

# MAINE STATE LEGISLATURE

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February 29, 2016

**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 May through August 2015 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 I  
J. Stanley Brown, Independent Spent Fuel Storage Installation Manager, Maine Yankee  
David Sorensen, Senior Health Policy Advisor  
Kenneth Albert, Director, Maine Center for Disease Control and Prevention  
Paul Mercer, Commissioner, Department of Environmental Protection  
Timothy Schneider, Maine Public Advocate  
Lieutenant Scott 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

## July 2015 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 on-going 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 nationally during the month.

### National:

- The Department of Energy (DOE) solicited proposals to perform deep borehole testing in order to conduct characterization investigations for burying spent nuclear fuel and high-level waste.
- President Obama designated the Basin and Range in Nevada as a new national monument. The 704,000 acre parcel would prohibit the construction of a 40 mile segment of the proposed 200 mile Caliente Rail line that would have transported spent nuclear fuel shipments to Yucca Mountain in Nye County, Nevada.
- The Bipartisan Policy Center, a Washington think tank that is working on finding solutions to the nation's key challenges, announced a nuclear waste primer series that would cover such topics as consolidated storage options, state's authority to regulate, Yucca Mountain, options and limits for presidential executive action, and transportation.
- The U.S. Court of Federal Claims ordered the federal government to pay Entergy Corporation's Palisades's nuclear plant in Michigan \$20.6 million for failing to take the plant's spent nuclear fuel.
- Senators Reid and Heller from Nevada introduced legislation, the Nuclear Waste Informed Consent Act, that would prevent DOE from making payments for transporting nuclear waste through Nevada without first receiving consent from the Governor, local officials, and tribal leaders.
- Holtec International disclosed that it will submit a license application to the Nuclear Regulatory Commission (NRC) in 2016 to construct a consolidated interim storage facility for spent nuclear fuel in New Mexico that would be expected to receive shipments by the year 2020.

### 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 ongoing, 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, historical addendum, and glossary 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.

## Independent Spent Fuel Storage Installation (ISFSI)

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

There was one fire-related impairment for the month and it involved a fire detection panel that was taken out of service to support the office build out project. Compensatory measures were put into place until the project is completed.

There were twelve security incident reports logged for the month. Five of the reports involved transient environmental conditions. Three dealt with project work associated with the security system. Two of the incidents involved the office build out project. The remaining two involved a loss of internet connectivity and security system maintenance. In all instances compensatory measures were put into place until the systems were resolved.

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

- 1<sup>st</sup> CR: Documented the loss of internet connectivity with an offsite vendor. Compensatory measures were put into place until the internet connection was restored. This CR will address adding additional redundancy to the system as well as upgrading the process when loss of the internet occurs.
- 2<sup>nd</sup> CR: Documented that compensatory measures required by procedure were not followed during a system outage. The staff was provided with refresher training on this procedural requirement.
- 3<sup>rd</sup> CR: Documented that the compensatory measures required by a procedure were not followed by the Local Law Enforcement Agency (LLEA). Corrective actions are being formulated and will include a change in compensatory measures.
- 4<sup>th</sup> CR: Documented one of two radio systems could not contact the LLEA. After troubleshooting and contacting Maine State Police, the problem was determined to be with one of the State's radio towers. All other communication channels were working as designed. The State repaired their equipment and the radio re-tested as satisfactory.
- 5<sup>th</sup> CR: Documented a follow-up to the second CR above, noting that alternate compensatory measures should have been considered. A barrier screen was performed on the issue to capture all corrective actions on this issue.
- 6<sup>th</sup> CR: Documented that an industrial camera exhibited poor video quality. The camera was replaced.
- 7<sup>th</sup> CR: Documented that the new regulation screening form was not completed in a timely manner. Personnel involved in reviewing the new regulations are being trained on the requirements to perform their screening prior to the regulation becoming final.
- 8<sup>th</sup> CR: Documented that an industrial camera field of view was found inadequate. The camera had just been replaced. The issue was not with the camera, but rather with the operation of the joystick. All personnel were briefed on its proper operation.
- 9<sup>th</sup> CR: Documented the Procedure Noncompliance Trend Analysis. This was a tracking CR that noted 19 procedure non-compliance issues for the prior 12 months. Management was evaluating the proper coding for the CRs' cause codes and will determine appropriate corrective actions.
- 10<sup>th</sup> CR: Documented that the system was degraded due to environmental conditions. Compensatory measures were put into place until the system was restored.
- 11<sup>th</sup> CR: Documented that the Special Nuclear Material Balance Report for 2014 was not submitted to records. The Report was submitted to records.
- 12<sup>th</sup> CR: Documented that the system was degraded due to environmental conditions. Compensatory measures were put into place until the system was restored.

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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.

- 13<sup>th</sup> CR: Documented a tracking CR to perform the evaluation for Process Improvements for the field transfer of weapons. CR remained open to perform benchmarking at other sites.
- 14<sup>th</sup> CR: Documented a procedure cancellation Regulatory Review form was not signed off in 2014. It was found during an audit of regulatory reviews. The form was properly signed off.
- 15<sup>th</sup> CR: Documented a vendor being brought in to perform equipment maintenance without processing a purchase requisition. The requisition will be processed to cover the scope of work.
- 16<sup>th</sup> CR: Documented that the system was degraded due to environmental conditions. Compensatory measures were put into place until the system was restored.
- 17<sup>th</sup> CR: Documented that the system was degraded due to environmental conditions. Compensatory measures were put into place until the system was restored.
- 18<sup>th</sup> CR: Documented that during the office project a contractor was found using a propane torch without a permit. The work was terminated and the individual counseled on the proper tools and process requirements.
- 19<sup>th</sup> CR: Documented that a breaker was found to be labelled incorrectly during the camera project. The breaker labelling was corrected.
- 20<sup>th</sup> CR: Documented that the system was degraded due to environmental conditions. Compensatory measures were put into place until the system was restored.
- 21<sup>st</sup> CR: Documented that the South HVAC unit was not working. Troubleshooting determined that the inlet screen was clogged causing the coils to freeze. The inlet screen was cleaned and the unit restarted.

#### *Other ISFSI Related Activities*

1. On July 6, Maine Yankee notified the NRC of some changes in its Board of Directors with the resignation of one and the appointment of another from Eversource, formerly known as Northeast Utilities. Since the firm was a domestic corporation, there were no foreign ownership, control or influence issues to contend with.
2. On July 14, the legislatively mandated group, representing the Department of Environmental Protection (DEP), the State Police, the Public Advocate, the Department of Health and Human Services' Radiation Control Program and Maine Yankee, met for its quarterly meeting to discuss the State's and Maine Yankee's activities pertinent to the oversight of the ISFSI. The State Inspector's report highlighted the status of his monthly and annual reports to the Legislature, his meeting with the Director of Maine's Center for Disease Control and the new initiatives implemented to streamline the monthly reports, his meeting with Maine Yankee on dry cask licensing, his work on the Confirmatory Summary Report, his on-going participation in a national interregional team that is developing recommendations from states to the Department of Energy (DOE) on funding emergency preparedness for local communities on spent fuel shipments traversing their jurisdictions. Maine Yankee informed the Group of their recommendations to reduce the number of wells sampled on-site. DEP informed the Group that they have reviewed Maine Yankee's recommendations and will implement the changes at the next scheduled sampling in five years. Maine Yankee also apprised the Group that its office project at Maine Yankee is nearing completion, that they will be installing a fence along Ferry Road starting in September and will be requesting an exemption from the NRC on their technical specifications. In addition, they also stated that their annual emergency plan exercise will be held on October 21 and that there was very little development on the congressional front. The Public Advocate's Representative updated the status on the nuclear bills introduced in this legislative session and remarked that electric rates were slightly lower than they would be due to the Maine Yankee's successful lawsuit over the federal government's failure to take the spent nuclear fuel.
3. On July 28, Maine Yankee submitted to the NRC revision 5 to its Emergency Plan and a revision to one of its implementing procedures. The revision to the Plan involved the retitling of a table along with a restructuring of that table to better reflect the initiating conditions, the action levels, and the

corresponding NRC classification level. The changes to the procedure were minor as they encompassed the matching of the revised table in the Emergency Plan, clarifications on actions undertaken as recommended from a previous exercise observation for the Site Supervisor/Emergency Coordinator, ensuring that contractors are included in any evacuation of unnecessary personnel, and updates to phone contacts.

### Environmental:

The State's second quarter results will be published in the August monthly report.

### Other Newsworthy Items:

1. On July 2, Nuclear Engineering International reported that both Texas and New Mexico are vying to host a consolidated storage facility for spent nuclear fuel and were expected to submit license applications in 2016. Both states want to expand their nuclear footprint with New Mexico having higher aspirations of also hosting a spent fuel reprocessing or recycling industry and possibly even a fast reactor. Although both states enjoy local and gubernatorial support for the construction of such a storage facility, New Mexico's two congressional senators have expressed strong reservations over such a facility while Texas' senators are supportive. The web link for the magazine article can be accessed by positioning the cursor over the underlined text and following the directions.
2. On July 3, Bond Technologies, a small start-up company in Elkhart, Indiana, landed a contract with Posiva Oy, the firm responsible for the disposal of spent nuclear fuel in Finland, to build a special welding machine to secure the lids on spent fuel copper barrels designed to last 100,000 years. The welding is performed by spinning a tool to heat the metal just hot enough to soften it. The barrel and the barrel's lid are then pressed together to form a natural seam that is stronger than a traditional weld.
3. On July 8, the Department of Energy (DOE) issued a request for proposals to perform deep borehole testing for up to five years in order to conduct site and borehole characterization investigations. DOE is exploring the possibility of burying spent nuclear fuel or high-level waste in deep, geologic boreholes. The contract would be awarded on a cost plus fixed fee basis. A pre-proposal meeting will be held in Las Vegas with proposals due by September 9. The web link for the proposal can be accessed by positioning the cursor over the underlined text and following the directions.
4. On July 8, the quarterly brief of the FERC Rate Case Settlement took place. The three Yankee Companies held their quarterly conference call to brief interested stakeholders from the states of Maine, Massachusetts, and Connecticut on the status of the Federal Energy Regulatory Commission rate case settlement on spent nuclear fuel storage issues. The General Counsel updated the attendees on Yankee Companies' Phase III litigation damage claims for the period 2009 through 2012. The trial ran for two days starting on June 30. The Judge requested post-trial briefings after which the case will be ready for a decision. However, it was assumed that the decision would not be rendered until next year. Updates were provided on the appropriations legislation in Congress. The House approved funding for \$150 million for the Nuclear Waste Disposal Program and \$25 million for the NRC to continue the Yucca Mountain licensing proceedings. The Senate's appropriations bill included a pilot program for interim storage of spent nuclear fuel (SNF) and allowing DOE to store SNF at private facilities such as those proposed for Texas and New Mexico. As for proposed legislation the House had not introduced new legislation but was working on a bill that would address some of the obstacles put in place by Nevada. The house was also considering drafting legislation that would add a provision for the DOE to use private facilities to store the SNF, that DOE would accept title to the spent fuel that was moved, that priority would be given to shutdown plants, and that funds for the storage program would be restricted to the interest of the Nuclear Waste Fund. The Senate introduced the Nuclear Waste Administration Act with a hearing scheduled for August 4. The Act included the establishment of a pilot project for the

storage of spent nuclear fuel with provisions that directed the priority removal from permanently shutdown reactor sites. A further update noted that the Northeast High-Level Radioactive Waste Transportation Task Force was focused on the funding allocation for states and municipalities over emergency preparedness for spent fuel shipments within their borders and the condition of the rail line infrastructure in the Northeast to support SNF shipments.

5. On July 9, SKB International, Sweden's national radioactive waste management company, signed a three year contract to assist Taiwan in drawing plans for a final repository for spent nuclear fuel. Taiwan will adopt Sweden's and Finland's repository techniques. However, Taiwan's geological conditions differ from Sweden's or Finland's as Taiwan has a much greater risk from earthquakes.
6. On July 10, President Obama designated the Basin and Range in Nevada as a new national monument. The area included rock art dating back 4,000 years and served as a resource for archaeologists, historians and ecologists. The 704,000 acre parcel also included the proposed Caliente Rail line that would have transported spent nuclear fuel shipments to Yucca Mountain in Nye County, Nevada. Recently, there were discussions of reviving the shuttered Yucca Project when the U.S. Court of Appeals ordered the NRC to restart its licensing process to construct the repository. However, the designation placed another roadblock for the Yucca Project. The designation was seen as a ploy to stop the Yucca Mountain since it was created at the urging of Senator Harry Reid, a long-time, staunch opponent of the proposed nuclear waste repository. The web link for the fact sheet is <https://www.whitehouse.gov/the-press-office/2015/07/10/fact-sheet-president-obama-designates-new-national-monuments> and can be accessed by positioning the cursor over the underlined text and following the directions.
7. On July 16, the Bipartisan Policy Center, a Washington think tank that is working on finding solutions to the nation's key challenges, announced a nuclear waste primer series of five briefs over the next few months. The briefs will cover such issues as options for consolidated storage, state's authority to regulate, Yucca Mountain, options and limits for presidential executive action, and transportation. The briefs grew out of five regional meetings from an extensive range of interests. The first two briefs published in the primer series are "[Options for Consolidated Storage of Nuclear Waste](#)" and "[State's Authority to Regulate Nuclear Waste](#)." The Options primer discussed three interim storage options – at-reactor sites, federal facilities, or private facilities and presented the main advantages and disadvantages of each approach. The State's Authority primer discussed five options for expanding the state role, namely through a negotiated agreement, state enforcement, state certification, state certification and enforcement authority, and a change in radioactive material exemption. In order for the options to become viable changes to federal law would be required. The web link for the [announcement](#) and the two briefs can be accessed by positioning the cursor over the underlined texts and following the directions.
8. On July 17, the U.S. Court of Federal Claims ordered the federal government to pay Entergy Corporation's Palisades's nuclear plant in Michigan \$20.6 million for failing to take the plant's nuclear waste. Entergy had initially sued over the breach and claimed the government owed them \$36 million. During the trial, a government expert calculated that Entergy was only owed \$20.6 million with \$15.7 million remaining in dispute. Even though the government objected and argued that the judgment should not be granted until the case was fully litigated, the Court rejected the argument and ordered a partial payment on that portion that was not in dispute.
9. On July 21, the NRC Chairman forwarded the monthly status report to the House Chair on Energy and Commerce on NRC's activities pertaining to the licensing proceedings on Yucca Mountain. The report listed the accomplishments to date such as the issuance of Volumes 2 through 5 of the Yucca Mountain Safety Evaluation Report (SER). The report also noted the ongoing work approved by the Commission on the supplemental Environmental Impact Statement (EIS) on groundwater and SER wrap-up activities, records retention and a lessons learned report. Almost all of the \$136,000 expended during the month

was for the development of the EIS supplement. The web link for the cover letter and report can be accessed by positioning the cursor over the underlined text and following the directions.

10. On July 22, Senators Reid and Heller from Nevada introduced legislation, the Nuclear Waste Informed Consent Act, that would prevent the Energy Department from making payments for transporting nuclear waste through Nevada without first receiving consent from the Governor, local officials, and tribal leaders. The Act also included contiguous units of local governments should spent nuclear fuel be transported through their jurisdictions. The web link for the proposed legislation can be accessed by positioning the cursor over the underlined text and following the directions.
11. On July 29, Holtec International disclosed in a national webinar its schedule to construct and operate a consolidated interim storage facility for spent nuclear fuel in New Mexico by 2020. The facility will be located on a 1,000 acre parcel midway between Hobbs and Carlsbad, New Mexico. Holtec will submit a letter of intent to NRC next month, which will trigger a pre-application meeting between the parties later this year with the goal of submitting an application by June 2016. If so, the expectation will be for the NRC to issue a storage license by January 2019 with construction of the facility starting in April 2019 and operation starting as early as April 2020. The facility will feature Holtec's HI-STORM UMAX design with dry storage of the spent fuel casks underground. The web link for the article can be accessed by positioning the cursor over the underlined text and following the directions.
12. On July 30, Oak Ridge National Laboratory (ORNL) reported that, with NRC's support, researchers have developed a Cyclic Integrated Reversible-bending Fatigue Tester (CIRFT) to test spent nuclear fuel under dynamic vibration conditions. The Tester was capable of bending the spent fuel rod sample and measured the forces that represent the normal vibrations during transport. This type of testing is crucial to the NRC and the nuclear industry to better understand deformation and stress in fuel rods under transportation conditions. Previous testing was performed without the fuel in the rod and never tested the system as a whole. The web link for the invention can be accessed by positioning the cursor over the underlined text and following the directions.