

MAINE STATE LEGISLATURE

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An Office of the
Department of Health and Human Services

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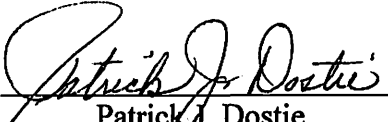
October 28, 2009

To: Honorable Ms. Elizabeth Mitchell, President of the Senate
Honorable Ms. Hannah Pingree, Speaker of the House

Subject: State Nuclear Safety Inspector Office's September 2009 Monthly Report to the Maine
Legislature

New legislation was enacted in the second regular session of the 123rd and signed by Governor John Baldacci last spring 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 facility located in Wiscasset, Maine.

Enclosed please find the Inspector's September 2009 monthly activities report. Should you have questions about its content, please feel free to contact me at 207-287-6721, or e-mail me at pat.dostie@maine.gov.


Patrick J. Dostie
State Nuclear Safety Inspector

Enclosure

cc:

Mr. E. William Brach, U.S. Nuclear Regulatory Commission
Ms. Nancy McNamara, U.S. Nuclear Regulatory Commission, Region I
Mr. James Connell, Site Vice President, Maine Yankee
Ms. Brenda Harvey, Commissioner, Department of Health and Human Services
Mr. Geoff Green, Deputy Commissioner, Department of Health and Human Services
Ms. Lucky Hollander, Director of Legislative Relations, Department of Health and Human Services
Dr. Dora Mills, Director, Maine Center for Disease Control and Prevention
Mr. Patrick Ende, Senior Policy Advisor, Governor's Office
Mr. David Littell, Commissioner, Department of Environmental Protection
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Mr. Jay Hyland, PE, Manager, Radiation Control Program

State Nuclear Safety Inspector Office

September 2009 Monthly Report to the Legislature

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 123rd Legislature, the foregoing is the monthly report from the State Nuclear Safety Inspector under this new legislation.

The State Inspector's individual activities for the past month are highlighted under certain broad categories, as *illustrated below*. Since some activities are periodic and on-going, there may be some months when very little will be reported under that category. It is recommended for reviewers to examine previous reports to ensure connectivity with the information presented as it would be cumbersome to continuously repeat prior information in every report.

Since the footnotes are expanded definitions of some scientific terms, for simplicity they were placed in a glossary at the end of the report. In addition, to better understand some of the content of the topics, some effort was placed in providing some historical information. However, for the time being this historical context will be provided as an addendum to the report.

Independent Spent Fuel Storage Installation (ISFSI)

During September the general status of the ISFSI was normal. There were two instances of spurious alarms due to environmental conditions. All alarms were investigated and no further actions were warranted.

There were no fire or security related impairments in September. There were, however, six security events logged. Three were due to environmental conditions with the remaining three involving hardware issues. Compensatory measures were instituted in all cases. One issue was due to a failed unit that was replaced. The remaining two issues required some adjustments to the hardware.

There were 11 condition reports¹ (CRs) for the month of September. The first CR was written on September 9th to address inconsistent Vendor response protocols. The Vendor protocol issue has been resolved with hardware upgrades being evaluated to minimize the reoccurrence of similar events. A second CR was written on September 10th for a sewer problem. The problem was due to a leaking flush valve/flange inside a sewer manhole. The manhole was pumped out and the valve/flange replaced. The third and fourth CRs were written on September 12th. The first dealt with a sewer alarm and the second involved the sewer main. The sewer high level alarm light was found disconnected as a result of the locker room renovation. A work order was generated to reconfigure the installation of the alarm indicator. The second was due to the main gate valve preventing flow through the sewer main. The gate valve was replaced and the system is back in service.

The fifth and sixth CRs were written on September 14th for administrative issues that were uncovered during the fuel classification project. The classification project is to ensure that the Maine Yankee spent fuel, which was previously classified in accordance with Maine Yankee and Nuclear Regulatory Commission criteria, is further evaluated to meet Department of Energy regulations concerning classification criteria of spent nuclear fuel. The first was for inconsistent location documentation for 24 thimbles in fuel assemblies. Thimbles are sleeves inserted into the center guide tube of fuel assemblies which allowed for the insertion of in-core instruments (detectors) from

¹ Refer to page 7 in the Glossary.

the bottom of the fuel assembly to monitor the neutron flux inside an operating reactor. The second involved a label error that was discovered for one of the fuel load sequences. Corrective actions are in progress for both CR's. A seventh CR was written on September 18th for an equipment issue. The flail mower was incorrectly used to cut tall and thick grass, and it bound up. The mower was cleaned and returned to service. An eighth CR was written on September 19th for a few drips of gasoline onto a cement pad. The leakage resulted from a gas valve being left open and the fitting dripping intermittently. The container was taken out of service and the wet area of the cement pad was cleaned up with an absorbent pad. A ninth CR was written on September 23rd due to two pages missing from the Training and Qualification portion of the Security Plan. The pages are not safeguard related and therefore do not contain security sensitive information. Apparently, when the original document was copied, these two pages were not properly copied. The missing information was copied and placed in the copied Plan. A tenth CR was written on September 26th for a loose bolt on the three point hitch connections of the bush hog. The loose bolt was tightened. An eleventh CR was written on September 29th on the scheduled fire extinguisher surveillance. The procedure change was not updated electronically on the system, which resulted in a new extinguisher missing its surveillance. The issue was corrected the same day.

Other ISFSI Related Activities

On September 3rd Maine Yankee submitted its Annual Special Nuclear Material (SNM) Report for 2009 to the Nuclear Regulatory Commission (NRC). Last month Maine Yankee submitted the same report to NAC International, who is the NRC licensed Certificate of Compliance holder of the multipurpose canister systems used for storage of the spent fuel at Maine Yankee. The SNM report provides the accounting for the residual fissionable fuel at the ISFSI.

On September 3rd Maine Yankee submitted to the NRC its physical security plan for the ISFSI. The submittal was in response to a complete reformatting of the Plan. Since no physical security changes were made, there was no decrease in the effectiveness of the Plan.

On September 3rd Maine Yankee provided comments to the Riverbank Power Corporation from Toronto, Canada, on its proposed underground riverbank project, north of the ISFSI. Maine Yankee's comments focused on the potential effects that blasting and excavation could have on the ISFSI, the electrical grid, the groundwater flow and sampling program, and potential security issues.

On September 29th Maine Yankee resubmitted to the NRC its physical security plan for the ISFSI. Apparently, the September 3rd submittal overlooked the addition of one critical task to the Training and Qualification Chapter of the Plan.

As of September 30th the maintenance on nine of the 64 vertical concrete casks (VCC's) was completed. The VCC maintenance is expected to continue for another year as the maintenance is weather and temperature dependent.

Environmental

In addition to its periodic air sampling at the old Bailey Farm House, the State's Radiological Environmental Monitoring Program (REMP) results from the June 30th quarterly sampling regimen of freshwater, saltwater, and seaweed along with the first quarter's results are illustrated in Table 1 on page 3. The State's Health and Environmental Testing Laboratory (HETL) analyzes the samples and employs various analytical methods to measure the particular radioactive elements. Except for Iodine-131² (I-131), all the positive results reported highlight naturally occurring background levels and ranges. There are seasonal variations, but these would be

² The long form of writing out the radioactive species is its name and its corresponding mass number, such as Iodine-131. However, in scientific shorthand the name is usually abbreviated by using its chemical element symbol from the Periodic Table of the Elements and its mass number, for example Iodine-131 is equivalent to I-131.

difficult to point out with only two data points. When additional surveillance results become available the data will be plotted to illustrate trends.

Table 1 – REMP Media Results

Media Type	Positive Results	Quarterly Sampling Period	
		1 st Quarter 2009	2 nd Quarter 2009
<u>Freshwater</u>	Gross Beta ⁽³⁾ Tritium (Hydrogen-3 or H-3)	1.09 pCi/L ⁽⁴⁾ BIDC pCi/L	1.06 pCi/L BIDC
<u>Seawater</u>	Tritium (H-3) Potassium-40 (K-40)	BIDC* 90.2 pCi/kg ⁽⁵⁾	149 pCi/L 159 pCi/kg
<u>Seaweed</u>	Beryllium-7 (Be-7) Potassium-40 (K-40) Iodine-131 (I-131)	136 pCi/kg 4,150 pCi/kg BIDC	69.6 pCi/kg 5,230 pCi/kg 46.1 pCi/kg
Air Filters	Gross Beta (range) Quarterly Composite (Be-7)	17.8 - 40.2 fCi/m ³ 93.5 fCi/m ³	8.6 - 26.2 fCi/m ³ ⁽⁶⁾ 95.7 fCi/m ³
Air Filters (Control)	Gross Beta (range) Quarterly Composite (Be-7)	OOS** OOS**	10.3 - 29.3 fCi/m ³ 88.7 fCi/m ³

* BIDC = Below Instrument's Detection Capability

** OOS = Out of Service (Air sampler was repaired and unit returned to service on April 7, 2009)

Besides the bi-weekly gross beta analysis a quarterly composite of the air filters is evaluated for the gamma energy fingerprints of most radioactive elements. The gross beta values reported are comparable to the historical values seen at Maine Yankee and at the control station on the roof of the Health and Environmental Testing Laboratory.

The Iodine-131 that was found does not originate from Maine Yankee. With a half-life⁷ of about 8 days, all the available I-131 inventory on-site since the plant last operated in December of 1996, including that in the spent fuel, would have physically disappeared from the plant site by the summer of 1998. The source is most likely from the Wiscasset Municipal Waste Treatment System. Patients at nearby hospitals are sometimes injected with radioactive Iodine for thyroid scans or uptakes. When the patients return home and use their bathroom facilities, the waste water containing the I-131 is channeled to their local wastewater treatment plant. The treated water is then discharged into the bay and the I-131 is eventually picked up by the seaweed. Seaweed is a very efficient bio-accumulator for numerous elements and therefore, a good indicator of environmental contaminants.

³ Refer to page 7 in the Glossary.

⁴ Refer to page 8 in the Glossary.

⁵ Refer to page 8 in the Glossary.

⁶ Refer to page 7 in the Glossary.

⁷ Refer to page 7 in the Glossary.

Tritium (Hydrogen-3 or H-3) and Beryllium-7 (Be-7) are both naturally occurring “cosmogenic” radioactive elements, which mean they are continuously being produced by cosmic-ray interactions in the atmosphere. Be-7 is produced from the high-energy cosmic rays bombarding the oxygen, carbon and nitrogen molecules in the atmosphere. Besides being naturally produced, Tritium is also a man-made element as it is a by product of the fission and neutron activation processes in nuclear power plants.

Since Potassium-40 (K-40) has such a long half life, approximately 1.3 billion years, it is a “primordial” radioactive element, which means it has survived in detectable quantities in the earth’s crust since the formation of the earth. Generally speaking K-40 is not normally found in freshwater, but it is readily detected in saltwater due to minerals being washed into streams and rivers and ultimately emptying into the ocean.

Maine Yankee Decommissioning

At present, there are eleven confirmatory reports that are essentially complete. Due to the extensive delays in finalizing the last report including on-going commitments and emerging issues, the confirmatory summary report is now expected to be finalized in November.

Groundwater Monitoring Program

The results from Maine Yankee’s June groundwater sampling indicated that six wells of the 16 wells monitoring the former industrial portion of the site had plant derived radioactive elements. Each of the six wells had one of the radioactive elements. The elements were Tritium, (a form of heavy hydrogen usually denoted as H-3), Cobalt-57, Ag (Silver)-110m, Iodine-131, Cerium-144 and Europium-152. Besides Tritium, the presence of the other radioactive elements is suspect. However, to be conservative, Maine Yankee calculated an effective projected dose for each radioactive element, except for the Iodine-131. The doses ranged from a low of 0.0003 mrem⁸ for Cobalt-57 to a high of 1.09 mrem for Tritium. The reason that Iodine-131 was excluded from the dose computation is due to its short half life of about 8 days and its presence is questionable as explained in the Environmental Section. The high Tritium concentration in well MW-502 continues, but it is slowly decreasing from its peak concentration of 59,570 pCi/L⁹ in March of 2006 to its current value of 36,140 pCi/L. Due to the well’s low yield and infiltration rate it is expected that it will take a few years before the concentration decreases to a level below the Environmental Protection Agency’s groundwater concentration limit of 20,000 pCi/L.

Other Newsworthy Items

1. On September 8th the Nuclear Regulatory Commission’s (NRC) announced that its Atomic and Safety Licensing Board will hold a pre-hearing conference in Las Vegas on September 14-15 to discuss scheduling and other case management issues for the adjudicatory hearing on the Department of Energy’s license application for the proposed Yucca Mountain nuclear waste repository.
2. On September 9th the Nuclear Waste Strategy Coalition held a conference call to discuss congressional activities relative to the FY 2010 budget for the Department of Energy and the Nuclear Regulatory Commission and its impact on the Yucca Mountain license application, on Senators Ted Kennedy’s and John Kerry’s letter to Energy Secretary Chu and Dr. Chu’s affirmative response to appointing “a member with expertise in spent fuel management at decommissioned plants.” Copies of letters from Senators Kennedy and Kerry, and Dr. Chu are available in the August monthly report to the Legislature.

⁸ Refer to page 8 in the Glossary.

⁹ Refer to page 8 in the Glossary.

3. On September 10th the NRC's Atomic Safety Licensing Board Panel Construction Authorization Board has recognized the councils of the Shoshone and Paiutes as having legal standing for the purpose of being a party to the Yucca Mountain case. Initially, the panel had declined them status, but on appeal the Tribes were able to demonstrate that they would be directly affected by the proposed waste repository.
4. On September 14th Senators Lieberman and Dodd from Connecticut co-signed a letter to the Chairman and Ranking Member of the Senate's Committee on Appropriations Subcommittee on Energy and Water Development requesting special consideration of the single unit decommissioned reactor sites by including representation on the proposed Blue Ribbon Panel. A copy of their letter is attached at the end of the report.
5. On September 14th the State of Nevada filed five new challenges to the Department of Energy's license application to build a geologic repository at Yucca Mountain. The contentions involved how fast a special alloy for waste containers will corrode, the logic of waiting 75 years to install titanium drip shields for water intrusion, and the amount of water infiltrating the repository and eroding the waste containers sooner than expected. The remaining two challenges were related to future volcanic activity at the Yucca Mountain site.
6. On September 15th the NRC published in the Federal Register its proposed changes to its licensing requirements for the storage of spent nuclear fuel. The proposed rule would formalize the initial and renewal terms of an ISFSI license up to 40 years instead of the present duration of 20 years. In addition, it would also allow licensees to make changes to previously loaded casks and their initial certificates to those of an amended certificate of compliance without further NRC concurrence. Currently, licensees must request exemptions to their previously loaded casks.
7. On September 16th a Department of Energy spokeswoman proclaimed that the DOE is "planning to make an announcement soon" on the composition of the Blue Ribbon Panel, but declined to elaborate further.
8. On September 23rd the quarterly conference call of the Federal Energy Regulatory Commission (FERC) rate case settlement briefings relevant to Maine Yankee, Connecticut Yankee and Yankee Rowe in Massachusetts. The briefings provide updates to both state and private officials in the states affected by the FERC settlements on the status of the Yankee companies' lawsuits as well as regional and national issues on spent nuclear fuel storage.
9. On September 23rd, after 20 years of providing technical overviews of a proposed repository at Yucca Mountain, the Nuclear Waste Technical Review Board, established in 1987 by Congress, departed from the proposed repository and started discussing ways of reusing the spent fuel. Discussions focused on different ways to sort out the components of nuclear waste, on burying some, recycling others for use as fuel, and by putting some in reactors to transform the waste into materials easier to handle.
10. In a September 29th article from the Richmond Times-Dispatch 16 federal sites feared being the alternative to Yucca Mountain. The defense related waste includes the wastes from the production of nuclear weapons dating back to World War II Manhattan Project, from used nuclear fuel from reactors that produced plutonium and from the spent fuel from naval ships and submarines powered by nuclear reactors. The high level radioactive waste is stored at 16 federal sites in 13 states, though most of it is stored at three sites, Hanford in Washington, Idaho National Laboratory and the Savannah River Site in South Carolina.
11. On September 30th the Nuclear Waste Strategy Coalition held a second conference call on the appointment of the House Conferees to the FY2010 Energy & Water Appropriations Committee that will cover the Yucca Mountain Project and the licensing reviews performed by the Nuclear Regulatory Commission (NRC), the two NRC Commissioners perspective on the NRC's forthcoming waste confidence rule, the proposed Blue Ribbon Panel or possibly a Presidential Commission instead, and the Congressional Budget

Office's Nuclear Waste fund Fee proposal to Congress. Both NRC Commissioners advocated deferring action until additional information and insights are gathered to arrive at a more informed decision, whereas the Chair opted to go forward with the staff's position that disposal capacity will be available 50 to 60 years beyond the operating life of a nuclear power plant.

Other Noteworthy Items:

1. On July 16th Kim Cawley from the Congressional Budget Office testified before the U.S. House of Representatives' Committee on the Budget on the Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act. Ms. Cawley stated that, since 1983 to the end of 2008, \$16.3 billion had been collected from electric utilities that generate civilian nuclear waste through a disposal assessment fee of 0.1 cents per kilowatt-hour. The interest credited over the same time period to the Nuclear Waste Fund established by Congress in 1983 amounted to \$12.8 billion for a total of \$29.1 billion. As of the end of 2008 \$7.1 billion had been disbursed from the Fund, which left a balance of \$22 billion. The Congressional Budget Office estimates that in 2009 nearly \$800 million will be collected from fees with about \$1.2 billion in interest being credited to the Fund for a total of \$2 billion. The projected expenditures for 2009 will total \$200 million. On defense related wastes \$3.6 billion has been appropriated by Congress from 1983 through 2008 with \$100 million being appropriated in 2009. The remainder of the testimony focused on the liabilities that the federal government is accruing due to damage claims filed by electric utilities on the federal government's 1998 breach of its contracts to take the spent fuel. The claims against the federal government are paid out of a taxpayer subsidized Judgment Fund. It is estimated that if a repository were to open and accept waste in 2020 the taxpayers' liabilities from the lawsuits would amount to \$12.3 billion in today's dollars and that further payments would be expected from the Judgment Fund for a number of decades beyond 2020. If no repository is available to receive wastes, then federal liabilities will remain substantial for decades to come.

Glossary

Condition Report (CR): A report that promptly alerts management to potential conditions that may be adverse to quality or safety. The report is generally initiated by a worker at the ISFSI facility. The report prompts management to activate a process to identify causal factors and document corrective and preventative measures stemming from the initial report.

Decay Series: There are three naturally occurring decay series of heavy elements that transform into a series of various radioactive elements by releasing energy in the form of particles, (such as alpha or beta), and/or gamma rays to end in a stable form of non-radioactive Lead. All three decay series start with extremely long lived radioactive, heavy elements that can be measured in geologic time units. They are Uranium-238 with an approximate half-life of 4.5 billion years, Uranium -235 with a half-life of about 700 million years, and Thorium-232 with a half-life of 14 billion years. All three series contain some more well-known radioactive species, Radium and Radon.

Dose is the amount of radiation that is absorbed by a person's body. In the radiation field the term dose is sometimes used interchangeably with dose equivalent, which is defined as the rem and described below.

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 curie, named after its discoverers Pierre and Marie Curie, is defined as the rate at which a radioactive element transforms itself into another element that is most often another radioactive element. It is mathematically equivalent to 37 billion disintegrations or transformations per second. A "femto" is a scientific prefix for an exponential term that is equivalent to one quadrillionth (1/1,000,000,000,000,000).

Half-life is a measure of how fast half the mass of a radioactive element will transform itself into another element. Each radioactive element has its own unique rate of transformation. Consequently, if a radioactive element, such as Iodine-131 has a half-life of 8 days, then in 8 days half of the original amount of Iodine-131 will be gone; in another 8 days half of that half will be left and so on.

Gamma Spectroscopy is a scientific method used to analyze gamma rays emanating from radioactive elements. The analytical system determines the gamma ray energy which acts as a "fingerprint" for specific radioactive materials. For example, Potassium-40 (K-40) has a very, distinctive gamma energy at 1460 keV. This uniqueness allows the instrument to positively identify the K-40 1460 energy as its own unique fingerprint. A keV is an abbreviation for kilo electron volt, which is a measure of energy at the atomic level. A kilo is a scientific prefix for the multiplier 1,000.

Gross Beta is a simple screening technique employed to measure the total number of beta particles emanating from a potentially radioactive sample, with higher values usually indicating that the sample contains natural and/or man-made radioactive elements. High values would prompt further analyses to identify the radioactive species. A beta is a negatively charged particle that is emitted from the nucleus of an atom with a mass equal to that of an orbiting electron.

Liquid Scintillation is an analytical technique by which Tritium and many other radioactive contaminants in water are measured. A sample is placed in a special glass vial that already contains a special scintillation cocktail. The vial is sealed and the container vigorously shaken to create a homogeneous mix. When the tritium transforms or decays it emits a very low energy beta particle. The beta interacts with the scintillating medium and produces a light pulse that is counted by the instrument. Although a different scintillation cocktail is used, this is basically how radon in well water is measured.

mrem or millirem is one thousandth (1/1000) of a rem. The rem is defined below.

milliRoentgen (mR) is one thousandth (1/1000) of a Roentgen, which is defined below.

pCi/kg is an acronym for a pico-curie per kilogram, which is a concentration unit that defines how much radioactivity is present in a unit mass, such as a kilogram. A “pico” is a scientific prefix for an exponential term that is equivalent to one trillionth (1/1,000,000,000,000).

pCi/L is an acronym for a pico-curie per liter, which is a concentration unit that defines how much radioactivity is present in a unit volume, such as a liter.

Rem is an acronym for roentgen equivalent man. It is a conventional unit of dose equivalent that is based on how much of the radiation energy is absorbed by the body multiplied by a quality factor, which is a measure of the relative hazard of energy transfer by different particles, (alpha, beta, neutrons, protons, etc.), gamma rays or x-rays. In comparison the average natural background radiation dose equivalent to the United States population is estimated to be 292 millirems per year, or 0.8 millirem per day, with 68 % of that dose coming from radon. A millirem is one thousandth, (1/1000), of a rem.

Roentgen is a special unit of exposure named after the discoverer of X-Rays, Wilhelm Roentgen. It is a measure of how much ionization is produced in the air when it is bombarded with X-Rays or Gamma Rays. Ionization is described as the removal of an orbital electron from an atom.

Skyshine is radiation from a radioactive source that bounces off air molecules in the sky, much like a cue ball does off the banking of a billiard table, and is scattered/redirected back down to the earth.

Thermoluminescent Dosimeters (TLD) are very small plastic-like phosphors or crystals that are placed in a small plastic cage and mounted on trees, posts, etc. to absorb any radiation that impinges on the material. Special readers are then used to heat the plastic to release the energy that was stored when the radiation was absorbed by the plastic. The energy released is in the form of invisible light and that light is counted by the TLD reader. The intensity of the light emitted from the crystals is directly proportional to the amount of radiation that the TLD phosphor was exposed to.

Tritium (Hydrogen-3 or H-3) is a special name given to the radioactive form of Hydrogen usually found in nature. All radioactive elements are represented as a combination of their chemical symbol and their mass number. Therefore, Tritium, which is a heavy form of the Hydrogen molecule with one proton and two neutrons in the nucleus of its atom, is abbreviated and represented by its chemical symbol, H, for Hydrogen and 3 for the number of particles in its nucleus, or mass number. Similarly, other radioactive elements, such as Potassium-40, can be represented and abbreviated as K-40, and so on.

Addendum

Historical Perspectives

Independent Spent Fuel Storage Installation (ISFSI)

In 1998 the Department of Energy (DOE) was required to take title and possession of the nation's spent nuclear fuel as mandated by the Nuclear Waste Policy Act (NWPA) of 1982. When the NWPA was enacted, Congress assumed that a national repository would be available for the disposal of the spent fuel. Since the licensing and construction of the high level waste repository at Yucca Mountain in Nevada had experienced significant delays, DOE is currently projecting that the Yucca Mountain site will not be available until at least the year 2020 or later.

DOE's inaction prompted Maine Yankee to construct an ISFSI during decommissioning to store the more than 1434 spent fuel assemblies that were previously housed in the spent fuel pool in the plant, into 60 storage casks on-site. Another four casks contain some of the more radioactive components of the reactor internals that were cut up during decommissioning, since their radioactive concentrations were too high to dispose at a low level radioactive waste facility. These are expected to be shipped along with the spent fuel to the Yucca site should the repository open. Since then the Obama Administration and Energy Secretary Chu have advocated that the Yucca Mountain site is no longer a viable option for disposing of the nation's high level waste and spent nuclear fuel and plan to assemble a Blue Ribbon Panel of experts to review alternative strategies for managing these waste forms.

Environmental

Since 1970 the State has maintained an independent, radiological environmental monitoring program of the environs around Maine Yankee. Over the years there was an extensive quarterly sampling and analysis program that included such media as salt and fresh water, milk, crabs, lobsters, fish, fruits, vegetables, and air. Since the decommissioning the State's program has been reduced twice to accommodate decreased revenues for sample analyses at the State's Health and Environmental Testing Laboratory (HETL). Presently, the State monitors one freshwater location, one saltwater and seaweed location, and one air sample location. The State maintains a quarterly sampling regimen, except for the air sample, which is performed bi-weekly near the old Bailey Farm House. Besides the media sampling, over the years the State has maintained a robust thermoluminescent dosimeter (TLD) program to measure the radiation environment. The TLDs were placed within a 10 to 20 mile radius of the plant to measure the background radiation levels and later, when the plant was operating, any potential increases in background levels due to plant operations. Over time the number of TLDs nearly doubled to address public concerns over the clam flats in Bailey Cove and the construction of the ISFSI. After the plant's decommissioning the State reduced the number of TLDs around Bailey Cove, but maintained the same number for the environmental surveillance of the ISFSI. A further evaluation of reducing the State's radiological environmental monitoring program is planned for the fall of 2009.

Maine Yankee Decommissioning

Maine Yankee's decommissioning was completed in the fall of 2005. At that time the State Nuclear Safety Inspector (SNSI) also commenced his final walk down survey of the site. Certain areas such as the transportation routes exiting the plant site were surveyed after the plant industrial area was decommissioned. Due to the length of the egress routes, it took a considerable amount of time to complete both half-mile east and west access routes and the two thirds of a mile of the railroad track. In addition, seven specific areas, including the dirt road, were also examined as part of the final site survey. The State's final survey of the dirt road leading to the old softball field

was extended in the fall of 2007 when the State discovered three localized elevated areas on the road that were contaminated. At that time, extensive bounding samples were taken to determine the extent of the contamination.

Because of the State's findings the original Class III designation of little or no potential for small areas of elevated activity was deemed incorrect. Therefore, the Dirt Road systematic sampling was necessary to ensure that all the State's findings would still pass Maine Yankee's License Termination Plan (LTP) Class I criteria. The State and Maine Yankee findings both indicated that the random concentration of the Cesium-137 was low and comparable to what is normally found in nature from past weapons testing during the 1950's and 1960's. On October 31st the State issued a letter to Maine Yankee stating that, based on the recent systematic sampling and bounding efforts on the elevated areas, the results demonstrated that Maine Yankee had met its Class I LTP criteria. Therefore, the State concluded that there were no further outstanding issues relative to the Dirt Road and considered the issue closed. Even though some residual radioactivity remains, due to the localized nature of the contaminant and the restricted security access to the site, the contamination found does not present a public health hazard.

With the closure of the Dirt Road, the only remaining walk down survey left to be performed on-site is the portion of the East Access Road adjacent to the ISFSI bermed area. This area remains as the background radiation levels from the ISFSI were initially too high to survey, (greater than 30,000 counts per minute), and could mask potential elevated areas. Since then the State has been monitoring the levels every spring and has observed a steady decrease in the ambient radiation levels down to 25,000 counts per minute (cpm). When the levels reach about 20,000 cpm the area will be surveyed to close out all transportation routes at the Maine Yankee site.

The State will publish its decommissioning findings in a confirmatory summary that is expected in October of 2009. As part of that process the State will condense over 40 major survey areas into eleven confirmatory reports that are being worked on by an outside consultant. The independent consultant has been collecting all the State's findings and summarizing them in confirmatory reports that the State Nuclear Safety Inspector will use to complete the State's confirmatory summary.

Groundwater Monitoring Program

In June of 2004, the State, through the Department of Environmental Protection's (DEP) authority under 38 MRSA §1455, signed an agreement with Maine Yankee for a five year, post decommissioning radiological groundwater monitoring program at the site. Presently, the program is in its fourth year. The details of how the agreement would be carried out relative to the quality assurance facets of the monitoring, sampling and analyses would be captured in Maine Yankee's Radiological Groundwater Monitoring Work Plan.

The normal sampling regimen for the groundwater monitoring program is March, June and September of each year. However, since the first sampling took place in September of 2005, the annual sampling constitutes the September sampling of the current calendar year and finishes with the June sampling of the following year.

It should be noted that the Agreement between the State and Maine Yankee set an administrative limit of 2 mrems per year per well as a demonstration that it has met the State's groundwater decommissioning standards of a 4 mrem dose per year above background values. If a well exceeds the 2 mrem value after the five year monitoring program ends, Maine Yankee would allow the State to continue monitoring that well. To-date fifteen of the sixteen wells sampled have not exceeded one tenth of the limit, or 0.2 mrems/yr. Only well number MW-502 has come close to exceeding the 2 mrems administrative limit and that was back in March of 2006 when the dose was 1.96 mrems. Since then the Tritium in this well has been steadily decreasing. It is expected that this well will remain elevated for some time as the water infiltration rates are very low. Consequently, the decrease *will be slow and steady*.

JOSEPH I. LIEBERMAN
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September 14, 2009

Senator Byron Dorgan, Chairman
Committee on Appropriations
Subcommittee on Energy and Water Development
The Capitol, S-128

Senator Robert Bennett, Ranking Member
Committee on Appropriations
Subcommittee on Energy and Water Development
The Capitol, S-128

Dear Chairman Dorgan and Ranking Member Bennett:

As you finalize the Energy and Water Appropriations Act of 2010, we urge that any language pertaining to the proposed Blue Ribbon Commission on nuclear reactor sites remain mindful of the special circumstances confronting decommissioned nuclear reactor sites. We think it is essential that national nuclear waste policy consider the storage issues surrounding their unique situation.

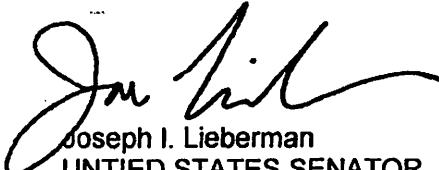
Specifically, we ask that you consider including House report language requiring the proposed Commission to include representation from decommissioned reactor sites. The provision is on page 121 of House Report 111-203: ["Additionally, the Committee directs that the proposed Blue Ribbon Commission shall include an appropriate level of representation of decommissioned reactor sites to ensure their interests are considered in the formulation of a national nuclear waste policy."]


A number of independent reviews of our nation's civilian nuclear energy and disposal programs have consistently recognized that the removal of the nuclear waste material from decommissioned reactor sites needs urgent attention. We believe the Commission should recognize that permanently shutdown single-unit reactor sites, such as the Connecticut Yankee facility in our state, face a unique set of circumstances with regard to waste management and acknowledge that these sites merit distinct treatment for that reason. Once sites like Connecticut Yankee are decommissioned, spent fuel and high-level waste are still stored there. As a result, they cannot be considered for a full range of subsequent productive uses.

As the Blue Ribbon Commission examines the next steps in our nation's spent fuel management program, it is vitally important that single-unit decommissioned sites such as Connecticut Yankee are assured full consideration by the Commission.

We thank you for your consideration of this important request.

Sincerely,


Joseph I. Lieberman
UNITED STATES SENATOR


Christopher J. Dodd
UNITED STATES SENATOR