

MAINE STATE LEGISLATURE

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November 28, 2017

MEMORANDUM

TO: Senator Michael Thibodeau, President of the Senate, and Representative Sara Gideon, Speaker of the House

FROM: Ricker Hamilton, Commissioner
Department of Health and Human Services

SUBJECT: State Nuclear Safety Inspector's August 2017 Monthly Report 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 report emphasizes local and national highlights on the storing and disposing of used nuclear fuel.

The enclosed report provides 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.

RH/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
Nick Adolphsen, Senior Health Policy Advisor
Dr. Bruce Bates, Director, Maine Center for Disease Control and Prevention
Paul Mercer, Commissioner, Department of Environmental Protection
Barry Hobbins, 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

August 2017 Monthly Report to the Legislature

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 highlights the significant activities that took place locally, nationally and, at times, internationally during the month.

Local:

- Maine Yankee submitted to the Nuclear Regulatory Commission (NRC) a revision to its Irradiated Fuel Management Plan. The changes are essentially editorial and are not considered significant. The Plan provides a general status update of spent fuel activities at the storage facility, references a schedule from its Post-Shutdown Decommissioning Activities Report on the time period for storing the spent fuel and projected a date transferring the used fuel to the Department of Energy (DOE), and affirmed that it provides an annual report to the NRC on the funding associated with managing the irradiated fuel.

National:

- Southern California Edison (SCE) and Citizens Oversight, a San Diego based civic group, announced that an out-of-court settlement was reached between the parties after Citizens Oversight sued the California Coastal Commission's approval of a twenty-year permit for SCE to expand a dry cask storage system on its beach front property at the San Onofre Nuclear Generating Station. The dry cask storage facility is located between the Pacific Ocean and the California Freeway, I-5. Under the settlement filed in Superior Court for San Diego County, SCE agreed to retain a team of experts from nuclear engineering, siting, licensing, transportation, and radiation detection and monitoring to advise SCE on how best to relocate its dry cask storage location to an offsite storage facility. The settlement stipulated that SCE formally request to solicit an agreement with the owners of the Palo Verde Nuclear Power Station in Arizona to develop an expanded storage facility at the Palo Verde Station to store San Onofre's spent fuel. SCE is a 15.8% owner of the Palo Verde Station.
- The Nuclear Waste Technical Review Board (NWTRB) forwarded their observations of the fact finding they did at two meetings on DOE's research activities related to corrosion and long-term performance of borosilicate high-level radioactive waste glass in a repository environment. The Board was interested in the three stages of glass corrosion mechanisms and rates, and the environmental factors that control these mechanisms and rates. The Board offered their observations on DOE's corrosion modeling. Although there was substantial progress, they noted that significant uncertainties remained when it came to what triggers the third stage and its resumption of a potentially higher corrosion rate. The Board remarked that DOE should continue its robust support for international collaboration and support for new and novel analytical and experimental methods to better understand the processes that control corrosion of the waste glass in a geologic repository. The Board also commented on enhancing databases by incorporating data from all sources, on the importance of long-term experiments on stage III initiation, on factoring in uncertainties in new models, maintaining bounding estimates of glass durability in standard test procedures, and the use of natural analogs from archeological and natural glass samples to validate models for high-level radioactive waste glass corrosion. The Board appreciated the international perspective from France on modeling glass performance in repository environments, the remaining challenges in measuring and modeling long-term performance of

borosilicate nuclear waste glasses, and their studies on natural and archeological glasses. The Board also provided a primer on explaining glass corrosion mechanisms and the kinetics associated with the three corrosion stages and their related rate-limiting mechanisms.

- The NRC forwarded its monthly status report to the Chair of the House Energy and Commerce Committee. The report noted the on-going updates to the collection of knowledge management reports covering technical topics in climate, hydrology, and pre- and post-closure safety assessments. The status also included some litigation work on the Texas lawsuit seeking to force the NRC to complete its licensing proceedings on Yucca Mountain. Of the \$148,780 expended, almost 97% was for updating the management reports.
- The National Transportation Stakeholders Forum Rail/ Routing Ad Hoc Working Group held a workshop in Colorado. State and tribal volunteers from different regions of the country presented their findings from their routing exercise. The Prairie Island Indian Community from Minnesota used the Canadian Pacific rail carrier to take the spent fuel from the Prairie Island Nuclear Power Plant to Kansas City. New Mexico's Energy Conservation and Management Division had two routing schemes, one in conjunction with Arizona's Radiation Regulatory Agency used the Union Pacific rail carrier and went from the Palo Verde Nuclear Power Plant in Arizona to Kansas City. The concern was the impacts to the city of Phoenix and assess options to avoid the city. The second was chosen to test the route preparedness in parts of the state not used to seeing radioactive material shipments with the Burlington Northern and Santa Fe Railway from the San Onofre Nuclear Power Plant in California to St. Louis. Illinois' Emergency Management Agency chose to test the route with the Union Pacific from the Zion Nuclear Station to Denver and evaluate the impacts to the city of Chicago as well as options on how to avoid it. Vermont's Public Service Department chose the short-line railroad from the Vermont Yankee Nuclear Power Plant to the CSX Transportation interchange in Palmer, Massachusetts to St. Louis. Tennessee's Emergency Management Agency also used the rail carrier CSX Transportation from the Robinson Nuclear Power Plant in South Carolina to Memphis, Tennessee. The Arkansas Department of Health representative chose Union Pacific to travel from the Arkansas Nuclear Power Plant to Kansas City. In addition, the four major rail carriers presented their perspective on how routes would be chosen on their rail lines for spent fuel shipments based on safety and risk evaluations. As part of the workshop the Group also toured the Transportation Technology Center Incorporated, a railroad research and testing facility in Pueblo, Colorado.
- The NWTRB forwarded their review of the DOE's High Burnup Dry Cask Storage Research and Development Program test plan. The Board applauded the simplified, phased approach since it improved transparency and flexibility for this unique opportunity for destructive classification of high-burnup spent fuel rods. The Board provided several suggestions to improve the test plan. They recommended establishing goals for testing the rods at 750 degrees F, identifying models and the test data that the models will use to allow the results to extend to other types of high-burnup fuel, clarifying what was meant by testing six inch defueled segments and at least one grid spacer, and providing "logic for the time sequence of executing the planned tests." The Board also recommended preserving the documentation related to the sister rods and storing the sister rods so that their characteristics are not changed during storage.