to Dominion Nuclear Connecticut, Inc. As the new owner, Dominion decided to maintain Unit 1's spent fuel in the existing spent fuel pool in lieu of dry cask storage. For the M1DAC, this decision meant that monitoring dry cask storage operations would be unnecessary.

M1DAC members felt that since current committee members are already familiar with the progress of decommissioning at Unit 1, it would be sensible to preserve the committee and amend the meeting schedule as needed. This recommendation was approved by NEAC. Consequently, the M1DAC will continue to operate and meet on a limited basis. In conjunction with the NRC's inspection schedule for Unit 1, the committee has elected to meet annually in May. The next meeting of the M1DAC will be scheduled for the first Thursday in May 2002.

A listing of the Millstone 1 Decommissioning Advisory Committee members may be found in **Appendix 5.**

Connecticut Yankee

Dismantlement activities continue at Connecticut Yankee with the project nearing 50% completion. Bechtel Power is the Decommissioning Operations Contractor. During 2001, most major components in the Primary Auxiliary Building were removed and shipped offsite. The segmentation of the reactor internals was completed. The pieces were transferred to the Spent Fuel Pool for storage. The specialty contractor continues to demobilize equipment used during the segmentation activity and Bechtel is preparing the Reactor Pressure Vessel for removal in 2002. The most recent milestone achieved towards the removal of the RPV was the complete isolation of the Reactor Cavity from the Spent Fuel Pool.

During the spring, the 4-steam generators were shipped by barge to a waste disposal facility in South Carolina. The pressurizer was transported via truck to a local rail spur for rail shipment to a disposal facility in Utah. The reactor vessel head was shipped to the same Utah disposal facility via a land transporter.

Bechtel subcontractor, DEMCO, has initiated the demolition of 8 water storage tanks and has begun component removal and interior demolition of the Turbine Building. Over 100,000 pounds of material is being removed daily from the Turbine Building, with completion scheduled for January 2002. Demolition activities included the switch out of the Turbine Building Trolley with the Yard Crane system. The Yard Crane is being modified to meet federal requirements for cask handling when the switch to dry cask fuel storage occurs.

Construction of the Dry Cask Storage Facility is on hold as legal proceedings continue in order to resolve issues with the Town of Haddam regarding Haddam's denial of a building permit to construct the facility. Cask liners and associated parts have arrived onsite. NAC is overseeing the construction of the stainless steel canisters in a facility in Japan.

The Atomic Safety and Licensing Board conducted two hearings on behalf of several parties who filed contentions against CY's License Termination Plan (LTP). The LTP had been submitted to the NRC in 2000 and interested parties had the right to file for intervener status until January 2001. The CT Department of Public Utility Control (DPUC) and the Citizens Awareness Network (CAN) were granted intervener status. Informal LTP discovery sessions were conducted and agreement was reached with the State DPUC regarding their contentions. Negotiations with CAN continue. The Nuclear Regulatory Commission continues to work with Bechtel and CY's Licensing departments on the review of the LTP. CY has received and responded to several requests from the NRC for additional information regarding the LTP. Final review and acceptance is expected in 2002.

Early in 2001, CY and AES entered into negotiations for AES to purchase a portion of the property and to obtain a partial site release of the property from its NRC license for the construction of a gas-fired electric generating plant. These plans have been put on hold until resolution is reached with the Town of Haddam in the location and construction of the Dry Fuel Cask Storage Facility.

As part of the decommissioning process, a significant portion of the Connecticut Yankee property will be released from the NRC license and will ultimately be Unrestricted. The process of releasing the property, as described in CY's proposed License Termination Plan (LTP), will be accomplished in stages beginning with areas containing no contamination first. Bechtel's Site Closure Group has conducted the Final Status Surveys of certain class 3 land areas (areas that are not expected to contain any residual radioactivity). These class 3 land areas represent approximately 250 acres on the eastern portion of the CY property, surrounding the access road from the CL&P substation to the discharge canal.

CY continues to work with the Conservation Law Foundation on its plan to donate a large portion of the site for open space conservation. The property survey is complete and a

Natural Resource and Archeology Inventory are nearing completion. The next phase of the project involves gathering public input and the establishment of an advisory board to review data and assess the list of potential land donation recipients and land use options.

Connecticut Yankee entered a heightened mode of security since the September 11 terrorist attacks against the country. Some of the protective measures taken are visible and include additional vehicle barriers, tighter access controls, increased vigilance, additional security checkpoints, and outside security support. Other measures - which cannot be seen - are also in place, further enhancing CY's security capabilities. CY is continually monitoring and evaluating their security program in concert with federal, state and local authorities, including the NRC, FBI, Connecticut State Police and the State of Connecticut.

CY continues to provide information to the public through daily publications of *CY Today*, its website www.connyankee.com, monthly meetings of the Community Decommissioning Advisory Committee and active involvement in the activities of the Middlesex County Chamber of Commerce.

COUNCIL ACTIVITIES IN 2001

Meetings:

As required by PA 96-245, the NEAC held six regular public meetings to provide a venue for the discussion of issues relating to the safety and operation of the state's nuclear power plants. Meeting minutes are included in **Appendix 6.** A summary of the meetings is presented below:

January 11, 2001: A special meeting was held at the Haddam-Killingworth High School for the express purpose of completing the year 2000 annual report. Just prior to the meeting, the Millstone Station Employees Association requested an audience with the Council. Its concern regarded the Dominion pension policies that could adversely affect those employees who would be required to leave as a result of the planned reduction. The Deregulation Act included language to insure employees would be fairly treated as a result of the generation reorganization. While recognizing that this issue was between NU and Dominion, the NEAC did recommend that the Association ask the DPUC to reopen the hearing so this issue could be adjudicated. NEAC further indicated that it would contact relevant legislators so that the questions could be addressed. Many were concerned about pension issues, and the differences were resolved.

January 25, 2001: The NEAC held a meeting at the Haddam-Killingworth High School for the purpose of receiving a CY radiation study report completed by the Connecticut Academy of Science and Engineering (CASE). Although the study is reported in the issues section, CASE concluded that atmospheric emissions from Connecticut Yankee did not have a detectable influence on cancer incidences in the State of Connecticut. The NEAC is appreciative of the work done by CASE.

March 15, 2001: A meeting was held in Waterford to receive a report on the Radiological Emergency Preparedness (REP) Program. The program was presented by John Wiltse, State Director of the Office of Emergency Management (OEM). Topics included up-dates on evacuation plans and host communities.

May 17, 2001: The NEAC met in Waterford to receive the first Dominion report from Mr. William Matthews, Dominion Vice President and Senior Nuclear Executive. In addition, Bob Fairbank, Jr. provided an up-date on the MP1 missing fuel rod independent review team's progress. Ron Bellamy, NRC's Region 1 Branch Chief discussed the NRC's role relative to the missing fuel rods, indicating that formal comments would have to await NRC's receipt and review of the NU report.

July 17, 2001: A joint NEAC/NRC meeting was held at the Waterford Town Hall to receive a report of the new NRC Reactor Oversight Program. Curt Cowgill, Chief, Reactor Projects, presented the report for the NRC.

November 29, 2001: The NEAC received a formal report on the missing fuel rod status from Allen Price, Vice President, Technical Services, Dominion Nuclear Connecticut. In addition, Ron Bellamy, NRC Region 1 Branch Chief, indicated that the NRC would be holding a hearing on MP1's missing fuel rods and issue a report after the first of the year.

COUNCIL LETTERS

May 17, 2001: At the recommendation of the Millstone 1 Decommissioning Advisory Committee (MIDAC), NEAC sent a letter to Richard Meserve, NRC Chairman expressing its concern about the need for specific decommissioning regulations. As more and more plants enter the decommissioning mode, specific regulations must be developed to insure safe and uniform decommissioning processes. The NRC rulemaking process has commenced.

May 23, 2001: Continuing the ongoing discussion between the NEAC and Office of Policy and Management (OPM) on the supply of Potassium Oxide (KI), OPM sent the Council a letter outlining the status of the State's efforts and raising two issues regarding the distribution of KI. The issues follow:

- How can stockpiling and distribution be done in a manner that does not hinder the timely evacuation and sheltering of the general public from such a densely populated emergency planning zone (EPZ)?
- How can the state develop an effective public education campaign that instructs the public on the proper use of KI, while at the same time dispelling the false sense of security that many people may have from taking a pill that provides only limited health benefit in a nuclear emergency?

January 2, 2002: Although this letter was dated in 2002, its contents were approved in 2001 and were included in the 2001 report discussion. In a general letter to the annual report distribution, the council emphasized its concerns about off site storage of high level nuclear waste, Potassium Iodide, and homeland security.

Copies of the letters may be found in **Appendix 7.**

RECOMMENDATIONS

Federal:

1. PROMPT ACTIVATION OF THE PERMANENT NUCLEAR WASTE STORAGE REPOSITORY AT YUCCA MOUNTAIN

The unforeseen nature of the aircraft suicide attacks on September 11 has justifiable heightened public concern regarding the vulnerability of Connecticut's three spent fuel pools that are not located within a containment structure. Federal legislative proposals to augment existing nuclear power plant security that do not, as a minimum, require the prompt and immediate consolidation of spent fuel at the federal repository should be considered incomplete and deficient. The United States Senate, including the Connecticut delegation has repeatedly voted against opening Yucca Mountain. It is now in the national interest as well as a matter of national security to activate the national repository and relocate high level nuclear waste from Connecticut to this more secure location.

2. HOMELAND SECURITY/POINT DEFENSE

Recent measures to augment physical security at local vital installations most likely will provide a baseline for additional homeland defense initiatives. As future continental air defense plans are formulated/funded, serious consideration should be given to including in our regional asset inventory mobile air defense systems (Hawk/Patriot missile batteries, and AEGIS cruisers/destroyers). These moveable air defense systems are available and routinely deployed overseas to protect our troops and allies. They should be considered an element of our homeland defense posture, particularly in regions with a concentration of high value military and non-

military) targets. A robust antiair homeland defense strategy should include local point defense radar/missile systems as the final protective barrier to the kamikaze terrorist committed to penetrating a "No Fly Zone" in a commandeered private/commercial jet aircraft.

3. POTASSIUM IODIDE

The acquisition, storage and distribution of Potassium Iodide have been and continue to be debated. Practical solutions are fraught with challenges. As the nation embarks on larger and more complex projects associated with protecting the public from small pox and anthrax exposure, federal homeland defense authorities should similarly be encouraged to bring closure to the disposition of Potassium Iodide within the established Emergency Planning Zones (EPZs) around nuclear facilities.

STATE

1. Office of Emergency Management

- NEAC recommends that the Office of Emergency Management (OEM) receive the fiscal support to address any shortfalls in emergency preparedness.
- During the next emergency preparedness test, it is recommended that the OEM conduct a preannounced test token evacuation of one of the schools in EPZ to the evacuation center. The evacuation should consist of two or three buses of volunteer (parental permission) children and teachers. The buses should follow the recommended route to the evacuation center in normal traffic. This will check the travel time. The evacuation center equipment should then be tested using the services of the evacuees.

Decommissioning

The legislature, governor and NEAC should continue to insist the NRC maintain vigilant oversight during the entire decommissioning effort at Connecticut Yankee and Millstone 1. Regular inspections should be carried out by the NRC for as long as the high level waste remains on site.

2. High Level Nuclear Waste

The state administration and legislature should support an effective federal solution to the High Level Waste problem while urging our congressional representatives and the federal administration to resolve the situation.

3. Homeland Security

It is recommended that the State Administration assess the adequacy of the security provisions currently in place at the nuclear sites, and, if appropriate, provide government protection of the sites.

NEAC

1. NEAC should continue to monitor the stability of the Employee Concerns Program/Safety Conscious Work Environment.

2. NEAC should monitor the establishment of the potassium iodine distribution system for the public.

3. NEAC should continue monitoring:
   - The ongoing power operations at Millstone 2 and 3, including the Corrective Action backlog reduction;
   - The decommissioning of Millstone 1 and Connecticut Yankee, including the Spent Fuel Pool Islands, Dry Cask Storage, and the License Termination Plan (CY);
   - The refueling outage at Millstone 2.

3. NEAC should continue to advocate that spent fuel from plants undergoing decommissioning receives priority in disposal.

4. Responding to concerns of Haddam residents, NEAC should:
   - Sponsor an informational program for Haddam and the surrounding communities regarding the pros and cons of dry cask storage of spent fuel Vs the spent fuel pool, including details of dry cask construction; and
   - Obtain and impart information regarding Greater Than Class C (GTCC) nuclear waste now stored at CY.

5. Communication of NEAC activities should be continued and increased through:
   - Regular distribution of reports/press releases to daily/weekly newspapers and town newsletters;
   - Coordination of agendas with the citizen committees involved with the decommissioning of CY and Millstone 1; and
   - Development of consistent post-restart public communications in conjunction with local citizen groups and the utility.

7. NEAC should request informal meetings with US senators Lieberman and Dodd, and Congressman Simmons, to provide a briefing on NEAC's work and goals so that a better working relationship is established.

8. To insure public health and safety are not compromised NEAC should monitor:

- Millstone efforts to continue a Safety Conscious Work Environment (SCWE);
- Millstone Stations continuing personnel realignments and reductions;
- The License Amendment Request (LAR) to "re-rack the Millstone 3 Spent Fuel Pool;
- Final status of Connecticut Yankee and Millstone 1 as the "Spent Fuel Pool Islands" and "Dry Cask Storage" solutions are finalized;
- Final completion of any pre recovery deficiencies at Millstone;
- Toxic discharges from Millstone and Connecticut Yankee;
- Resolution of the Millstone 1 missing fuel pin issue; and
- The effect of deregulation on the operation of Millstone 2 and 3.

9. NEAC should monitor homeland security issues as they affect the Millstone and Connecticut Yankee operations.

APPENDIX 1

NUCLEAR ENERGY ADVISORY COUNCIL MEMBERSHIP

John Markowicz (Co-Chair) Waterford: BS Engineering, Naval Academy. Economic director, former chief engineer nuclear powered submarine.

Evan W. Woollacott (Co-Chair) Simsbury: MBA, Wharton School, Former Vice President, Combustion Engineering, and Vice Chair, CT DPUC.

Mary Ann Buckley Haddam Neck: MA Child Development and Family Relations, UConn. Director of Noyes Rhythm Foundation, Inc.

Marjorie W. DeBold Haddam: BA Psychology and Child Development, UC Berkeley . Retired teacher, former First Selectman of Haddam.

Gregg W. Dixon PHD Niantic: Mechanical Engineering (Nuclear) Stanford University. Mechanical. Engineering Section Chief, US Coast Guard Academy.

John Helm, Sr. Groton: MS Mechanical Engineering, Columbia. Consultant, former experience includes Nuclear Submarine development.

Mark Holloway Waterford: BS Interdisciplinary Sciences, Charter Oak. Task Manager and analyst in nuclear submarine development.

Robert J. Klancko Woodbridge: BS Chemical Engineering, UConn. Engineering Consultant, member, State Emergency Response Board.

Pearl Rathbun Niantic: BA Economics. Three Rivers C-TC. Administrative Assistant, Office of Emergency Management & Fire Marshal's Bureau, East Lyme.

Rep. Kevin Ryan Oakdale: OD, Pennsylvania College of Optometry. Legislator, Adjunct Faculty. University of New Haven.

John (Bill) Sheehan Waterford: MBA, Rensselaer Polytechnic. Director, Management Information Systems, former Captain, Nuclear powered submarine.

James Sherrard, PhD Mystic: USCG Academy, Nuc.& Mech. Eng. MIT/UConn. Chairman, Nuclear Engineering Technology Department, TRCTC.

William J. Temple Waterford: Manager, Executive Support, Dominion Nuclear Connecticut . Dominion representative on the council.

Edward L. Wilds Griswold: PhD Physics, UConn. Director, Division of Radiation, Department of Envionmental protection.

APPENDIX 2

THE CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

Radiation Exposure from the Connecticut Yankee Plant

EXECUTIVE SUMMARY

Statement of Inquiry

Citizens living in the vicinity of the Connecticut Yankee Nuclear energy plant (CYN) have increasingly expressed concerns related to the reported and possible other emissions of radiogenic elements into the atmosphere, the Connecticut River and Long Island Sound. Much of the information on which these concerns were/are based, however, contains no scientific data and has little or no statistical significance.

To assist the Nuclear Energy Advisory Council with its analysis of public safety in proximity to nuclear energy plants, the Academy was asked to study and make an initial report on cancer incidences in regions with relatively high exposure from the Connecticut Yankee plant in Haddam, using data from the Connecticut Tumor Registry.

Connecticut Yankee was selected for this study because of the fact that it has been intermittently active for several decades, and was finally closed in the fall of 1996. The relatively long and specific interval during which radioogenic emissions could have occurred may provide a reliable database of tumor incidences despite the fact that the radiation half-life of many of the elements probably released extends well beyond the closing date.

Summary of Findings

A review of the scientific literature revealed no definitive studies showing increased neighborhood cancer rates associated with normally operating nuclear power plants. An estimate in 1981, undated in 1987, by Northeast Utilities (NU) indicated very low rates of emission and resulting exposure dosages well below health standards. Examination of the actual emission data, which the committee received from NU, indicated that re-analysis of the available data was not likely to result in different conclusions. Therefore, the committee agreed that a modeling analysis would be more useful in determining if more intensive measurement studies were necessary.

An atmospheric transport model was utilized to estimate the exposure doses, called Committed Effective Dose Equivalents (CEDE), of selected radionuclides in each town in Connecticut. In no town was the expected total CEDE in excess of 1 millirem (mrem) for the 28-year period. The maximum expected fatal cancers for the entire state of Connecticut was estimated to be 0.11 deaths.

In addition, the committee agreed to use the Connecticut Tumor Registry to look for any associations between tumors relatable to radionuclides from CYN and location of towns to the plant.

Incidences of leukemia (IDC-9-CM 204-208.9) and thyroid cancer (ICD-9-CM 193) as recorded by the Connecticut Tumor Registry from 1976 to 1995 were examined. Geographic Information Systems (GIS) technology was used to prepare a spatially referenced database of information from the Tumor Registry. US census information for 1980 and 1990 for Connecticut's 169 towns was used to normalize the cancer incidence data. No association between cancer incidence and proximity to CYN was found through this cluster analysis.

The committee then performed an analysis that compared the calculated doses with the Connecticut Tumor Registry data.

Results of logistic regression analysis comparing disease incidence, population counts and estimated exposure levels did not identify meaningful associations among the cancers and radiation exposures in the towns. In comparisons for some tumors, a negative correlation was found.

Conclusions

The committee found that exposures to radionuclides emitted from CYN are so low as to be negligible. The committee also found no meaningful associations among the cancers studied (pediatric leukemia, adult chronic leukemia, multiple myeloma, and thyroid cancer) and proximity to CYN. Both methods thus yield the same result. Then a regression analysis of calculated doses to the tumor incidence was conducted and no correlation was found. Base on these findings, the committee concludes that atmospheric emissions from CYN have not had a detectable influence on cancer incidences. The committee has also concluded that additional study of this topic is unlikely to produce any positive correlation.

APPENDIX 3

Testimony of Evan Woollacott, Co-Chair, Nuclear Energy Advisory Council for the State of Connecticut

Good Morning. I am Evan Woollacott, Co Chairman of the Nuclear Energy Advisory Council [NEAC] for the State of Connecticut. By Legislative Act, the NEAC has been assigned the responsibility for working with federal, state and local agencies and companies operating nuclear plants to ensure public health and safety.

The NEAC supports Senate Bill 211, an Act Regarding the Supply of Potassium Iodide. Since our establishment in 1996, we have spent considerable hours studying the importance of making potassium iodide available to the general public. A separate subcommittee was established under the chairmanship of Mark Hollaway of Waterford. The Council endorsed its recommendations.

During its process, the NEAC spent substantial time working with the Nuclear Regulatory Commission [NRC]. This included a separate meeting with the NRC on potassium iodide. We agree with the latest recommendation of the NRC that KI should be made available to the general public. It should be made available not only to the families in the immediate area, but also to the schools. In the unlikely event of a nuclear excursion, KI must be readily available.

The World Health Organization has endorsed KI and it is currently distributed to residents of several European Communities. KI proved its worth in the aftermath of Chernobyl when Poland instituted a rapid distribution to its people. There were no incidents of Thyroid cancer among the Polish citizens who took KI and were in the effluent pathway.

We also recommend that there should be a community education program so that parents and families understand why KI should be made available.

Should there be any questions, I would be pleased to answer them for the Nuclear Energy Advisory Council of the State of Connecticut.

Evan W. Woollacott

APPENDIX 4

Memorandum - 2001-01

DATE: JANUARY 13, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On January 13, 2001, I spent from 1035 to 1140 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was at 89% power coasting down to the refueling outage. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations. Some alarms were not announced because of scheduled I & C testing in progress.

   b. A watchstanders reported water dripping from a ventilation duct in an electronic equipment room behind the control room. The shift manager and unit supervisor called upon their memories of a similar incident to instruct the operator to adjust the humidistat settings on the air conditioning and see if that stopped the water dripping.

   c. A shift mechanic reported to the control room that he had removed a sump cover to check a pump and then replaced the cover. Unfortunately, procedurally, he should have informed the control room prior to removing the cover so that the watchstanders could log in the entering of a technical specification requirement (because of the open sump cover) and then log out of the technical specification requirement when the sump cover was replaced. The shift manager was not pleased with the action of the mechanic.

   d. The unit 3 watchstanders that I observed are looking forward to the transfer of ownership and will be very pleased when the waiting is over.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-02

DATE: JANUARY 29, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On January 29, 2001, I spent from 1640 to 1740 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations. The only activity that occurred during my visit was the shifting of RBCCW pumps.

   b. An off going maintenance front line supervisor (FLS) reported that a worksite in the Unit1/Unit 2 Transition area was not left in proper condition by the work crew assigned. The Shift Manager had the Mechanical Operator inspect the site, put it in a safe condition and report back to the Shift Manager The site's FLS was identified and his supervisor would be informed of the deficiencies found.

   c. The Shift Manager directed that a ventilation fan be secured after Engineering informed him of a new "Thermography Procedure" that classified the various operating temperatures of fans and similar equipment. The Shift Manager was not familiar with this new procedure. He commented that it would have been considerate to inform operations of these new specifications rather than his having to ask the question of maintenance engineering.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-03

DATE: FEBRUARY 13, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On February 13, 2001, I spent from 1715 to 1750 in the control room of MILLSTONE 3 observing the control room watchstanders and from 1753 to 1820 in the "One Stop Shop" observing the refueling outage job control. The Reactor Plant was shutdown, cooled down and open to the atmosphere and refueling preparations continued. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. There is a problem with the refueling machine. This is a new machine and it was built from engineering drawings and prints. Unfortunately, it appears to be about one and one half inches too short to grab and lock on the fuel assemblies. The refueling team was hard at work taking measurements and then designing a modification to the refueling machine. The estimate was that the design would be approved, installed, tested and ready to go by second shift tomorrow, February 14, 2001. This has set the refueling leg of the outage path at least a day behind. The schedule had MP3 in Mode 0 and defueled by 1600 February 13, 2001.

   c. On a brighter note, the remainder of the outage is proceeding ahead of schedule. The controlling path in the secondary plant, Turbine Rotor Inspections, is about 16 hours ahead of schedule.

   d. Personnel from Millstone 2 who are enthusiastic in their efforts to get the job done heavily augment the "One Stop Shop". The Station Director, who is the outage senior manager, stated to me that the best thing the outage team can do is proceed with gusto on the rest of the jobs. The refueling machine problem is disappointing but should not be dwelled upon. In the long run, that will minimize this event's impact on the remainder of the outage.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-04

DATE: FEBRUARY 26, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On February 26, 2001, I spent from 1954 to 2054 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was shutdown in Mode 6, cooled down with reactor vessel head removed. The refueling was complete and CRDM extension shafts were installed. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. The only event during the monitor was the shifting of a circulating fan. The operator performing the operation had a peer review of the steps of the procedure.

   c. Preparations to test the "B" Diesel Generator completed just as I was departing and the test run was expected to start at any moment.

   d. Repairs were commenced on pressurizer level detector piping that showed indications of leakage during inspection of the containment area.

   e. The Unit Supervisor commented to me that, although this was the best planned outage he had experienced, there were still many lessons to be learned from the "little things" that did not go as planned. For example, all surveillances scheduled during the outage were included in the outage schedule. However, since the surveillance schedule did not adjust when the overall outage plan changed due to emergent work (such as the addition repairs required to the main turbine rotors) they were back to fitting the surveillances in when able rather than following a fluid schedule.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-05

DATE: MARCH 20, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On March 20, 2001, I spent from 1700 to 1800 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was shutdown in Mode 3, awaiting completion of maintenance prior to initial startup after refueling and low power physics testing. The following comments are germane:

   a. Watchstanders were not as formal in their communications with each other concerning plant operations as I have seen in the past.

   b. Testing of the 'B' Emergency Diesel Generator was completed during my monitor.

   c. The startup was being delayed by an intermittent alarm from individual rod position indication circuitry. The alarm occurred three times in the hour I was conducting my observation despite ongoing repair efforts.

   d. The unit supervisor asked an Instrumentation and Control technician to come back in an hour to request permission to conduct a surveillance so that the attendant alarms would not interfere with the watch turnover briefings just starting.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-06

DATE: MARCH 27, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On March 27, 2001, I spent from 1738 to 1845 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was shutdown in Mode 4, awaiting completion of maintenance on the Terry Turbine prior to startup and post outage steam plant testing. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. Trainees from the current licensing class were at each watch station to gain some practical experience.

   c. The startup is delayed due to the failure of the Terry Turbine surveillance. The Terry Turbine governor is being replaced and it is hoped that plant heat up, testing of the Terry Turbine and reactor startup will commence on Wednesday March 28, 2001.

   d. I observed watch turnover and on shift brief after watch relief. The "board walk" by all watchstanders was very detailed. I still am uncomfortable with the lack of positive announcement of watch relief. Only one watchstanders informed the Unit Supervisor that he had been relieved. All others just said a "good night to all".

   e. The watch brief was through and all questions were answered.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-07

DATE: APRIL 16, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On April 16, 2001, I spent from 1710 to 1810 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 97% power with the 'C' Circulating Water Pump in the final lineup for testing after an overhaul. The following comments are germane:

   a. Watchstanders were generally formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was a boron dilution of 20 gallons to keep power at 97%. It was conducted efficiently and correctly.

   c. The valve line ups were completed for initial start and testing of the 'C' Circulating Water pump but the actual pump start would be delayed until after shift change.

   d. The Shift Manager showed me a new "Event Free Tool" card that has been instituted at Millstone 2 to promote peer checking and a greater attention to detail. There were samples of card usage posted in the hallway leading to the MP2 control room.

   e. The individual shift turnover briefs were simultaneous but the "board walk" was staggered. At least one operator was able to concentrate on plant conditions instead of turnover during the watch relief.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-08

DATE: MAY 01, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On May 01, 2001, I spent from 1735 to 1835 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was shutdown to Mode 3 (Hot Standby) awaiting completion of repairs after a reactor scram on Sunday April 29, 2001. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was a monitoring repairs, making preparations for Reactor startup scheduled for 0300 May 2, 2001, and shift turnover.

   c. The reactor trip on Sunday was caused by a loss of vacuum in the main condenser after the operating circulating water pump (C) shutdown due to an error during maintenance testing on the "D" pump. The loss of vacuum caused the main turbine to trip that then caused the reactor to scram. The "C" pump was shutdown when a lug was lifted in a breaker to permit testing of the "D" pump off line.

   d. The individual shift turnover briefs were simultaneous but the "board walk" was staggered. At least one operator was able to concentrate on plant conditions instead of turnover during the watch relief. Actual watch reliefs were also staggered with the unit supervisor the last to be relieved.

   e. The Process Owner Operations Millstone 2 indicated to me that although the root cause investigation was still under way, there were many lessons to be learned from the Sunday mishap. Foremost among them was the necessity to document infrequent maintenance procedures to eliminate the reliance on the resident expert in the particular system being repaired.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-09

DATE: MAY 15, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On May 15, 2001, I spent from 1730 to 1830 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was preparing for watch turnover and the conduct of the shift turnover. The individual shift turnover briefs were staggered with the shift manager to be the last relieved. The "board walk" by each watchstanders was also staggered. At least one operator was able to concentrate on plant conditions instead of turnover during the watch relief. Watch relief was not announced or reported to the next senior watchstanders.

   c. I asked the off going unit supervisor about the "Threat to Generation" 24V ground. He informed me that it was in the Turbine Control Stop Valve control circuitry. The most likely location was in the amphenol connection at the control valve. A procedure for troubleshooting had been approved and was scheduled for Friday. If the ground is in the valve, it will not be repaired but if it is in the connector, it will be repaired on the spot.

   d. During watch relief, one of the "old hands" commented that this was much better than the old days prior to 1996 when MP3 was at 100% power with over 80 locked in alarms. Another operator commented that he was impressed that a senior manager from Dominion Nuclear actually visited the control room and asked questions. He hoped the practice would continue.

   e. Outage plans were discussed and one operator felt that the preparations for the next outage were not starting soon enough and not concentrating on solving the problems uncovered in the previous outage. He felt that management was "too easygoing" in progressing toward expressed goals.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-10

DATE: JUNE 03, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On June 03, 2001, I spent from 1523 to 1625 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was completing the necessary Condition and Trouble reports for a problem that occurred earlier in the shift. Due to a misaligned drain valve, some salt water back flowed into a rad waste tank. Fortunately the PEO was monitoring his tank levels and secured the procedure in progress when the abnormal rise in level was detected. The reported Cl^- level reported was 580 to 600 ppm. Initial evaluation of cause of valve misalignment was an incomplete clearing of a tag out for a hydro test on a portion of the drain system.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-11

DATE: JUNE 16, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On June 16, 2001, I spent from 1114 to 1241 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was a midshift meeting conducted by the Shift Manager. Plans for the rest of the shift as well as plans for the coming week were discussed. This section is having a "nontraining" Training week next week and plans were made for special classes and qualification work at Unit 2. The crew also commenced reviewing some mutual expectations as I left the brief still in progress.

   c. I asked the shift manager about the "Threat to Generation" turbine runback during shifting of stator cooling water pumps. He informed me that I & C was still trouble shooting but had narrowed the likely suspects of the problem. It is a threat to generation because a loss of stator cooling is sensed during pump shifts and the turbine automatically starts to throttle down in anticipation of a loss of the generator at a rate of 35 MW per minute.

   d. One of the problems discussed during the midshift meeting was the motor driven feed pump. It apparently leaks oil when it is operated and trouble shooting the problem means changing conditions in a feed system that is currently operating with no other problems. Scheduling the necessary testing and repairs was proving difficult.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-12

DATE: JULY 04, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On July 04, 2001, I spent from 1530 to 1630 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations. The announcement and acknowledgement of alarms and annunciators was the best I have heard in a long time.

   b. During my monitor the major activity was disabling a recurring annunciator for Condensate Pump trouble that was providing a false alarm. The annunciator was disabled and a temporary log established according to OP2387A.

   c. A review of turnover documentation revealed that the activity of the RCS to RBCCW leak was up slightly. The suspected cause of the increased activity was the unplanned plant trip in early May.

   d. The shift activities were appropriate for a holiday routine.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-13

DATE: JULY 14, 2001

TO: Evan Woollacott and Terry Concannon, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On July 14, 2001, I spent from 1120 to 1220 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was a midshift meeting conducted by the Shift Manager. Plans for the rest of the shift were discussed.

   c. One of the problems discussed during the midshift meeting was status of a high-pressure air compressor whose first stage discharge had sheared a bolt. Engineering and maintenance were planning how to conduct repairs.

   d. During a discussion with the unit supervisor he commented that he liked his position because his choice was "easy." The "Safety of public" was paramount and if it was necessary to shut the plant down, he would.

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-14

DATE: JULY 29, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On July 29, 2001, I spent from 1402 to 1505 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was the isolation of the 'B' Boron Quench Tank level indicator for a routine surveillance. These tank levels are isolated and filled for six hours on Sundays to remove the buildup of Boron crystals in the level indicators.

   c. The shift manager was not in the control room for most of my visit because he was conducting a trainee walkthrough the plant for qualification checkout.

   d. This was the best kind of monitor--- generating electricity with no problems.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-15

DATE: AUGUST 13, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On August 13, 2001, I spent from 1628 to 1732 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was training qualifying watchstanders. Some of the procedures conducted were a pre job brief for the back seating of a leaking valve in the feedwater system; dilution of primary coolant; and the securing of a pump under test.

   c. There was one "unexpected" alarm – Rad Waste Trouble. Investigation determined that it was only unexpected by the Control Room watchstanders.

   d. When I debriefed the shift manager I stated that my only comment was that I did not think the watchstanders were letting the unit supervisor under instruction make any decisions. They would report to the qualified unit supervisor and he would respond -- not permitting the trainee get involved. The shift manager commented that he had just discussed that with on of the control room operators (I had to wait to give my report until he finished talking with the watchstanders. I did not know what was being discussed.) and planned to discuss with the unit supervisor. He agreed that the UI should have the chance to be UI (Under Instruction).

2. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-16

DATE: AUGUST 28, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On August 28, 2001, I spent from 1726 to 1830 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was shift turnover. It was one of the better turnovers I have observed. During the walk of the boards, the unit supervisor directed one of the control operators to watch the panels so he could pay attention to the briefing of his relief. Although it was possible to tell who had the watch during turnover, the watchstanders still do not announce their relief.

   c. The off going shift was preparing for testing the plant emergency diesel tomorrow and the oncoming CO spent about five minutes giving his predecessor some helpful hints based on his experience. It was a good exchange.

   d. The only significant material deficiency was a bus ground on 22A. The oncoming section was tasked with ground isolation as the major task of their shift.

   e. The shift manager was not in the control room for most of my visit because he was at a shift manager's meeting that concluded just at the end of my observation period.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-17

DATE: SEPTEMBER 16, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On September 16, 2001, I spent from 1247 to 1400 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was troubleshooting of Power Range Nuclear Instrumentation Channel 2 (NI42). The procedures to be followed were briefed by the senior I & C Technician. The major precaution was the need to arrange for flux mapping or reduce power to 75% with trips reduced to 85% if the drawer was not restored in four hours.

   c. The actual securing of the power range drawer occurred without incident and communications between the technicians and the operators was superior.

2. As you know the station is in a state of heightened security and my entry and departure from the site was carefully monitored by security.

3. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-18

DATE: OCTOBER 04, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On October 04, 2001, I spent from 1702 to 1802 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. One of the operators was taking a teat written by the unit supervisor to check for plant knowledge. Control room conversation revolved around his comments about the test and its difficulty. This was basically a "No Comment" monitor.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-19

DATE: OCTOBER 22, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On October 22, 2001, I spent from 1957 to 2104 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical and generating 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. During my monitor the major activity was a door alarm reported by Security. Investigation revealed that the latch on the door was sticking and periodically prevented the door from shutting automatically on use as required. A trouble report was written.

2. As you know the station is in a state of heightened security and my entry and departure from the site was carefully monitored by security.

3. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-20

DATE: NOVEMBER 08, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On November 08, 2001, I spent from 1650 to 1800 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical at 30% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. There were four additional watchstanders in the control room to support the maintenance in progress in the containment area on valve LCV460 that had failed earlier in the week.

   c. The resident NRC Inspector was observing the maintenance efforts and testing.

   d. Early in my observation, the crew conducted a careful brief of the procedures to test LCV460 after the repairs had been completed.

   e. I was shown how the repairs were broken into small steps with different persons conducting each step to minimize exposure to radiation. So far, the repairs were well under the planned exposure.

   f. The valve failure was caused by a hole in the control diaphragm that was replaced.

   g. At the end of my monitor period, the watchstanders conducted the valve stroke tests to insure that the repair was complete. The valve operated within the specifications.

   h. Because it was time for shift turnover, the procedure was halted until after watch relief. The next section would restore the system to service and commence the return to 100% power.

   i. The operators were deliberate in the steps and second checked each other. It was a professional effort as expected.

2. As you know the station is in a state of heightened security and my entry and departure from the site was carefully monitored by security. The presence of a National Guard armed HUMVEE adds to the security aura.

3. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-21

DATE: NOVEMBER 27, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On November 27, 2001, I spent from 1656 to 1800 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 94% power due to the failure of the A Circ Water pump last week. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. There were a number of trainees from the current licensing class in the control room for practical factors.

   c. I reviewed the condition reports submitted by the watch section that day. They covered many items and it is apparent that the philosophy of early documentation of problems is believed at the lowest working level.

   d. I observed a portion of shift turnover. There appeared to be a detailed exchange of information between the two shifts. I would call this a "No Comment Monitor."

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

Memorandum - 2001-22

DATE: DECEMBER 15, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 3 CONTROL ROOM

1. On December 15, 2001, I spent from 1010 to 1120 in the control room of MILLSTONE 3 observing the control room watchstanders. The Reactor Plant was critical at 100% Power in Mode 1. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. The operators were deliberate in procedure steps and second checked each other. It was a professional effort as expected.

   c. The Control Rod Exercise Surveillance completed as I started my monitoring period.

   d. A series of briefs were held on shifting circulating water pumps, conducting hypocholorination of the circ water system, and the back flush of 'F' condenser bay. Operators used their briefing cue badges to insure that no required elements were missed in the briefs.

   e. During the briefs the mechanical operator noted that one of the screen water pumps had an oil leak and he there would be a slight delay during the starting of the screen water pumps while he cleaned up the oil. The Unit Supervisor informed me after the brief that the oil leak was not impacting operations and would require removal of the pump to repair. The repair is scheduled for the next refueling outage. It does mean the operator has to wipe up oil every time he visits the circ water stations.

   f. There was an intermittent alarm on the 'A' Main Feed Pump outlet temperature. A check of local temperatures was within the normal limits. A TR would be written to identify the malfunctioning computer sensor.

   g. There was a slight delay during the actual procedure because a peer checker was doing a tag out procedure for work control. The unit supervisor under instruction commented that the control room should have invited a representative of work control to their briefing.

   h. The Unit Supervisor Under Instruction (US (UI)) was actually able to perform those duties. The actual Unit Supervisor served as a check on his actions and answered questions or concurred in actions when asked by the US (UI). It was a very good training environment.

   i. A containment high-pressure alarm was received and a containment vacuum pump started to clear the alarm condition.

2. It was a busy period filled with routine procedures that watchstanders performed in a very professional manner.

3. A copy of these comments was provided to Bill Hoffner, Process Owner Operations Millstone 3.

Bill Sheehan

Memorandum - 2001-23

DATE: DECEMBER 28, 2001

TO: Evan Woollacott and John Markowicz, Co Chairs, NEAC

FROM: Bill Sheehan

RE: MONITOR WATCH IN MILLSTONE 2 CONTROL ROOM

1. On December 27, 2001, I spent from 1120 to 1225 in the control room of MILLSTONE 2 observing the control room watchstanders. The Reactor Plant was at 100% power. The following comments are germane:

   a. Watchstanders were formal in their communications with each other concerning plant operations.

   b. There were a number of trainees from the current licensing class in the control room for practical factors. Trainees now wear a Blue Vest for easy identification

   c. The Shift Manager informed me that Operations had initiated a new requirement for watchstanders to scan the panels for any additional alarms or abnormal conditions when an alarm was received. He asked that I check this action. I am pleased to report that all watchstanders scanned the panels as they silenced any alarms that were received. I cannot state that they saw anything in the scan but it was conducted.

   d. The major material problem awaiting repair was a failed atmospheric steam dump valve. The malfunction appeared to be in the controller. The valve must be repaired by 0526 on 12/29/2001 or MP2 must shut down. An action meeting was scheduled for 1300 to outline the repair steps.

   e. I observed the midshift brief. It was detailed and concise.

2. A copy of these comments was provided to Dan Hagen, Process Owner Operations Millstone 2.

Bill Sheehan

APPENDIX 5

Nuclear Energy Advisory Council

Millstone 1 Decommissioning Advisory Committee

Pearl I. Rathbun (Co-Chair), Niantic: BA Economics, Eastern Connecticut State University. Administrative Assistant, East Lyme Emergency Management and Fire Marshal's Bureau; Deputy Emergency Management Director, East Lyme.

Rep. Kevin Ryan (Co-Chair), Oakdale: O.D., Pennsylvania College of Optometry. Legislator, Adjunct Faculty University of New Haven.

Paul Blanch (Ad Hoc Member), West Hartford: BSEE, University of Hartford. Professional Engineer, Management Consultant, Northeast Utilities.

Jerome Bobruff, M.D., New London: M.D. Degree, Yale University. Private Practice.

Joseph M. Coleman, Niantic: BSME, University of Notre Dame. Retired. Former experience includes Civil Engineer, Bethlehem Steel Company; Supervisor of Shipbuilding, USN and Electric Boat Division of General Dynamics Corp.

Terry Concannon (Ex Officio, NEAC Co-Chair), Marlborough: BSc Biochemistry, Dublin, Ireland. Tax Consultant, former state legislator.

Gregg W. Dixon, Ph.D., Niantic: Ph.D., Mechanical Engineering (Nuclear), Stanford University. Mechanical Engineering, U.S. Coast Guard Academy.

Wayne L. Fraser, East Lyme: First Selectman, Town of East Lyme.

Robert A. Moore, Niantic: Master of Theology, Boston University. Pastor of Niantic Community Church.

James R. Sherrard, Mystic: MS Nuclear Science and Ph.D. Program in Nuclear Engineering, Catholic University of America. Chairman of Nuclear Engineering Technology Department, Three Rivers Community-Technical College.

Doran Shumway, Oakdale: School of Radiologic Technology, Windham Community Memorial Hospital, Willimantic. Former radiation control specialist, Connecticut Department of Environmental Protection.

Paul A. Suprin, Waterford: BA Psychology, Central Connecticut State University. Senior Commercial Lending Officer.

Geralyn Winslow, Waterford: Southern Connecticut State University and University of Arizona. Paraprofessional, lifelong resident of Waterford, member of Citizens Regulatory Commission (CRC).

APPENDIX 6

Nuclear Energy Advisory Council (NEAC) Meeting
Waterford Town Hall
Waterford, Connecticut
March 15, 2001

March 29, 2001

Ms Terry Concannon, Co-Chair
Mr. Evan Woollacott, Co-Chair
Mr. John Markowicz
Mr. Frank Rothen
Mr. Bill Sheehan
Mr. Mark Holloway
Ms. Pearl Rathbun
Ms Mary Ann Buckley
Mr. Robert Klancko
Mr. John Helm
Dr. Edward Wilds, representing DEP, Commissioner Arthur J. Rocque, Jr.

1. Call to Order

Co-Chair Concannon called the meeting to order at 7:15 PM on March 15, 2001, at the Waterford Town Hall, Waterford, Connecticut

Co-Chair Concannon asked for a motion to accept the November 16, 2000 and January 11, 2001 NEAC minutes. The motion was made, seconded and accepted, as recorded, for the meeting notes.

2. Welcome/Introductory Remarks:

Co-chair Concannon informed the committee of a new member, Mr. Jim Sherrard. In addition, Mr. Frank Rothen will be resigning from the committee and will need to be replaced.

3. Radiological Emergency Preparedness (REP) Program, John Wiltse

Mr. John Wiltse, Director, Office of Emergency Management, State of Connecticut, gave a presentation of the emergency preparedness program. He introduced Ms. Deb. Ferrari of his office.

Questions from NEAC members

- Mr. Klancko had concerns about the risks involved with natural habitant getting contaminated. Dr. Wilds: a study is currently being performed by the DOE showing dose requirements; wildlife will now be addressed.

- Mr. Holloway had concerns about people panicking, traffic problems, KI being discounted, host reception centers, increased role of the National Guard.

- Co-chair Concannon: what would be the criteria for a host location. Mr. Wiltse: one requirement would be a city located 15 miles of the area.

- Mr. Markowitz: what is the state compensation plan. Ms. Ferrari: an exercise was proposed for New London but was cancelled; FEMA informed her department that they had to develop a compensatory plan listing all of the requirements a town would have to do. She mentioned the town Waterford was a very good resource of information.

- Mr. Markowitz added there should be more federal activities involved, i.e., army, navy, coast guard, etc. as a source of manpower.

- Ms. Rathbun questioned the traffic management plan, if the state police had a plan for people running out of gas or accidents on the highways. Ms. Ferrari: the state police would have the problem vehicle moved to the side of the road. Ms. Rathbun: how long would an evacuation be for the area. Ms. Ferrari: it would take anywhere from 6 1/2 (normal conditions) to 9 1/2 (weather, time of year) hours. Regarding the change in evacuation route for Fishers Island, Ms. Rathbun asked about the procedure for transport. Mr. Wiltse: the area is equipped to handle emergency situations and a relationship with New York and Rhode Island has been established with Connecticut; both states are notified if there should be an emergency situation.

- Mr. Markowitz read a list of discrepancies from an exercise some communities were found to have; Mr. Wiltse said the towns worked to correct these items. Mr. Markowitz also said an alternate plan should be also considered and more assets should be used.

- Co-chair Concannon: did the NRC have a plan to accept patients that were coming in from the EPC area. Ms. Ferrari: both Lawrence & Memorial and Middlesex Hospitals are trained to handle contaminated and injured individuals.

- Co-chair Concannon discussed a letter to FEMA regarding a March 15, 2000 exercise for Waterford schools and asked how would a school be evaluated during an exercise. Mr. Wiltse said by demonstrating the role of the superintendent and his/her staff in the emergency operation center, ability to give direction and orders to his/her staff; ability to exercise and acknowledge the plan; ability to access bus companies and have the bus assets report to a school; have bus drivers demonstrate knowledge and information where the children will be taken.

- Mr. Klancko addressed an incident with a freighter that came into New Haven Harbor; Dr. Wilds informed the committee of the situation and his findings.

4. Public Comment and Question Period:

Concerns included: host communities and how they are established, traffic control plan, how to contact family members if people aren't allowed back into the area, alternative ways (trains, waterways) for evacuation. Mr. Bob Moore: are there any plans for nursing homes and hospitals. Mr. Wiltse: the nursing homes are required to have plans, if people were ambulatory, they would evacuate them.

He also mentioned that prisons also have plans; they could be sheltered in place or be transported to another DOC facility. Another concern was with students that have special needs; they must be transported immediately. Mr. Joe Besade: is there a plan for Plum Island. Mr. Wiltse: Plum Island is part of New York and is part of the plan. Ms. Ferrari added that Plum Island residents will either go to Orient Point or Old Saybrook and Plum Island has their own ferry system. Another concern was with the new company taking over, if they will abide by the same rules as NU. Mr. Wiltse: the new owner agrees to abide by all the plans that are in effect.

Mr. Mike Ahern, NU, summarized an incident regarding a crack in a turbine at Unit #3. He explained the inspection procedure and the repair of the crack.

5. NEAC Business Meeting:

5.a. Written report from Kevin McCarthy

Co-chair Concannon read a list of activities that Kevin McCarthy has been involved in during the past year. A suggestion was made to have Mr. McCarthy come to the May 17th meeting.

5.b. Millstone Monitor Report from Mr. Bill Sheehan

Mr. Sheehan read his monitoring reports of January 13, January 29, February 13 and February 29. The operational focus meeting reports of March 14 and March 15 were also handed out. He summarized the outage and Unit #1 separation projects.

5.c. M1DAC Report

Ms. Rathbun discussed the MIDAC report and the progress with the missing fuel pins. She discussed having NRC clarify and establish regulations for decommissioned plants; the committee members will locate a similar letter that may have been sent regarding this point.

Mr. Rothen added that when he was at a recent NRC meeting in Washington, the NRC was in the process of developing a separate regulation for decommissioned plants; he noted this may take a few years before it gets implemented.

Regarding the status of M1DAC, Mr. Markowitz asked if the unit goes into "cold and dark", what will the committee do. Co-chair Woollacott suggested that M1DAC members reevaluate their situation and make recommendations to the NEAC committee and the committee will consider them.

5.d. Status of NEAC

Co-chair Concannon met with Melody Peters who suggested that at the next legislative session, perhaps NEAC's status might have to be modified. Co-chair Woollacott said that NEAC should continue, but maybe have quarterly meetings.

Mr. Helm was concerned about nuclear energy and water resources and that was the intent of the committee; these need to be addressed and we need to give advice to the governor, since the committee is an advisory committee.

Mr. Markowitz would like NRC to give a public meeting on a summary of their inspection findings on onsite inspections.

5.e. Misc.

Co-chair Concannon read a resignation letter from Mr. Frank Rothen and Dominion should be replacing him soon. Mr. Rothen added that the committee is a dedicated group of people and has enjoyed working with them. Mr. Rothen added that the committee provides valuable information to the public and the NRC in Washington uses Millstone and Connecticut Yankee as models for public communication.

Ms Buckley gave status on Connecticut Yankee, their storage situation and additional acreage for the storage. She said maybe NEAC could address the long term storage issue with the politicians.

Co-chair Woollacott discussed his testimony regarding Senate Bill 211, Potassium Iodide. He noted no one testified against the bill, but he was the only one that testified for the bill.

Suggestions made: have NRC meet with the committee for the May meeting and have Dominion meet with the committee for the July meeting.

Meeting adjourned at 11:00 PM

Next meeting: May 17th, Waterford Town Hall

Nuclear Energy Advisory Council (NEAC) Meeting
Waterford Town Hall
Waterford, Connecticut
May 17, 2001

May 30, 2001

Ms Terry Concannon, Co-Chair
Mr. Evan Woollacott, Co-Chair
Mr. John Markowicz
Mr. Bill Sheehan
Mr. Mark Holloway
Ms Mary Ann Buckley
Ms Marge DeBold
Mr. John Helm
Mr. Mike Firsick, representing DEP, Commissioner Arthur J. Rocque, Jr.

1. Call to Order, Opening Remarks

Co-Chair Concannon called the meeting to order at 7:10 PM on May 17, 2001, at the Waterford Town Hall, Waterford, Connecticut.

Co-Chair Concannon asked for a motion to accept the March 15, 2001 NEAC minutes. A correction was made to add "and the legislature" to Mr. Helm's statement regarding the status of the NEAC committee (Section 5d). The motion was made by Mr. Sheehan, seconded by Co-Chair Woollacott, and the minutes were accepted as amended.

2a. Introduction of Bill Matthews:

Co-chair Concannon introduced Mr. Bill Matthews, Vice President and Senior Nuclear Executive, Dominion. Mr. Matthews read his biography listing his nuclear background to the committee. Co-Chair Concannon described the backgrounds of NEAC council members. Mr. Matthews also introduced Mr. Gene Grecheck, Vice President, Nuclear Operations and Ray Necci, Vice President, Technical Services.

Questions/Comments from NEAC members

Mr. Markowicz asked about Units 2 and 3. *Mr. Matthews*: Unit 2 had three recent forced outages, one was due to an equipment problem, and the first one was due to a personnel error. It was more than they had hoped for, but they were learning from these and taking corrective action so they wouldn't be repeated. The employees were taking pride in their work. Unit 3 had a tremendous run of 565 days. The station had done extremely well in identifying problems, but there was a backlog of corrective actions that needed to be accomplished.

Mr. Markowicz: regarding the event that lead to the shutdown, it always seemed to be an engineering problem and both Mr. Sheehan and he were concerned about these engineering problems. In his opinion many of the knowledgeable people were gone and there weren't any specific written procedures in place to use as guidance when there was a problem.

Mr. Sheehan commented that they needed to develop confidence in the area of maintenance and in making those procedures work better. He said they also had to look at the safety conscious work environment and how that was going to develop. He was impressed with the self-feedback used by the operators in identifying problems.

Co-Chair Concannon asked if they planned to leave the current Safety Conscious Work Environment plan in place. *Mr. Matthews* said Millstone had the best safety conscious work environment plan and it would remain intact.

Co-Chair Woollacott asked if there were more problems with Millstone II than Millstone III. *Mr. Matthews* said the regulatory performance at Millstone II was worse in terms of violations. Unit II was older and, thus, had presented more challenges. *Co-Chair Woollacott* asked about the root cause of the problems with Unit II. *Mr. Matthews* replied that they did a root cause analysis on the adverse trend of the violations last fall and put several corrective actions in place. *Mr. Grecheck* added many issues were addressed in the spring, corrective actions were taken and investment made in the plant. Progress was being made.

Co-Chair Concannon: regarding the issues still pending following the ICAVP [Independent Corrective Action Verification Program undertaken at Millstone II and III during Restart in 1997-99]; when would the DRs be finished? *Mr. Grecheck:* The deadline to complete the Discrepancy Reports (DRs) at Unit II was by the end of 2001. Out of 400, the list was down to 10 corrective actions remaining. Unit III was completed in 2000.

Mr. Markowicz: asked about the spent fuel pool at Unit III and the licensing of the additional storage capacity. *Mr. Matthews*: The Atomic Licensing and Safety Board did think that the accountability issue needed to be addressed. *Mr. Markowicz:* Was the approval granted, what was the status? *Mr. Grecheck:* The hearing was being reopened to deal with this one issue. There had been no change in the previously given approval status. *Mr. Necci*: A process needed to be followed that might lead to some hearings.

Mr. Holloway: asked about the employee turnovers within the last three months. *Mr. Matthews* replied there had been a fairly high turnover. *Mr. Holloway* commented on the lack of written procedures and asked how that was being handled. *Mr. Grecheck* said they were putting everyone through a training program. As an example, a few weeks previously when some individuals made a mistake, they did not do the right thing; they had tried to figure it out by themselves and did not go through the proper channels. It was explained to them that this could not continue and if anything unexpected came up, they would need to stop and seek help from their supervisors. Procedures were now in place for them to follow. *Mr. Holloway*: asked what was Dominion's impression of morale. *Mr. Matthews* commented it was extremely high and he had heard positive comments.

Mr. Holloway asked what was Dominion's view on the spent fuel pool's design capacity for Unit II. *Mr. Matthews* said that spent fuel pools were originally designed to hold the fuel for a certain period of time. The intent was to recycle the fuel. However, President Carter stopped the plans as part of nuclear non-proliferation, and a permanent storage

facility had yet to be completed. He said he felt more comfortable with the spent fuel pool than with dry cask storage, but not as a long-term storage solution.

Mr. Holloway: asked about the license extensions for Units II and III. *Mr. Matthews* said it was being looked at.

Mr. Markowicz: There was a procedure being implemented during a test that required the removal of a valve. It was a unique procedure, but there were no written instructions. *Mr. Grecheck*: The procedure that was in place said to install a necessary jumper in order to bypass the valve. Maintenance procedures must include specific steps outlining how they should be done. *Mr. Markowicz*: were they looking at all those procedures that could affect the plant? *Mr. Grecheck*: this was a station issue. They were reviewing each of these. As they came up, specific steps would be developed.

Questions/Comments from the public

Mr. Joe Besade had comments regarding the press, discharge of water, and the reracks in the spent fuel pool. Mr. Matthews said the reracks had been completed and new racks were installed. Mr. Besade asked if he would still have permission for walkdowns. Mr. Matthews said they would consider it.

2b. Millstone 1 -- Case of Missing Rods, Robert Fairbank

Mr. Fairbank introduced Mr. Dave Smith and Mr. Hugh Thompson. Mr. Smith talked about the transfer of the license and explained that Dominion was responsible for the pins that were not accounted for at Millstone 1. Dominion would also be responsible for reviewing the report.

Mr. Fairbank presented slides on the progress, to date, of the search for the 2 missing pins. Mr. Thompson discussed the Independent Review Team's progress, which he was leading.

Co-Chair Concannon asked if the team was selected through an RFP process. *Mr. Thompson* said they had come in on December 2nd to make sure a comprehensive search was done for the rods. They, along with Frank Rothen, recommended a project-dedicated team in order to allow Unit I to proceed to 'cold and dark' decommissioning status. They were also chosen for their experience and knowledge. *Co-Chair Concannon* asked if the team had done anything like this previously. *Mr. Thompson* said, no, not exactly. He had been at a sonic drilling area in Idaho and had written the criteria to make the area safe. They had not reached any conclusions on the current situation as yet.

Co-Chair Concannon asked how good were the records kept by Barnwell and Hanford [low-level waste storage sites]. *Mr. Fairbank* replied their shipping records were based on the packing and shipping records as provided by the utilities. They would know the storage location of each shipment at the site.

Mr. Holloway asked if all the fuel pins had identifying numbers. *Mr. Fairbank* said yes.

Mr. Woollacott asked if there are any indications that the problem could have been procedural. *Mr. Fairbank*: Until they identified the location and/or disposition of the rods, they couldn't tell where the problem occurred. *Mr. Thompson*; in the 20-year time frame since the problem occurred, procedures had been upgraded, and modified. There have been 5-6 revisions of the original procedures.

Mr. Markowicz: asked if they are getting encouraged/discouraged. *Mr. Fairbank*: The material that had been found was very comprehensive and they were becoming more and more encouraged. In addition, eighty-five (85) persons who were working at Millstone Station during the period in question had been identified and each would be interviewed in attempt to obtain more information. *Mr. Markowicz*: was there any indication of criminal involvement. *Mr. Fairbank* said no, but they are looking at that, and the independent team concurred.

Mr. Holloway asked if the last documentation was in 1980, was there anything further after that date that referred to the rods. *Mr. Fairbank* said no, but that they were inspecting every square foot with the video camera to confirm that the assemblies were intact.

Co-Chair Concannon asked what would they do should they come to the end and didn't have any answer. *Mr. Fairbank* said the more documents that were looked at; the more likely they would be to find the trail. *Co-Chair Concannon* asked how could they be sure that someone did not steal them. *Mr. Fairbank* said the material had a radioactivity level that would have been fatal to an unprotected individual, that it would have set off the alarms when taken from one area to another in the plant, if properly packed it would have needed a large crane to get it out of the area, it would have involved more than one person, many checkpoints would be involved, etc. etc. In addition, the amount of nuclear material involved would not have been sufficient to create any weapon. They were still continuing to look at that, but there was no indication that that occurred. Mr. Thompson said the NRC has responded to congress on this issue.

Mr. Markowicz asked to whom had they been talking at the state level during the weekly progress phone calls. *Mr. Mike Firsick,* DEP, said he was the state contact.

Questions/Comments from the public

Mr. Besade asked if the rods were buried on site, how deep would they have been buried before they could not be detected. Mr. Fairbank said about 30 feet.

Mr. Paul Blanch asked if one possible outcome was that the missing rods were no longer in the spent fuel pool, were they going to be able to say that with certainty. He also wanted to know when would they say, enough was enough. Who would make that decision? Mr. Rothen said that when he was satisfied that they had exhausted every plausible scenario they would present that to Dominion.

If they concurred with the findings, they would submit it to the NRC, including the root cause and the fact that the report could be considered to be the result of their best efforts. They had a completion date set by the end of June, providing all (72) scenarios had been evaluated.

Mr. Ron Bellamy, NRC Branch Chief, Region 1, added that the NRC was going to wait for Dominion's report. At the end of the process, the NRC would review the document and method by which they (Dominion) generated that document. The NRC would determine if they were content with the results. Mr. Blanch asked if the NRC had the final say. Mr. Bellamy: One outcome could be going back to Dominion and informing them they hadn't gone far enough; another could be to negotiate with the state.

2b. NRC Comment, Ronald Bellamy:

Mr. Bellamy discussed the progress of Millstone 1's inspection status.

Questions/Comments from NEAC members

Mr. Markowicz said this [the case of the missing rods] falls under the category of unique events, had the NRC put out notices to other plants informing them to perform checks. *Mr. Bellamy* said any document that they had received was entered into a computer system, and other plants that were being decommissioned were aware of this situation. Mr. Rothen said Dominion did not find the problem, the employees found it and responded properly.

Mr. Holloway asked whether some other utilities might not be as keen with their inventory keeping and maybe this scenario did exist in other plants. *Mr. Bellamy* said other plants had done an exhaustive inventory and had found nothing out of the ordinary.

Mr. Sheehan: If you looked at the scenario that these pins were taken out during a refueling event 20 plus years ago, the problem could have happened to any plant of similar design that was continuing to operate today. Was it possible that this scenario would not occur in a pressurized water reactor because of the design of the fuel rods? Could this be unique to boiling water reactors? *Mr. Bellamy*: they would highlight this vintage boiler aspect, and make sure that all were aware of it.

3. Public Comment and Question Period:

None. The program agenda ended at 9:00 PM

4. NEAC Business Meeting:

a. Mr. Bill Sheehan discussed his monitoring reports of Millstone II and Millstone III.

b. Ms. Rathbun was not present to discuss the M1DAC report that was handed out. Co-Chair Concannon read M1DAC's suggestions as to the future of M1DAC. Motion was made by Co-Chair Woollacott, seconded by Ms Buckley, to have M1DAC remain as a

committee and meet, annually, on the first Thursday of May, unless there was reason for a special meeting in the interim. All voted in favor, no objections. Mr. Bill Temple will keep MIDAC informed if there is any new information.

c. Co-Chair Concannon informed the committee that Bob Klancko was going to need cardiac surgery in the near future. She reported that Robert John Klancko Day took place on April 17th. Proclaimed by Governor Rowland, it recognized Bob for his "35 years of distinguished service to the materials industry of Connecticut as manager, technical professional, and educator".

Co-Chair Concannon also mentioned that another NEAC member was recognized recently; Co-Chair Woollacott for his many contributions to the town of Simsbury during his 40 years in residence, including 15 years as elected town moderator and his tenure as president of the Historical Society culminating in his recently published work, 'The Gavel and the Book, The Simsbury Town Meeting 1670 to 1986," a 568 page book chronicling the debates, town meetings and gatherings of 316 years.

d. Co-Chair Concannon said the NRC would be available in July to cosponsor a public meeting with NEAC regarding the new nuclear oversight program with the review of its first year; however they only could be available on Tuesday, July 17th. Mr. Sheehan said he would find out if the regular meeting room at the Waterford Town Hall would be available for that night and would get back to Co-Chair Concannon.

Co-Chair Concannon discussed a state senate bill, which facilitates the Agreement State status for Connecticut. Mr. Holloway said the KI bill has made it through several committees of the legislature.

Co-Chair Concannon made the announcement that she is planning to retire from the council as of July 31, after five years. NEAC's first meeting took place 8/1/96 in Hartford. She made comment about the unique aspects of NEAC's experience and thanked the members for their extraordinary commitment and teamwork. Council members thanked her for her dedication, negotiating skills, leadership, knowledge and organization. She suggested having a dinner on June 21 at a restaurant in the Waterford area; Mrs. Helms will be checking out a few restaurants to see if they are available.

5. Adjournment

Motion by Mr. Sheehan to adjourn, seconded by Mr. Markowicz; Meeting adjourned at 9:38 PM

Next meeting: Tuesday, July 17, at Waterford Town Hall

Nuclear Energy Advisory Council (NEAC) Meeting
Waterford Town Hall
Waterford, Connecticut
July 17, 2001

Mr. Evan Woollacott, Co-Chair
Mr. John Markowicz
Mr. Bill Sheehan
Ms Mary Ann Buckley
Mr. John Helm
Mr. Jim Sherrard
Ms Pearl Rathbun
Dr. Edward Wilds, representing DEP, Commissioner Arthur J. Rocque, Jr.

1. Opening Remarks, Call to Order

Co-Chair Woollacott called the NEAC/NRC joint meeting to order at 7:00 PM on July 17, 2001, at the Waterford Town Hall, Waterford, Connecticut. Co-Chair Woolacott also expressly thanked Ms. Concannon for her leadership with the NEAC Committee in the early years when there was a lack of trust by the public in both NU and the NRC.

2. Approval of May 17, 2001 NEAC Meeting Minutes

Co-Chair Woollacott asked for a motion to accept the May 17, 2001 NEAC minutes. The motion was made by Mr. Sheehan, seconded by Mr. Markowicz and accepted, as recorded.

3. Comments by NEAC Co-Chair Evan Woollacott and NRC Co-Chair Randy Blough, Director, Division of Reactor Projects:

Co-Chair Woollacott introduced the NEAC members and Mr. Blough introduced NRC staff; also, Mr. Temple introduced Dominion staff who were also present at the meeting. Mr. Blough described the meeting agenda. Mr. Hub Miller added that he appreciated the interest the NEAC has maintained in nuclear issues in Connecticut.

4a. Review of the New NRC Reactor Oversight Program, First Year's Results Nationally, Curt Cowgill, Chief, Reactor Projects, Branch 6.

Mr. Cowgill presented slides of the new NRC oversight program and current national results. He said their mission is focused on safety and protect the environment. Regarding the performance indicators, data is reported to the NRC on a quarterly basis by each company and licensee and the results of those indicators are evaluated. If any of the indicators cross the thresholds, that would define specific NRC action and specific action for the licensee to restore that indicator to a "green" condition. The inspection procedures were modified and there are objective indicators of performance. When the performance indicators were developed, data from across the country was gathered over a three-year period, the data was averaged and then a specific deviation from the averaged data was taken to define the green-white threshold. Mr. Miller added that there are a number of things in this new program that address the weaknesses and criticism that came from the NRC. He added that the rules of engagement are far clearer now and it is a much more predictable process.

Questions/Comments from NEAC members

Mr. Sheehan questioned what was meant by increased independent observations resulting from a yellow finding/condition. *Mr. Cowgill* responded that during a yellow condition, the NRC would require the utility to determine the fundamental cause. The NRC will then conduct their own in assessment and draw their own conclusions independent of the utility. The NRC would also review of the broadness of the problem instead of relying solely on the utility's analysis.

Mr. Markowicz asked if the performance indicators were going to be updated on an ongoing basis and will thresholds be changed in the future. *Mr. Blough* responded that it was not the intent to reset them. They used the averaging of three years of historical data to artificially set a threshold. *Mr. Markowicz* noted that if performance improved, the thresholds might become higher. *Mr. Miller* stated that, on average, there have been improvements. *Mr. Markowicz* noted that the inspection and measurements that result in an inspection finding appear to be subjective, and questioned if there were objective criteria to establish green, white, yellow, or red conditions/findings. *Mr. Cowgill* responded that there are objective data, which is based on risk, and a risk analyst analyzes each finding that has crossed a threshold. He added that other NRC risk analysts conduct independent verification. *Mr. Markowicz* asked in the case of the two Millstone white findings, who made that color determination, was it an inspector or risk analysis team? *Mr. Cowgill* stated that the basic inspection was done by the inspectors, the analysis was made and provided to the Region, then the NRC made a final determination; it is not a regional decision alone, but it is an agency decision.

Co-Chair Woollacott commented that the standards keep improving. *Mr. Miller* stated that the NRC is required to set minimum standards and he agrees that the standards are improving.

Co-Chair Woollacott asked which plants had the yellow and red conditions, and what were the causes? *Mr. Cowgill* responded that the Indian Point red involved an inspection of the steam generators in an outage three years ago. There were defects that were unaccounted, and therefore, the performance problem and the significance were judged to be red. *Mr. Blough* stated that at the Midwestern plant, they had a problem with the offsite notification sirens during testing, and a yellow finding was assigned. On the first inspection, there wasn't enough information to satisfy the inspection. Four to six weeks later, the results were still unacceptable and at that point the NRC created a yellow inspection finding to their performance indicator for failure to correct the issues. The sirens were repaired and passed the tests, but there hasn't been a thorough evaluation, and yellow inspection indicator remains.

Dr Wilds asked how often the NRC is going to go back and look at the performance indicators themselves to ensure that they are monitoring the correct conditions. *Mr. Blough* responded that it is a continuous process, and *Mr. Miller* stated that it would be performed on an annual basis.

4b. Review of the New NRC Reactor Oversight Program, How Millstone Fared Under the New Inspection Program, Curt Cowgill, Chief, Reactor Projects, Branch 6.

Mr. Tony Cerne presented slides of Millstone III's progress. From their refueling in 1999 to their fueling outage in 2001, they ran without shutting down. All their performance indicators are green and the inspection findings are green. Mr. Steve Jones, resident inspector, Millstone II, presented slides of the progress of Millstone II. Under the mitigating system cornerstone, there was one white finding for the high-pressure injection system unavailability. This issue resulted from a maintenance activity.

Questions/Comments from NEAC members

Mr. Sheehan asked where in the cycle (green, etc.) did you place the error on the water pump? *Mr. Jones* stated that it was a green condition. *Mr. Cowgill* noted that it still goes into a performance indicator as an unplanned plant shutdown and would be monitored from that aspect. If there were enough unplanned shutdowns, that performance indicator would cross the threshold and change to white which would initiate action.

Mr. Markowicz asked if the NRC was looking at cross cutting issues at both Millstone II and III or just II. *Mr. Cowgill* responded that they are looking at their performance station-wide. *Mr. Miller* added that they have an outstanding team and he likes to visit the site by managerial level. During his observations, there are improvements in this station. The focus is on work control and human performance. *Mr. Sheehan* also noted that he visits the control rooms about once a month for an hour.

5. Public Comment and Question Period:

Mr. Besade read an article regarding a new cable TV series on the dangers of nuclear power in Connecticut. He asked various questions to both NRC and Dominion staff; some answers were not readily available.

Mr. Blanch asked if the NRC found a safety system inoperable, and maybe it could be a long time until its operability is restored, how would that factor into the performance indicator? Would the unavailability of that safety system show up and go to zero and how long would it take to go into the green band? *Mr. Blough* stated that they would have to look at the history to find out how long that condition affected the equipment.

The NRC presentation ended at 8:55 PM.

6a. NEAC Business Meeting, Millstone Monitor:

Mr. Sheehan discussed his monitor reports.

6b. NEAC Business Meeting, Future Meeting Schedule:

Co-Chair Woollacott asked the committee for suggestions on a future meeting schedule. Motion was made by Mr. Markowicz to meet quarterly, the first month of each quarter subject to special meetings called to chair and invite the utilities to make presentations at 6 month intervals and invite NRC to make presentations at 6 month intervals. Mr. Bill Sheehan seconded, and all voted in favor.

6c. NEAC Business Meeting, Membership:

Co-Chair Woollacott asked for a motion from the committee to nominate Mr. Markowicz as Co-Chair; Mr. Sheehan made the motion, Ms. Rathbun seconded, and all voted in favor. Also, Co-Chair Woollacott informed the committee of two new appointments: Mr. Jim Sherrard, who replaced Mr. Bill Brockett and Dr. Gregg Dixon, who will replace Co-chair Concannon. These changes will be effective for the next meeting in October. Mr. Temple said that he is waiting for a letter from the Governor's office to replace Mr. Frank Rothen.

6d. NEAC Business Meeting, Miscellaneous:

Co-Chair Woollacott asked for topics for the October meeting. Mr. Sherrard suggested performance indicators, human performance indicators, adequacy or inadequacy of training; spent fuel report, downsizing of the plant.

Mr. Jim Sherrard discussed a recent conference on nuclear management which members of advisory groups from across the United States attended. He had a report from the conference if anyone wanted to look at it.

Mr. Paul Blanch mentioned recent documents from the NRC on spent fuel, spent fuel liability and terrorist activities. Mr. Temple will mail a hardcopy of the documents to all members.

Mr. Besade commented about the two teenagers that were arrested at the Millstone site. The teenagers had to pay a fine for trespassing. He wants to have Dominion reimburse the teenagers the money.

7. Adjournment

Motion by Mr. Sheehan to adjourn, seconded by Ms. Rathbun. Meeting adjourned at 9:30 PM

Next meeting: at Waterford Town Hall, November 29, 2001

Nuclear Energy Advisory Council (NEAC) Meeting
Waterford Town Hall
Waterford, Connecticut
November 29, 2001

Mr. Evan Woollacott, Co-Chair
Mr. John Markowicz, Co-Chair
Mr. Bill Sheehan
Mr. John Helm
Dr. Jim Sherrard
Ms. Pearl Rathbun
Dr. Gregg Dixon
Mr. Bill Temple
Ms Marge DeBold
Mr. Mark Holloway
Dr. Edward Wilds, representing DEP, Commissioner Arthur J. Rocque, Jr.

1. Opening Remarks, Call to Order

Co-Chair Woollacott called the meeting to order at 7:05 PM on November 29, 2001, at the Waterford Town Hall, Waterford, Connecticut.

2. Introductions

Co-Chair Woollacott introduced Mr. Allen Price from Dominion Nuclear, Connecticut; and Mr. Ron Bellamy and Todd Jackson from the NRC.

3. Approval of July 17, 2001 NEAC Meeting Minutes

Co-Chair Woollacott asked for a motion to accept the July 17, 2001 NEAC minutes. The motion was made by Mr. Dixon, seconded by Dr. Sherrard, all voted in favor as recorded.

4. Millstone I Missing Fuel Rod Presentation and Summary Presentation on Millstone II and III: Allen Price, Vice President, Technical Services, Dominion Nuclear Connecticut.

Mr. Price presented slides for his presentation. His discussion included the station status for Millstone I, II and III; security update; and the fuel rod accountability project. He noted that all the milestones from the May MIDAC meeting have been completed. Northeast Utilities has completed their evaluation and have given Dominion the report and Dominion has submitted the report to NRC. The root cause evaluation has been completed, corrective actions have been accepted by Dominion and they are in the process of completing those corrective actions.

5. Questions/Comments from NEAC members

Mr. Sheehan said one of the requirements for Unit II staff to be responsible for Unit I is the process owners for Unit II operations and the shift managers had to become certified fuel handlers. He asked for an explanation of a certified fuel handler and why was it assigned to the senior management on watch. *Mr. Price*: In order to move nuclear fuel, one has to have SRO training equivalent.

With Unit I being in a decommissioning status, there are no more reactor operators or senior reactors operators. to be trained as certified fuel handlers. *Mr. Sheehan* asked if the pump arrived for Unit 2 and would they be able to handle meeting the schedule for refueling, which is less than 33 days. *Mr. Price* responded the pump did not arrive, but they would be finished before the refueling started.

Co-Chair Woollacott asked why didn't NU make this presentation. *Mr. Temple* said that since the NRC inspection report has not yet been completed, it was best that Dominion do the presentation.

Mr. Holloway questioned the video scanning's effectiveness when inspecting the fuel pool. He asked if a more thorough inspection could be performed by physically removing the fuel assemblies from the pool. *Mr. Price:* responded that it is possible to move individual fuel assemblies. If the fuel rods were taken out to be placed in dry cask storage, an inspection can then be performed.

Co-Chair Markowicz: asked if the inspection of Millstone Unit I is complete and it is still identified as a possible site for the rods, why do you think, or why does NU think that the rods are still in the pool? *Mr. Price:* responded that every fuel assembly is being evaluated. *Co-Chair Markowicz*: If every assembly has been inspected and based on the paper trail, you have an accurate inventory of the rods in the assemblies, why would you conclude that the rods are possibly still in the pool? *Mr. Price:* Back in that time frame, nuclear material accountability in Unit I was maintained by assembly, not by individual rods.

Co-Chair Woollacott: The report said there was no authorized move, so they can't be in the three off site areas, and therefore must be in the pool. *Mr. Price*: There was no authorized move of the missing spent fuel. *Co-Chair Woollacott*: There should be a way to make an inventory of Millstone I without saying it is too hot to move. *Mr. Price:* They haven't considered moving the fuel from I to III. They evaluated Unit I's fuel and concluded that it is safe in the pool. They are looking into future options for Unit I and when they empty the spent fuel pool, it will either be to ship it to a DOE facility or come up with another storage option.

Ms. Rathbun: What percent of Unit I has been searched. *Mr. Price*: 98% of the pool was searched. *Ms. Rathbun:* Currently you say Unit I is in modified safe store; is modified safe store being reconsidered for Unit I? *Mr. Price*: Not modified safe store per se, but should they remove the reactor internals and drain the remainder of the water out of the reactor vessel, they would do what the best thing they could do for the intake structure. *Ms. Rathbun:* asked if the security force is privately contracted. *Mr. Price* said all are privately contracted.

Dr. Dixon: asked if the fuel assembly was disassembled due to damage; was accounting done by assembly and could the rods be separated from the assembly and not included in the nuclear material accounting practice. *Mr. Price*: responded that in this case, that is what was reported to us.

Mr. Blanch: How many individual pins are supposed to be in the pool, is it possible to count the pins and have you done it? *Mr. Price*: responded that hasn't been done; didn't have an exact number, but it could be 10's of 1,000's.

Dr. Sherrard: If we assume they were cut up and sent to the sites, there is sophisticated nuclear instrumentation that is put underground that takes a radioactive signal to identify certain types of material. Was this considered or would be considered? *Mr. Price*: There is discussion amongst the states. Whether or not does technologies exist is an issue. Is it possible, is it proven and whether that course of action should be pursued are open issues. *Dr. Sherrard*: With Millstone II outage and the current security problems, will there be a problem getting contractors from the outside to come in. *Mr. Price*: It will be a problem but they will not cut any corners.

Ms. Winslow: asked what corrective actions would be made with the fuel rod accountability project. *Mr. Price*: responded that they have to clearly assign ownership to the fuel pool to standardize their expectation of all 3 units. This is something that they are doing right now.

Co-Chair Markowicz: If we were to move fuel from I to III, what would be the radiation exposure? *Mr. Price*: We look at the radiation exposure for all activities. When you move fuel, the amount of exposure is not extremely high.

Co-Chair Woollacott: asked for the definition of a condition report. *Mr. Price:* A condition report is anything in the power station that needs to be reported to management and that needs to take corrective action for. *Co-Chair Woollacott:* How long after a condition is noted should it be reported? *Mr. Price:* When you know the condition, you write the condition report. *Co-Chair Woollacott:* In August, people at NU noticed a problem of the fuel rods but the condition report was not made until 4 months after the incident. Is Dominion accepting the report as presented by NU? *Mr. Price*: We have accepted their report, and we will be accepting the report that the NRC gives us.

Mr. Helm: expressed concern that this problem should not be overlooked. He said the Oyster Creek clean up was incredible.

Mr. Sheehan: After reading the report, the most likely scenario is because the rods looked very similar to the low power range monitors that were cut up in 1979, these rods were cut up and stored with those monitors and sent down in that shipment. This is the most logical explanation as to why they aren't there.

6. Public Comment and Question Period:

One member of the public asked if the water was cloudy and is there other equipment kept in the fuel pool? How difficult would it be to cut these up and ship it with the shipment going to Barnwell and would these become radioactive? *Mr. Price:* The water was clear and there is 20' of water above the fuel assemblies. At the time there were other equipment kept in the fuel pool. One possibility is that workers mistook the rods for low power range monitors.

A reporter from the Day: Does Dominion have a position on the bill regarding nuclear safety in the U.S. Senate? *Mr. Price* : We have not seen the bill yet. If it is determined that this is the appropriate way to go, we will do our best to make it a success story. When we talk about making a fundamental change, we need to approach it very systematically and cautiously so whatever corrective action we put into place they will have unattended consequences.

Mr. Besade: asked Mr. Price if he ever toured the fuel pool; commented on the low lighted area in the fuel pool, the roof above the spent pool is constructed with inferior materials, and the galvanized roof drains are running over the top of the pool. Mr. Price said the building surrounding the fuel pools are not similar designed to a garden shack.

7. Status and comments on NRC review of the NU missing fuel rod submittal, Ron Bellamy, Todd Jackson, NRC

Mr. Bellamy discussed the missing fuel rod project. They will issue a report by the end of January, 2002 and hold a public meeting to discuss their findings. He introduced Todd Jackson, who has been in charge of this investigation.

8. <u>Questions/Comments from NEAC members</u>

Co-Chair Markowicz: asked if inaccessible means inaccessible today, not necessarily inaccessible in the future. *Mr. Jackson*: We have gotten assurance from the licensee that there is 100% certainty of accountability for all of the fuel except these two rods. The assemblies in the pool are all accounted for. They looked at each of those assemblies for evidence of hardware manipulation and whether the assemblies have been opened. There were no outstanding questions whether or not there was anything accounted for. They did not do a count for each individual rod. There are some areas where racks are on top of a cover and it is impossible to get in and verify it. Everything that could be accessed and examined was done.

Mr. Holloway: asked if this has occurred elsewhere. *Mr. Jackson*: responded that they are not aware of any other cases. Mr. Bellamy did say that there is a developing situation at Dresden I reactor; they are in the same situation; and are conducting a full accounting of what is in the spent fuel pool.

November 7th of this year they identified a fuel canister with two fuel pins and a pin segment that is not in that canister.

Co-Chair Woollacott: Have you found the assembly that the rods came from? *Mr. Jackson*: The assembly has been found in the fuel pool and the licensee has all of the rods except for these two are in this assembly.

Mr. Holloway: What was NRC's role in monitoring nuclear fuel in 1980 and what it is now? It seems the spent pool has items that have different levels of waste that are similar in appearance and that a possibility could exist that maybe this is a way to store things in. *Mr. Price*: Back in the 1970's there was a mix of everything in a number of spent fuel pools. In the fuel pools today, you won't see any of that happening.

Dr. Dixon: In the 1970's Unit I fuel material was accounted for by assembly and when the rods were removed they were no longer included in the nuclear material accounting system. Was that NRC accepted practice at that time? *Mr. Jackson*: Whether or not the items were separated, there still was a requirement that all special nuclear material was accounted for.

Co-Chair Markowicz: What was the inventory clue that led them to being discovered as missing? *Mr. Jackson*: As a part of a full accounting of what was in the pool, and the sale, when an assembly comes in, it is given a card file and the moves of that assembly were tracked by these cards. In 1979, a reactor engineer noticed these two rods in a container in a part of the pool and couldn't find a record of it. They initiated two cards. Those cards were not updated from that point on, but they were in the card file.

Mr. Helms: Is there a visible path in the fuel rack to identify where the rods went down? *Mr. Jackson*: Anytime a pin may be taken from the assembly, they are moved to a fuel prep machine in an area in the fuel pool. The assembly that is missing these two rods was one that was looked at using the camera.

Ms. Winslow: If you could think of something better that they could do, would you tell them what to do? Mr. Bellamy: One of the charters that the inspection team has to look at is, did the licensee do a full comprehensive evaluation to try and determine where the fuel pins are. One of our options is to go back to the licensee and ask them to take some additional investigative measures.

9. Public Comment and Question Period:

One comment: The facilities that they might have been sent to, are these dumping grounds or do they keep records. *Mr. Jackson*: These are controlled burial sites. We do have records what is shipped but they do not open the packages up.

Ms. Winslow: Do they know where they are on the site. *Mr. Jackson*: Yes, they know where they are.

Reporter from the Day: With the Dresden situation now, is there any possibility of a generic industry-wide order to reevaluate the inventory and how they go about the way they inventory especially with these older spent fuel storage issues? *Mr. Bellamy*: It is premature right now, but one of the things to consider is whether there is a need for any generic types of actions.

10a. NEAC Business Meeting: Millstone Monitor

Mr. Sheehan discussed the monitoring reports. He talked about security measures and the repairs are being done very cautiously. He mentioned that Unit II is at 94% power due to an alpha circulation pump that is out of commission; and the pump is about to arrive shortly.

10b. NEAC Business Meeting: MIDAC Report

Ms. Rathbun said MIDAC's next meeting will be held May, 2002.

10c. NEAC Business Meeting: Annual Report

Co-Chair Woollacott and Co-Chair Markowicz need to have the individual reports for the annual report sent to them as soon as possible (by December 15th).

Co-Chair Markowicz read a draft letter that will be sent to the Governor and the legislature regarding potassium iodide, point defense/home and security and activation of the permanent nuclear waste storage repository at Yucca Mountain. Some members had comments regarding wording. Motion was made to amend letter; all in favor. Co-Chair Markowicz will amend according to those comments and send a copy to all members for approval.

10d. NEAC Business Meeting: Subjects for Subsequent Meetings

Subjects for next meeting (in March): NRC's inspection report. Professor Sherrard suggested after the letter is sent out, having a meeting requesting feedback.

10e. NEAC Business Meeting: Future Meeting Schedule

Ms Debold informed me that Ms Mary Ann Buckley sent in a letter of resignation.

11. Adjournment

Motion by Ms. Rathbun to adjourn, seconded by Co-Chair Markowicz; meeting adjourned at 10:00 PM

Next meeting: Waterford Town Hall, March 21, 2002

APPENDIX 7

State of Connecticut

NUCLEAR ENERGY ADVISORY COUNCIL

TERRY CONCANNON
Co-Chair
EVAN WOOLLACOTT
Co-Chair

Room 4100
Legislative Office Building
Capitol Avenue
Hartford, CT 06106

The Honorable Richard Meserve, Chairman
Nuclear Regulatory Commission
Washington, DC 20555-0001

May 17, 2001

Dear Chairman Meserve;

On behalf of the members of the Connecticut Nuclear Energy Advisory Council (NEAC) and its decommissioning subcommittee, Millstone 1 Decommissioning Advisory Committee (MIDAC), we are writing to express our concern about the need for specific decommissioning regulations.

In Connecticut, as you know, we have 2 nuclear power plants that are being decommissioned, each by a different method. The residents living in proximity to Millstone 1 and Connecticut Yankee are particularly concerned that all is being done to execute these significant undertakings in a safe manner. The fact that there are no specific regulations in place to control and set parameters for these activities is far from reassuring. Referring to existing regulations may give rise to interpretive issues. What is more, many of the plants are unique for one reason or another including, location, size and type of fuel, condition and age of the plant's infrastructure etc. These could be addressed in appropriate regulations. In short, the nuclear industry has arrived at the stage where a number of power plants are being decommissioned, and we need the regulators to provide specific oversight and authority to ensure safety for the citizens living in these areas.

We understand that the rulemaking process has commenced, and we urge the Commission to ensure that regulations are established and enforced that apply exclusively to the decommissioning process and to decommissioned nuclear power plants. We also urge the Commission to encourage completion of this project in an expeditious manner.

With appreciation for the important nature of the Commission's work and on behalf of NEAC,

Terry Concannon, Co-Chair

Evan Woollacott, Co-Chair

STATE OF CONNECTICUT
OFFICE OF POLICY AND MANAGEMENT
www.opm.state.ct.us
May 23, 2001

To: Terry Concannon, Co-Chair
Evan W. Woollacott, Co-Chair
Nuclear Energy Advisory Council

From: Brian Mattiello, Under Secretary
Office of Policy and Management

Subject: Potassium Iodide (KI)

As you may know, the Nuclear Regulatory Commission (NRC) recently published a rule change in the Federal Register amending a section of its emergency preparedness regulations (10 CFR 50.47(b)(10)). The new rule requires states with commercial nuclear power plants to consider the use of potassium iodide (chemical symbol KI) as a protective measure for the general public to supplement sheltering and evacuation in the unlikely event of a severe nuclear power plant accident. This rule change became effective on April 19, 2001.

Subsequent to the rule change, the Federal Emergency Management Agency (FEMA) regional office notified the Office of Emergency Management on the status of activities related to the NRC rulemaking (see attached). Although FEMA encourages states to begin the consideration process, they concede that the process cannot be completed until the Food and Drug Administration (FDA) issues its final guidance on dosage requirements and the NRC publishes NUREG 1633 and establishes an application process for the initial supply of KI.

The Office of Policy and Management, together with representatives from the Department of Public Health, the Office of Emergency Management and the Department of Environmental Protection, has taken the lead in managing this issue since the NRC decided to grant the revised petition for rulemaking on June 26, 1998. The working group met most recently on April 18, 2001.

A letter from OPM Secretary Marc Ryan to you dated January 13, 1999, committed to further consider the use of KI in nuclear emergency response planning upon the NRC Rule going final. With the new rule in place, the interagency working group will continue to meet, as necessary, to develop an appropriate response. The working group's level of activity will be predicated in large part on the timing of anticipated federal actions.

In order to further the discussion on the possible role of KI with regard to the general public and institutionalized populations, you can anticipate being invited to a meeting within the next several months. While the interagency working group, led by OPM, will ultimately be responsible for meeting this federal requirement, I believe that the group will benefit from your advice.

Some of the issues that the working group has debated, and that you may wish to advise on, include:

- How can stockpiling and distribution be done in a manner that does not hinder the timely evacuation and sheltering of the general public from such a densely populated emergency planning zone (EPZ)?
- How can the state develop an effective public education campaign that instructs the public on the proper use of KI, while at the same time dispelling the false sense of security that many people may have from taking a pill that provides only limited health benefit in a nuclear emergency?

As I know you appreciate, the consideration of KI as a supplemental measure to sheltering and evacuation is a very complex issue that must be managed accordingly. I want to assure you that OPM will continue to move forward in a prudent manner to meet its reporting requirements to the NRC.

cc: Sen. Toni N. Harp, Co-Chair of Public Health Committee
Rep. Mary U. Eberle, Co-Chair of Public Health Committee
Sen. George L. Gunther, Ranking Member of Public Health Committee
Rep. Dennis H. Cleary, Ranking Member of Public Health Committee
Dr. Edward J. Wilds, DEP
John T. Wiltse, OEM
Warren Wollschlager, DPH

State of Connecticut

NUCLEAR ENERGY ADVISORY COUNCIL

JOHN MARKOWICZ
Co-Chair
EVAN WOOLLACOTT
Co-Chair

Room 4100
Legislative Office Building
Capitol Avenue
Hartford, CT 06106

January 2, 2002

Governor John G. Rowland
Room 202
State Capitol
210 Capitol Avenue
Hartford, CT 06106

Dear Governor Rowland:

In accordance with Section 17 of Public Act 96-245, the Nuclear Energy Advisory Council (NEAC) is charged to advise the governor and legislature on matters relative to the safety and operation of our nuclear power plants. In light of the recent terrorist threats to vital United States interests, NEAC recognizes and appreciates the actions taken by federal, state, and local agencies and organizations, both public and private, to enhance physical security at these installations. Looking ahead to emerging initiatives being proposed to improve homeland defense, consideration should be given and advocated, as appropriate, to the following recommendations:

1. PROMPT ACTIVATION OF THE PERMANENT NUCLEAR WASTE STORAGE REPOSITORY AT YUCCA MOUNTAIN. The unforeseen nature of the aircraft suicide attacks on September 11 has justifiably heightened public concern regarding the vulnerability of Connecticut's three spent fuel pools that are not located within a containment structure (i.e., Connecticut Yankee, Millstone 2, and Millstone 3). Federal legislative proposals to augment existing nuclear power plant security that do not, as a minimum, require the prompt and immediate consolidation of spent fuel at the federal repository should be considered incomplete and deficient. The United States Senate, including the Connecticut delegation, has repeatedly voted against opening Yucca Mountain. It is now in the national interest as well as a matter of national security to activate the national repository and relocate nuclear waste from Connecticut to this more secure location.

2. HOMELAND SECURITY/POINT DEFENSE. Recent measures to augment physical security at local vital installations most likely will provide a baseline for additional homeland defense initiatives. As future continental air defense plans are formulated/funded, serious consideration should be given to including in our regional asset inventory mobile air defense systems (Hawk/Patriot missile batteries, and AEGIS cruisers/destroyers). These moveable air defense systems are available and routinely deployed overseas to protect our troops and allies. They should be considered an element of our homeland defense posture,

particularly in regions with a concentration of high value (military and non-military) targets. A robust anti-air homeland defense strategy should include local point defense radar/missile systems as the final protective barrier to the kamikaze terrorist committed to penetrating a "No Fly Zone" in a commandeered private/commercial jet aircraft.

3. POTASSIUM IODIDE. The acquisition, storage and distribution of Potassium Iodide have been and continue to be debated. Practical solutions are fraught with challenges. As the nation embarks on larger and more complex projects associated with protecting the public from smallpox and anthrax exposure, federal homeland defense authorities should similarly be encouraged to bring closure to the disposition of Potassium Iodide within the established Emergency Planning Zones (EPZs) around nuclear facilities.

Thank you for your consideration of these important issues.

For the Nuclear Energy Advisory Council,

Sincerely,

Evan W. Woollcott
Co-Chairman

Sincerely,

John Markowicz
Co-Chairman

EWW:JM/js

Cc: Moira K. Lyons – Speaker of the House
Kevin B. Sullivan – Senate President Pro Tempore
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