

# MAINE STATE LEGISLATURE

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Department of Health  
and Human Services

Maine People Living  
Safe, Healthy and Productive Lives

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July 6, 2015

**MEMORANDUM**

**TO:** Senator Michael Thibodeau, President of the Senate, and Representative Mark Eves, Speaker of the House

**FROM:** Mary C. Mayhew, Commissioner  
Department of Health and Human Services

**SUBJECT:** State Nuclear Safety Inspector's January through May 2014 Monthly Reports to the Legislature on the Interim Spent Fuel Storage Facility in Wiscasset, Maine

Legislation enacted in the spring of 2008 requires the State Nuclear Safety Inspector to provide monthly reports to the President of the Senate, Speaker of the House, the U.S. Nuclear Regulatory Commission, and Maine Yankee. The reports focus on activities at the site and include highlights of the national debate on storing and disposing of the used nuclear fuel. For your convenience, highlights of local and national events are captured in the executive summary of the reports.

The enclosed reports provide the information required under Title 22 of the Maine Revised Statutes Annotated §666, as enacted under Public Law, Chapter 539, in the second regular session of the 123<sup>rd</sup> Legislature.

Should you have questions about its content, please feel free to contact Mr. Patrick J. Dostie, State Nuclear Safety Inspector, at 287-6721.

MCM/klv

Enclosure

- cc: Mark Lombard, U.S. Nuclear Regulatory Commission
- Monica Ford, U.S. Nuclear Regulatory Commission, Region 1
- J. Stanley Brown, Independent Spent Fuel Storage Installation Manager, Maine Yankee
- Holly Lusk, Senior Health Policy Advisor
- Kenneth Albert, Director, Maine Center for Disease Control and Prevention
- Patricia W. Aho, Commissioner, Department of Environmental Protection
- Timothy Schneider, Maine Public Advocate
- Lieutenant Scot Ireland, Special Services Unit, Maine State Police
- Nancy Beardsley, Director, Division of Environmental Health
- Jay Hyland, PE, Manager, Radiation Control Program



State Nuclear Safety Inspector Office  
Maine CDC – DHHS

March 2014 Monthly Report to the Legislature

Executive Summary

The report covers activities at the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI) facility, including the State's ongoing environmental radiation surveillance and provides updates on the national effort to license and construct a consolidated interim storage facility and/or a permanent geologic repository for the disposal of spent nuclear fuel. Maine's goal is to move the ISFSI waste stored at Maine Yankee to one of these facilities. The report's highlights assist readers to focus on the significant activities that took place both locally and nationally during the month.

Local

- Maine Yankee submitted to the Nuclear Regulatory Commission (NRC) its Nuclear Decommissioning Trust Fund and Decommissioning Funding Assurance Status Reports. The Trust Fund, which had a balance of \$116.9 million, is strictly used for managing the irradiated fuel and Greater Than Class C (GTCC) Waste at the Wiscasset site. The Decommissioning Funding Assurance Fund has a current balance of \$25.6 million, which is more than the \$22.7 million required to decommission the storage facility after all the spent nuclear fuel and GTCC has been removed from the site.

National:

- The U.S. Court of Federal Claims awarded Duke Energy \$103.7 million for the storage of its spent fuel at four of its southern nuclear power plants. The federal Court also awarded \$19.3 million to Energy Northwest for dry storage costs at its Columbia Station in Washington.
- The U.S. Court of Appeals for the District of Columbia rejected the Department of Energy's (DOE) petition for rehearing before the full court (en banc) on the Court's November 2013 ruling that the DOE suspend nuclear utility payments into the Nuclear Waste Fund.
- The Georgia Public Service Commission issued a resolution to their congressional delegates to accept DOE's letter to Congress to set the Nuclear Waste Fund fee to zero.
- The DOE forwarded a letter to the Chair of the House Subcommittee on Environment and the Economy updating DOE's activities and \$2.1 million in expenses related to the Yucca Mountain licensing proceeding.
- The NRC Chairman forwarded the February monthly status report of the staff's activities and expenditures on the carryover funds appropriated from the Nuclear Waste Fund for resuming the licensing process as remanded by the U.S. Court of Appeals over DOE's Yucca Mountain license application.
- The Governor of Texas sent a letter to the Lieutenant Governor and Speaker of the House forwarding a report from the Texas Commission on Environmental Quality assessing the challenges presented by the spent nuclear fuel stored on-site at six nuclear reactors. The report concluded that an onsite indefinite storage facility in Texas for spent nuclear fuel was plainly necessary and should not be delayed.
- The Nuclear Technical Waste Review Board issued a summary of their November 2013 workshop on the impacts of dry storage canister designs on the future handling, storage, transportation, and geologic disposal of spent nuclear fuel and noted that "the nation's strategy for managing spent nuclear fuel would benefit from a more comprehensive 'end to end' systems approach to decision-making."



## Introduction

As part of the Department of Health and Human Services' long standing oversight of Maine Yankee's nuclear activities under Title 22, Maine Revised Statutes (MRS) §666 (2), legislation was enacted in the second regular session of the 123<sup>rd</sup> and signed by Governor John Baldacci requiring that the State Nuclear Safety Inspector prepare a monthly report on the oversight activities performed at the ISFSI facility located in Wiscasset, Maine.

The State Inspector's individual activities for the past month are highlighted under certain broad categories, as illustrated below. Since some activities are periodic and on-going, there may be some months when very little will be reported under that category. It is recommended for reviewers to examine previous reports to ensure connectivity with the information presented as it would be cumbersome to continuously repeat prior information in every report. Past reports are available from the Radiation Control Program's web site at the following link: [www.maineradiationcontrol.org](http://www.maineradiationcontrol.org) and by clicking on the nuclear safety link in the left hand margin.

Commencing with the January 2010 report, the glossary and the historical perspective addendum are no longer included in the report. Instead, this information is available at the Radiation Control Program's website noted above. In some situations, the footnotes may include some basic information and may redirect the reviewer to the website. In October 2011, the format of the report was changed to include an executive summary which replaced the official memorandum to the legislative leadership transmitting the report. To further streamline efforts, beginning in August of 2012, the report featured hyperlinks to documents that would normally be attached as copies to the report. The hyperlinks should facilitate the reports review with some readers focusing on the report while others who wish to explore the cited documentation can do so. In January 2014, the report's executive summary was shortened to improve its readability.

## Independent Spent Fuel Storage Installation (ISFSI)

During March the general status of the ISFSI was normal, with no instances of spurious alarms due to environmental conditions.

There were no fire-related impairments for the month. However, there was one security-related impairment and it occurred on March 29. The impairment involved seven security events, all logged on the same day. All seven involved transient environmental conditions.

There were twelve condition reports<sup>1</sup> (CR) for the month and they are described below.

- 1<sup>st</sup> CR: Documented a loose conduit fitting to an electrical panel and the hardware was replaced.
- 2<sup>nd</sup> CR: Documented that that the Emergency Plan implementing procedures were not submitted within 30 days of their revisions as required by regulation. The controlled distribution list was updated to require that E Plan procedure revisions be submitted within 30 days.
- 3<sup>rd</sup> CR: Was written to document that procedural requirements for safety training were not fully incorporated into the site training program. The Plant Access Training modules were updated to include the required safety training.
- 4<sup>th</sup> CR: Was written to document that the Emergency Plan did not receive an annual independent review in 2013 as required. An independent review was performed and the tracking database was corrected to ensure annual reviews going forward.
- 5<sup>th</sup> CR: Was written to document an incorrect procedure reference in one of the Emergency Plan implementing procedures and knowledge gaps regarding the reportability procedure. The procedure was corrected and refresher training on reportability was conducted.
- 6<sup>th</sup> CR: Was written to track recommendations from the independent assessment of the Emergency Plan.

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<sup>1</sup> A condition report is a report that promptly alerts management to potential conditions that may be adverse to quality or safety. For more information, refer to the glossary on the Radiation Control Program's website.



- 7<sup>th</sup> CR: Documented the finding of conflicting data in a Radiation Protection procedure on control TLD<sup>2</sup> numbers. The numbers were corrected.
- 8<sup>th</sup> CR: Documented various incorrect procedure references. The procedure changes are scheduled to be issued in accordance with the Integrated Improvement Plan changes to these procedures.
- 9<sup>th</sup> CR: Was written to document that a procedure revision eliminated a document review process. However, reference to this process also existed in other procedures which were not revised. All impacted procedures were revised.
- 10<sup>th</sup> CR: Was written to document that the TLD vendor had changed the TLD model for the first quarter of 2014 for the Radiological Environmental TLD Monitoring Program. Previous model TLDs have been deployed in parallel with the new models to compare readings for 2014.
- 11<sup>th</sup> CR: Was written to document the finding of a steel rod sticking out of the ground near the Central Maine Power (CMP) switchyard. The rod was marked for safety and CMP was notified to assess and address the issue.
- 12<sup>th</sup> CR: Was written to document the security impairment mentioned above.

### *Other ISFSI Related Activities*

1. On March 12, Maine Yankee forwarded a letter to the Nuclear Regulatory Commission (NRC) submitting its Funding Status Report for Managing Irradiated Fuel and GTCC Waste at its Wiscasset facility/site. At the end of 2013, the amount of funds available in the Nuclear Decommissioning Trust to manage the storage facility totaled \$116.9 million. This did not include the \$25.6 million in funds already set aside to decommission the ISFSI after the used nuclear fuel is removed. The Report also projected that \$185.3 million would be needed from 2014 through 2033 to secure and manage the storage site. In addition, the Report also elaborated on what measures Maine Yankee has available to obtain additional funds to cover projected costs. These included their power contracts with the different owners of Maine Yankee, the proceeds from the successful litigation against the federal government for its failure to remove the spent nuclear fuel, and an assumed rate of return on the Trust Fund of 4.5% after fees and taxes.
2. On March 12, Maine Yankee also submitted to the NRC its Decommissioning Funding Assurance Status Report as of December 31, 2013. Besides the \$25.6 million accumulated to decommission the ISFSI, the funding required to decommission the ISFSI was estimated at \$22.7 million. No funds have been expended for decommissioning. Although Maine Yankee has sufficient funds currently to cover the estimated decommissioning costs, Maine Yankee does have contracts with its owners to cover any additional funds should the need arise. Maine Yankee also has available the proceeds from its successful litigation on breach of contract damage claims against the DOE for its failure to remove the used nuclear fuel from the site. The Fund assumed an inflation rate of 2.5% and an after tax earning rate of 4.5%.

### Environmental

On March 14, the State received its second quarter package of thermoluminescent dosimeters (TLDs). Three TLD control badges were immediately returned to the vendor to assess the transit dose for the round trip. The remaining TLDs and controls were placed at the Health and Environmental Testing Laboratory's pre-World War II steel vault pending the field replacement at the end of the month or early next month. The results from the quarterly field change outs are published on a quarterly basis with the first quarter results published in the April monthly report.

<sup>2</sup> Thermoluminescent dosimeters are very small plastic like phosphors or crystals that are placed in a small plastic cage and mounted on trees, electric utility poles, etc. to absorb any radiation that impinges on the material. For a further explanation, refer to the glossary on the Radiation Program's website.



## Other Newsworthy Items

1. On March 7, the Energy Communities Alliance (ECA) sent a letter to Energy Secretary Moniz expressing their concerns over the radioactive leak at the Waste Isolation Pilot Plant in New Mexico. The ECA commended the DOE's initial efforts and laid out a seven point plan to enhance the public's trust as well as trust between the federal government and local government. The web link for the letter can be accessed by positioning the cursor over the underlined text and following the directions.
2. On March 10, the U.S. Court of Federal Claims awarded Duke Energy \$103.7 million in damages for their storage expenses of its used nuclear fuel at the Harris and Brunswick nuclear power plants in North Carolina, its Robinson plant in South Carolina, and the Crystal River plant in Florida. The award covered expenses incurred from 2006 to 2010.
3. On March 11, the federal Court also awarded \$19.3 million to Energy Northwest for dry storage costs at its Columbia Station in Washington.
4. On March 18, the U.S. Court of Appeals for the District of Columbia rejected DOE's petition for rehearing before the full court (en banc) on the Court's November 2013 ruling that the DOE suspend nuclear utility payments into the Nuclear Waste Fund. A majority of the judges eligible to participate did not vote in favor of the petition. The National Association of Regulatory Utility Commissioners (NARUC) and the Nuclear Energy Institute that brought suit against the DOE's fee assessment praised the Court's denial of DOE's waste fee appeal. NARUC called the decision a big win for consumers.
5. On March 18<sup>th</sup> the Georgia Public Service Commission issued a resolution to their congressional delegates to accept DOE's letter to Congress to set the Nuclear Waste Fund to zero. Once the fee is set to zero the Georgia Commission will adjust the Fuel Cost Recovery levy accordingly. The web link for the resolution can be accessed by positioning the cursor over the underlined text and following the directions.
6. On March 19, the U.S. Nuclear Waste Technical Review Board (NWTRB) met in Albuquerque, New Mexico to discuss the disposal of used nuclear fuel and high-level radioactive waste in salt formations. The topics included the Waste Isolation Pilot Plant's experience and lessons learned, the basis for using salt beds, the modeling of thermal-hydrological-chemical-mechanical processes in a salt repository, and collaborating with Germany on research and development investigations on salt as a disposal medium. The web link for the agenda can be accessed by positioning the cursor over the underlined text and following the directions.
7. On March 21, the NRC held a briefing on the status of its Waste Confidence rulemaking. The Commission had two panels presenting feedback on the Waste Confidence process. The first was an external panel of stakeholders from the Prairie Island Indian Community, the Assistant Attorney General of New York, the Vice President of the Nuclear Energy Institute, a representative from the decommissioned plant owners' perspectives, and the senior attorney for the Natural Resources Defense Council. The second panel was all NRC staff and their overview of the rulemaking and synopsis of public comments. The Prairie Island Community questioned the validity of assuming the existence of institutional controls in 100 or 200 years, or even longer. The State of New York contended that the NRC's draft Generic Environmental Impact Statement was flawed on its treatment of severe accidents and that it artificially limited the discussion of alternatives. The nuclear industry commended the NRC for performing the requisite analyses to demonstrate the adequacy of their rulemaking. The decommissioning plant coalition applauded the NRC's efforts but cautioned that the NRC should not endorse indefinite storage as a management policy. The Natural Resources Defense Council considered



NRC's approach as woefully inadequate to meet the intent of the National Environmental Policy Act. The NRC outlined the extent of their public outreach efforts and highlighted the 9,000 unique comments they received out of the 33,000 submitted. The web link for the [agenda](#) and the [presentations](#) can be accessed by positioning the cursor over the underlined texts and following the directions. (Note: The presentations link will bring you directly to the NRC website where the individual presentations can be accessed by highlighting the appropriate presentation and clicking on it.)

8. On March 26, the DOE forwarded a letter to the Chair of the House Subcommittee on Environment and the Economy updating DOL's activities and expenses related to the Yucca Mountain licensing proceeding. The letter outlined the activities for the previous five months which included contractor expertise availability to support DOE's response, pension fund payments for retired Yucca Mountain workers, management of the Nuclear Waste Fund, and maintenance of the Yucca Mountain project documents. DOE's costs over that timeframe amounted to \$2,113,000 with \$17.2 million still available to support the licensing effort. The web link for the [letter](#) can be accessed by positioning the cursor over the underlined text and following the directions.
9. On March 26<sup>th</sup> the NRC announced that they would meet with DOE officials to deliberate DOE's plans to update their 2009 technical report on the potential groundwater impacts of the Yucca Mountain repository. The NRC requested DOE to issue a supplemental environmental impact statement (EIS) on groundwater as part of their licensing efforts to complete the safety evaluation report on Yucca Mountain. Last month DOE notified the NRC that they would not issue a supplemental EIS, but rather proposed to revise their 2009 technical report on groundwater. The web link for the [news release](#) can be accessed by positioning the cursor over the underlined text and following the directions.
10. On March 28, the NRC Chairman forwarded the February monthly status report of the staff's activities and expenditures on the carryover funds appropriated from the Nuclear Waste Fund for resuming the licensing process as remanded by the U.S. Court of Appeals over DOE's Yucca Mountain license application. The report noted the staff's efforts on the Safety Evaluation Report (SER) and how it was managed, the loading of more than 3.5 million documents from the Licensing Support Network into their non-public data base management system, and general counsel activities in program planning and support, and advice in NRC proceedings. February expenditures totaled \$638,700 with \$1,191,000 expended to date, leaving about \$9,194,000 to complete the SER and related activities. The web link for the [letter report](#) can be accessed by positioning the cursor over the underlined text and following the directions.
11. On March 28, the Governor of Texas sent a letter to the Lieutenant Governor and Speaker of the House forwarding a report from the Texas Commission on Environmental Quality assessing the challenges presented by the used nuclear fuel stored on-site at six nuclear reactors. With the federal government shutting down the Yucca Mountain Project, with the Courts determining that "no credible plan" exists, and with New Mexico advocating for a high-level waste repository within 50 miles of the Texas border, the Governor stated they "have no choice but to begin looking for a safe and secure solution for high-level waste in Texas". The report concluded that an onsite indefinite storage facility in Texas for used nuclear fuel was plainly necessary and should not be delayed. The web link for the [letter](#) and [report](#) can be accessed by positioning the cursor over the underlined texts and following the directions.
12. In March, the Nuclear Waste Management Organization (NWMO) of Canada submitted to the Canadian Minister of Natural Resources their triennial report of 2011 to 2013. The report elaborates on NWMO's activities over the past three years in executing Canada's plan for the long term management of their used nuclear fuel. In addition, the report also presented NWMO's five year strategic plan. Canada has a nine step selection process that employs an Adaptive Phased Management approach to allow flexibility along the way to take advantage of newer and better technologies when they are developed, or to adjust

if people's values or priorities change over time. The web link for the letter and the summary can be accessed by positioning the cursor over the underlined texts and following the directions.

13. In March, the NWTRB issued a summary of their November 2013 workshop on the impacts of dry storage canister designs on the future handling, storage, transportation, and geologic disposal of spent nuclear fuel. Three distinct categories were identified by workshop participants as raising future implications on the management of the backend of the nuclear fuel cycle. They were repackaging and direct disposal, repackaging, and direct disposal. All three categories had their issues broken down into three common subgroups: general issues, programmatic and regulatory issues, and scientific, engineering and operational issues. Thirty four separate and specific issues were identified of which one was considered a central theme. Evidently, without a repository or consolidated storage facility for spent nuclear fuel, utilities focus on making decisions on a plant or site-specific basis when designing their fuel, how the fuel is burnt in the reactor, or the size and type of canisters used for storing the fuel, thereby making the issues more complex over time. The Board noted "the nation's strategy for managing spent nuclear fuel would benefit from a more comprehensive 'end to end' systems approach to decision-making." The web link for the summary can be accessed by positioning the cursor over the underlined text and following the directions.