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November 1, 1996



The Honorable Shirley Ann Jackson, Chairman
U.S. Nuclear Regulatory Commission
Washington DC 20555

Re: The Evolving NRC Position on "Assured Storage"

Dear Chairman Jackson:

Your letter to me of May 9, 1996 stating that the Commission is open to consider a state request for assistance in assured storage of low level waste proposals and outlining various issue considerations was appreciated. The nuclear community continues to express significant interest in the concept as is attested by the publication of additional articles, the convening of an "Assured Storage Working Group", and escalating community and media discussion. Some of the NRC staff work also now involves this option and needs to carefully and concisely present its potential. In specific, I would like to comment on the Strategic Assessment and Rebaselining Initiative, specifically Strategic Assessment Issue Number 5: The role of the Nuclear Regulatory Commission (NRC) in the management of low-level radioactive waste. My comments concern option 6, which addresses "assured storage," but is entitled "long-term storage." In order for the Commissioners to give fair consideration to assured storage, it would be helpful to have a more straightforward description of the concept than is provided in the staff's current background paper, which unfortunately has already been posted on the Internet.

First, option 6 indicates that the NRC currently has a policy of discouraging "long-term storage," and, by implication, "assured storage." We do not believe the NRC policy is accurately stated. The NRC does discourage "temporary storage" of low-level radioactive waste at the site of generation if other options are available. This is because temporary storage of waste is generally done under fewer specific license constraints, due to the ad hoc nature of such storage and the need for flexibility to accommodate changes in waste generation patterns. Where better options are available, preventing the accumulation of large amounts of waste on site can help reduce the potential for accidental exposure. Like traditional disposal, assured storage systems entail a comprehensive approach to long-term management. Because of this, it fulfills a different objective than temporary storage of waste between the time of its generation and the time of shipment offsite.

Emphasizing Government &

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Second, the Introduction to the options seems to suggest that assured storage is offered as a substitute to disposal, for "managing the country's LLW." We have clearly and repeatedly stated that assured storage may provide an alternative to traditional disposal in situations where, for whatever reason, states, compacts, and developers are unable to establish Part 61 facilities.

Third, the paper misrepresents to the Commissioners the nature of support for the assured storage concept. As a principal author, I am a practicing attorney in Boise, Idaho, and served as U.S. Nuclear Waste Negotiator in the Bush administration, and as Lieutenant Governor and Attorney General of Idaho. I am not generally considered a "DOE contractor," although I have provided the Department some limited consulting services over the years. But my colleagues and I are not the only supporters of assured storage. At two separate briefings with NRC Commissioners and staff from the low-level radioactive waste program a state official from Connecticut eloquently related his view of positive public reaction in that state when the concept of assured storage was presented as an alternative to traditional disposal. In addition, we have provided the NRC staff copies of letters from state officials, industry representatives and knowledgeable observers indicating their strong support for the proposal.

Fourth, the paper declares that establishment of an assured storage facility for waste generated within the region would not fulfill state "obligations" under the Low-Level Radioactive Waste Policy Amendments Act. It is not clear just what obligations the paper is referring to. If the statement means to imply that a Congressionally-approved compact region would not be able to limit use of an assured storage facility to waste generated within the region, the point would be more credible if it made reference to some supporting legal analysis. In fact the issue is far from settled. In our most recent article on assured storage, we have offered a different view of this. I believe that the NRC staff's conclusion on this important legal issue is premature at best.

Finally, and most importantly, the staff's background paper appears to describe assured storage in the most superficial manner possible, and bears little relationship to the descriptions and arguments provided in our articles on the subject. This kind of presentation may invite rejection of the idea without affording the Commissioners an opportunity to fully understand the proposal and its implications.

It is necessary to understand what assured storage is, and what it is not. Assured storage is not just long-term storage. Nor does assured storage consist simply of buildings or structures. Under our proposal, the NRC would not have to determine "at what point indefinite storage constitutes disposal." As we state in our paper, assured storage is an integrated management system for safely housing waste, while preserving options for its long-term management, through robust, accessible facilities, planned preventive maintenance, and sureties adequate to address contingencies or implement future alternatives. In short, assured storage is a comprehensive waste management system governed by a framework of regulations, orders and license conditions.

The concept can be best illustrated with a practical example: If, after years of inspection and maintenance, a facility operator believed he had sufficient information and data to demonstrate that the facility could go on isolating the waste without human oversight, he might petition the regulatory agencies to reduce or discontinue institutional control activities. If the regulatory agencies agreed with the proposal, they would prescribe the conditions of closure as part of the official licensing action. If the regulatory agencies were not persuaded, then the site operator would continue the institutional control regime in accordance with his license conditions, using funds in a perpetuity account. It is plausible, however, that advances in waste treatment and isolation that are inevitable over the coming decades and centuries would render the assured storage system obsolete, in which case the waste would be removed in favor of a better solution.

Interestingly, we have found support for assured storage from two very different groups of people. Some materials engineers believe that, in combination with improved waste forms, today's man-made structures alone are adequate to isolate radionuclides for very long periods of time, irrespective of site conditions. They are confident that within a reasonable period of time assured storage facilities would demonstrate this point, leaving our successors to wonder what all the fuss was about. Some individuals, on the other hand, believe that there currently is no safe permanent disposition for low-level radioactive waste. And for this reason, it makes sense to house waste under the kind of institutional safeguards provided with assured storage systems. Ironically, both of these polarized groups might be able to support the development of assured storage systems, while agreeing to disagree on the long-range outcome.

We believe it would damage the regulatory credibility of the NRC for it to become actively involved in "promoting" the establishment of waste treatment, storage or disposal facilities by states or by companies in the private sector. At the same time, however, the NRC would best serve the cause of safe and effective waste management by taking whatever steps are necessary to preserve any and all reasonable waste management options. The NRC should also come to grips with the reality that it may no longer be possible to license new Part 61 disposal facilities in some parts of the U.S. Public interest in the outcome of these high profile licensing decisions has thrust them into a political realm beyond the reach of career professionals who are officially charged with such "technical" decisions.

Several years ago, former NRC Chairman Ivan Selin recognized the difficulty states were having in developing new facilities under Part 61 and offered an intriguing way forward:

" . . . a new generation of designs has evolved, based on highly engineered concrete structures and waste containers. Such designs can help to provide and sustain the physical isolation of low-level waste; they can be employed under a wide range of environmental conditions Another possibility would be to provide greater latitude for disposal concepts featuring, for example, greater reliance on institutional control, maintenance, and retrievability Technology is available to site and safely operate facilities in almost

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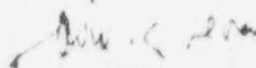
any environment, and the necessary regulatory framework is in place . . . The NRC is more than ready to do what we can to help, within the bounds of our proper regulatory role."

I believe that the concept of assured storage, as presented in our articles, goes a long way toward fulfilling the vision of the former Chairman.

The Strategic Assessment and Rebaselining Initiative invites comments on the NRC's proper regulatory role in the further development of assured storage. However, absent balanced and objective information about the proposed concept, it would hardly be possible for the Commissioners to reach independent conclusions in the public interest. For this reason, I am respectfully submitting a substitute background paper in the same format as the original. The substitute background paper accurately, though briefly, describes the assured storage proposal and highlights the actual issues associated with the idea.

I hope this information provides the Commission a more balanced presentation of the assured storage proposal, and we stand ready to respond to any questions you and your colleagues may have. Your leadership and objectivity to allow this infant, but valuable option to rise or fall on its own merits in the arena of public policy debate is both necessary and appreciated.

Sincerely,



David H. Leroy

cc: Senator Larry Craig
Representative Mike Crapo
Connecticut Congressional delegation

Option 6: Recognize Assured Storage in Concept as a Viable Long-Term Waste Management Option

1. Option

As described in journal articles, "assured storage" is an approach to long-term management of low-level radioactive waste involving greater reliance on institutional controls, waste retrievability, and engineered barriers. *The option for the Commission at this time is whether to formally recognize assured storage, in concept, as a viable waste management option, recognizing that specific issues associated with the concept would have to be addressed as part of a licensing action.*

2. Discussion

Three articles in trade journals and conference proceedings describe the "assured storage integrated management system." Assured storage facilities would look much like above grade engineered "disposal" facilities, but would be different in several key respects. Rather than backfilling and closing the structures, they would remain accessible, most likely through an internal aisleway, for ongoing internal inspection. This would allow for maintenance and repair of the facility structure or repair or repackaging of concrete waste modules during the institutional control period. An inspection and maintenance regime of this kind might eliminate or reduce the frequency of groundwater monitoring, which is generally intended to detect structural failure after the fact.

Unlike traditional Part 61 disposal facilities, which assume a 100-year institutional control period, assured storage facilities could be inspected indefinitely using funding from a perpetuity fund, that would likely be similar in scope and coverage to annuity funds provided for institutional control of disposal facilities. Under Part 61, a license applicant must show that the facility would protect public health and safety even if all institutional control ended 100 years after closure. Some states, however, plan for much longer institutional control periods. Ohio, for example, plans institutional control for 500 years.

Some assured storage proponents believe that improved waste forms and engineered barriers are now sufficient to allow for safe isolation of waste much longer than the 100 years credit allowed for under disposal regulations, regardless of site characteristics. They believe it likely that such facilities would prove themselves over a long period of time, giving future regulators a basis of empirical data to justify a decision to permanently close the facilities and discontinue further inspections. They concede, however, that continued facility performance is not guaranteed. For this reason, waste remains in an easily retrievable form, and the institutional control fund would allow for alternatives other than closure of the facility.

By leaving future options open, proponents of assured storage believe that developers might avoid public skepticism about implementing a disposal decision that is meant to be permanent and nonreversible. They point to public cynicism over previous efforts to permanently dispose of waste that later have become remediation projects.

The primary issues related to assured storage involve how such facilities might be licensed, and the nature and coverage of the financial assurance or decommissioning plans. Under contract to DOE's National Low-Level Waste Management Program (NLLWMP), a private lawfirm specializing in licensing issues has issued a report concluding that assured storage facilities might be licensed by putting together applicable provisions from various NRC regulations. In order to provide realistic funding to take advantage of the various possible

outcomes for assured storage (facility closure, indefinite institutional control, waste removal, etc.) the financial assurance plan would have to provide the necessary resources at the appropriate time to take advantage of such options. The NLLWMP plans to conduct further work to describe the elements of such a financial assurance plan.

The state of Connecticut, for one, plans to evaluate whether the compact region would be able to exclude out-of-region waste from an assured storage facility. Assured storage briefings have been held in two other states. Another state recently developed a scale model of a facility closely resembling the assured storage concept described in the articles in order to stimulate public discussion. Some industry representatives have expressed interest in developing waste management facilities based on the assured storage approach.

3. Impacts

Regulatory Changes Required -- A license for operating an assured storage facility could likely be issued under current regulations in 10 CFR 30, 40, 61, and 70, supplemented by NRC orders.

NRC Program Impacts and Efficiencies -- If the proposed facility were located in a non-agreement state, NRC would be responsible for reviewing the license application. It is estimated that several FTE's and a year or longer would be required to license the facility. This period of time could be shortened considerably in response to a comprehensive, high quality license application that anticipated and responded to applicable issues. Whether in an agreement state or not, NRC would probably be required to issue a special nuclear materials license. This licensing action, however, would likely be similar to proposals to place similar quantities of SNM in above grade, engineered "disposal" facilities.

Action on this option is independent of the Commission's resolution of other options in this series.