

State Nuclear Safety Inspector Office  
Maine CDC – DHHS

July 2013 Monthly Report to the Legislature

Executive Summary

As part of the State's long standing oversight of Maine Yankee's nuclear activities, legislation was enacted in the second regular session of the 123<sup>rd</sup> Legislature and signed by Governor John Baldacci requiring that the State Nuclear Safety Inspector prepare a monthly report on the oversight activities performed at the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI) facility located in Wiscasset, Maine.

The report covers activities at the storage facility, including the State's on-going environmental radiation surveillance and the national debate over the licensing and construction of a geologic repository for the disposal of spent nuclear fuel. The report's highlights assist readers to focus on the significant activities that took place during the month, both locally and nationally.

LOCAL:

- The Nuclear Regulatory Commission (NRC) issued Maine Yankee its exemption request from foreign ownership, control, or domination. Maine Yankee is partially and indirectly owned by corporations from foreign countries amounting to 74% of Maine Yankee (Spain 38%, United Kingdom 24%, and Canada 12%). In reviewing the request, the NRC came to the conclusion that the spent fuel storage facility in Wiscasset was not a production or utilization facility as defined under the Atomic Energy Act of 1954 as amended. Consequently, ISFSI's such as Maine Yankee can be exempted since they do not fall under the exclusive prohibition of the Atomic Energy Act and are not capable of producing or using special nuclear material such as plutonium, uranium-233, and either enriched uranium-233 or uranium-235. Since the restrictions apply only to financial ownership and do not involve technical or operational requirements, the NRC concluded the exemption would pose no risk to the public's health or safety.

The national highlights primarily focused on congressional initiatives and a journal article.

National:

- The U.S. Senate Committee on Energy and Natural Resources held a hearing to move forward a bill, Nuclear Waste Administration Act of 2013, that would permanently secure the disposal of the nation's nuclear waste backlogged at operating and shutdown reactor sites. The bill would implement some of the key recommendations from the President's Blue Ribbon Commission such as a new agency, a consent-based process for siting nuclear waste storage and disposal facilities, and a new working capital fund for the proposed waste facilities. The bipartisan bill established an aggressive timeline of ten years to operate a consolidated interim storage facility with the caveat that progress towards developing a geologic repository was maintained. If not, then the new Agency Head would be compelled to not site any further interim storage sites until a repository site was selected for evaluation.
- The House Subcommittee on Environment and the Economy held a hearing to examine the statutory and feasibility of the technical and economic support for the Department of Energy's (DOE) strategy on managing the nation's used nuclear fuel, and the status of the current activities implementing this strategy. Energy Secretary Moniz testified on behalf of DOE and reiterated the Administration's position that Yucca Mountain was not a workable option. He based his response on science and public

acceptance. Dr. Moniz believed that science may demonstrate that Yucca Mountain may be acceptable, but the public's trust was shattered when Yucca Mountain was singled out to be the only repository and, thereby, fostering opposition to this day. Several representatives were very skeptical that starting over from scratch with a consent-based approach would solve the nation's dilemma. They gave an example of Yucca Mountain where local support for the repository was very high whereas the State and outlying counties were not. Another example was the federally licensed interim storage facility on the reservation of the Goshute Indians in Utah. Again, local support was very high, but the rest of the State opposed it, eventually forcing the company to request its license be terminated. Finally, the Low-Level Waste Policy Act (LLPA) was cited as another example. The LLPA was enacted by Congress in 1980 for states to form regional compacts using a consent-based approach to dispose of their low-level waste. After 33 years only two facilities exist nationally and 34 states have no access to their higher concentrations of low-level waste. If the low-level waste compacts with much lower concentrations of radioactivity were any indication of public sentiment, then public acceptance of high-level waste and used nuclear fuel would fare even less.

- The American Nuclear Society's Radwaste Solutions journal published an article, entitled, "Consent-Based Siting: What Have We Learned?" The article was written by a senior professional staff person at the U.S. Nuclear Waste Technical Review Board and reflected the author's opinions not necessarily those of the Board. The article provided a historical perspective on consent-based siting along with consent approaches from eight foreign countries besides the U.S. experience. The consent processes for Sweden, Finland and Canada were examples of approaches that enhanced public acceptance. The lessons learned over the past 50 years indicated that a) "any siting process that ignored the views, values, and preferences of a potential host community was unlikely to succeed" and b) it "strongly suggested that consent-based processes which include volunteers would not necessarily culminate in a durable selection of a site." The author offered three design conditions that could increase the likelihood of success.
  - Advancing a persuasive and technically defensible case for the safety of a country's disposal concept prior to seeking a community's consent could increase its chances for acceptance.
  - Institutional continuity and culture likely influence whether bonds of trust are formed between waste managers and potential host communities.
  - Any consent-based process will likely struggle with the issue of how power will be distributed between the federal government on the one hand and state and local governments on the other.

## Introduction

As part of the Department of Health and Human Services' responsibility under Title 22, Maine Revised Statutes Annotated (MRSA) §666 (2), as enacted under Public Law, Chapter 539 in the second regular session of the 123<sup>rd</sup> Legislature, the foregoing is the monthly report from the State Nuclear Safety Inspector.

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 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 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.

## 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. The impairment had to do with the fire loading in the truck bay from the build-up of paper awaiting the arrival of the shredding truck.

There was no security-related impairment for the month. However, there were ten security events logged and all involved transient environmental conditions.

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

- 1<sup>st</sup> CR: Documented a problem with the site's gate. Replacement parts were ordered and the gate was fixed.
- 2<sup>nd</sup> CR: Documented a rifle sling becoming disengaged from the rifle. The sling was replaced.
- 3<sup>rd</sup> CR: Documented a problem with the man-lift drive system. The problem could not be reproduced so a service technician was called in. No problem was identified.
- 4<sup>th</sup> CR: Was written to document an insect sting to a worker. Ice was applied.
- 5<sup>th</sup> CR: Was written to document the automatic start of the diesel generator without a loss of power. The problem was traced to a loose wire in the auto transfer switch. The wiring harness was replaced.
- 6<sup>th</sup> CR: Documented low voltage on the incoming power line. The taps on the building's transformer were changed to deliver the proper voltage to the building.
- 7<sup>th</sup> CR: Documented the loss of the signal alert on the diesel auto transfer switch. The control board was replaced.
- 8<sup>th</sup> CR: Was written to document the loss of communication with the gate house during a lightning storm. The modules were reset and repowered the following shift.
- 9<sup>th</sup> CR: Documented a procedure not being updated to reflect a change in the regulation. The procedure was revised.
- 10<sup>th</sup> CR: Documented uneven wear on the John Deere tires. It was later determined that the wear was normal for a four wheel drive vehicle with tractor type tires operated on pavement.
- 11<sup>th</sup> CR: Documented the failure of one of the building exhaust fans. The fan's motor was replaced.

### *Other ISFSI Related Activities*

1. On July 12, 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 briefed the group on his participation in the National Working Group making recommendations to the Department of Energy on funding state grants for spent nuclear fuel shipments, the status of the State's Confirmatory Summary Report on the Maine Yankee decommissioning, and the State's recent neutron survey at the storage facility. Maine Yankee briefed the Group on the new building that was constructed in the old staff

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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 Program's website.

building parking lot. The maintenance building will allow for the construction of more office space in the Security and Operations Building. Maine Yankee noted that it had received from NRC a license amendment for the new name of its Security Plan and an exemption request to its emergency planning. Maine Yankee also informed the oversight group that it had installed a new vehicle barrier at the ISFSI and was planning a comprehensive assessment of all its security equipment next year. In addition, they mentioned the NRC's nearly 600 page waste confidence report that discussed indefinite storage of the used nuclear fuel. NRC's evaluation assumed that every 100 years the storage facilities would require complete replacement of the concrete storage casks, as well as the concrete pads the casks rest on. It was also contemplated that some repackaging of the used fuel canisters that are housed inside the concrete casks may be necessary. This would be accomplished by constructing a dry transfer building at the site to facilitate the handling and transfer of the used fuel.

2. On July 15, the NRC issued Maine Yankee its exemption request from foreign ownership, control, or domination. Maine Yankee is partially indirectly owned by foreign corporations amounting to 74% of Maine Yankee. The foreign ownership breakdown is 38% from Spain, 24% from the United Kingdom, and 12% from Canada. In reviewing the request, the NRC came to the conclusion that the spent fuel storage facility in Wiscasset was not a production or utilization facility as defined under the Atomic Energy Act of 1954 as amended. Consequently, ISFSI's such as Maine Yankee can be exempted since they do not fall under the exclusive prohibition of the Atomic Energy Act and are not capable of producing or using special nuclear material such as plutonium, uranium-233, and either enriched uranium-233 or uranium-235. Since the restrictions apply only to financial ownership and do not involve technical or operational requirements, the NRC concluded the exemption would pose no risk to the public's health or safety.

## Environmental

The surveillance results will be reported in the August, 2013, monthly report.

## Other Newsworthy Items

1. On July 5, Nevada's Representative Titus introduced three amendments to the House's Appropriations Bill. Three amendments were introduced to negate the provisions in the Appropriations Bill that would have allotted funds to support the geological repository program at Yucca Mountain in Nevada, to help affected local governments, and to support the Yucca Mountain licensing proceedings enacted by the Nuclear Regulatory Commission. In addition, one of the amendments deleted one of the provisions of the Appropriations Bill that would have prevented any closure of the Yucca Mountain proceedings. The third amendment prevented the use of any funds for the Yucca Mountain Project. The web link for the [amendments](#) can be accessed by positioning the cursor over the underlined text and following the directions. (The reviewer is referred to the hyperlink for "comments" in the second newsworthy item below for specificity on the proposed legislative context of the amendments.)
2. On July 9, the Nuclear Energy Institute sent a letter to the Chair and Ranking Member of the House's Subcommittee on Energy and Water Development in support of the House's Appropriations Bill that would provide \$25 million to continue the review of the Yucca Mountain license application. The letter was in response to Nevada's Representative Titus's three amendments to the Appropriations Bill. NEI provided their position on the three amendments. The web link for the [letter](#) and [comments](#) can be accessed by positioning the cursor over the underlined text and following the directions.
3. On July 9, Nevada's Representative Heck introduced an amendment to the House's Appropriations Bill that would redirect the \$25 million appropriation to continue the Nuclear Regulatory Commission's

licensing proceedings on Yucca Mountain to the High Energy Physics Program at the Department of Energy's Office of Science. The Program would develop accelerator technology that would reduce the toxicity of the used nuclear fuel by transforming the long lived radioactive elements into shorter ones. The web link for the Representative's [statement](#) can be accessed by positioning the cursor over the underlined text and following the directions.

4. On July 9, the State participated in a National Transportation Stakeholders Forum webinar introducing a new website solely devoted as an information exchange on used nuclear fuel. The participants were trained on how to use the site, how to find documents, how to access international programs and their experiences, and even how to save and edit documents. The Oak Ridge National Laboratory developed the website and named it CURIE for Centralized Used Fuel Resource for Information Exchange.
5. On July 10, Germany passed a new law on repository selection for the disposal of used nuclear fuel by restarting from scratch. The action was taken after the Gorbelen site, which has been explored for over three decades, was politically contested. However, the site would remain as an option. A 33 member commission will be set up with representation from four sectors of German society. The membership would be comprised of eight scientists, eight from the general public, eight from the German Parliament, eight from the state governments, and one Chairperson. The commission was tasked with recommending changes to their Site Selection Act, especially those involving the process, public participation, and site selection and exclusion criteria by no later than July, 2016. The German government's experience appeared very similar to the U.S. undertaking with Yucca Mountain. The web link for the [news release](#) can be accessed by positioning the cursor over the underlined text and following the directions.
6. On July 10, the Plymouth Zoning Board rejected an appeal by opponents to stop the construction of a dry cask storage facility on the property of the Pilgrim Nuclear Power Plant in Massachusetts. Although the owners of the Pilgrim station, the town of Plymouth and the opponents agree that the used fuel in the spent fuel pool must be loaded into dry casks, the opponents contended that the Zoning Board should overturn the initial permit issued to construct the storage facility because the storage site required a special permit subject to public hearings.
7. On July 11, the State participated in the Nuclear Waste Strategy Coalition's bi-weekly update of the Department of Energy's activities on their 2021 pilot storage facility, the recently released NRC's waste confidence draft documents, the status of the two cases before the D.C. Circuit Court of Appeals (the mandamus case to compel the NRC to reopen the Yucca Mountain licensing proceedings and the Nuclear Waste Fund case to stop the imposition of the nuclear generating fee), the current status of the Senate's proposed legislation to enact some of the recommendations from the President's Blue Ribbon Commission on used nuclear fuel, and the House's potential bill to affirm Yucca Mountain as the nation's sole repository.
8. On July 22, DOE's Assistant Secretary for Nuclear Energy responded to the Chair of the House's Environment and the Economy Subcommittee June 28 letter in which the Chair requested any information on activities of the DOE's Office of Nuclear Energy initiated in response to the Administration's strategy document for the management and disposal of nuclear waste. The Assistant Secretary summarized the major activities commencing with the closure of the Yucca Mountain Project in 2010 through the Administration's 2013 issuance of its strategy document to manage the nation's nuclear waste. Since specifics were requested by the Subcommittee Chair, the DOE response included three tables summarizing the programs, solicitations, or activities undertaken to support the Administration's strategy. The tables further illustrate the deliverables and their associated estimated completion dates, the resources expended to date and the source of those funds along with DOE's legal authority to perform these tasks. The web link for the [letter](#) and [tables](#) can be accessed by positioning the cursor over the underlined text and following the directions.

9. On July 25, the State participated in the Nuclear Waste Strategy Coalition's (NWSC) bi-weekly update. The purpose of the call was solely to discuss the NWSC's draft comments to the Senate's proposed legislation, the Nuclear Waste Administration Act of 2013. Even though there were some improvements from the earlier discussion draft circulated in April, the proposed bill needed additional improvements in certain areas to create a supportable process for managing the nation's nuclear waste. Recommendations were made in seven major areas. They encompassed the reaffirmation of Yucca Mountain as the law of the land; the opposition to the requirement that nuclear utilities have to settle their lawsuits before having access to future storage facilities; expressing disappointment in the proposition of a separate agency with a single administrator as opposed to a federal corporation as recommended by the Blue Ribbon Commission along with the number of Board members overseeing the new agency and who should appoint them; commending the bill's provision to create a Working Capital Fund (WCF) for payments into the fund but failing to transfer the accrued interest and corpus of the present Fund into the WCF; maintaining flexibility in the consent-based siting process; and the importance of establishing a permanent repository as quickly as possible so as to not deter communities from hosting storage facilities with a repository target date as far off as the year 2048.
10. On July 30, the U.S. Senate Committee on Energy and Natural Resources held a hearing to move forward a bill, Nuclear Waste Administration Act of 2013, that would permanently secure the disposal of the nation's nuclear waste backlogged at operating and shutdown reactor sites. The bill would implement some of the key recommendations from the President's Blue Ribbon Commission such as a new agency, a consent-based process for siting nuclear waste storage and disposal facilities, and a new working capital fund for the proposed waste facilities. The bipartisan bill established an aggressive timeline of ten years to operate a consolidated interim storage facility with the caveat that progress towards developing a geologic repository was maintained. If not, then the new Agency Head would be compelled to not site any further interim storage sites until a repository site was selected for evaluation. The web link for the [news release](#) can be accessed by positioning the cursor over the underlined text and following the directions. At the end of the news section additional links on the proposed legislation are also provided. In addition, the following testimonies from the [National Conference of State Legislatures](#), [Energy Communities Alliance](#), the [Nuclear Waste Strategy Coalition](#), and [Energy Secretary Moniz](#) are all accessible through the underlined hyperlinks. Each organization's testimony provided additional information on their varied positions as to why they embraced certain facets of the bill and opposed others. Furthermore, additional links to testimonies from other panel speakers are available on the [Committee's website](#) by scrolling down and clicking on the speaker's name.
11. On July 30, the U.S. Nuclear Waste Technical Review Board forwarded a letter to the DOE's Assistant Secretary in response to the DOE's April 16 presentation in Richland Washington on researching and developing deep borehole disposal of used nuclear fuel. The Board made three recommendations to the DOE. The first recommendation was to ensure that the research should be sequenced from bench scale testing to in place tests in the proposed environment to a full scale pilot test. The second recommendation centered on the DOE employing international collaborations with Switzerland and Sweden, which have underground laboratories, to better characterize the host rock at great depths. Finally, the Board recommended that the DOE assess the repackaging of used nuclear fuel into smaller packages and the facilities that would be required to support such an undertaking. The Board reiterated its concern that borehole concept is in its infancy and nearly 600 deep boreholes would be required to dispose of the used nuclear fuel presently in dry and wet storage across the country. Because of this the Board advocated for a mined geologic repository. The web link for the [letter](#) can be accessed by positioning the cursor over the underlined text and following the directions.
12. On July 31, the House Subcommittee on Environment and the Economy held a hearing to examine the statutory and feasibility of the technical and economic support for DOE's strategy on managing the nation's used nuclear fuel, and the status of the current activities implementing this strategy. Energy

Secretary Moniz testified in behalf of DOE and reiterated the Administration's position that Yucca Mountain was not a workable option. He based his response on science and public acceptance. Dr. Moniz believed that science may demonstrate that Yucca Mountain may be acceptable, but the public's trust was shattered when Yucca Mountain was singled out to be the only repository and thereby fostering opposition to this day. Several representatives were very skeptical that starting over from scratch with a consent-based approach would solve the nation's dilemma. They gave as examples Yucca Mountain where local support for the repository was very high whereas the State and outlying counties were not. Another example was the federally licensed interim storage facility on the reservation of the Goshute Indians in Utah. Again local support was very high but the rest of the State opposed it, eventually forcing the company to request its license be terminated. Finally the Low-Level Waste Policy Act (LLPA) was cited as another example. The LLPA was enacted by Congress in 1980 for states to form regional compacts using a consent-based approach to dispose of their low-level waste. After 33 years only two facilities exist nationally and 34 states have no access to their higher concentrations of low-level waste. If the low-level waste compacts with much lower concentrations of radioactivity were any indication of public sentiment, then public acceptance of high-level waste and used nuclear fuel would fare even less. The web links for the Subcommittee's [background memorandum](#) and [preliminary transcript](#) can be accessed by positioning the cursor over the underlined text and following the directions.

13. In July the American Nuclear Society's Radwaste Solutions journal published an article, entitled, "Consent-Based Siting: What Have We Learned?" The article was written by a senior professional staff person at the U.S. Nuclear Waste Technical Review Board and reflect the author's opinions not necessarily those of the Board. The article was very insightful as it provided a historical perspective on consent based siting along with consent approaches from eight foreign countries besides the U.S. experience with the Waste Isolation Pilot Plant in New Mexico. The U.S. historical perspective provided three examples of past consent approaches starting with the Interagency Review Group's recommendations to and accepted by President Jimmy Carter in 1980. It tendered a consultation and concurrence approach. That approach was changed to consultation and cooperation by the 1982 Nuclear Waste Policy Act (NWPA) and aborted by the mandate for Yucca Mountain with the 1987 amending of the NWPA. The consent process for Sweden, Finland and Canada were examples of approaches that stood out and increased public acceptance. The lessons learned over the past 50 years indicated that a) "any siting process that ignored the views, values, and preferences of a potential host community was unlikely to succeed" and b) it "strongly suggested that consent-based processes which included volunteers would not necessarily culminate in a durable selection of a site." The author offered three design conditions that could increase the likelihood of success.
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  - o Any consent-based process will likely struggle with the issue of how power will be distributed between the federal government on the one hand and state and local governments on the other.

The web link for the [journal article](#) can be accessed by positioning the cursor over the underlined text and following the directions.