NRC NEWS

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"The Need for Alternatives in Low-level Radioactive Waste Disposal"

Prepared Remarks for

The Honorable Gregory B. Jaczko
Commissioner
U.S. Nuclear Regulatory Commission

at the
Electric Power Research Institute's
2007 International Low-level Waste Conference and Exhibit Show
Foxwoods Resort, Connecticut

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I am pleased to be here today to share some my thoughts on low-level radioactive waste disposal. I understand that this is the 16th consecutive meeting of its kind so I hope that what I am about to share will add some weight to the discussions that you will have.

Most of the work that the U.S. Nuclear Regulatory Commission (NRC) is known for tends to be about nuclear power plants. That leads to a focus on the energy generation and waste generation issues. One area I have seen that deserves much more attention is the area of low-level waste disposal, and I do not believe you can talk about low-level waste disposal without discussing decommissioning.

One of the principles I have focused on that is relevant to these issues is public confidence. Dealing with low-level waste and decommissioning are technical undertakings but they ultimately involve larger societal challenges. To address these challenges, we should first and foremost focus on public confidence issues.

There are several examples of NRC licensed facilities that are not in operation. I mention that to make the point that the public is a powerful entity. If a large portion of a community does not support a specific facility, it will not get opened even if the technical issues were addressed

and the NRC issues a license. If we address the societal issues first, think about them first, we will be more efficient and likely more successful at resolving complex public policy issues. We need that public involvement from a diverse group of stakeholders and ultimately their confidence to make and implement the right decisions.

It is in that context I think about what seems to be a clear problem -- the low-level waste compact process has not been quite as successful as we would have hoped. While the NRC has developed national standards for low-level radioactive waste disposal in its regulations the agency does not currently regulate any of the disposal sites in the United States. The current disposal facilities are all regulated by states. These sites are located in Barnell, South Carolina; Clive, Utah; and Richland, Washington.

The Low-level Radioactive Waste Policy Acts of 1980 and 1985 were supposed to ensure a reliable and predicable means of disposing of low-level radioactive waste. The acts made each state responsible for providing for waste disposal, but I do not believe that the overarching objectives of the acts will ever be realized. In fact, low-level waste disposal back in the early nineties has been anything but predictable.

In December 1992, the state of Nevada closed the Beatty site, which first opened to commercial low-level waste (LLW) disposal in 1962. This action reduced the number of commercial LLW sites to two - Barnwell and Hanford. Because of the compact system, states not belonging to compacts that included the Barnwell and Hanford sites no longer had access to LLW disposal. This precluded disposal from approximately 33 states.

We are now in a similar situation with the looming closure of Barnwell, but back in July 1995, South Carolina withdrew from the Southeast Compact and opened the Barnwell site to all U.S. commercial low-level waste generators except those in North Carolina. Recent developments, however, in the South Carolina legislature will close the Barnwell site to out-of-compact waste disposal again in 2008. This will create challenges to disposing of commercial low-level waste, particularly Class B and C waste in the form of resins from reactors and sealed sources used in medical applications. The decision to close the Barnwell facility introduces greater uncertainty in the availability of disposal options and further strains a systems that requires greater flexibility.

Several organizations have analyzed these issues. In 2001, the National Academies commissioned a study on “The Impact of Low-level Radioactive Waste Management Policy on Biomedical Research in the United States,” where the committee found the cost of disposal to be a major driver in medical research. Additionally, the committee indicated that if access was further restricted resulting from closure in a disposal facility may increase the need for on-site storage. It also indicated that further stress on the medical community beyond what already exist “might not be as well tolerated.”

In 2004, the Government Accountability Office (GAO) published a report concerning LLW disposal availability and gave testimony on the findings in the report before the Senate Committee on Energy and Natural Resources that same year. GAO concluded that “although no shortfall in disposal availability appears to be imminent, uncertainties remain about the future access to

disposal facilities." The report also concluded that the development of any new facilities may not address national needs for the disposal of Classes B and C waste disposal.

A more recent GAO study released in March 2007 evaluated foreign experience with LLW to look for ways to improve the U.S. system of management. The GAO in this report, like the report in 2004, raised concerns with disposal options. GAO concluded that disposal options were needed for very low-level radioactive waste "by either removing this waste from review by the nuclear regulatory authority as LLRW, or providing special disposal options for this waste."

There is no looming crisis, which is good, but because of that, it is it harder to get the attention that this issue deserves focused on finding a solution. Because there is no immediate crisis, however, we do have an opportunity to work through the societal issues involved.

Before I turn to my ideas for new approaches to this problem, let us review the recent regulatory history. Back in the early nineties it was thought that a lot of the nuclear power reactors would decommission in the near future. With a wave of power plants decommissioning there would be an increase need for disposal of a significant amount of LLW. But this need has been put off into the future as a result of license renewal for a large portion of the current fleet of reactors. NRC's License Renewal Rule has allowed licensees of power reactor facilities to extend the life of their plants by 20 years. Thus, license extension for existing power reactors has eased the demand for LLW disposal in the short-term.

In July 1997, the NRC published in the *Federal Register* its final rule for Radiological Criteria for License Termination. This new rule amended 10 CFR 20 to include Subpart E where section 20.1406, "Minimization of contamination," was added to require new applicants, other than renewals, after August 20, 1997, to describe how their facility design and procedures for operations will reduce contamination to the facility and the environment. While the NRC staff is just beginning to gain experience with this new rule they are proposing to amend this provision to include nuclear facilities currently operating. The expansion of this section of the License Termination Rule could increase the volumes of waste requiring disposal in the short-term.

The NRC staff has initiated a strategic assessment of the NRC's LLW program aimed at evaluating what actions the staff could take to ensure a stable, reliable and adaptable regulatory framework for management of LLW. The staff issued a *Federal Register* notice back in July of 2006, requesting comments from those of you here today as well as others concerned about LLW disposal. I understand that the staff received a lot of comments from various stakeholders and I am looking forward to the staff's recommendations to the Commission.

Back in January 2007, the Commission met with its Advisory Committee on Nuclear Waste (ACNW) and we discussed with them the various challenges facing generators of LLW if Barnwell were to close. As a result of that meeting the Commission directed the ACNW to work with the staff to provide recommendations on what could be done to increase disposal options for LLW.

One is the minimization of waste that I just discussed. Another alternative the Commission involves taking a holistic look at the waste classification system to ensure disposal options are based on the public health and safety implications of the material. In that light, the Commission

directed ACNW to analyze the use of Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste sites as a potential option for disposal of certain LLW.

On May 14, 2007, the Commission approved for publication in the *Federal Register* its final rule amending several sections of its regulations to establish the regulatory framework for certain radium sources, accelerator-produced material, and certain discrete sources of naturally occurring radioactive material (NARM). The final rule revises the definition of "byproduct material," adds a definition for "discrete source," and amends existing regulations and adds certain provisions in order to provide the regulatory framework for the newly added byproduct material. This rule primarily impacts those involved in the academic, medical, and industrial use of byproduct materials.

The Energy Policy Act of 2005 (EPAct), which gave the Commission the authority to regulate these materials, recognized the existing framework in place by states to dispose of these radioactive materials safely in licensed low-level radioactive waste facilities or other facilities. The act specifically stated that these radioactive materials, which are defined in Section 11e.(3) and 11e.(4) of the Atomic Energy Act of 1954, as amended (AEA), may be transferred to and disposed of in a disposal facility that is adequate to protect public health and safety. These facilities may be "licensed by the NRC or State that has entered into an agreement with the Commission under Section 274b of the AEA or at a disposal facility in accordance with any Federal and State solid or hazardous waste law, including the Solid Waste Disposal Act, also known as the Resource Conservation and Recovery Act (RCRA)." I believe that RCRA facilities could prove to be a viable disposal option for very low-level radioactive waste to facilitate this effort if it can be demonstrated that the facility meets standards comparable to current regulations for disposal of such waste. Thus, when it comes to radioactive waste disposal, these facilities would need to meet standards comparable to NRC's regulations.

One of the things I have focused on since joining the Commission was making sure that sites undergoing decommissioning are returned to productive use in the communities where licensed operations took place. Decommissioning sites so communities are not restricted in the future use of these locations builds public confidence. However, I have recognized that waste disposal options, particularly at non-power plant sites, become so cost prohibitive that it may not be possible to fully clean up and return decommissioning sites to green fields. Not having this option is not acceptable to many of the communities where these facilities exist. Developing alternatives to deal with this problem will take a concerted effort to communicate and listen to the public in communities around the nation. Decommissioning sites and establishing waste disposal facilities are intertwined issues that affect a majority of states. We must have a dialogue that allows us to listen to concerns and base a new system on public health and safety. One final point is that it is important to have these discussions broadly, not centered around the approval or disapproval of a specific facility which leads to conflict rather than a comprehensive solution.

An alternative means to addressing how to ensure sites can be returned to green field status is the minimization of waste that I just discussed earlier. Another alternative being discussed at the Commission involves taking a holistic look at the waste classification system to ensure disposal options are based on the public health and safety implications of the material. This particular alternative was borne out of the Commission's decision to decommission the source material contamination at the Heritage Mineral Site in New Jersey. Because of sites like the one in

New Jersey, as well as others, the Commission directed ACNW to analyze the use of Resource Conservation and Recovery Act Subtitle C hazardous waste sites as a potential option for disposal of certain LLW.

While there may be other alternatives, such as opening up disposal at government facilities, I believe all options should be required to meet standards comparable to those within NRC's regulations. The closing of Barnwell next year, the uncertainty surrounding the licensing of the Waste Control Specialists site, and the degree of relief it may or may not provide for Class B and C disposal place increasing pressure on the need to ensure safe, reliable, and predicable LLW disposal. I believe that a lot of work needs to be done to increase disposal options. Increasing our options will go along way to improving outcomes at decommissioning sites/facilities and meeting the demand placed on waste disposal by potentially building new nuclear facilities.

In the end, I am committed to finding viable alternatives to LLW disposal that meet comparable NRC standards. Developing greater disposal options that meet acceptable safety standards will be critical to ensuring these alternatives gain the support and confidence of the public, which in turn is critical to the success of any future approach. As you continue to meet the many challenges facing the disposition of radioactive waste in the nation, I encourage you to engage the NRC staff in its strategic assessment and to look for publicly acceptable approaches to expanding LLW disposal options.

Thank you and I would be happy to take any questions you may have.