Paul R. LePage, Governor Mary C. Mayhew, Commissioner

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November 4, 2011

MEMORANDUM

TO: Senator Kevin Raye, President of the Senate, and Representative Robert Nutting, Speaker of the House

FROM: Mary Mayhew, Commissioner
Department of Health and Human Services

SUBJECT: State Nuclear Safety Inspector's August 2011 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 focuses on activities at the site and includes highlights of the national debate on storing and disposing the used nuclear fuel.

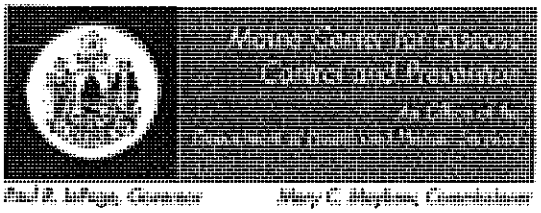
The enclosed report provides the information required under Title 22 of the Maine Revised Statutes Annotated §666, as enacted under Public Law, Chapter 539, in the second regular session of the 123rd Legislature.

Should you have questions about its content, please feel free to contact Mr. Patrick J. Dostie, State Nuclear Safety Inspector, at 287-6721.

pjd

Enclosure

cc: Vonna Ordaz, U.S. Nuclear Regulatory Commission
Monica Orendi, U.S. Nnclear Regulatory Commission, Region I
James Connell, Site Vice President, Maine Yankee
Katrin Teel, Senior Policy Advisor, Governor's Office
Sheila Pinette, DO, Director, Maine Center for Disease Control and Prevention
Patricia W. Aho, Acting Commissioner, Department of Environmental Protection
Richard Davies, Maine Public Advocate
Major Christopher Grotton, Special Services Unit, Maine State Police
Nancy Beardsley, Director, Division of Environmental Health
Jay Hyland, PE, Manager, Radiation Control Program



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September 20, 2011

To: Honorable Mr. Kevin L. Raye, President of the Senate
Honorable Mr. Robert W. Nutting, Speaker of the House

Subject: State Nuclear Safety Inspector Office's August 2011 Monthly Report to the Maine Legislature

As part of the State's long standing oversight of Maine Yankee's nuclear activities, legislation was enacted in the second regular session of the 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 Maine Yankee Independent Spent Fuel Storage Installation facility located in Wiscasset, Maine.

Enclosed please find the Inspector's August 2011 monthly activities reports. The local highlights involve the State's closure on decommissioning surveys and the acceptance of the groundwater results from the five year monitoring program. The national highlights for August include:

- The host county for the Yucca Mountain Project, Nye County in Nevada, joined the states of Washington and South Carolina, Aiken County in South Carolina, the National Association of Regulatory Utility Commissioners, and three business leaders from the Tri-City area near the Hanford Resrvation in Washington in a lawsuit to prevent the dismantling of the Yucca Mountain repository in Nevada.
- The U.S. Court of Federal Appeals for the Federal Circuit upheld the decision of the Court of Federal Claims which had ruled that Southern California Edison was entitled to $142 million in damages for the federal government's breach of its contract to take possession of the utility's spent nuclear fuel and compelling the utility to build and operate an Independent Spent Fuel Storage Installation.

Please note that the reports will not feature the glossary and the historical addendum as in previous years. However, both the glossary and the addendum are available on the Radiation Control Program's website at http://www.maineradiationcontrol.org under the nuclear safety link. Should you have questions about the reports' contents, 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:
Vonna Ordaz, U.S. Nuclear Regulatory Commission
Nancy McNamara, U.S. Nuclear Regulatory Commission, Region I
James Connell, Site Vice President, Maine Yankee
Mary Mayhew, Commissioner, Department of Health and Human Services

Sheila Pinette, DO, Director, Maine Center for Disease Control and Prevention
Katrin Teel, Senior Policy Advisor, Governor's Office
Patricia W. Aho, Acting Commissioner, Department of Environmental Protection
Richard Davies, Maine Public Advocate
Major Christopher Grotton, 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

August 2011 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.

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. 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.

Commencing with the January 2010 report the glossary and the historical perspective addendum are no longer included in the report. Instead, this information is available at the Radiation Control Program's website noted above. In some situations the footnotes may include some basic information and may redirect the reviewer to the website.

Independent Spent Fuel Storage Installation (ISFSI)

During August the general status of the ISFSI was normal. There were no instances of spurious alarms due to environmental conditions.

There were two fire-related impairments in August. The first impairment was discovered during a routine surveillance when a fire damper was found not closing fully. The damper was adjusted and satisfactorily retested the same day. The second fire impairment was a result of losing power to the fire monitoring panel during tropical storm Irene. Since the fire panel is not powered by the emergency diesel, the power was lost to the panel when the backup batteries became exhausted. What's more, during that same power outage, an electric door latch did not reset after the power was restored and was replaced.

There were no security related impairments. However, there were five security events logged for the month and all were related to transient camera issues due to environmental conditions.

There were six condition reports[1] (CR) for the month of August and they are described below.

1st CR: Addressed a procedure attachment that was reissued with some information missing.
2nd CR: Documented the use of a procedure attachment with an incorrect procedure revision number.
3rd CR: Written to document the 5.8 Virginia earthquake that occurred on August 23rd. There was no impact or damage at the site.

[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 Program's website.

4th CR: Was issued to track recommendations from a recent training review.
5th CR: Was written to document some minor erosion around a culvert from tropical storm Irene.
6th CR: Documented an inlet damper to the diesel generator that was not working properly. A new damper control unit was ordered and installed. The new damper tested satisfactorily.

Environmental

On August 2nd the State received the second quarter results from the field replacement of its TLDs around the ISFSI and the Maine Yankee industrial site. The results from the quarterly TLD change out continued to illustrate three distinct exposure groups: elevated, slightly elevated, and normal. The high stations identified were G and K and averaged 25.3 milliRoentgens[2] (mR). Last quarter station G had slipped for the first time in nearly ten years to the slightly elevated group.

The moderately high group stations were E, F, L and Q with an average of 23.6 mR. There appeared to be a subset of the moderately high group which contained the stations J, M and O with a slightly lower average of 22.3 mR. There is no straightforward reason for the slightly elevated status as these stations were in the normal group last time. The remaining stations, A, B, C, D, H, I, N and P averaged 19.9 mR.

The Maine Yankee industrial site TLDs averaged 19.9 mR, which is comparable to the normally expected background radiation levels of 15 to 30 mR on the coast of Maine. The background levels are highly dependent upon seasonal fluctuations in the out gassing of the naturally radioactive Radon gas, tidal effects, and local geology.

The control TLDs that are stored at the State's Radiation Control Program in Augusta averaged about 21.7 mR. The field controls at Ferry Landing on Westport Island and the roof of the State's Health and Environmental Testing Laboratory read 22.3 and 20.2, respectively. The field controls at the Edgecomb Fire Station could not be found and are considered lost. In cases like this, the reason is generally due to vandalism but this could not be verified. The Town of Edgecomb is constructing a much larger fire station next to the current facility. It is not known whether this activity was a factor in the disappearance of the field controls.

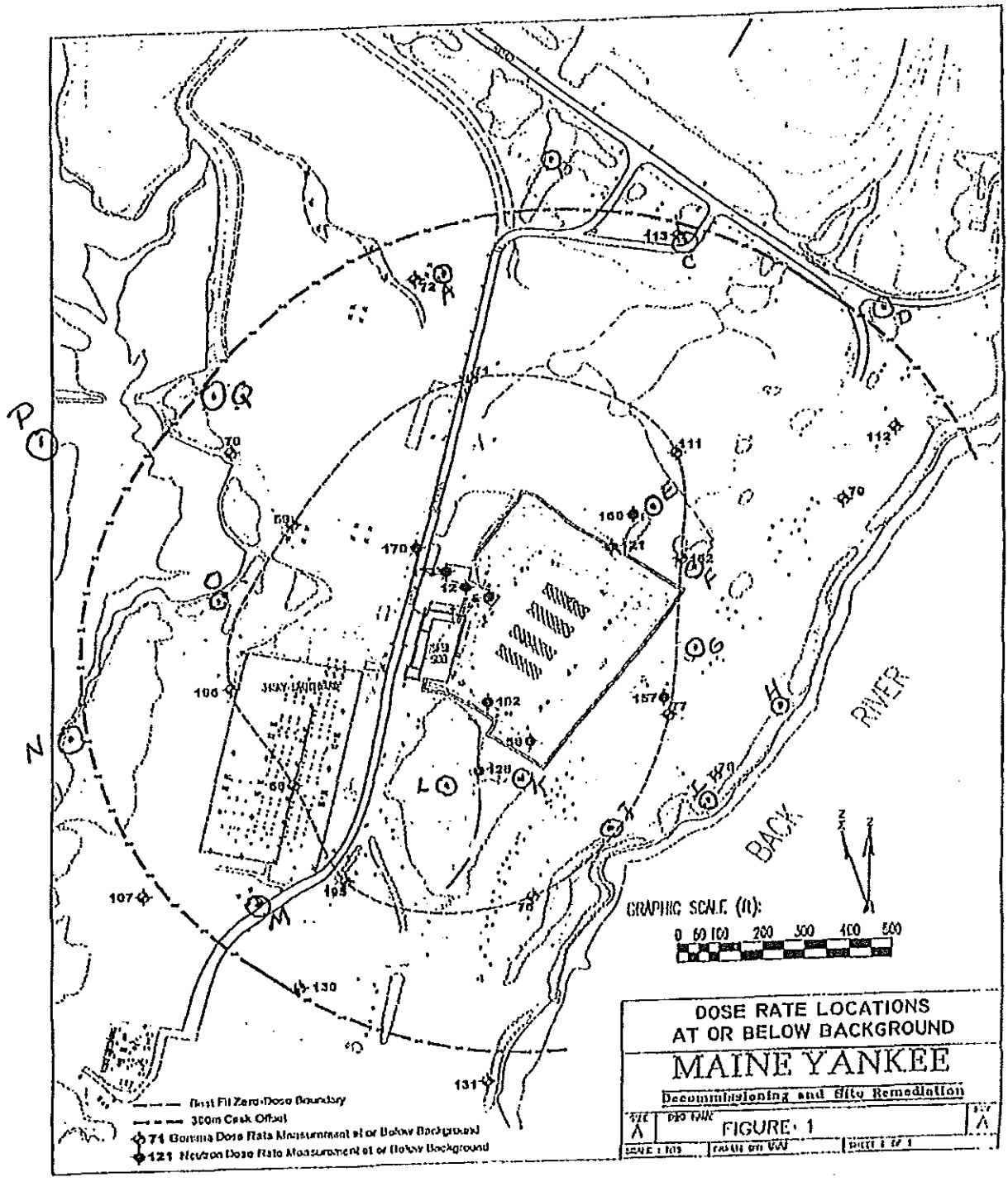
All the spring TLD results were higher when compared to the previous winter's results. That is to be expected as there are seasonal fluctuations in the radiation background due to frozen ground conditions and snow cover, which primarily impede the out gassing of Radon in the soils.

For informational purposes Figure 1 on page 3 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 two highest locations being stations G and K.

Commencing with the second quarter the State has embarked on a program to better quantify the individual impacts of storage and transit exposures to the TLDs. As part of that assessment the State is utilizing a pre-World War II steel container at the Health and Environmental Testing Laboratory (HETL). The assessment, which is expected to last about two years, will allow for more accurate comparisons between control TLDs and field results.

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

Figure 1



Maine Yankee Decommissioning

On August16th the State issued a closure letter to Maine Yankee stating that a final survey of the East Access Road was unwarranted. The State provided the following six reasons for not pursuing a final survey of the road.

- The initial survey did not identify any contamination areas in excess of the ambient radiation levels.

- Based on the current levels it would take another two or more years for the levels to decrease below the 20,000 counts per minute established to minimize any potential masking due to elevated radiation background levels.
- The chances of detecting any contamination physically decreases with time as the radioactive elements decay away. Consequently, the potential radiological risk from contamination also decreases proportionately.
- The resources for performing the road survey are now much more limited than they were during the decommissioning. For example, there would be manpower constraints to perform the survey in a timely and efficient manner. In addition, the State's Health and Environmental Testing Laboratory's ability to process and analyze soil samples has also diminished, which would further delay a timely resolution.
- Ever since President Obama decided to forego the construction of a national nuclear repository for the geologic disposal of spent nuclear fuel at Yucca Mountain in Nevada, the likelihood that the Maine Yankee site will be released to the public within the next decade is virtually nonexistent.
- The area is maintained under constant security surveillance and will be for decades to come until either a consolidated interim storage facility or a repository is approved and constructed. Even then it will take time for all the used nuclear fuel to be removed from the Wiscasset storage facility.

With the closure of the East Access Road survey the State has officially ceased all of its decommissioning survey activities pertaining to the Maine Yankee nuclear power plant.

Groundwater Monitoring Program

On August 16th the State issued a waiver letter to Maine Yankee on one of its groundwater results. Initially, when the fifth and final annual groundwater report was received it was noted that two of the results from the same well did not meet the agreed upon quality assurance criteria range for tracer recoveries for four radioactive Plutonium elements. Maine Yankee's vendor laboratory was able to retrieve a portion of the original well water sample and reanalyzed it for three of the four tracer deficiencies. The reanalysis demonstrated that three of the Plutonium elements were within specifications and their results were accepted. However, this left one radioactive Plutonium element still outside the acceptable range.

Upon further review, the State decided to waive the minimum 50% tracer recovery criteria for this one result. The decision was predicated on the following:

1. The highest minimum detectable concentration for the Plutonium-241 was 5.6 pCi/L[3].
2. Neither the sample nor its duplicate had any positive findings for Plutonium-241.
3. According to the Agreement between Maine Yankee and the State, at least a ten-fold increase in the concentration to 60 pCi/L would be necessary to force an investigation of the well.
4. Since the inception of the five year post decommissioning groundwater agreement, there has never been a positive finding of Plutonium-241 in any well above the instrument's lower level of detection.
5. The State was more concerned with the 50 times higher radiological health consequences associated with the three Plutonium elements (Plutonium-238, -239 and -240) than that of the Plutonium-241.
6. The tracer recovery of 48.6% is very close to the 50% cut-off, which was based on the State's Health and Environmental Testing Laboratory criteria.
7. According to national accreditation standards a laboratory must establish its own acceptance criteria based on its own intrinsic laboratory equipment, processes, and performance. Consequently, an acceptable range for tracer recoveries may vary from one laboratory facility to another.

[3] A pCi/L is 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. A "pico" is a scientific prefix for an exponential term that is equivalent to one trillionth (1/1,000,000,000,000).

With the final results in for the radiation groundwater monitoring program Maine Yankee closed the radiation monitoring wells at the site on July 19th.

Other Newsworthy Items

1. On August 1st it was reported that Japan and the United States were pressing for a deal with other countries to build a nuclear fuel repository in the Gobi Desert in southern Mongolia. The proposal would let the International Atomic Energy Agency manage the repository facility and include building a nuclear fuel production facility, nuclear reactors, a research laboratory and a storage facility.

2. In August Nye County in Nevada, the host county for the Yucca Mountain Project, joined the States of Washington and South Carolina, Aiken County in South Carolina, and three business leaders from the Tri-City area near the Hanford site in Washington in a lawsuit to prevent the dismantling of the Yucca Mountain nuclear repository.

3. On August 3rd the Chair of the House Energy and Commerce Committee's Environment and the Economy Subcommittee issued a press release emphasizing that 400 days have elapsed with no decision from the Nuclear Regulatory Commission (NRC) on their Atomic Safety and Licensing Board's decision to deny the Department of Energy's motion to withdraw it's Yucca Mountain license application before the NRC. The chair called upon the Chairman of the NRC to issue a decision. A copy of the press release is attached.

4. On August 8th the Nuclear Regulatory Commission's (NRC) Licensing Support Network Administrator notified the NRC's Atomic Safety and Licensing Board (ASLB) that the Licensing Support Network (LSN) website operated by the ASLB for the Yucca Mountain license application would cease immediately. The LSN provided stakeholders with the Department of Energy's supporting documents for its the Yucca Mountain license application before the NRC. A copy of the notice is attached.

5. On August 10th the Nuclear Waste Strategy Coalition held its bi-monthly conference call to update its membership on recent congressional efforts in appropriations and the introduction of the Nuclear Fuel Storage Improvement Act in the Senate, the recent Blue Ribbon Commission's draft recommendations, the closure of the Nuclear Regulatory Commission's licensing support network for Yucca Mountain, and the petition from the states of Washington and South Carolina and others mandating the NRC take action on the Atomic Safety and Licensing Network Order denying the Department of Energy's motion to withdraw its Yucca Mountain license application.

6. In August Pacific Northwest National Laboratory issued a news release stating that the national laboratory has been working with researchers from five other countries to acquire "samples of old glass against which to test computer models that simulate nuclear waste stored for long periods". The ancient glass provides historic information on how slow glass dissolves over time. The researches are exploring ways to safely store nuclear waste by turning it into glass, a process known as vitrification. A copy of the news release is attached.

7. On August 18th The Heritage Foundation published an article in its Backgrounder publication commenting on the Blue Ribbon Commission's (BRC) missed opportunity for permanent reform. The article elicited three basic problems with the present national waste management system – no long term geologic storage, waste generators are relieved of their responsibility for waste management, and no specific price for specific services rendered. Although the BRC's

recommendations provide some framework for change the article contended that the recommendations focused more on the symptoms of the nation's failed waste management as opposed to its deficiencies. It further argued that moving a function from one government entity to another did not guarantee success unless the underlying deficiencies were addressed. The author offered several proposals in three key areas in resolving the nation's mounting nuclear stockpile. A copy of the article is attached.

8. On August 22nd the American Nuclear Society (ANS) sent a letter to the Chairman of the Nuclear Regulatory Commission (NRC) expressing their deep concern over the Commission's inability to complete the scientific and technical review of the Yucca Mountain license application and urging the Commission to perform its legally mandated duties as prescribed by the Nuclear Waste Policy Act. A copy of the letter is attached.

9. On August 22nd the Nuclear Regulatory Commission issued a notice of its upcoming meeting on September 28th to obtain feedback from stakeholders on their extended storage and waste confidence activities for used nuclear fuel storage and transportation. Copies of the notice and draft agenda are attached.

10. On August 23rd the U.S. Court of Appeals for the Federal Circuit issued a decision in favor of the Court of Federal Claims which ruled that Southern California Edison (SCE) was entitled to monetary damages for the federal government's breach of its contract to take possession of the spent nuclear fuel compelling SCE to build and operate an ISFSI. The Court of Federal Claims awarded SCE $142 million for the construction of their ISFSI.

Other Related Topics

1. In June the U.S. Nuclear Waste Technical Review Board (NWTRB) sent a letter to Congress and Energy Secretary Chu on their latest Topical Report #2, "Nuclear Waste Assessment System for Technical Evaluation (NUWASTE): Status and Initial Results". NUWASTE is a computer based systems analysis tool that is capable of evaluating the management of spent nuclear fuel, "including dry storage, direct disposal in a repository, and the potential introduction of reprocessing with recycling of uranium and plutonium". The report focused its initial efforts on four scenarios:

    - Long-term Dry Storage
    - Direct Disposal of Spent Nuclear Fuel
    - Recycling of Uranium and Plutonium
    - Recycling of Plutonium Only

    The report also mentioned additional ways the computer analysis tool could be expanded for the future. Copies of the letter and report summary are attached.

2. On June 27th the Decommissioned Plant Coalition (DPC) sent a letter to the Department of Energy (DOE) providing their comments to the DOE's "Draft Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste". The letter reaffirmed that the GTCC wastes stored at decommissioned sites are covered by the utilities spent fuel contracts and that DOE is obligated to remove this waste along with the spent nuclear fuel. The letter further stated that the Courts have upheld this position through the various lawsuits against the federal govermnent. Maine Yankee's ISFSI has four canisters with GTCC. The DPC membership is comprised of representatives from single unit decommissioned reactor sites such as Maine Yankee, Connecticut Yankee, Yankee Rowe in Massachusetts, Lacrosse in Wisconsin, Rancho Seco in California, and Big Rock Point in Michigan. A copy of the letter is attached.

3. On July 5th the Chief Nuclear Officer for Maine Yankee sent separate but similar letters to Senators' Snowe and Collins highlighting the Blue Ribbon Commission's Transportation and Storage Subcommittee's draft recommendations to the full Committee on centralized interim storage with a first in line priority for decommissioned reactor sites. In addition, the letter also mentioned the language from the House's Energy and Water Appropriations Bill directing the Department of Energy to develop interim storage capacity with a priority to decommissioned sites. A copy of the letter is attached.

4. On July 29th the National Association of Regulatory Utility Commissioners issued a press release stating that they joined the States of Washington and South Carolina and local governments from Nevada in filing a lawsuit against the Nuclear Regulatory Commission for withholding a decision on the Yucca Mountain license application. NARUC believed that it had to take this action in order to force the NRC to act. A copy of the press release is attached.

House Energy & Commerce Committee

FEATURED STORY

PRESS RELEASE

400 Days and Still No Decision on NRC Atomic Safety Board Yucca Vote - Chairman Jaczko Continues Stonewalling Tally of 5 Votes

Atomic Safety Licensing Board Denied Energy Department's Motion to Withdraw Yucca Mountain Application on June 29, 2010

August 3, 2011

WASHINGTON, DC -- The Energy and Commerce Committee's Environment and the Economy Subcommittee Chairman, Rep. John Shimkus (R-IL), today called on Nuclear Regulatory Commission Chairman Gregory Jaczko to once and for all affirm the NRC vote on the Atomic Safety Licensing Board's denial of the Department of Energy's motion to withdraw the Yucca Mountain repository licensing application. The ASLB made its decision 400 days ago, on June 29, 2010, but Chairman Jaczko continues to delay the affirmation of the Commission's votes. The Energy and Commerce Committee is investigating the administration's decision-making process to terminate the Yucca Mountain nuclear repository.

"Chairman Jaczko insists that he and his fellow commissioners should re-write the regulations for the entire commercial nuclear industry in a mere 90 days," said Shimkus. "Yet, it's been 400 days since the ASLB made its ruling and Jaczko has still not added up the five votes on whether NRC even has a license application from DOE. And he's still counting. Anybody who manipulates NRC rules and needs over 400 days to tally five votes should not be trusted to overhaul an entire industry in 90 days. After 400 days, it's well past time for Chairman Jaczko to cast aside politics and heed the DC Circuit Court's recommendation to finally complete action on the Yucca repository licensing application."

On July 1, 2011, the U.S. Court of Appeals for the District of Columbia Circuit underscored the importance of the NRC's obligation to complete its review of the Department of Energy's license application for Yucca Mountain. Chief Judge Sentelle's ruling stated, "The NWPA (Nuclear Waste Policy Act) set forth a process and schedule for the siting, construction, and operation of a federal repository for the disposal of spent nuclear fuel and high-level radioactive waste. At this point in that process, the DOE has submitted a construction license application for the Yucca Mountain repository and the Commission maintains a statutory duty to review that application."

During a May 4 subcommittee hearing, Chairman Shimkus directly asked the NRC Commissioners about the vote on the ASLB ruling, and whether they believed their votes were final. While Chairman Jaczko had previously downplayed the ASLB vote during a March 16 subcommittee hearing, referring to the Commission vote as "preliminary views" and "prepared remarks," Commissioners Svinicki, Magwood, and Ostendorff all testified they believed their votes were based on thorough review and final. Commissioner Ostendorff called his vote a "final, concrete legal decision."

In June, the NRC Inspector General released a report that revealed evidence that Chairman Jaczko abused his legal authority by deliberately withholding key decision-making information from his fellow Commissioners and intentionally blocking issues for resolution that were long overdue.

ASLB TIMELINE (as detailed in the NRC Inspector General Report)
On March 3, 2010, DOE submitted to the ASLB a motion to withdraw its Yucca Mountain license application.

On June 29, 2010, the ASLB issued a decision that denied DOE's motion to withdraw, concluding that DOE lacks the authority to seek to withdraw the application. The ASLB grounded its decision in its interpretation of the NWPA, reasoning that Congress directed DOE to file the application and the NRC to consider the application and issue a final, merits-based decision approving or disapproving.

On June 30, 2010, the Commission issued an order inviting hearing participants to file briefs as to whether the Commission should review, and reverse or uphold, the ASLB's decision, thus signifying the Commission's decision to review the ASLB's decisions.

On August 10, 2010, in accordance with the NRC's process, the Office of Commission Appellate Adjudication (OCAA) submitted adjudicatory paper SECY-10-0102, "U.S. Department of Energy (High-Level Waste Repository), Review of LBP-10-11, Docket No. 63-001-HLW," to the Commission for its review and vote.

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U.S. Representative Fred Upton

Congressman Fred Upton has represented the commonsense values of southwest Michigan since 1987. In 2010, Fred was selected by his House colleagues to serve as Chairman of the Committee on Energy and Commerce. Read More»

Commissioners began casting their votes on SECY-10-0102 on August 25, 2010, and a majority of Commissioners had voted by September 15, 2010. Chairman Jaczko did not cast his final vote at that time.

Despite the August 25, 2010 voting deadline, voting was not complete until Chairman Jaczko submitted his second vote (approximately six weeks after the majority of Commissioners had voted) on October 29, 2010.

The voting process proceeded as follows:

August 10, 2010 - Commissioner Apostolakis announced he would not participate
August 25, 2010 - Commissioner Svinicki voted
August 25, 2010 - Chairman Jaczko provided initial vote
August 26, 2010 - Commissioner Ostendorff voted
August 30, 2010 - Chairman Jaczko retracted initial vote
September 15, 2010 - Commissioner Magwood voted
October 29, 2010 - Chairman Jaczko voted for second time

Although the notational voting process was complete as of October 29, 2010, the Commission still has not held an affirmation vote on the matter and the draft order continues to sit in deliberation before the Commission for affirmation.

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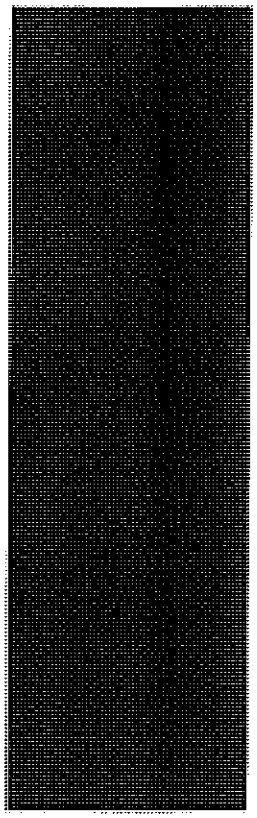


UNITED STATES
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL
WASHINGTON, DC 20555 - 0001

August 8, 2011

MEMORANDUM TO: Administrative Judge Thomas S. Moore
Chair, Construction Authorization Board 4

Administrative Judge Paul S. Ryerson
Member, Construction Authorization Board 4

Administrative Judge Richard E. Wardwall
Member, Construction Authorization Board 4

FROM: Daniel J. Graser **/RA/**
Licensing Support Network Administrator

SUBJECT: CD Submission of LSN Accession Numbers/Participant Accession Numbers and Transmittal of DOE License Application Supporting Documents Identifiers

This is to advise Construction Authorization Board 4 that availability of the Licensing Support Network (LSN) website operated by the Atomic Safety and Licensing Board Panel ceased on August 8, 2011.

As directed, a Compact Disk (CD) containing the full list of LSN Accession Numbers and corresponding Participant Accession Numbers as of August 5, 2011 has been delivered to the Office of the Secretary for inclusion into the docket. Copies of the CD are being made available to the parties as requests are received.

Additionally, attached to this submission, is a document previously available as a finding tool via the LSN homepage entitled "License Application Supporting Documents" prepared by the Department of Energy (DOE). That document contains the Title, DOE publication number, LSN Accession Number and Participant Accession Number for 196 primary references to the DOE License Application.

Ancient Glass in the Nuclear Age

Denis Strachan and Joseph Ryan

Pacific Northwest
NATIONAL LABORATORY
Proudly Operated by Battelle *Since 1965*

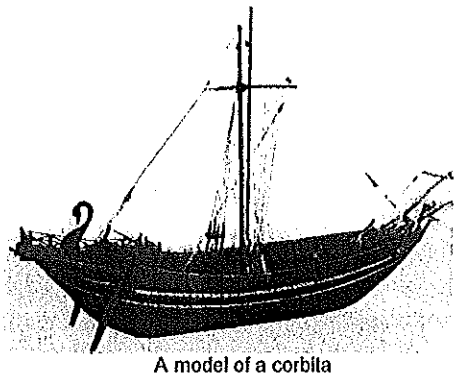
PNNL scientists are studying pieces of ancient Roman glass from 1,800-year-old shipwrecks and ruins to assist today's efforts to safely store nuclear waste.

One way to store nuclear waste safely is to turn it into durable glass through a process called vitrification. At PNNL, Denis Strachan, Joseph Ryan and others are helping explore how such a glass can withstand the test of time if stored in repositories deep underground. Glass dissolves so slowly that it's difficult to understand changes that might happen over thousands or a million years. Researchers want samples of old glass against which to test computer models that simulate nuclear waste stored for long periods of time. Scientists use these models to demonstrate that a glass will perform according to regulatory requirements. Until recently, the longest test on a piece of man-made, simulated nuclear waste glass available to researchers has been about 25 years. But now they have access to glass subjected to a 1,800-year-old "experiment" in the Mediterranean region.

Earlier this year, PNNL researchers worked with the University of Padua in Italy to obtain samples of glass from a 1,800-year-old shipwreck called the *Iulia Felix* in the northern Adriatic Sea. They also acquired dry glass dug up from a 1,800-year-old Roman villa nearby in the town of Aquileia. While the glass samples from the sea do not represent those likely to be found in a repository, they do provide researchers with important information about how glass generally dissolves. The samples from the Roman villa more closely represent the conditions under which nuclear waste would be stored long term. The PNNL researchers are also collaborating with French scientists to study a third glass sample of about the same age but from a shipwreck off the southern coast of France.

The project is part of an international collaboration to study how glass dissolves and involves researchers from six nations.

The ship: *Iulia Felix* shipwrecked 6 miles (15 km) off the coast of Grado in Adriatic Sea about 1,800 years ago. It was a merchant ship called a corbita commonly used in Roman times for long distance trading voyages. This voyage contained a barrel of glass for recycling and many containers holding oils and spices. The *Iulia Felix* measured between about 45 to 55 feet long (15 and 18 meters) and 15 to 20 feet wide (5-6 meters). Researchers believe the recycled glass fragments may have been destined for the port of Aquileia, known to have been an important center of Roman glass making.



A model of a corbita

The instruments: At EMSL, the researchers will be using some of the most sophisticated analytical instruments to give them the information needed to properly interpret the results of these 1,800-year long experiments. In addition, these analytical methods have been unavailable to the archaeologists, making the results important not only to the nuclear waste management field but to archaeology in general.

The funding: Two offices within the Department of Energy -- Nuclear Energy and Environmental Management -- are funding an international study on glass corrosion. The ancient glass study involves researchers from the United States, France, and Italy. Researchers within the glass corrosion project also hail from the United Kingdom, Belgium and Japan.

Backgrounder
No. 2600
August 18, 2011
Published by The Heritage Foundation

Blue Ribbon Commission on Nuclear Waste: Missing Opportunity for Lasting Reform

Jack Spencer

Abstract: *The Blue Ribbon Commission on America's Nuclear Future has released its draft recommendations on how to resolve America's nuclear waste dilemma. The Blue Ribbon Commission has provided some sound analysis and introduced some new ideas, but overall, it has focused more on the symptoms of America's failed approach to nuclear waste management than addressing the system's structural deficiencies. U.S. nuclear waste management must transition to a more market-oriented system. Moving the responsibility for nuclear waste management away from the federal government will be difficult, but it is necessary for an economically rational and sustainable resolution to America's nuclear waste dilemma.*

The draft recommendations from President Barack Obama's Blue Ribbon Commission (BRC)[1] on America's Nuclear Future fall short of fixing America's nuclear waste dilemma. Though some of the recommendations were positive, they would, if implemented, not result in the fundamental reforms necessary for an economically sustainable and technologically diverse approach to nuclear power to emerge.[2]

While acknowledging the many challenges and failures of America's nuclear waste management and disposal program, the BRC unwisely accepts that the basic structure of the system is sound. This acceptance leads to recommendations that focus more on symptoms than on underlying flaws. Real progress requires first identifying the real problems.

There are three fundamental problems with nuclear waste management in the United States:

Talking Points

- Current recommendations of the Blue Ribbon Commission (BRC) on America's Nuclear Future focus more on the symptoms of America's failed approach to nuclear waste management than on addressing the system's structural deficiencies.
- Simply moving a function from one government agency to another (even if the new agency is called a "federal corporation") without changing the system fundamentals only perpetuates existing deficiencies while creating the perception of action.
- Nonetheless, it does provide a framework that, with some modification, could yield a long-term solution.
- The modifications include transitioning responsibility for nuclear waste management to waste producers and allowing market-based pricing for waste management services.
- Despite the Obama Administration's myopic and misguided insistence that the BRC preclude any consideration of Yucca Mountain, addressing the issue head-on would add substantial credibility to the final report.

This paper, in its entirety, can be found at:
http://report.heritage.org/bg2600

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1. **No long-term geologic storage.** Deep geologic storage like that proposed for Yucca Mountain, Nevada, provides a safe, long-term solution and thus is critical to any comprehensive nuclear waste management plan. To date, despite having spent approximately $15 billion in electricity rate payers' and taxpayers' money on Yucca Mountain and a statutory mandate to do so, the U.S. still has no functional geologic repository for nuclear waste.
2. **Waste producers are relieved of their responsibility for waste management.** Private nuclear plant operators produce waste, but under current law the federal government is responsible for managing it. This removes the incentive for those who financially depend on waste production, the nuclear utilities, to have any interest in how the waste is managed because the federal government is wholly responsible. Washington, however, has proved unable to implement anything close to a workable solution. This outcome is predictable given a structure that fundamentally misaligns incentives, responsibilities, and authorities. The nuclear industry, which is fully capable of running safe nuclear power plants, is likewise fully capable of managing its own waste and should have the responsibility to do so.
3. **No specific price for specific services rendered.** Under the current system, nuclear utilities produce waste, and then pay the federal government a flat fee for an undefined, not-rendered service. Accurate pricing is critical to any efficient market place. Prices provide suppliers and purchasers a critical data point to determine the attractiveness of a product or service, and gives potential competitors the information they need to introduce new alternatives.

Although the BRC is missing an opportunity to address major underlying issues, it does provide a framework that, with some modification, could yield a long-term solution. To achieve it, the BRC's final draft should consider the following recommendations.

Nuclear Waste Management Responsibility

The centerpiece of the BRC's recommendations is its proposal to establish a federal corporation "dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed." While the general proposition could help transition the United States toward a more market-based system, the BRC's version will not work because it maintains the current system's basic underpinnings. A government-based entity, separate from waste production, will remain responsible for waste management and disposal, relieving producers of all responsibility, and there would remain no direct connection between services rendered and pricing.

Though the BRC goes to great lengths to define the responsibilities of the new organization, these responsibilities are similar to those of the Department of Energy under the current system. In both cases, the federal government is fully responsible for all nuclear waste management and disposal. Simply moving a function from one government agency to another (even if the new agency is called a federal corporation) without changing the system fundamentals only perpetuates existing deficiencies while creating the perception of action.

This approach assumes that the basic premise of the current system is correct—that nuclear waste management and disposal falls ideally within the purview of the federal government. It essentially blames the current problems on a misplaced federal bureaucracy when the actual problem is relegating a commercial activity to a government bureaucracy. Instead of trying to modify a fundamentally flawed system, the BRC's final report should recommend transferring the responsibility for nuclear waste

1. Blue Ribbon Commission on America's Nuclear Future, "Draft Report to the Secretary of Energy," July 29, 2011, at *http://brc.gov/sites/default/files/documents/brc_draft_report_29jul2011_0.pdf* (August 10, 2011).
2. Jack Spencer, "Introducing Market Forces into Nuclear Waste Management Policy," testimony to the Reactor and Fuel Cycle Technology Subcommittee of the Blue Ribbon Commission on America's Nuclear Future, Heritage Foundation *Testimony*, August 30, 2010, at *http://www.heritage.org/research/testimony/introducing-market-forces-into-nuclear-waste-management-policy*.

management and disposal away from Washington and toward the private sector.

The BRC's recommendation to create a federal corporation could facilitate that transition to private-sector responsibility. Though the objective should be to remove federal responsibility for nuclear waste management and disposal, near-term privatization is likely not practical. This is because the federal government is obligated by virtue of signed contracts to take responsibility for the disposal of nuclear waste produced at existing plants and the nuclear industry, through fees levied on nuclear power users, and has already paid $38.5 billion (about $750 million annually) for that service.[3] The result is that the federal government is currently responsible for disposing of a total of about 70,000 tons of waste. A federal corporation, limited in scope, could be the correct entity to take responsibility for disposing of that waste.

In preparing its final recommendations, the BRC should emphasize closely realigning incentives, responsibilities, and authorities in nuclear waste management. These recommendations should include:

- **Creating a federal corporation with a limited scope of responsibility, limited duration, and access to the Nuclear Waste Fund.** The federal corporation should have two basic responsibilities. First, it should site a geologic repository. If the repository is located at Yucca Mountain, as current law stipulates, then the federal corporation should assume the Department of Energy's responsibilities of completing the Yucca construction and operation permit application. Once issued, the permit to operate Yucca should be transferred to a non-federal entity to construct and operate the facility. If the Yucca location is deemed technically deficient, the corporation should be responsible for overseeing the selection of a new location. However, the permit application should be prepared by whichever entity will eventually construct and operate the facility.

  The corporation's second responsibility should be to assure proper disposal of the existing nuclear waste for which the federal government is currently responsible and it should receive near-term access to the approximately $25 billion in the Nuclear Waste Fund to finance its activities. This would allow the federal government to meet its existing contractual and regulatory waste disposal responsibility while allowing an eventual transfer of waste management responsibility to the private sector. It would also allow the Nuclear Waste Fund to be used for its intended purpose. Most important, however, it would create a significant market demand for privately offered waste management services like storage, transportation, and processing. Businesses would naturally emerge to meet this demand that would then be available for future private waste management operations.

  Finally, the transitional federal corporation must be mission-specific and its creation must be accompanied by a dissolution plan. Once its two responsibilities are met, it should either be privatized or abolished.

- **Removing the federal role in geologic repository operations.** All geologic repositories should be operated by non-federal entities. The management organizations could be private, for-profit, non-profit, state-based, or a combination thereof. Among their most basic responsibilities would be to set market-driven prices for waste emplacement. Market-driven prices would take waste characteristics, such as heat load, toxicity, and volume as well as repository space into consideration. Waste producers would then have different variables to consider when deciding which fuels to purchase and what nuclear technologies to use as these decisions would affect how they would ultimately manage their waste. It could be most cost effective to place waste directly in the repository for some utilities, while others might find interim storage or another process to be more economical. Market-based price signals would encourage new technologies, such as small nuclear reactors that have different waste streams, and services, such as reprocessing, to be introduced as new market demands emerge.

3. Nuclear Energy Institute, "Costs: Fuel, Operation, and Waste Disposal," at *http://www.nei.org/resourcesandstats/nuclear_statistics/costs/* (August 10, 2011).

- **Transferring responsibility for management of new waste to waste producers.** As noted above, the federal government (through the corporation) should meet its responsibility to dispose of existing waste. But, moving forward, nuclear utilities should be made responsible for waste they produce. This responsibility should be accompanied by a repeal of the fee—1/10 of 1 cent per kilowatt hour of electricity produced at nuclear power plants—paid to the federal government for waste disposal. Utilities would then bear the responsibility and also have the freedom to choose how best to manage their waste. The federal role would be to ensure that private waste management activities meet adequate regulatory standards. In essence, waste management would be treated the same way the rest of the nuclear industry is treated. The federal government is not responsible for getting the fuel to the reactor and it should not be responsible for removing it.
- **Allowing the federal corporation to broker waste management services.** To further ensure that nuclear waste producers have access to waste management services, the federal corporation could be permitted, for a fee, to broker waste management services for private industry. This would allow waste producers to hire the federal corporation to contract for waste management services on their behalf. It may be the case that, as the corporation gains experience and establishes relationships with waste management providers, it can negotiate better terms based on volume, or other variables, for specific services. Or waste producers may simply find the convenience of contracting with the federal corporation to manage its waste to be worth a premium. Waste producers would not be obligated to seek waste management services through the federal corporation. This brokering service would only be available as long as the federal corporation is carrying out its chartered mission, and would not justify its existence as a public entity beyond those specified responsibilities. However, one can imagine a business case where brokering such services could provide the basis for future privatization. Ultimately, while such an arrangement is not necessary, it does provide an additional transition step toward the new market-based system.
- **Limiting the federal government's long-term role to setting broad regulatory guidelines and taking final title of decommissioned repository sites.** Once the federal corporation carries out its mission and is dissolved, the federal government should have two roles. First, it should set the broad regulatory guidelines for waste management just as it does for other parts of the nuclear industry. Second, the federal government should take final legal possession, what is commonly referred to as "title," of geologic repositories and their contents as they are decommissioned. While private actors should manage nuclear waste and finance its final disposal, including long-term maintenance, only the federal government has the guaranteed longevity to credibly take long-term possession and liability for whatever elements of waste end up in geologic repositories after decommissioning, when the repository would be permanently sealed.

Geologic Storage

Of the seven key elements addressed by the BRC, two are dedicated to geologic storage. One calls for a new, consent-based approach to searching out future nuclear waste management facilities, while the other calls for a prompt effort to develop one or more geologic repositories. While clearly stating the need for geologic storage is important, the BRC's charge from the Secretary of Energy to rule out any consideration of the Yucca Mountain facility weakens the utility of its otherwise reasonable recommendations. For this reason, the BRC should address Yucca in its final recommendations, which is allowable per the BRC's charter that gives no direction to preclude Yucca. Indeed, it does the opposite, by directing the BRC to consider *all* options. It states that the Secretary of Energy established the commission at the direction of the President to:

> conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel, high-level

waste, and materials derived from nuclear activities.[4]

Furthermore, the BRC's recommendations on geologic storage reflect its more general flaw—that nuclear waste management should remain within the purview of the federal government. These problems can be addressed in the final report by the following actions:

- **Address Yucca Mountain head on.** The BRC should state what it believes should happen with Yucca Mountain based on the best science and evidence available. If its members believe Yucca should be shut down, it should state why and provide a recommendation for disengaging from Yucca. If, on the other hand, it finds that Yucca should be pursued, perhaps as one of a number of options, then the commission should provide recommendations on how to move forward. Such a conclusion could reject the current Yucca program while proposing an alternative. Such an alternative could embody the recommendations of the BRC's consent-based approach where the people of Nevada are given control over the future of the Yucca facility. Even though the Secretary of Energy directed the BRC to pretend Yucca Mountain does not exist, nothing in the BRC's charter prevents it from facing facts. For the sake of the commission's credibility, it must honestly and directly address Yucca in its final conclusions.
- **Limit the federal government's responsibility to siting and permitting one geologic repository.** Whether at Yucca or elsewhere, the federal government's role should be limited to developing a single geologic repository. This repository should at least match the capacity of Yucca Mountain, which is sufficient to hold all of the waste produced by America's existing commercial reactors over their expected lifetimes. Once sited and permitted, a non-federal entity should operate the repository. Developing future repositories should be the responsibility of non-federal actors.
- **Rescind recommendation to develop one or more interim storage facilities.** The BRC is correct that interim storage of nuclear waste, like geologic storage, is a critical part of any comprehensive nuclear waste management system. Further, it correctly points out a myriad of reasons why interim storage makes sense, such as allowing for fuel removal from shutdown plants. However, the federal government should neither construct such a facility nor mandate that one be built. Instead, private-sector interim storage facilities would emerge to meet the demand for such services in a market-based system. The federal government's role should be to ensure that those willing and able to develop appropriate interim storage facilities have an efficient and predictable regulatory environment. The BRC makes very sound recommendations toward this end.

Financing Nuclear Waste Management and Disposal

The BRC correctly spent significant effort on making recommendations on how nuclear waste management should be financed. Indeed, it correctly identifies many of the problems with the current system, namely that it does not work as intended and that continuing to collect fees for services not rendered is patently unfair. It also correctly recognizes that government accounting rules make gaining access to collected funds extraordinarily difficult. Finally, it recognizes that building a sustainable nuclear waste policy program is nearly impossible as long as it relies on the inherently inefficient and unpredictable congressional appropriations process.

Separating finance issues from larger organizational issues is impossible. The two are inherently related. How nuclear waste activities are financed will ultimately depend on who is responsible for its disposal. Therefore, any rational financing scheme must be developed congruently with larger organizational reform. So if one accepts the BRC's general proposition that the federal government should remain responsible for nuclear waste management, its recommendations on finance reform make sense. In reality, since its recommended actions would do little to change the underlying system fundamentals, the same inefficiencies that result from federal control would ultimately resurface.

4. Blue Ribbon Commission on America's Nuclear Future, "Charter," March 1, 2010, at *http://brc.gov/index.php?q=page/charter* (August 10, 2011).

Similar to its larger organizational recommendations, the BRC does provide a framework from which a more market-based, economically rational system could be constructed. Indeed, the BRC introduces some elements that are critical to a sustainable waste management system. Instead of attempting to modify the current system, the BRC should develop recommendations to allow the United States to transition to a new model for financing nuclear waste management while ensuring that existing resources are used for their intended purposes. To achieve this transition, the BRC's final recommendations should include the following:

- **Congress should immediately begin transferring the Nuclear Waste Fund to the new organization.** The BRC acknowledges that whoever is ultimately responsible for waste management and disposal must gain access to the $25 billion in the Nuclear Waste Fund, and puts forth a basic plan to achieve this. The plan would allow limited access to those funds 10 years after the new organization is established. Near-term operations would be funded through ongoing fee payments. This approach, however, assumes that the new organization would maintain ongoing responsibility for waste management and disposal. Under the modifications proposed in this analysis, the new organization would only be responsible for waste produced to date, and should be funded through fees already paid. Thus, the new organization would need immediate access to the Nuclear Waste Fund, although disbursal could occur over time.
- **Congress should mandate the creation of utility-specific or plant-specific escrow accounts to fund waste management activities.** An innovative concept in the BRC report is to create escrow accounts held by an independent third party into which nuclear waste fees are paid. Only that amount appropriated by Congress for waste disposal activities would be paid to the U.S. Treasury out of the escrow accounts. This would ensure that only those funds actually being spent on waste disposal would go to the government thus preventing additional funds from being placed into the Nuclear Waste Fund.

This specific idea is not consistent with the overall reform that is necessary, but the introduction of waste management financed through escrow accounts is consistent with fundamental reform. A better model would mandate that nuclear utilities place in escrow adequate funds to dispose of whatever waste is being stored on site. No funds would ever go to the U.S. Treasury, and congressional appropriators would have no role. Utilities would simply pay for waste management and disposal services on an as-needed basis. This approach would benefit nuclear utilities by ensuring they have access to the funds set aside for waste disposal and it would protect the American taxpayer by making sure adequate disposal funds will be available even if a plant owner goes out of business.

- **Congress should repeal the fee paid to the federal government for future waste disposal services.** Since, under these reforms, existing nuclear waste disposal would be financed through existing nuclear waste fund fees, and future disposal through the privately held escrow accounts, there would be no need to continue paying the nuclear waste fee to the federal government.

Building on the BRC's Recommendations

The Blue Ribbon Commission on America's Nuclear Future has an opportunity to resolve America's nuclear waste dilemma. While it has provided a credible analysis and introduced some new ideas, it has focused more on the symptoms of America's failed approach to nuclear waste management than addressing the system's structural deficiencies. Nonetheless, its recommendations provide a starting framework that could be modified to address these difficult issues. Moving the responsibility for nuclear waste management away from the federal government will be difficult, but it is necessary to for an economically rational, technologically diverse, and sustainable resolution to America's nuclear waste dilemma.

—Jack Spencer is Research Fellow in Nuclear Energy in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation.

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August 22, 2011

The Honorable Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
11555 Rockville Pike – M/S O-16G4
Rockville, MD 20852

Dear Chairman Jaczko:

On behalf of the 11,000 members of the American Nuclear Society (ANS), and after consultations with other ANS leaders, I write to express our deep concern about the U.S. Nuclear Regulatory Commission's inability to complete consideration of the Yucca Mountain license application in a scientifically objective and technically meritorious manner. We fully understand that the U.S. Department of Energy (DOE) has sought to withdraw its application for an NRC license; however, it has become clear that DOE's actions do not relieve the Commission from its duty.

As a scientific and professional organization, the ANS has avoided entering the political disputes over the Yucca Mountain Project, and decided not to take a position on the suitability of the Yucca Mountain site as a geological repository. Our most recent position statement, approved in 2009, supports the "expeditious processing of the Yucca Mountain license application in an open, technically sound manner ..." We also expressed confidence that the NRC would make a licensing determination, "fairly and only after thoroughly reviewing the scientific information in the application."

Subsequent events have eroded that confidence.

In June 2010, the NRC's Atomic Safety and Licensing Board (ASLB) determined that the DOE's motion to "withdraw" the Yucca Mountain license application does not relieve the Commission of its duty to review it and make a decision on its technical merits. Despite the ASLB ruling, the NRC, without an open formal decision of its own, has suspended its review of the application and heretofore refused to release the main technical licensing document prepared by NRC staff, the Safety Evaluation Report (SER).

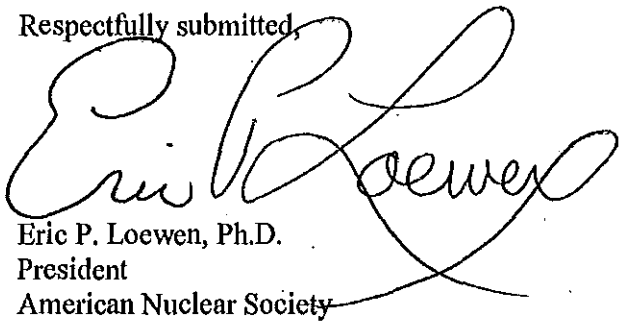
On July 1, 2011, the U.S. Court of Appeals ruled that the Nuclear Waste Policy Act "requires the Commission to review the application," that the deadline for Commission action is "at hand," and that the Court would issue an order of mandamus if necessary to correct "transparent violations of a clear duty to act" or an attempt by the NRC "to insulate itself from judicial review by refusing to act."

On behalf of the ANS, I urge you to perform your duties mandated by the Nuclear Waste Policy Act and complete the Yucca Mountain licensing process. The July 1, 2011 Court of Appeals decision makes clear that the NRC is required to act. Our members are concerned that if the Commission does not act, the Court will order it to do so, thereby inflicting indelible harm to the Commission's reputation for scientific professionalism and independence.

I also encourage you to facilitate the public release of the staff's Safety Evaluation Report. The recently released "Technical Evaluation Report" has little merit and does not provide a pathway for the licensing process. Moreover, efforts to promote the "Technical Evaluation Report" as meeting NRC obligations under the NWPA have created the perception that the NRC withheld key safety information for political reasons, thus further tarnishing the Commission's reputation and credibility.

In closing, while we recognize that the Commission must operate within a political context, it must also remain independent. We urge you to protect the Commission's traditions of openness, objectivity and excellence by completing the scientific review of this matter.

Respectfully submitted,



Eric P. Loewen, Ph.D.
President
American Nuclear Society

cc: United States President Barack Obama
U.S. Secretary of Energy Dr. Steven Chu
Senator Barbara Boxer, Chair, U.S. Senate Committee on Environment & Public Works
Senator James M. Inhofe, Ranking Member, U.S. Senate Committee on Environment & Public Works
Congressman Fred Upton, Chairman, U.S. House Energy & Commerce Committee
Congressman Henry A. Waxman, Ranking Member, U.S. House Energy & Commerce Committee

UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201-3367

June 2011

The Honorable John A. Boehner
Speaker of the House
United States House of Representatives
Washington, DC 20515

The Honorable Daniel K. Inouye
President Pro Tempore
United States Senate
Washington, DC 20510

The Honorable Steven Chu
Secretary
U.S. Department of Energy
Washington, DC 20585

Dear Speaker Boehner, Senator Inouye, and Secretary Chu:

The U.S. Nuclear Waste Technical Review Board submits this report, *Nuclear Waste Assessment System for Technical Evaluation (NUWASTE): Status and Initial Results*, in accordance with provisions of the 1987 amendments to the Nuclear Waste Policy Act (NWPA), Public Law 100-203, which direct the Board to report its findings and recommendations to Congress and the Secretary of Energy at least two times each year. Congress created the Board to perform ongoing independent evaluation of the technical and scientific validity of activities undertaken by the Secretary of Energy related to implementing the NWPA.

This report describes work being performed by the Board to evaluate the effects on the management of spent nuclear fuel and high-level radioactive waste of various fuel-cycle options being considered by the U.S. Department of Energy (DOE). Of particular interest to the Board are the types and quantities of the radioactive waste streams that would be generated. The Board has developed a computer-based systems analysis tool (NUWASTE) to support its technical evaluation of DOE activities in this area. Included in the report are initial findings from NUWASTE analyses.

The Board looks forward to continuing to provide useful independent technical and scientific information to Congress and the Secretary that can be used to inform the decision-making process.

Sincerely,

B. John Garrick
Chairman

Telephone: 703-235-4473 Fax: 703-235-4495

Nuclear Waste Assessment System for Technical Evaluation (NUWASTE): Status and Initial Results

Summary

The U.S. Nuclear Waste Technical Review Board (Board) has developed a computer-based systems analysis tool called the Nuclear Waste Assessment System for Technical Evaluation (NUWASTE). The Board intends to use NUWASTE to support its ongoing technical evaluation of U.S. Department of Energy (DOE) activities related to the management of spent nuclear fuel (SNF) and high-level radioactive waste[1] (HLW). Initial analyses performed using NUWASTE have demonstrated its value in gaining a better understanding of the effects of potential fuel-cycle initiatives on the generation of SNF, HLW, and other waste streams. A particularly important feature of NUWASTE is its ability to compare results for a range of scenarios and quantify the relative impacts on the program for managing SNF and HLW in the United States.

NUWASTE currently is designed to assess alternative fuel-cycle scenarios for the existing fleet of U.S. light-water reactor (LWR) nuclear power plants and the additional LWRs for which license applications have been submitted to the U.S. Nuclear Regulatory Commission (NRC). The initial focus of the NUWASTE analyses has been on the management of the SNF generated by those LWR plants, including dry storage, direct disposal in a repository, and the potential introduction of reprocessing with recycling of uranium and plutonium.

1. A glossary of technical terms and abbreviations is provided at the end of this report.

This report presents the results of analyses performed on four scenarios for managing SNF and HLW. The results reinforce the need for a deep geologic repository for disposal of both SNF and vitrified HLW in the United States and demonstrate that the timing of the availability of such a repository will fundamentally affect the need for additional SNF storage capacity. The results also show that, for the existing LWR fleet and the additional LWRs being considered by the NRC, the reprocessing scenarios considered here would have limited benefit in reducing the demand for natural uranium and limited benefit in reducing the volume of SNF and HLW, while significantly increasing the amount of low-level radioactive waste requiring disposal.

The Board is considering ways to extend this analysis and increase the scope and functionality of NUWASTE. This effort includes evaluating additional LWR scenarios and adding the capability to show the relative effects of different scenarios on program costs and operational timelines. Longer-term plans include expanding the capability of NUWASTE to consider implications for SNF and HLW management of introducing advanced thermal and fast reactors, alternative reprocessing technologies and away-from-reactor storage facilities, disposal of all DOE-owned SNF and HLW, and transportation requirements at each stage of the fuel cycle. As these developments are implemented, the Board will continue to report the results of its analyses to Congress, the Secretary of Energy, and the interested public.

712 North Carolina Avenue, SE
Washington, DC 20003

Decommissioning DPC Plant Coalition

Phone: 202.546.4258
Email: dpc@govstrat.com

June 27, 2011

Arnold Edelman, EIS Document Manager
Office of Environmental Management
U.S. Department of Energy
Cloverleaf Building, EM-43
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Edelman:

On behalf of the Decommissioning Plant Coalition[1] (DPC), I am providing comments on the U.S. Department of Energy's (DOE) *Draft Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste* (DOE/EIS-0375-D), hereinafter noted as the "draft EIS."

The draft EIS was prepared to aid in the evaluation of the potential environmental impacts associated with the proposed development, operation, and long-term management of a disposal facility or facilities for the identified waste stream, which the document defines as those low level radioactive waste (LLRW) materials with radionuclide concentrations exceeding the limits for Class C LLRW established by the U.S. Nuclear Regulatory Commission (NRC). The draft EIS notes that this material is generated by activities licensed by the NRC or Agreement States and cannot be disposed of in currently licensed commercial LLRW disposal facilities.

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[1] The Decommissioning Plant Coalition was established in 2001 to highlight issues unique to nuclear power plants that have undergone or are undergoing decommissioning. The DPC is focused on addressing the needs of reactors at single-unit sites that are undergoing or have completed decommissioning activities. Members and participants of the Decommissioning Plant Coalition include the Connecticut Yankee (CT), LaCrosse (WI), Maine Yankee (ME), Rancho Seco (CA), Yankee Rowe (MA), and Big Rock (MI) facilities.

The DPC represents several single-unit decommissioned nuclear power reactor sites now operating as Independent Spent Fuel Storage Installation (ISFSI) sites under NRC licenses that are storing GTCC material required to be removed for disposal by the US DOE under their respective spent nuclear fuel contracts. The DPC provides the following comments on the Draft GTCC EIS.

The draft EIS Summary document indicates that while some GTCC wastes are currently in storage and available for disposal, many such wastes will not be generated for several decades. We certainly hope that this statement by DOE does not suggest that the Department believes there is no imperative for the federal government to define a near-term path forward for the removal and disposal of the GTCC material that is currently stored at decommissioned reactor sites. The GTCC LLRW waste stored at our sites is addressed under our spent fuel contracts with DOE and the Department is obligated to remove this material together with the spent nuclear fuel (SNF) stored at the sites. This position has been repeatedly affirmed in several U.S. Court decisions involving DPC member spent nuclear fuel and high-level radioactive waste contract lawsuits against the government.

The draft EIS also states that excess or unwanted radioactive sealed sources represent a national security concern, so their disposal is a high priority. We do not disagree and believe that there should be no schedule conflict or competition associated with the removal schedule for decommissioned reactor site GTCC LLRW with radioactive sealed sources. The DPC has long held that the GTCC LLRW and SNF stored at our sites should be promptly removed on a priority basis under the contracts we entered into with the Department and that further delay in the removal of this material only exacerbates the liability of the federal government and taxpayers and the adverse economic impact on ratepayers. Further delay in addressing the removal of the GTCC LLRW and SNF at our sites undermines the confidences that our stakeholders have that DOE can accomplish its management obligations under the Nuclear Waste Policy Act. Accordingly, the Department of Energy should integrate the removal of the stored GTCC LLRW with its program to remove the stored SNF at our decommissioned reactor sites and do so on an expedited basis.

While the draft EIS correctly notes that the GTCC LLRW resulting from the reactors that have already been decommissioned is currently being stored at the former reactor sites, it does not specifically cite the fact that this existing inventory of GTCC LLRW is currently, or soon will be, completely stored in dual-purpose canister systems licensed by the NRC for both storage and transportation. For completeness and accuracy, the draft EIS should specifically mention the decommissioned reactor ISFSI sites with dual-purpose canister systems containing GTCC LLRW. Specifically for the DPC facilities, the GTCC LLRW is stored at Maine Yankee in four (4) NAC UMS system canisters; Connecticut Yankee in three (3) NAC MPC system canisters; Yankee Rowe in one (1) NAC MPC system canister; Rancho Seco in one NUHOMS system canister; and Big Rock Point in one Fuel Solutions system W-150 canister. Accordingly, there is an existing volume of GTCC LLRW stored at decommissioned nuclear power reactor ISFSI sites that should be specifically addressed in the GTCC EIS as completely packaged, in

dual-purpose canisters licensed by the NRC for transportation and accordingly available for expedited DOE removal and disposal.

We appreciate your consideration of our comments; please do not hesitate to contact me with any questions or should you desire any additional information.

Sincerely,

Michael S. Callahan
On behalf of the Decommissioning Plant Coalition

MAINE YANKEE

321 OLD FERRY ROAD * WISCASSET, ME 04578

July 5, 2011

The Honorable Olympia Snowe
United States Senator
154 Russell Senate Office Building
Washington, D.C. 20510-1903

Dear Senator Snowe:

I am writing to update you on two recent and positive developments on our efforts to ensure that the removal of the remaining radioactive material now stored at the Maine Yankee site receives the priority attention that we have long sought with your assistance.

First, the Transportation and Storage Subcommittee of the Blue Ribbon Commission on America's Nuclear Future has issued its draft recommendations to the full Committee. Chief among them are:

- The United States should proceed expeditiously to establish one or more consolidated interim storage facilities as part of an integrated, comprehensive plan for managing the back end of the nuclear fuel cycle. An effective integrated plan must also provide for the siting and development of one or more permanent disposal facilities.

- Spent fuel currently being stored at decommissioned reactor sites should be "first in line" for transfer to a consolidated interim storage facility as soon as such a facility is available.

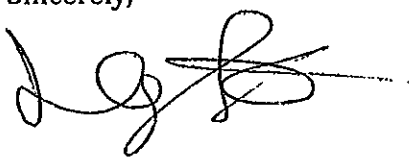
Second, the Report Accompanying the House Energy and Water Appropriations Bill for FY '12 includes the following guidance to the Department of Energy:

- ... the Committee directs the Department to submit, with its fiscal year 2013 budget request, a plan containing options to develop interim storage capacity that would, as a priority matter, provide a means of consolidating the spent nuclear fuel and other high level waste present at permanently shut-down reactors. This plan should include a cost-benefit analysis comparing the options to the status quo. The Department should also submit to the appropriate Committees any legislation it determines necessary to facilitate the implementation of such plan.

We view this guidance as positive and complementary to the draft recommendations of the BRC in regard to the fuel and Greater –Than-Class C Waste at our sites. These will continue to be stored safely and securely in dry storage casks that are also licensed for transport.

After the full BRC draft report is issued July 29 Eric Howes will contact Patrick Woodcock to discuss the next necessary steps. We thank you for your past support and look forward to working with you to build on the progress we have made together.

Sincerely,



Wayne A. Norton
Chief Nuclear Officer

For Immediate Release: **July 29, 2011**
Contact: Rob Thormeyer, 202-898-9382, rthormeyer@naruc.org

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NARUC Joins with Washington, South Carolina in Suit Against NRC in Yucca Case

WASHINGTON—The nation's State utility commissioners joined a coalition of State and local governments in filing suit against the Nuclear Regulatory Commission for unreasonably delaying a decision on the proposed nuclear-waste repository at Yucca Mountain, Nev.

In joining the suit with the States of South Carolina, Washington, and local governments from Nevada, the National Association of Regulatory Utility Commissioners is asking the U.S. Court of Appeals for the District of Columbia Circuit to compel the NRC into acting on the Yucca Mountain proposal.

Noting that the Nuclear Waste Policy Act (NWPA) requires the agency to determine whether Yucca Mountain is safe for the storage of spent-nuclear fuel, the lawsuit alleges the NRC is flouting its statutory obligations.

At issue is the Department of Energy's June 2008 license application to begin construction of the repository in Yucca Mountain. The Nuclear Waste Policy Act requires the NRC to make a determination on the application within three years. Although DOE has since sought approval to withdraw its application, the law remains unchanged.

"Although the NWPA mandates that the NRC 'shall consider' the license application, NRC has unreasonably and unlawfully withheld its consideration by (a) withholding its decision regarding DOE's motion to withdraw [the Yucca application], and (b) terminating its staff's technical review of the license application and allowing effective suspension of the adjudication before" the agency's Atomic Safety Licensing Board.

NARUC and the coalition filed the suit after the D.C. Court of Appeals dismissed a similar lawsuit against the Dept. of Energy's withdrawal application. In that case, the court determined that because the NRC has not acted on the Department's request, the court had nothing to review. Instead, it noted that the NWPA allows the agency three years to review the 2008 Yucca application, and that deadline has since passed.

"We do not take this action lightly, but given the NRC's actions contrary to the plain reading of the law, we feel we have no other option," said NARUC President Tony Clark of North Dakota. "We join our State and local colleagues from Washington, South Carolina, and Nevada in urging the court to require the NRC to act. We are hopeful that the NRC will not ignore a court order as it is ignoring congressional intent."

"It is unfortunate and a waste of taxpayer dollars that we have to seek court approval just to make the NRC do its job," said NARUC Subcommittee on Nuclear Issues—Waste Disposal Chair David Boyd of Minnesota. "But given the more than $30 billion investment our nuclear-power consumers have already made, they deserve a fair and thorough review for their money. The Nuclear Waste Policy Act is crystal clear in its requirement that the NRC act on the Yucca application within three years. We are past that date and are optimistic the court will force the NRC to act."

An affidavit from Commissioner Phyllis Reha of Minnesota is also included in the suit.

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NARUC is a non-profit organization founded in 1889 whose members include the governmental agencies that are engaged in the regulation of utilities and carriers in the fifty States, the District of Columbia, Puerto Rico and the Virgin Islands. NARUC's member agencies regulate telecommunications, energy, and water utilities. NARUC represents the interests of State public utility commissions before the three branches of the Federal government.

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