

No.: S-5-92
Tel.: 301/415-8200

NRC PERSPECTIVE ON EXTENDED ON-SITE STORAGE OF
LOW-LEVEL RADIOACTIVE WASTE AFTER 1993

COMMISSIONER FORREST J. REMICK
U.S. NUCLEAR REGULATORY COMMISSION

WASTE MANAGEMENT '92
TUCSON, ARIZONA
MARCH 3, 1992

Abstract

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) requires that each State which has not provided for disposal capacity by January 1, 1993, must take title to and possession of the low-level radioactive wastes generated in the State. If a state does not take title to and possession of the wastes, the rebates to which the state would have been entitled to will be returned to the waste generators.

In considering how to implement the provisions of the Act, the Commission solicited comments from States, low-level radioactive waste compacts, local governments, and the general public.

This paper describes the NRC's current regulatory framework for implementing the title transfer provisions of the LLRWPA. The paper also describes the Commission's views on extended on-site storage of low-level radioactive wastes after the 1993 and 1996 milestones established by the Act.

INTRODUCTION

Good morning, ladies and gentlemen. I am delighted to be a participant in this major international conference on the management of radioactive waste. I appreciate having the opportunity to discuss with you the NRC's perspective on extended on-site storage of low-level radioactive waste.

I firmly believe that issues concerning the proper management, storage, and disposal of radioactive wastes -- both high-level and low-level -- are among the principal issues that must be successfully resolved if commercial nuclear power is going to continue to contribute to the energy mix of not only this country but also other countries as well.

BACKGROUND

As you know, the demand for electricity in this country continues to grow. Conservation can certainly reduce the rate of growth in demand for electricity. But eventually, new electrical generating capacity will be needed if the economies of this country and other countries are to **continue to grow**. The decisions that we are making today on matters related to radioactive waste management and disposal will go a long way in determining the future role of nuclear power in providing some of the future electrical generating capacity both here and abroad.

Just two weeks ago, I visited Indonesia and had discussions with Indonesian officials on their development of a nuclear regulatory program. I might note here that although Indonesia has a sizable radioisotope and radio-pharmaceutical program, it has no commercial nuclear power program at this time. However, Indonesian officials stated that the demand for electricity in their country is growing at a rate of about 16 percent per year. This translates into a need to double their electrical generating capacity about every four or five years. Because of this rapid growth in electrical demand, the Indonesians are giving serious consideration to all forms of power generation that might provide for their electrical energy needs over the next several decades. One source of electrical power that is being seriously considered by the Indonesians is nuclear energy. I found it very important that while they were interested in the overall regulatory program for nuclear power plants, they were also keenly interested in the progress that is being made in this country in solving the radioactive waste disposal problem, even though they have state--of-the-art low-level radioactive waste-handling facilities. They are looking not just at the NRC and the progress that the NRC has made in developing a regulatory program for radioactive waste management and disposal but at the entire process of managing and disposing of radioactive wastes. This means they are looking at the collective performance of all of us -- whether we be regulators, developers of waste disposal facilities, or waste generators. It is important that we not lose sight of this.

Low-Level Radioactive Waste Policy Amendments Act of 1985

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) (I'll refer to it as simply the "Act") clearly laid out the roles and responsibilities of the various parties involved in the management and disposal of low-level radioactive wastes in this country. The NRC has, over

the past several years, made every effort to assure that the provisions of the LLRWPA that the NRC is responsible for implementing have been complied with.

One of the very first initiatives that the NRC pursued after the passage of the LLRWPA was to thoroughly review the Act to determine the provisions which ² might affect NRC programs and to determine what the NRC must do to fulfill each of its responsibilities under the Act. These requirements and responsibilities were laid out in detail in a 1986 NRC report entitled, "Plans and Schedules for Implementation of U.S. Nuclear Regulatory Commission Responsibilities Under the Low-Level Radioactive Waste Policy Amendments Act of 1985" - NUREG-1213.

Emergency Access to Disposal Facilities

Several examples of the NRC's proactive approach to the implementation of our responsibilities under the Act come to mind. For example, Section 6 of the Act provides the NRC with the authority to grant emergency access to any non-Federal disposal facility if there is a serious and immediate threat to the public health and safety caused by the inability of a waste generator or owner to manage or dispose of this waste. In 1989, in order to carry out this responsibility effectively, the NRC promulgated a new section in the Code of Federal Regulations (10 CFR Part 62). This new Part sets forth the criteria and procedures that the Commission would apply in making a determination whether to grant or deny emergency access to a disposal facility. These regulations establish rather stringent requirements for the NRC's granting of emergency access to a disposal site.

Alternative Disposal Methods

The NRC's attempt to comply with Section 8(a) of the Act is another example of the NRC's proactive approach to the Act. That section requires the NRC to identify methods for the disposal of low-level radioactive waste other than shallow land burial and to establish and publish technical guidance regarding the licensing of facilities that use such methods. In response to this requirement, the NRC, during the late 1980s, issued several technical reports and guidance documents, and updated our standard review plans to provide the information that was called for by the Act.

Below Regulatory Concern (BRC)

Of course, no discussion of the actions that the NRC has taken to implement the various provisions of the Act would be complete without some mention of Section 10 of the Act. Section 10 of the Act directs the NRC to establish standards and procedures for acting upon petitions to exempt specific radioactive waste streams from regulation by the Commission due to the presence of

radionuclides in these waste streams in sufficiently low concentrations or quantities to be below regulatory concern, or simply "BRC." The Commission responded to Section 10 by issuing a policy statement on August 26, 1986 (51FR30839). That policy statement contained criteria that, if satisfactorily addressed in a petition for rulemaking, would allow the Commission to grant relief on a practice-specific basis. The Commission followed this policy statement with a second policy statement in July of 1990 that provided a unifying risk framework for making decisions about which practices can be exempted from the full scope of the NRC's comprehensive regulatory controls. This second BRC policy statement was intended to provide a framework for making decisions on whether to grant specific exemptions in areas such as:

3

- (1) the cleanup of sites containing residual radioactivity,
- (2) the distribution of consumer products containing very low levels of radioactivity,
- (3) the disposal of certain wastes containing very low levels of radioactivity, and
- (4) the recycling or reuse of materials that have very low levels of radioactivity.

As most you are aware, the Commission's efforts in implementing Section 10 of the LLRWPA met with considerable public and political resistance. Last summer, the Commission placed a moratorium on implementing the 1990 BRC policy statement. At that time, the Commission embarked on a consensus-building process that attempted to bring together all of the principal parties who had demonstrated a major interest in the BRC issue. Unfortunately, not all of the major parties were willing to participate in the process; so the Commission has now directed the staff to initiate a participatory rulemaking on decommissioning and decontamination criteria that seeks agreement among those parties which are willing to participate in the process. Many of you may wish to participate in the development of the issues for this rule.

While I'm on the subjects of BRC, and decommissioning and decontamination, I would like to mention in passing a visit that I made in January to a gaseous diffusion uranium enrichment facility operated by British Nuclear Fuels (BNFL) in Capenhurst, England. BNFL is currently in the process of decontaminating and decommissioning that facility. They are decontaminating metals and concrete to 0.4 Bq/g (about 10 pCi/g). The BNFL officials told me that 99 percent of the materials in the old gaseous diffusion plant will be recycled. They said that the recycled material amounted to 40,000 tons of metal and 100,000 tons of concrete. If this material had been required to be disposed of

at the U.K.'s low-level waste disposal facility at Drigg, the cost of disposal, at current disposal rates in the U.K. (about \$3,200/m³), would have been about a quarter of a billion dollars. The Capenhurst decontamination and decommissioning activity is impressive and shows that radioactive materials can be managed, disposed of, and recycled in a safe and reasonable manner.

The main point that I want to make by mentioning emergency access, alternative disposal methods, and BRC is that the NRC has taken very seriously each of the provisions of the LLRWPA which might involve the NRC and has established a complete regulatory framework that will contribute to the successful implementation of the Act. But NRC actions alone will not ensure success in the development of new disposal facilities. We continue to provide technical assistance to States to support their regulatory and developmental efforts, and we continue to provide regulatory guidance and criteria that will ensure safe management of low-level wastes until new waste disposal facilities are available.

TITLE AND POSSESSION PROVISIONS OF THE LLRWPA

Let me turn now to the title and possession provisions (Section 5(d)(2)(c)) of the LLRWPA. As you may be aware, this section of the Act provides that if a State or compact cannot provide for disposal of its low-level radioactive wastes after January 1, 1993, nuclear waste generators can request the State to take title to and possession of the waste; the State must eventually assume the liability for not doing so. In 1993, a State can decline taking title to and possession of the waste and avoid the liability provisions, too, but it would forfeit surcharge rebates. Let me explain what these rebates are. Under the Act, surcharges are assessed on waste generators by the states with existing low-level radioactive waste disposal sites, on a per cubic foot basis, on low-level radioactive waste received from States with disposal sites or to compacts without low-level waste disposal sites. Twenty-five percent of the non-penalty surcharges collected by the States with disposal sites are transferred to DOE and later returned to those States or to compacts meeting the Act's milestones. However, if a State chooses not to accept title and possession of waste in 1993, if requested, the rebates will be returned to the individual waste generators from whom the surcharges were collected. In 1996 the penalties become even greater. The LLRWPA stipulates that in 1996 each State in which low-level radioactive waste is generated must, upon the request of the waste generator, take title and possession of the waste, and shall be liable for all damages incurred by the waste generators as a consequence of the failure of the State to take possession of the waste.

Past NRC Activities on Title and Possession Provisions

Early in 1990, the Commission directed the NRC staff to provide the Commission with information on the issues concerning the waste title transfer and possession provisions set forth in the LLRWPA so that the Commission might determine what role, if any, the NRC should play with regard to these provisions of the Act. The Commission was also interested in the adequacy of its existing regulatory framework for implementing the title transfer provisions of the LLRWPA. At the same time, the Commission also expressed its view that it would "not look favorably upon long-term on-site storage of low-level radioactive wastes beyond January 1, 1996."

Since that initial Commission directive to the NRC staff, the title transfer and possession provisions of the LLRWPA have been the subject of several papers, meetings, and briefings. In early 1991, the Commission published in the Federal Register an NRC staff analysis of the issues associated with the waste title transfer and possession provisions of the LLRWPA and solicited public comment on the staff's analysis and on several questions pertaining to the title transfer provisions. The staff's analysis identified various options for discharging the Commission's responsibilities under the LLRWPA. More than 70 comment letters were received by the NRC from States, compacts, local governments, waste generators, public interest groups, and individuals.

One of the principal issues raised by the commenters concerned what role the NRC should play in implementing the title and possession provisions of the LLRWPA. Not surprisingly, the views expressed in the public comment letters on this issue ranged over a wide spectrum. Some felt that the NRC should place itself in the role of the "enforcer" of the LLRWPA. That is, some wanted the NRC to consider not only public health and safety matters when making licensing determinations on storage matters but also the progress, or lack of it, in the development of low-level radioactive waste disposal facilities. Others wanted the NRC to limit its role to making determinations on storage issues solely from the perspective of the specific public health and safety issues related to a specific storage request, and not to consider the cumulative effects that such determinations might have on the development of low-level radioactive waste disposal capacity.

The issue of the NRC's proper role in implementing the title and possession provisions of the LLRWPA presented the Commission with a dilemma. On the one hand, the Commission appreciated the arguments being made by some that the appropriate role for the NRC in judging on-site storage of LLW is to narrowly examine the public health and safety consequences of on-site storage. On the other hand, it seems that if the NRC approves on-site storage without regard to the impact that such approvals might have on the ultimate development of low-level radioactive waste disposal

capacity, the NRC could in effect be undercutting the intent of the LLRWPA, which is to establish new low-level radioactive waste disposal facilities.

Current NRC Approach

I believe that the Commission has now embarked on an approach that not only will continue to ensure that the health and safety of the public will be adequately protected when low-level radioactive waste is stored on-site, but will also not impede progress in the development of regional low-level radioactive waste disposal facilities. The Commission's approach recognizes that there will be some need for on-site storage of low-level radioactive wastes after the LLRWPA milestone date of January 1, 1996, but it does not encourage such storage.

Let me describe the approach that the Commission has adopted. It is somewhat similar to the approach that the Commission took on the emergency access provisions of the Act (Section 6). There, the Commission recognized that the Act gave it the authority to grant emergency access to regional disposal sites if access had been denied and there was a serious and immediate threat to public health and safety. At the same time, however, the Commission recognized that the frivolous use of this provision could undercut the intent of the Act. So the Commission promulgated a regulation which allowed it to grant emergency access to disposal sites if necessary, but under standards and criteria so stringent that the emergency access provisions would be used only as a last resort and only for rare emergencies.

With regard to the title and possession provisions of the Act, the Commission continues to hold the view that it will not look favorably upon on-site storage of low-level radioactive wastes after January 1, 1996. It considers on-site storage of low-level radioactive waste to be a last resort.

Clearly, the NRC's preference is that low-level radioactive waste be permanently disposed of as soon after it is generated as is practicable. I recognize that this might not always be possible, particularly after January 1, 1993, and, in some cases, even after January 1, 1996.

Secondly, for on-site storage between now and January 1, 1996, the NRC's existing regulatory framework will continue to be applicable. For example, the on-site storage of low-level wastes resulting from reactor operation can be undertaken pursuant to the existing authorities and procedures, 10 CFR 50.59, and all

relevant licensing and regulatory requirements applicable to such storage.

For materials licensees, on-site storage of low-level radioactive wastes may be authorized provided that it is authorized under the existing conditions of the license and that the storage is consistent with existing authorities and procedures and all relevant licensing and regulatory requirements applicable to such storage.

For on-site storage beyond January 1, 1996, the Commission has directed the staff to publish a proposed rule that would establish procedures and criteria that will apply to reactor and materials licensees. In order for a reactor or materials licensee to store low-level radioactive waste on-site after January 1, 1996, the licensee will be required to document that he has exhausted other

7

reasonable waste management options. For example, the proposed rule will require that the licensee document that it has asked the State to take title to and possession of the waste pursuant to section 5(d)(2)(c) of the LLRWPA. The proposed rule will also permit the licensee to contract, either directly or through the State, for the disposal of waste in accordance with Section 5(e)(1)(F) of the Act.

The proposed rule will also require a reactor licensee to document that on-site storage activities will be consistent with the safe operation of the licensee's facility and not decrease the level of safety required by applicable regulatory requirements.

The Commission intends to implement these requirements through a rulemaking which will make them standard license conditions for every reactor and materials license issued. The rulemaking will amend 10 CFR Parts 50.54, 30.34, 40.41, and 70.32, which are those sections of our regulations that identify standard conditions for reactor and materials licenses. A licensee will not be required to make a formal submittal to the NRC to show compliance with these conditions. The licensee, however, will have to retain all relevant documentation that shows how the licensee has complied with the license conditions. And the licensee will have to make such documentation available to the NRC for inspection.

The Commission has instructed the NRC staff to develop the proposed rule on an expedited schedule. The proposed rule is to be submitted to the Commission for consideration by May 1, 1992. The final rule is hoped for by the end of 1992.

SUMMARY

I believe that the approach I have just outlined represents a reasonable and balanced position on how the NRC should handle the

title and possession provisions of the LLRWPA. What does this approach accomplish? First, and most importantly, it will, to a large degree, uniformly spread the burden on all involved parties to do their part in assuring that the LLRWPA succeeds. The approach will require that waste generators explore options other than on-site storage for their low-level radioactive wastes; the approach will place a burden on States to respond to the licensees' requests to take title and possession of wastes pursuant to the provisions of the Act; and the approach will require that the NRC inspect the documentation for on-site storage to ensure that the licensee has made a good faith effort to dispose of its low-level radioactive wastes offsite.

Also, the approach will ensure that if, as a last resort, on-site storage of low-level radioactive wastes beyond January 1, 1996, does become necessary for some NRC licensees, the storage will be done in a manner that protects the public health and safety.

I believe that this approach can and will succeed. But each party which has a role to play -- the regulator, the waste generator, the site developer, the State and the regional compact -- must do its part to ensure that the low-level radioactive waste disposal program in this country is a success. Thank you very much, and I would be pleased to answer any questions that you might have.