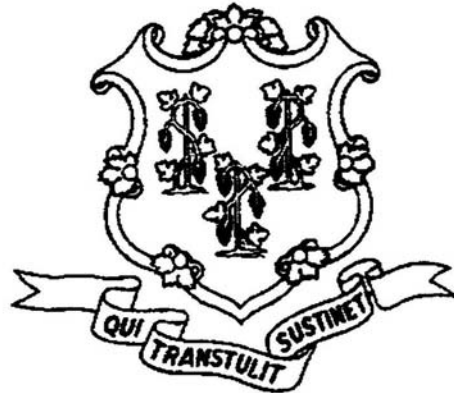


# STATE OF CONNECTICUT



## THE NUCLEAR ENERGY ADVISORY COUNCIL REPORT

# 2005

**Established Pursuant to Public Act 96-245**

**Evan W. Woollacott, Co-Chairperson  
John W. Sheehan, Co-Chairperson**

**January 26, 2006**

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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, and
5. Review the current status of the plants with the Nuclear Regulatory Commission.

## **COUNCIL MEMBERS**

The Council consisted of twelve (12) members appointed by the Governor, legislative leadership, and the executive bodies in the towns in or near which the state's nuclear power plants are located (Appendix 1).

## EXECUTIVE SUMMARY

This is the tenth annual report presented by the Nuclear Energy Advisory Council (NEAC). During Calendar Year 2005, the NEAC met twice and received reports from representatives of the Nuclear Regulatory Commission (NRC). Routine NRC Millstone Power Station inspection and performance assessment reports were also received and reviewed. During the first, and second quarters of 2005, Millstone Units 2 and 3 plant performance (Action Matrix ) was classified as "GREEN", meaning inspection findings were classified as having no or low safety significance,. There were no findings of significance in the Third Quarter. Results for the fourth quarter were not available at the time of this report. Because of the "GREEN" status, only routine baseline inspections were performed by the NRC. However, there was one inadvertent reactor trip at Millstone Unit 3 in the second quarter of 2005 and another in the fourth quarter of 2005. The cause of the first trip was a short on a circuit board due to a "tin whisker" that caused a Steam Line Pressure Low signal to be generated and subsequent reactor trip. The cause of the second trip was an actual Low Low Steam Generator Level due to water shrinkage when tripping off a turbine due to high vibration during an unplanned down power maneuver to trouble shoot a possible Reactor Coolant System Leak. Decommissioning activities at Connecticut Yankee continue to make progress with the transfer of all spent fuel from the Spent Fuel Pool to the Independent Spent Fuel Storage Installation and the destruction and removal of more than 15 plant buildings and structures. During the characterization of the Spent Fuel Pool building, some

contamination was found in a small section of soil adjacent to the building foundation that indicated a potential past leak in the Spent Fuel Pool. The contamination was isolated to the vicinity of the Spent Fuel Pool building and the contaminated soil was removed as part of site clean up.

## **COUNCIL ACTIVITIES IN 2005**

### **MEETINGS:**

As required by PA 96-245, the NEAC held two public meetings as follows: (1) March 29, 2005 and (2) May 18, 2005 at Waterford Town Hall, Waterford Connecticut. The purpose of these meetings was to provide a venue for discussion of issues relating to the safe operation of the state's nuclear power plants. Meeting minutes are included in Appendix 2. A summary of the meeting follows:

March 29, 2005: This was a joint meeting with the NRC Region I and focused on the Annual Assessment Report of Millstone Power Station Units 2 and 3 for the four calendar quarters of CY 2004. It was reported that overall these two units were operated in a manner that preserved public health and safety and fully met NRC cornerstone objectives. Accordingly, the NRC planned to conduct only baseline inspections at the facility through September 30, 2005.

May 18, 2005: This meeting was conducted at Waterford Town Hall with the team from the NRC discussing the Millstone 3 event of April 17, 2005 – An unscheduled shutdown caused by a “tin whisker” on a Steam Line Pressure card. During the NEAC business portion of the meeting Mr. John W. “Bill” Sheehan was elected Co-Chairman to replace Mr. John Markowicz who desired to step down as Co-Chairman but remain on the Council.

Millstone I Decommissioning Advisory Committee (M1DAC): Since Millstone 1 remains in Safe Storage (SAFSTORE) and no significant activities were conducted at the Unit during the past calendar year, M1DAC did not meet in CY 2005. M1DAC committee membership is included in Appendix 3.

## **REPORT ON ISSUES**

### **MILLSTONE OPERATIONS**

As reported by the Nuclear Regulatory Commission (NRC) in regular inspection reports and at a Joint Public Meeting (Appendix 2), Millstone Units 2 and 3 have continued to be operated in a manner that preserves public health and safety. No findings of significance were documented on routine baseline inspections conducted through October 31, 2005. Routine inspections conducted between January 1, 2005 and October 31, 2005 resulted in the identification of two Unit 2 issues, and eleven Unit 3 issues, all of very low safety significance (GREEN). In the second quarter of 2005, Unit 3 suffered an inadvertent reactor trip and safety injection actuation caused by the Low Steam Line Pressure signal card malfunction. This trip triggered a NRC Special Inspection that was completed on

April 29, 2005, briefed at the NEAC meeting of May 18, 2005, and finally reported on July 5, 2005. Six findings of low safety significance were documented in the final report and later included as part of the *eleven* Unit 3 issues mentioned above. A second trip occurred on December 1, 2005 due to a low Low Steam Generator Level alarm. Unit three was at forty percent power and decreasing when turbine vibration caused the trip of the turbine. The sudden decrease in demand led to “shrink” in the Steam Generator and the unplanned shutdown. Power was being decreased to trouble shoot a possible Reactor Coolant System (RCS) leak into the containment structure. The leak was found to be a packing leak on a Main Coolant Cutout Valve which was repaired. After determining the cause of the turbine vibration and the Low Low Steam Generator Level, Unit 3 was returned to power. The results of the fourth quarter inspections had not been released by NRC at the close out time of this report.

## **LICENSE RENEWAL**

Dominion submitted an application to the NRC on January 20, 2004 for authorization to operate Millstone Power Station for up to an additional 20 years. Several public meetings were held on this application in 2004. A final Environmental Impact Statement (EIS) was issued in July 2005, and a final Safety Evaluation report (SER) was issued in August 2005. The commission decision granting the License Renewal was announced on November 28, 2005.

## **NUCLEAR EMERGENCY PREPAREDNESS**

No Evaluated Emergency Preparedness Exercise was conducted in 2005. Millstone did participate in the TOPOFF 3 Exercise that was held in New London April 4-10, 2005. As an extension of that exercise, Millstone Site perimeter security was enhanced by the Department of Defense Northern Command during a portion of the exercise period.

## **DECOMMISSIONING**

### **MILLSTONE 1**

In July of 1998, it was announced that Millstone Unit 1 would undergo decommissioning. A modified Safe Storage (SAFSTOR) decommissioning option was selected and remains in effect. This involves some decontamination and dismantlement early in the process. After these initial activities are complete, the unit is then placed in safe storage until the other two units at the Millstone site undergo decommissioning. After reviewing Unit 1 requirements, in conjunction with the operational and outage requirements of Millstone Units 2 and 3, it was strategically decided to place Unit 1 in 'Cold and Dark' storage in April 2001. This allowed the safe and efficient separation (from Units 2 and 3) projects as well as the decommissioning projects. All separation projects were completed by April 1, 2001.

### **CONNECTICUT YANKEE**

The Independent Spent Fuel Storage Installation (ISFSI) has been completed. The storage site houses forty-three Vertical Concrete Containers (VCC) containing forty Transportable Storage Containers (TSC) with spent fuel and three with Greater Than Class C (GTCC) metal from the reactor vessel. The last TSC transfer was completed in



March 2005. Demolition of all remaining plant buildings and structures, including the containment dome and spent fuel pool, is scheduled to be completed by the end of 2006. Final radiation surveys and termination of the plant's NRC license, excluding the ISFSI, is scheduled for 2007.

In October 2005, during the characterization of the spent fuel pool building, evidence of a potential past below ground spent fuel pool leak was detected. All sampling to date indicates that the contamination was confined to a small area near the base mat foundation of the spent fuel pool building and did not migrate to other areas. The cleanup of the tank farm area was completed in 2005. The contaminated soil underneath the storage tanks was removed and backfilled with clean soil, resulting in an improvement in groundwater test results in this area. Groundwater monitoring on the former plant site will continue over the next several years to verify the long-term effectiveness of Connecticut Yankee's cleanup activities and compliance with the CT DEP requirement that the site groundwater meet the drinking water standards for radioactivity.

CY provides information to the public through regular publications of "CY Today", its website [www.connyankee.com](http://www.connyankee.com), quarterly meetings of the Community Decommissioning Advisory Committee (CDAC), and activities with the Middlesex Chamber of Commerce.

## **HIGH LEVEL NUCLEAR WASTE**

- NEAC continued to monitor activity to establish a permanent solution for spent nuclear fuel rods disposal. In view of the fact that there are now two nuclear plants currently being decommissioned in Connecticut, failure to establish a permanent repository or otherwise dispose of the high level waste could adversely affect the State's economy and homeland security. It is noted that temporary storage of spent fuel in dry cask storage containers has been implemented at both Millstone and Connecticut Yankee.

The U.S. Department of Energy's program schedule for Yucca Mountain is:

- License Application in 2004
- U.S. Nuclear Regulatory Commission Construction Authorization and begin construction in 2007.
- U.S. Nuclear Regulatory Commission License Approval and begin waste acceptance in 2010.

This schedule has slipped due to problems in submitting the license application. It is likely that the license application will not be submitted in 2006 due to recent DOE budget cuts. According to press accounts, the Department of Energy is working on a new National Nuclear Waste Policy that is likely to include fuel recycling – an option that was rejected in 1979 by President Jimmy Carter. However, a proposal has not been released for review by the four regional groups that coordinate with DOE on Spent Nuclear Fuel disposal. NEAC will continue to monitor the progress toward a solution to the problem of High Level Nuclear Waste.

## **RECOMMENDATIONS**

### **STATE**

1. Department of Environmental Protection should continue to address any emergency preparedness issues at Connecticut's nuclear sites.
2. Department of Environmental Protection should continue to address any security issues at Connecticut's nuclear sites.
3. The Governor, legislature, Department of Environmental Protection, and NEAC should continue to insist that the NRC continue vigilant oversight during the decommissioning of Connecticut Yankee and Millstone 1 and for as long as high-level nuclear waste remains on site.

### **NEAC**

1. Continue to monitor the stability of the Employee Concern Program and Safety Conscious Work Environment at Millstone Power Station.
2. Continue to monitor operations and decommissioning activities at Millstone Power Station and Connecticut Yankee, including the dry cask storage programs.
3. Continue to encourage the development of a solution to the problem of High Level Nuclear Waste and the safe transfer of high level nuclear waste from Connecticut .

## NUCLEAR ENERGY ADVISORY COUNCIL MEMBERSHIP

**John W. (Bill) Sheehan** (Co-Chair) Waterford: MBA, Rensselaer Polytechnic.

Consultant, former Captain, Nuclear powered submarine.

**Evan W. Woollacott** (Co-Chair) Simsbury: MBA Wharton School, Former Vice

President Combustion Engineering, and Vice Chair, CT DPUC

**Paul A. Blasioli** Waterford: Manager, Emergency Planning, Dominion Nuclear

Connecticut.

**Marjorie W. DeBold** Haddam: BA Psychology and Child Development, UC Berkeley.

Retired teacher, former First Selectman of Haddam.

**Gregg W. Dixon** Niantic: PhD Mechanical Engineering (Nuclear) Stanford University.

Professor, Mechanical Engineering, US Coast Guard Academy.

**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.

**John Markowicz** Waterford: BS Engineering, US Naval Academy. Economic director,

former chief engineer nuclear powered submarine.

**Pearl Rathbun** Niantic: BA Economics. Eastern Connecticut State University. Director

of Emergency Management, East Lyme.

**Rep. Kevin Ryan** Oakdale: OD, Pennsylvania College of Optometry. Legislator,

Adjunct Faculty, University of New Haven.

**James Sherrard** Mystic: PhD Nuc. & Mech Eng. MIT/UCONN. Chairman, Nuclear Engineering Technology Department, TRCTC.

**Edward L. Wilds, Jr.** Griswold: PhD Physics, UCONN. Director, Division of Radiation, Department of Environmental Protection.

**Nuclear Energy Advisory Council (NEAC) Meeting  
Waterford Town Hall Auditorium  
Waterford, Connecticut  
March 29, 2005**

**Members Present**

Mr. Evan Woollacott, Co-Chair  
Mr. John Markowicz  
Mr. James Sherrard  
Mr. Robert Klancko  
Mr. Paul Blasioli  
Dr. Gregg Dixon  
Ms. Pearl Rathbun  
Dr. Edward Wilds, representing DEP, Commissioner Gina McCarthy

**1. Call to Order**

Co-Chair Woollacott called the meeting to order at 6:13 PM at the Waterford Town Hall Auditorium, Waterford, Connecticut.

**2. Review NEAC Meeting Minutes**

No minutes were reviewed.

**3. NRC Presentation Concerning Millstone Station Performance in CY 2004**

NRC Staff Presenting:

Mr. Paul Krohn, Regional Branch Chief

Mr. Max Schneider = Millstone Site Senior Inspector.

NEAC members asked clarifying questions during the presentations.

**4. NEAC question period.**

NEAC members asked no additional questions.

**5. Public Question Period**

Clarifying questions were asked by several members of the public related to the incident and presentation.

**6. NEAC Business Meeting**

Annual Report for 2004 was discussed. Report was approved unanimously with suggested modifications.

**7. Adjournment**

Motion was made and seconded to adjourn; no objections; majority voted in favor; meeting adjourned at 8:05 PM

**Nuclear Energy Advisory Council (NEAC) Meeting  
Waterford Town Hall Auditorium  
Waterford, Connecticut  
May 18, 2005**

**Members Present**

Mr. Evan Woollacott, Co-Chair  
Mr. Bill Sheehan  
Mr. James Sherrard  
Mr. Robert Klancko  
Ms. Marge DeBold  
Dr. Gregg Dixon  
Ms. Pearl Rathbun  
Dr. Edward Wilds, representing DEP, Commissioner Gina McCarthy

**1. Call to Order**

Co-Chair Woollacott called the meeting to order at 6:00 PM at the Waterford Town Hall Auditorium, Waterford, Connecticut.

**2. Review NEAC Meeting Minutes**

No minutes were reviewed.

**3. NRC Presentation Concerning Millstone 3 Event of April 17, 2005 Dominion Presentations**

NRC Staff Present:

G. Scott Barber, Leader Special Inspection Team  
M. Sykes, Manager Special Inspection Team  
B. Holian, Director (Acting), Division of Reactor Projects, Region I  
M. Schneider, Senior Resident Inspector  
D. Jackson  
R. Nimitz  
T. Sicola  
P. Prasby

NEAC members asked clarifying questions during the presentations. See the attached PowerPoint Slide Presentations.



**4. NEAC question period.**

NEAC members asked no additional questions.

**5. Public Question Period**

Clarifying questions were asked by several members of the public related to the incident and presentation. See the attached PowerPoint Slide Presentations referred to above.

**6. NEAC Business Meeting**

Discussion on Mr. John Markowicz's resignation from committee Co-Chair due to commitments related to the BRAC hearings. Mr. Sheehan was nominated to replace Mr. Markowicz as Co-Chair. Motion was made and seconded for Mr. Sheehan to be Co-Chair; no objections; majority voted in favor; motion passed.

**7. Adjournment**

Motion was made and seconded to adjourn; no objections; majority voted in favor; meeting adjourned at 9:30 PM

*Nuclear Energy Advisory Council*

**Millstone 1 Decommissioning Advisory Committee**

**Pearl I. Rathbun** (Co-Chair), Niantic: BA Economics, Eastern Connecticut State University. Emergency Management Director, Town of East Lyme.

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

**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.

**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).