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April 15, 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 January through February 2016 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 123rd 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
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Kenneth Albert, Director, Maine Center for Disease Control and Prevention
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Nancy Beardsley, Director, Division of Environmental Health
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State Nuclear Safety Inspector Office Maine CDC – DHHS

January 2016 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 nationally during the month.

National:

- The Department of Energy's (DOE) selected Battelle Memorial Institute to lead a team to drill a test borehole of over 16,000 feet into a granite rock formation near Rugby, North Dakota as part of an initiative to explore the disposal of defense-related high-level radioactive waste.
- The International Atomic Energy Agency announced that it had successfully tested a borehole disposal concept for low-level radioactive sealed sources in Croatia using a specially designed, sealed canister and then emplaced it a few hundred meters deep into the earth's crust. The technique would allow countries to dispose of their own unused sealed sources.
- DOE held an invitational meeting in Washington, D.C. to kick-off its consent-based siting process that will be flexible, inclusive, adaptive, and transparent. The process will be a three phase effort with public and stakeholder engagements, design of a formal process, and engaging host communities using the process. DOE was expected to draw on the consent-based siting models from Canada, Finland, and Sweden.
- DOE announced that it will resume its operations at the Waste Isolation Pilot Project (WIPP) in Carlsbad, New Mexico in December 2016. The facility which had been receiving defense-related plutonium waste from the weapons era for over fifteen years was closed after an unplanned release of airborne radioactivity from a faulty drum occurred on February 14, 2014.

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 123rd 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 are available from the Radiation Control Program's web site at the following link: www.maineradiationcontrol.org and by clicking on the nuclear safety link in the left hand margin.

Independent Spent Fuel Storage Installation (ISFSI)

During January, 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 were eight security incident reports logged for the month. Five of the incident reports were written to provide compensatory measures for security system degradations such as a momentary loss in power, a key broken in a lock, a transient environmental condition, and two camera issues. The remaining three were associated with supporting snow removal.

There were twenty-six condition reports¹ (CR) for the month and they are described below.

- 1st CR: Documented a camera that was experiencing fogging and icing issues. The internal heater and a thermostat were replaced.
- 2nd CR: Documented that small wasp nests were found in several outlet vents in the concrete casks. The nests will be removed, weather permitting.
- 3rd CR: Documented a momentary loss in power in which the Uninterruptible Power System (UPS) did not respond as expected as it cycled on-off several times within seconds. Compensatory measure were put into place until the systems could be placed back in service and tested. The UPS was subsequently tested and operated satisfactorily. An old power strip was also replaced as a preventative measure.
- 4th CR: Documented that a key broke off in a lock located outside. Compensatory measures were put into place until the lock was replaced.
- 5th CR: Documented the loss of offsite internet connectivity with a vendor. The backup system worked as designed and the provider was contacted. The service was returned later that day.
- 6th CR: Documented that water was found on the floor in the diesel generator room due to heavy rains. The leakage appeared to have entered via the ductwork.
- 7th CR: Documented that a ground wire was found detached on one of the concrete cask pads. The wire was reattached and all other grounding wires were checked and all were found satisfactory.
- 8th CR: Documented that water was on the floor of the Storage and Maintenance Building after heavy rains. The water leakage appeared to come through the door seals.
- 9th CR: Documented the loss of internet connectivity with an offsite vendor. The backup system worked as designed. The provider was contacted and they were aware of the issue. The service was restored the next day.
- 10th CR: Documented that the telephone/internet service was not working. The provider was contacted again and indicated that it was due to some maintenance activities. All other backup systems remained operational and the service was restored later that shift.
- 11th CR: Documented that an individual had lost his access card during snow removal activities. The card was de-activated and a new card was issued.
- 12th CR: Documented that a small hydraulic fluid leak had occurred from a plow truck. The leakage was small and was contained and the truck was repaired. The leak did not meet the Department of Environmental Protection's reporting threshold.
- 13th CR: Documented that the administrative limit of 25% blockage on any one cask inlet vent was reached on several concrete casks due to ice. The limit was for notifying management only. The ice was removed during the shift.
- 14th CR: Documented that a computer device used to activate badges was obsolete and should be relocated.
- 15th CR: Documented that the system was degraded due to a transient environmental condition. Compensatory measures were instituted until the transient ceased.

¹ 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.

- 16th CR: Documented that the administrative limit of 25% blockage on any one cask inlet vent was reached on several concrete casks due to a snow event. The limit was for notifying management only. No further action was warranted.
- 17th CR: Was written to track recommendations from a training review/self-assessment. Appropriate recommendations were incorporated into the 2016 Training Plan.
- 18th CR: Documented that a steel exterior door had a small rust hole.
- 19th CR: Documented computer system issues regarding cleared alarm events.
- 20th CR: Was written to track a potential fitness for duty concern. Management performed an assessment. No fitness for duty concern was found and the issue was closed out.
- 21st CR: Documented that a phone line read “no service” for about one minute. The provider was contacted and was not aware of any issues.
- 22nd CR: Documented a potential issue with company records containing personal information at a vendor’s facility. The vendor did not receive the company’s policies regarding the protection of such records. The company is the process of forwarding those policies to the vendor.
- 23rd CR: Documented that several individuals had signed Lockout/Tagout forms as the Lockout/Tagout Coordinator without proper qualifications. Lockout/Tagout training was being developed and will be given in late February.
- 24th CR: Documented that the vehicle barrier system in one location had shifted and created a gap at a corner. The barrier was determined to be functional as is and a full inspection will be performed in 2016 to determine if a long term maintenance program is required.
- 25th CR: Documented that a momentary loss of video was experienced on a monitor while a technician was shifting some electronics behind the cabinet. The electronics were moved back to their original position and the video signal returned. The momentary loss was believed to be caused by strain on the connectors.
- 26th CR: Documented that an individual mistakenly brought his personal dosimeter home and returned it the next day. The expectation for TLDs² to remain onsite was reinforced with the staff.

Other ISFSI Related Activities

1. On January 6, Maine Yankee informed the Nuclear Regulatory Commission (NRC) of a change in their Board of Directors. Two members from the Canadian firm, Emera, were reappointed and replaced with two other individuals from the firm. Since they represent a foreign sponsor company, both individuals had previously signed certifications of foreign sponsor representatives to “ensure that Emera Maine will not exert control, domination, or influence over operational, safety or security matters at Maine Yankee.” The previous certifications were still valid.
2. On January 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’s report highlighted the status of his annual and monthly reports to the Legislature along with a timetable for completing the reports, his submittal of the Confirmatory Summary Report for management review, his on-going participation in a national interregional team that is developing recommendations from states to DOE on funding emergency preparedness for local communities on spent fuel shipments traversing their jurisdictions, his preparations for determining the radiation dose from the State’s storage facility, his participation in two national Ad Hoc Groups on communications and rail/routing of spent fuel shipment, and attendance at the Northeast High-Level Radioactive Waste Transportation Task Force. DEP informed the Group that they have reviewed Maine Yankee’s proposed changes and have come up with their own set of recommendations. Maine Yankee noted that it was preparing an official response

² Thermoluminescent dosimeters (TLDs) 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.

to DEP's recommendations. Maine Yankee informed the Group of its upcoming NRC inspection, its cask relicensing efforts this summer that would include removing a cask lid, its replacement of the radiation monitors on the security fence, additional security fence work to eliminate intrusion from burrowing animals, its biennial audit of its programs, and its successful emergency plan drill. Maine Yankee also apprised the Group of the status of their ongoing lawsuits against the federal government, the Citizens Advisory Panels' letter to the New England congressional delegation. The Public Advocate and the State Police had nothing to add to the discussion.

3. On January 18, Maine Yankee submitted their third revision to their Post-Shutdown Decommissioning Activities Report to the NRC to reflect the revised cost estimates that were previously forwarded to the NRC on decommissioning and managing the spent nuclear fuel and Greater Than Class C wastes stored at the Wiscasset facility through 2033.

Environmental:

The environmental radiation badge results will be available in February's monthly report.

Other Newsworthy Items:

1. On January 5, DOE selected Battelle Memorial Institute to lead a team to drill a test borehole of over 16,000 feet into a crystalline rock formation near Rugby, North Dakota as part of an initiative to explore the disposal of defense-related high-level radioactive waste. The five-year project will examine the chemical and mechanical properties of the host rock besides the drilling and sealing challenges. The first phase of the project will be with a test hole of 8.5 inches in diameter. If that is successful, a 17.5 inch test hole will then be drilled to perform handling and retrieval operations besides testing on storage containers. The web link for the news release can be accessed by positioning the cursor over the underlined text and following the directions.
2. On January 8, the NRC Chair responded to Senator Reid's letter from October 29, 2015, on transportation packages for spent fuel and high-level waste. The Chair noted that the information on three of the six requests was provided on December 11, 2015, to Senator Reid. The remaining requests were answered by providing a list of the seventeen transportation packages and the physical tests that were performed on each package. The information also included the instruments used to measure the stress on the packages and the descriptions of the different types of structural and/or seal tests for each package. The web links for the letter and the results of the packaging testing can be accessed by positioning the cursor over the underlined texts and following the directions.
3. On January 11, the International Atomic Energy Agency announced that it had successfully tested a borehole disposal concept for low-level radioactive sealed sources in Croatia. The sources were placed in a specially designed, sealed canister and then emplaced a few hundred meters deep into the earth's crust. The technique would allow countries to dispose of their own unused sealed sources. The web link for the news article can be accessed by positioning the cursor over the underlined text and following the directions.
4. On January 11, the State participated in a DOE webinar to preview their new Web Visualization Tool as part of DOE's consent-based siting initiative that will commence on January 20. The new communication tool illustrated the number of spent fuel assemblies in either dry or wet storage at each reactor site. Additional features contemplated included posting the quantities of low or high burnup fuel. A question was raised as to how the new tool would advance the development and progress of consent-based siting for a host site and whether the Tool could address changes in spent nuclear fuel inventory.

5. On January 11-13, the Institute for Nuclear Material Management held its 31st spent fuel management seminar in Washington, D.C. The seminar topics included national as well as international initiatives. Topics included the France's spent fuel policy and its repository efforts in Bure, France as well as overviews of Sweden's, Korea's, Spain's, and Japan's spent fuel management programs. Presentations also included NRC's perspective on spent fuel, emerging issues such as repository development, consolidated interim storage, consent-based initiatives, and utility perspectives. Other topics included spent fuel manufacturing and technology development, transportation campaigns in the U.S., and international issues related to spent fuel transportation. Other discussions focused on the Yucca Mountain Licensing Project, interim storage and repository options such as deep borehole disposal, and initiatives and perspectives on spent fuel security and aging management. The web link for the agenda can be accessed by positioning the cursor over the underlined text and following the directions. The individual presentations can be accessed by clicking on the blue highlighted topics at the following link: http://www.inmm.org/Content/NavigationMenu/Events/PastEvents/31stSpentFuelSeminar/31st_SF_Proceedings.htm.
6. On January 20, the quarterly brief of the Federal Energy Regulatory Commission (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 FERC's rate case settlement on spent nuclear fuel storage issues. A spokesperson for the General Counsel updated the attendees on Yankee Companies' Phase III litigation damage claims for the period 2009 through 2012. The trial was held June 30 through July 1. The Judge requested post-trial briefings that were originally scheduled for October 2015 but were extended to February this year with oral arguments scheduled for February 19. The General Counsel was optimistic of a spring ruling by the federal Court of Claims Judge. On the national scene it was reported that the Texas Waste Control Specialist Corporation was proposing to submit to the NRC their application for the construction of a consolidated interim storage facility in April 2016. It was also noted that the New Mexico Eddy-Lea Energy Alliance was expecting to submit their consolidated storage application to NRC by June 2016. On the congressional side Representative Conaway from Texas introduced The Interim Consolidated Storage Act of 2015. The proposed legislation would allow the DOE to contract with private organizations that are developing consolidated interim storage facilities. The bill also maintained priority for shutdown reactor sites. Maine Representatives Pingree and Poliquin were both cosponsors of the legislation besides Congressman Welch from Vermont and Congressman Courtney from Connecticut. Another national initiative included the DOE's announcement of a new Consent-Based Siting Initiative that would solicit public input in the development of a national process for the selection of storage or waste disposal facilities for spent nuclear fuel and high-level radioactive waste. DOE was expecting to host a series of public meetings the next few months. It was also reported that the states of Connecticut, Vermont and New York were preparing to file their oral arguments with the U.S. Court of Appeals challenging the NRC's adoption of its Continued Storage of Spent Nuclear Fuel Rule by February 22. The states asserted that the Rule violated the National Environmental Policy Act and the NRC's Environmental Impact Statement process.
7. On January 20, DOE held an invitational meeting in Washington, D.C. to kick-off its consent-based siting process. The process will be a three phase effort with public and stakeholder engagement, design of a formal process, and engaging host communities using the process. DOE was committed to a durable process that will be flexible, inclusive, adaptive, and transparent. Several noteworthy questions were raised such as: "When can a state or community pull out of the process? Will consent be required when determining transportation routes? How will DOE ensure this initiative will last beyond a change in administration?" Several meetings were being planned with the next two public meetings to be held in Chicago in March and Atlanta in April. DOE was expected to draw on the consent-based siting models used in Canada, Finland, and Sweden.

8. On January 21, DOE announced that it will resume its operations at the Waste Isolation Pilot Project (WIPP) in Carlsbad, New Mexico. The facility which had been receiving defense-related plutonium waste from the weapons era for 15 years was closed after an unplanned release of airborne radioactivity from a faulty drum occurred on February 14, 2014. Since then, new ventilation with a higher capacity flow was installed, the radioactive contamination was fixed on salt surfaces using water sprays, and a new emergency operations center was constructed to deal with state and local communities. Disposal operations were expected to resume in December 2016. The web link for the news update can be accessed by positioning the cursor over the underlined text and following the directions.
9. On January 22, the New Mexico Environment Department, DOE and its contractors finalized a settlement agreement with New Mexico that had issued fines on the DOE for two incidents at the WIPP facility in Carlsbad, New Mexico. The two underground incidents, one involving a truck fire and the other a radioactive release from a compromised waste drum, occurred in February 2014. The Environment Department, DOE and its contractors had agreed upon an initial settlement of \$73 million in April 2015. The final settlement of \$74 million allocated funds for road improvements, water infrastructure, and emergency response capabilities. The web link for the news release can be accessed by positioning the cursor over the underlined text and following the directions.
10. On January 27, the U.S. Nuclear Waste Technical Review Board submitted to Congress and the Secretary of Energy a report entitled, "Technical Evaluation of the U.S. Department of Energy Deep Borehole Disposal Research and Development Program," of their assessment of DOE's concept of deep borehole disposal. The report addressed the technical and scientific issues that could affect the feasibility of the borehole concept and whether DOE's field test will supply the appropriate information to assess the feasibility of this disposal concept. The Board highlighted four findings. The borehole approach did not eliminate the need for a mined geologic repository, the effort and time expended could be comparable to a mined repository, the field test will provide limited information on the feasibility of the borehole concept and site selection, and the design of a borehole facility would be very dependent on understanding the implications and limitations of handling and emplacing highly radioactive waste. In view of their findings the Board provided the following nine recommendations for DOE to incorporate into its borehole program.
 - the need for independent expert reviews with extensive expertise in design and implementation,
 - a more comprehensive risk analysis for all aspects of the drilling and emplacement phases,
 - addressing the technical and scientific issues related to the diversity and complexity of the subsurface geology,
 - performing extensive pre-drilling surveys to characterize the subsurface structure through detailed gravity, magnetic, seismic, or electrical data,
 - analyzing the safety benefits of more robust waste forms, packages, and seals,
 - develop an operational safety strategy for the remote handling of highly radioactive waste packages,
 - working with regulators to define retrievability requirements,
 - utilize the Borehole Field Test as a means of getting siting experience by engaging stakeholders and establishing transparency,
 - Appoint a chief scientist in charge of the project.

The Board believed that addressing all the recommendations would greatly improve DOE's technical basis and feasibility of the Borehole Program.

11. On January 28, the NRC Chair forwarded his monthly status report to the House Chair on Energy and Commerce on the staff's activities associated with the resumption of DOE's Yucca Mountain license application. The report summarized NRC's accomplishments since the Appeals Court Order in August 2013. The report also informed the House Chair that the NRC staff had sufficient remaining funds to start loading the licensing support documents into the NRC's publicly accessible library, the

Agencywide Documents Access and Management System. In addition, the NRC estimated that \$100,000 would be required to complete a lessons learned report on the licensing process. In December \$55,000 of the \$58,000 was spent on the development of the supplemental Environmental Impact Statement (EIS) for Yucca Mountain. About \$3 million remains to complete the licensing support documents and the supplemental EIS. The web links for the cover letter and the status report can be accessed by positioning the cursor over the underlined texts and following the directions.

State Nuclear Safety Inspector Office
Maine CDC – DHHS

February 2016 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 and state officials met to discuss Maine Yankee's emergency notification process. Most of Maine Yankee's notification procedure delineated internal state communications, which the State agreed should be governed by the state and not dictated by Maine Yankee. The State seized the opportunity to simplify its own internal notification process.
- The Nuclear Regulatory Commission (NRC) issued an exemption to Maine Yankee's Technical Specifications on its cask inspection requirements for the inlet and outlet vents following off-normal, accident, or natural phenomena events, but limiting the scope to only snow and icing events.

National:

- The Nuclear Waste Strategy Coalition, the National Association of Regulatory Utility Commissioners, and the Nuclear Energy Institute co-signed a letter to the Energy Secretary highlighting the billions of dollars that ratepayers have borne through mandated fees and the billions that taxpayers have paid for damages due to the federal government's failure to meet its contractual responsibilities. The three organizations advocated for "an annual plain-English accounting of how the money was collected and spent and how much remains."
- The Department of Energy (DOE) announced that it will be hosting eight public meetings seeking input in formulating a national consent-based siting process for communities wishing to host an interim spent fuel storage or geologic disposal facility. The first meeting is scheduled for March 29 in Chicago followed by Atlanta on April 11. The remaining six locations will be Boise, Idaho; Boston, Massachusetts; Denver, Colorado; Minneapolis, Minnesota; Sacramento, California; and Tempe, Arizona.
- DOE informed the public that it had published its final environmental impact statement (EIS) for the disposal of Greater Than Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste and recommended the GTCC waste be disposed at the Waste Isolation Pilot Project facility near Carlsbad, New Mexico. Maine Yankee has four concrete casks at the Wiscasset facility that contain GTCC waste.

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 123rd 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 are available from the Radiation Control Program's web site at the following link: www.maineradiationcontrol.org and by clicking on the nuclear safety link in the left hand margin.

Independent Spent Fuel Storage Installation (ISFSI)

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

There were no fire or security related impairments for the month. However, there were five security incident reports logged for the month. Three of the incident reports were written to provide compensatory measures to support snow removal, while a fourth was to support system maintenance activities. The fifth report was to document compensatory measures for a security system degradation while attempting to log into the computer system. The system was restarted clearing the error message.

There were eleven condition reports¹ (CR) for the month and they are described below.

- 1st CR: Documented that a drain-hole cover was missing. The area was marked as a tripping hazard.
- 2nd CR: Documented that various cords and wires in the Dayroom presented a tripping hazard. The cords were re-routed and bundled to eliminate the hazard.
- 3rd CR: Documented that a camera lens was fogging up. The internal heaters were checked and replaced as necessary. The fogging issue has not recurred. However, further testing was planned prior to closing the issue.
- 4th CR: Documented that the administrative limit of 25% blockage of one inlet vent was reached during a snowstorm. The affected concrete casks were inspected by management. Since the snow accumulation was well within limits, no further actions were taken.
- 5th CR: Documented that several concrete casks inlet screens were degraded due to snow removal activities. The screens had become detached from the frames in localized spots. New screens were ordered and will be installed.
- 6th CR: Documented that trouble alarms were noted on a cellphone backup system. The alarms cleared in a short time. The vendor was contacted for troubleshooting and parts were ordered.
- 7th CR: Documented that the heating system for a ventilation unit was not working properly. The thermostat was reset and the heating worked properly.
- 8th CR: Documented that there was excessive engine noise from a utility vehicle. The vehicle was taken out of service and will be replaced.
- 9th CR: Documented that an error message was received while attempting to log into a computer system. The system was restarted clearing the error message. The Condition Report will remain open pending further evaluation.
- 10th CR: Documented a discrepancy with the cask manufacturer's Technical Specification that required a one-time radiation survey, which was completed once each cask was loaded. The current Tech Spec's applicability was for "During Storage Operations." The previous wording when the casks were loaded was "During Loading Operations." An exemption request will be submitted to NRC to change the requirement to the previous wording. Otherwise, the current Tech Specs could force Maine Yankee to unload all the spent fuel assemblies from a cask within 30 days.

¹ 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.

11th CR: Documented that a piece of telephone equipment was making abnormal noise. A Fairpoint technician performed the troubleshooting and it appeared to be a cooling fan. A replacement part was ordered.

Other ISFSI Related Activities

1. On February 1, Maine Yankee submitted to the NRC its annual notification on its foreign ownership, control, or influence status. Maine Yankee described the three separate occasions that member changes were made to the Board of Directors since the last annual notification. One of the changes did not contain a foreign certification since the sponsor company was a domestic corporation. The other two changes involved Emera, a Canadian firm that bought out Bangor Hydro Electric.
2. On February 4, Maine Yankee and state officials met to discuss the Maine Yankee emergency notification tree. Most of Maine Yankee's notification procedure delineated internal state communications. The State agreed that internal communications during a declared emergency should be governed by the state and not dictated by Maine Yankee. The State seized the opportunity to simplify its own internal notification process.
3. On February 18, NRC issued an exemption to Maine Yankee's Technical Specifications on its cask inspection requirements for the inlet and outlet vents following off-normal, accident, or natural phenomena events. However, the NRC limited the scope of the events covered to specifically snow and icing events. Since the exemption met the categorical exclusion requirements of NRC's regulations, no environmental assessment and finding of no significant impact were issued.

Environmental:

The State received the fourth quarter results in late October from the field replacement of its thermoluminescent dosimeters (TLDs)² around the ISFSI and the Maine Yankee industrial site. The results from the quarterly TLD change out continued to illustrate three exposure groups: elevated, slightly elevated, and normal. The two usual high stations were stations G and K with two extra stations this quarter, F and Q, all with an average of 28.5 milliRoentgens³ (mR). Typically, stations F and Q are in the slightly elevated grouping.

There were five stations in the slightly elevated group (E, J, L, M, and O) with an average of 26.3 mR. Generally, stations M and O are in the normal group. Fluctuations in the background are not unusual and are expected. These appear to be within the statistical boundaries of seasonal variations. There were eight stations (A, B, C, D, H, I, N, and P) in the normal group with an average of 23.8 mR for this quarter. It should be noted that station D had one element with an abnormally high value of 42.7 when compared to the other five element readings of 23, 24, 25, 25, and 26. The vendor performed an outlier test and rejected the data. The State conducted its own statistical outlier test and was able to reject the data point with 99% assurance.

The Maine Yankee industrial site TLDs averaged 24.1 mR, which is comparable to the routinely expected background radiation levels of 15 to 30 mR for the coast of Maine. The industrial site TLD results exhibited the expected seasonal variations with the third quarter results being slightly higher than the previous quarter. Some of the stations have background levels that are highly dependent upon tidal effects, and local geology. However, virtually all the stations display some seasonal fluctuations that are affected by the out gassing of the naturally occurring radioactive gas, Radon. However, the fourth quarter experienced unusually mild weather with much higher temperatures than normal, which may explain why the exposure values were higher than

² Thermoluminescent dosimeters (TLDs) 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.

³ A milliRoentgen (mR) is a measurement of radiation exposure in air. For a further explanation, refer to the glossary on the Radiation Program's website.

normal. Frozen ground and snow cover were not prevalent this quarter, which would have normally impeded the outgassing of Radon and yielding correspondingly lower values.

The four control TLDs that were stored at the State's Health and Environmental Testing Laboratory (HETL) in Augusta averaged about 13.1 mR. Although the storage of the control TLDs at HETL's pre-World War II steel vault lowers the natural background values, the 13.1 mR value for this quarter was slightly higher than the second quarter's control results of 11.7 mR. There appears to be no obvious reason for the increase. The controls were initially part of a program to better quantify the individual impacts of storage and transit exposures on the TLDs. However, as indicated above, they also have been instrumental in pointing out changes that normally would have not been captured if it were not for the assessment program.

As a further application of this TLD control assessment, every quarter three of the seven control TLDs received for the upcoming quarter are typically returned to the State's TLD vendor, Global Dosimetry in California, for an analysis of the transportation exposures. The initial set of results from the control TLD badges returned indicated an average of 7.1 mR for the total exposure picked up between leaving the vendor, arriving at the State and then immediately being shipped back and received by the vendor. The 7.1 mR was slightly higher than the previous quarter's reported 7.0 mR for the transit badges. Besides seasonal and daily fluctuations in the background, modest increases or decreases could be attributed to an extra few days or a few days less transit time. After four years, the State has acquired enough data on the transit badges to estimate an average of 6.5 mR for the expected transit exposure. The calculated statistics indicated that virtually all the transit data for the last four years fell within the range of the 95% confidence level. Now that the State has some assurance of what the transit exposure is, it will shift its attention to the final unknown, the storage exposure within the steel vault unit. The exposure determination will take about two years to complete with exposure assessments performed semi-annually.

The field control TLDs at Ferry Landing on Westport Island, the Edgecomb Fire Station and the roof of the State's Laboratory read 25.5, 26.3, and 22.7 mR, respectively. Historically, the Edgecomb Fire Station value is higher than the Westport Island location.

As noted in earlier reports, the State maintains an environmental air sampler on the roof of HETL for local or national events. The air sampler was extremely instrumental during the Fukushima event in Japan over three years ago in quantifying the levels of radioactivity that was coming from the crippled reactors. This year's third quarter results did not identify any unusual radioactive elements and were within historical ranges for both gross beta⁴ and Beryllium-7, a naturally radioactive cosmogenic element that is produced from cosmic rays interacting with the nitrogen and oxygen atoms in the atmosphere. The gross beta results ranged from 21.9 to 29.4 femto-curies per cubic meter (fCi/m³)⁵. A composite of the six bi-weekly air filter samples was used to measure the Beryllium-7's concentration of 50.3 fCi/m³.

For informational purposes Figure 1 on page 5 illustrates the locations of the State's 17 TLD locations in the vicinity of the ISFSI. The State's locations are identified by letters with the highest locations for this quarter as F, G, K, and Q.

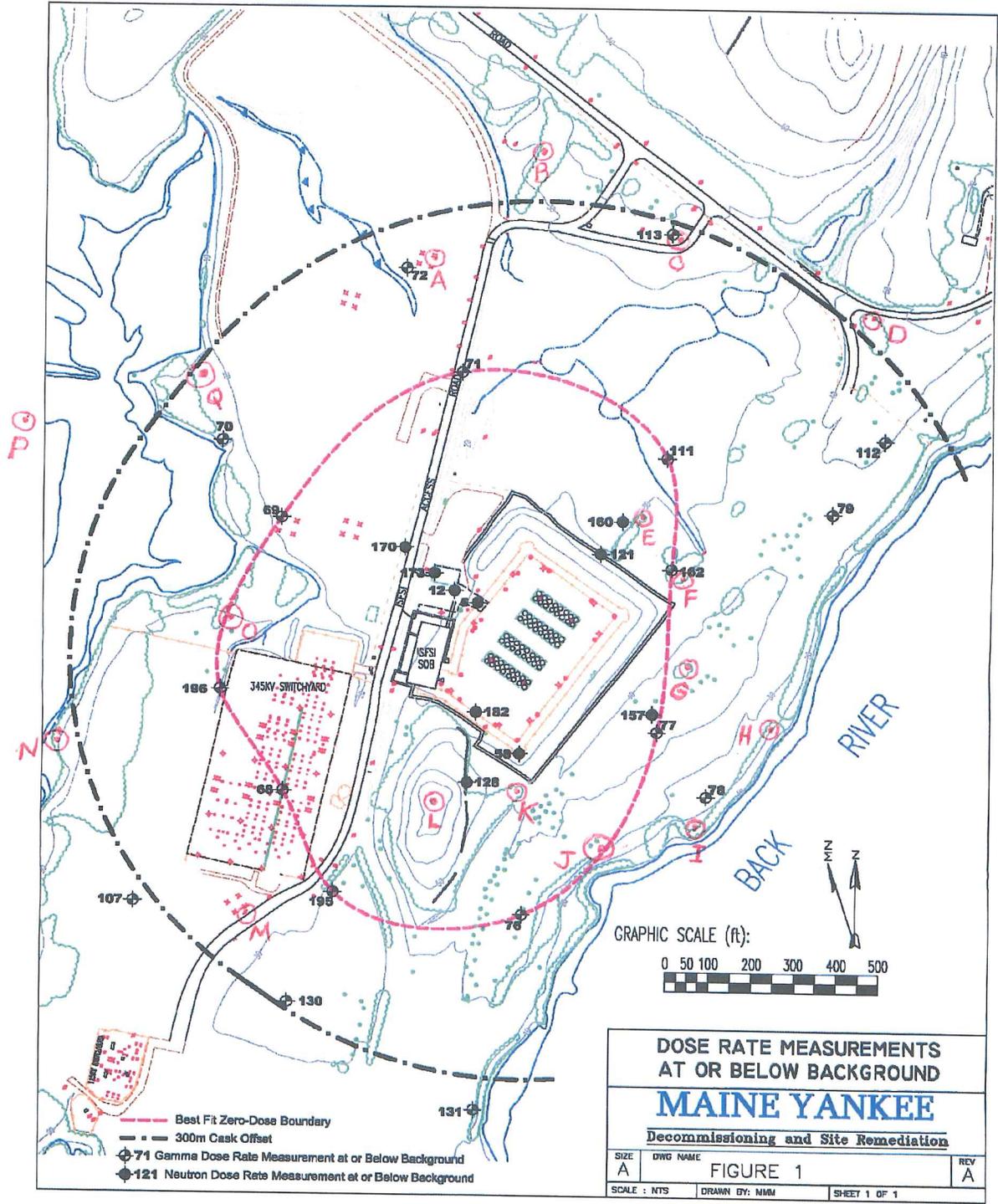
Other Newsworthy Items:

1. On February 9, DOE's National Transportation Stakeholders Forum (NTSF) held the first of three webinars on rail inspection disciplines with the NTSF's Spent Nuclear Fuel Rail/Routing Ad Hoc Working Group. The [Illinois Commerce Commission](#) presented the Transportation Bureau's Rail Safety

⁴ Gross Beta is a simple screening technique that measures the total number of beta particles emanating from a potentially radioactive sample. Refer to the glossary on the website for further information.

⁵ A fCi/m³ is an acronym for a femto-curie per cubic meter, which is a concentration unit that defines how much radioactivity is present in a particular air volume, such as a cubic meter. A "femto" is a scientific prefix for an exponential term that is equivalent to one quadrillionth (1/1,000,000,000,000,000).

Figure 1



Program. The presentation illustrated what track safety standards inspectors focused on, such as the rail, ballast and drainage, the crossties, rail alignment, the distance or gauge between the rails, vegetation infringement, switches and rail fasteners. Next, the [Oregon Rail Safety Program](#) discussed and showed what defects they encountered in the field when it came to wheels, roller bearings, trucks, couplers, draft gear, car bodies, handholds and ladder treads, end platforms, hand and power brakes, uncoupling levers, sill steps, barriers, and locomotive defects. The last presentation by the [Arizona Corporation Commission](#) elaborated on signal and train control and its evolution from the earlier years to today's electronic systems. The web links for the individual presentations can be accessed by positioning the cursor over the underlined texts and following the directions.

2. On February 12, the Nuclear Waste Strategy Coalition, the National Association of Regulatory Utility Commissioners, and the Nuclear Energy Institute co-signed a letter to the Energy Secretary expressing their concern for transparency in DOE's reporting of the Nuclear Waste Fund's status. The letter highlighted the billions of dollars that ratepayers have borne through mandated fees and taxpayers have paid for damages due to the federal government's failure to meet its contractual responsibilities. The three organizations advocated for "an annual plain-English accounting of how the money was collected and spent and how much remains" for Fiscal Year 2015. The web link for the [letter](#) can be accessed by positioning the cursor over the underlined text and following the directions.
3. On February 14, a team of British scientists announced that they discovered new cement material that was 50% better at reducing the impact of radiation than current disposal solutions. The two year experiment identified mineral phases known to absorb highly radioactive elements.
4. On February 16, DOE's Environmental Management Office issued a fact sheet on the status of the recovery efforts at the Waste Isolation Pilot Project (WIPP) after the two underground incidents involving the salt haul truck fire and radiological release in February 2014. Since the incidents, considerable progress has been made in recovering the underground work areas through key processes such as mine stability and habitability measures, initial waste panel closure, radiological risk remediation, fire suppression systems, the addition of an interim ventilation system, significant changes to all safety programs, and reinforcing emergency response capabilities. The progress has the world's only geologic repository ready to resume waste disposal operations in December of this year. The web link for the [fact sheet](#) can be accessed by positioning the cursor over the underlined text and following the directions.
5. On February 16, DOE published a report, entitled, "Nuclear Fuels Storage and Transportation Requirements Document." The report's objective was to develop a set of options and a series of supporting analyses that will inform DOE with choices on how best to manage spent nuclear fuel and high-level waste. The document established a baseline of functions and requirements for the storage and transportation portions of the nuclear waste management system, provided foundations for planning future activities, and identified intersecting points between storage and transportation systems. The web link for the [report](#) can be accessed by positioning the cursor over the underlined text and following the directions.
6. On February 17, the Nuclear Waste Technical Review Board held a meeting to discuss the DOE's research and development on the performance of high burnup spent nuclear fuel during storage and transportation. The Board heard from several experts on high burnup fuel data gaps, NRC regulations on high burnup fuel in storage and transportation, hydride reorientation occurrence and effects, testing on radial hydrides, vibrational and shaker testing on high burnup fuel simulating road conditions, bending and fatigue tests, cask demonstration program, and modeling of spent fuel drying by vacuum and gas circulation for dry cask storage. The web link for the individual [presentations](#) can be accessed by positioning the cursor over the underlined text and following the directions.

7. On February 18, DOE announced the eight locations where it will be hosting public meetings seeking public input in formulating a national consent-based siting process for communities wishing to host an interim spent fuel storage or geologic disposal facility. The first meeting is scheduled for March 29 in Chicago followed by Atlanta on April 11. The remaining six meetings will be held in Boise, Idaho; Boston, Massachusetts; Denver, Colorado; Minneapolis, Minnesota; Sacramento, California; and Tempe, Arizona. DOE was expected to complete all the public meetings by the end of July. The web link for the [news release](#) can be accessed by positioning the cursor over the underlined text and following the directions.
8. On February 18, a news article was published on a new spring model that was developed by the University of Eastern Finland. The new model can predict with good accuracy the swelling in bentonite clay at atomic-level interactions in a clay–water system. Bentonite clay is a key barrier in the deep geologic disposal of high-level nuclear waste as its main purpose is to protect waste canisters from contacting underground water and other corrosive agents such as bacteria. In addition, the plasticity of the bentonite clay helps the waste canister to stay intact against rock movements or earthquakes, making the clay’s swelling behavior vital as a buffer for disposal safety.
9. On February 19, DOE announced that they had cited two contractors, one the operator of the Waste Isolation Pilot Project (WIPP) and the other the operator of the Los Alamos National Laboratory (LANL), for violations of worker safety and health, and nuclear safety. The preliminary notices of violations were in regards to the salt haul truck fire and the radioactive release caused by inappropriate packaging material back in February, 2014. WIPP’s operator was cited for four Severity Level I and seven severity Level II violations resulting in a loss of \$7.6 million whereas the LANL operator was cited for two severity Level I and two severity Level II violations that resulted in the operator losing two years on its contract and \$57 million on its contract fees. The violation citations marked the completion of DOE’s investigation and enforcement process. The web link for the [announcement](#) can be accessed by positioning the cursor over the underlined text and following the directions.
10. On February 24, the NRC Chair forwarded his monthly status report to the House Chair on Energy and Commerce on the staff’s activities associated with the resumption of DOE’s Yucca Mountain License Application. The report summarized NRC’s accomplishments since the Appeals Court Order in August of 2013. The report also noted that the NRC staff had commenced loading the licensing support documents into the NRC’s publicly accessible library, the Agencywide Documents Access and Management System (ADAMS). In January, \$626,000 of the \$736,000 was spent on loading the support documents into ADAMS while nearly \$110,000 was spent on continuing the review of public comments to complete the final environmental impact statement supplement for Yucca Mountain. About \$2.4 million remains to complete the licensing support documents, the supplemental EIS, and the lessons learned report. The web links for the [cover letter](#) and the [status report](#) can be accessed by positioning the cursor over the underlined texts and following the directions.
11. On February 24, DOE informed the public that it had published its final environmental impact statement (EIS) for the disposal of Greater Than Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste. The report identified the different types of GTCC, both in volume and radioactivity, evaluated six federal locations, and described five disposal alternatives. The alternatives included no action, disposal at the WIPP facility in New Mexico, disposal in boreholes, disposal in a new trench system, and disposal in a new vault system. DOE’s preferred approach was disposal in the WIPP facility near Carlsbad, New Mexico. Maine Yankee has four concrete casks at the Wiscasset facility that contain GTCC waste. The web link for the EIS [summary and the five volume set](#) can be accessed by positioning the cursor over the underlined text and following the directions.
12. On February 29, the Chair of the House Committee on Energy and Commerce and the Chair of the Subcommittee on Environment and Economy forwarded a letter to the Comptroller General of the

Government Accountability Office (GAO) exhorting urgency for reconstituting the nation's nuclear waste disposal program. The Chairs asked the nonpartisan watchdog to evaluate DOE's ability to complete the Yucca Mountain licensing application. The members posed a series of six questions for GAO to address that would help the Committee gain a better understanding of DOE's nuclear waste disposal program and their ability to acquire the much needed contractor support to defend its licensing application before the NRC. The web link for the [letter](#) can be accessed by positioning the cursor over the underlined text and following the directions.

13. In February, the U.S. Nuclear Waste Technical Review Board issued to Congress and the Secretary of Energy a report titled, "Survey of National Programs for Managing High-Level Radioactive Waste and Spent nuclear Fuel: Update." The report was an update of an earlier 2009 report that described 30 technical and recognized elements of nuclear waste programs in 13 countries. The report focused on the laws and regulations governing each nation's nuclear waste programs, the availability of local host communities to exercise veto power, and technical approaches to managing and disposing spent nuclear fuel and high-level waste. The web link for the [report](#) can be accessed by positioning the cursor over the underlined text and following the directions.

Newsworthy Items Not Previously Reported

On January 6, the Social and Environmental Research Institute published a report, entitled, "Understanding Consent: Principles and Challenges for a Consent-based Process to Site Facilities for Interim and Long-term Storage of Spent Nuclear Fuel and High-Level Wastes in the United States." The report identified six key themes and fourteen challenges for consideration in the consent-based process. The themes ranged from weighing the collective interests of individuals, communities, and society to autonomy of the consent-giver to receiving adequate information and understood for both the consent-seeker and the consent-giver to obtaining consent prior to a decision or action to governing by principles that would be operationalized into specific procedural rules. Some of the challenges ranged from agreeing that action is needed to protecting the process from external pressure and coercion to socio-technical complexities to social distrust to full disclosure of information to trade-offs and expectations for negotiated agreements to voluntary consent to who issues consent to determining consent in a hierarchy of political jurisdictions to procedures for how and when consent is expressed to lacking a legally defined consent-seeker. The web link for the [report](#) can be accessed by positioning the cursor over the underlined text and following the directions.