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Three Senate Bills Introduced To Reform the Regulatory Framework for Nuclear Waste Management (S. 3146, S. 2761, and S. 2804). June 14, 1978. 13 pp. + enclosure (1 pp.).

Testimony before the Senate Committee on Environment and Public Works: Nuclear Regulation Subcommittee; by Monte Canfield, Jr., Director, Energy and Minerals Div.

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Authority: Residual Radioactive Materials Act of 1976; H.R. 12535 (95th Cong.). Energy Reorganization Act of 1974. S. 3146 (95th Cong.). S. 2804 (95th Cong.). S. 2761 (95th Cong.).

S. 3146, S. 2804, and S. 2761 seek to reform the regulatory framework for nuclear waste management. S. 3146 would direct the Nuclear Regulatory Commission (NRC) to regulate the storage and disposal of radioactive waste with certain national security exemptions and would establish standards for disposal and storage of uranium mill tailings and low level radioactive waste which may be regulated by the States. S. 2804 is similar except for certain Department of Energy (DOE) exemptions and the lack of standards for uranium mill tailings. S. 2761 would allow participation of States in the site selection process for storage and disposal facilities. GAO has previously identified factors which can hinder nuclear waste management, including fragmentation of responsibility between DOE and NRC and questions concerning proper Federal/State roles. Public acceptance of radioactive waste storage and disposal locations is also critical to the success of nuclear waste management programs. The extent and role of Federal agencies, State Governments, and private industry in nuclear waste management need to be clarified. The stringent State standards proposed in S. 2761 may not be needed if effective Federal standards and a sound regulatory framework are developed and if an effective system is implemented for public involvement. S. 3146 and S. 2804 are steps toward resolving some problems of the nuclear waste management program. (HTW)

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STATEMENT OF
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ENERGY AND MINERALS DIVISION
BEFORE THE
SUBCOMMITTEE ON NUCLEAR REGULATION
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
ON
THREE SENATE BILLS INTRODUCED TO REFORM THE
REGULATORY FRAMEWORK FOR NUCLEAR
WASTE MANAGEMENT (S. 3146, S. 2761, and S. 2804)

Mr. Chairman and Members of the Subcommittee:

We welcome the opportunity to be here today to discuss with you the regulatory framework for nuclear waste management and certain bills introduced to reform this framework. The bills are S. 3146, S. 2804, and S. 2761. Major provisions of S. 3146 would:

--Direct the Nuclear Regulatory Commission (NRC) to regulate the storage and disposal of all forms of radioactive waste. The President could exempt a storage or disposal facility from this requirement in the interests of national security. I note, however, that the bill is not specific as to what will meet the test of national security.

--Establish standards for disposal and storage of uranium mill tailings and low level radioactive waste which may be regulated by the States.

S. 2804 is similar to S. 3146 except that it (1) would exempt certain Department of Energy (DOE) waste storage operations at existing facilities, and (2) does not address a need to establish standards for uranium mill tailings.

Senate bill S. 2761 would allow States to participate in the site selection process for nuclear storage and disposal facilities licensed by NRC and provide any State the right to disapprove a site selected in that State for any such facility.

The General Accounting Office has been reviewing the Federal Government's nuclear waste management programs for many years. As a result of this work, we believe that resolution of the many uncertainties associated with radioactive waste management--the ultimate purpose of these bills--must be one of the Nation's highest priorities if nuclear fission is to be a major energy source. While we have not performed a detailed analysis of all the provisions of these bills, we do have several important observations based on our previous work regarding radioactive waste management.

In our past work we identified two areas which we feel are particularly important because they can hinder the orderly development and implementation of a national nuclear waste management program. They are:

--Fragmentation of existing responsibility governing the storage and disposal of nuclear wastes between DOE and NRC.

--Questions concerning the proper Federal/State roles in dealing with nuclear waste management.

We have continually taken the position that there is a need for NRC or some other form of independent overview of all waste storage and disposal facilities. Therefore, we endorse those aspects of Senate bills S. 3146 and S. 2804 which would require NRC to expand its licensing and regulatory authority over the short- and long-term storage and disposal of high level 1/ radioactive waste, spent fuel, radioactive waste containing transuranic 2/ elements, and low level 3/ waste.

Another matter which we believe is critical to a successful national nuclear waste management program is public and political acceptance of radioactive waste storage and disposal locations. DOE may not be successful in gaining acceptance of such facilities unless it can convince the public and political

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1/High level waste has extremely high radioactivity concentrations, is characterized by high levels of penetrating radiation, high heat generation rates, and a long toxic life. High level waste is created when reactor spent fuel elements are dissolved in acid to recover unused uranium and plutonium for reuse as nuclear fuel. It is the acid solution remaining that is referred to as high level waste.

2/Transuranic contaminated waste contains much lower concentrations of radioactivity than high level waste. It is generated by plutonium fuel fabrication and fuel reprocessing facilities and laboratories using transuranic elements. This waste generally consists of absorbent tissues, clothing, gloves, plastic bags, equipment, filters from effluent treatment systems, and fuel hulls which remain after fuel reprocessing.

3/Low level waste is all radioactive waste not defined as high level waste.

leaders that it has a sound waste management program and that the risks of radioactive waste storage and disposal are acceptably low. In testimony before the Subcommittee on Environment, Energy and Natural Resources, House Committee on Government Operations, we stated that as a last resort, Congress may need to get involved if major public opposition continues in selecting waste disposal locations. More stringent State standards or State veto power--as proposed in S. 2761--may not be needed if (1) effective Federal standards on waste are developed and implemented, (2) a sound regulatory framework is designed, and (3) an effective system is implemented for involving the public in waste management decisions.

Subsequent to our work, both NRC and DOE have begun to examine these significant issues. NRC has several waste management studies underway, many in response to our recommendations. In a February 1978 draft report, a DOE waste management task force assessed current nuclear waste management programs, and proposed alternative courses of action for proceeding with a national nuclear waste management program. Finally, on March 15, 1978, the President announced the formation of a Federal interagency review group, chaired by the Secretary of DOE, charged with formulating administration policies and plans for a comprehensive nuclear waste management program.

Within the context of these broad issues, let me discuss in more detail some of our prior work as it relates to the major provisions of the bills under consideration. Specifically,

I would like to focus on the need for NRC authority over all waste storage and disposal facilities; and on problems, and efforts being made to resolve them, associated with uranium mill tailings and low level waste burial grounds.

NRC LACKS AUTHORITY OVER ALL WASTE STORAGE AND DISPOSAL FACILITIES

Even if all activities which generate radioactive waste were stopped today, we would still be faced with a major radioactive waste disposal problem because great amounts of nuclear waste already exist. Radioactive waste has been accumulating for decades from our military program and nuclear research and development efforts, fuel reprocessing activities, and commercial nuclear powerplant operations. Existing responsibility governing the storage and disposal of high level and transuranic nuclear wastes is fragmented between NRC and DOE.

NRC was established by the Energy Reorganization Act of 1974 to regulate the commercial nuclear power industry and the commercial use and disposal of radioactive materials. That act also assigned NRC responsibility for licensing and regulating all DOE facilities used for storage of commercial high level waste, and retrievable surface storage facilities and other long-term storage facilities used to store DOE's high level waste from its military and research and development programs.

The act did not extend NRC's regulatory authority to DOE's (1) research and development facilities for the temporary storage or disposal of commercial and its own transuranic

contaminated wastes; (2) facilities for the temporary storage of DOE high level waste; or (3) research and development facilities or full-scale facilities for temporary storage and/or long-term storage or disposal of commercial spent fuel. Thus, NRC does not have regulatory authority over all waste storage and disposal facilities. In fact, about 99 percent of all high level waste in storage today is not under NRC's regulatory control.

In addition to recommending improvements in DOE's and NRC's waste management activities, GAO recommended to the Congress in a September 1977 report 1/ that it should either give NRC authority over those DOE facilities--including research and development facilities--intended for the storage and disposal of high level waste, transuranic contaminated waste, and spent fuel, or provide for other independent oversight and assessment of these facilities. In testimony before congressional committees, GAO has stated a preference for the first alternative.

Regardless of how it is achieved, we strongly believe that all of DOE's nuclear waste storage and disposal facilities should receive independent oversight. While S. 3146 would provide for such oversight, S. 2804 would exempt certain waste storage and disposal operations at existing DOE installations. The bill is not clear, however, as to how facilities to be

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1/"Nuclear Energy's Dilemma: Disposing of Hazardous Radioactive Waste Safely" (EMD-77-41, September 9, 1977).

exempted would be identified. We are not aware of any analysis to date attempting to identify the applicable facilities.

DOE and NRC generally agreed with, and are now acting on, most of the program improvement recommendations contained in our September 1977 report. Furthermore, the DOE waste management task force recommended that responsibility for the ultimate disposal of all forms of nuclear waste should be with the Federal Government and long-term waste disposal facilities should be subject to NRC licensing. The President's Federal interagency review group will be considering this and other task force recommendations as it develops a national nuclear waste management plan.

URANIUM MILL TAILINGS

Uranium mill tailings are a sand-like waste produced when uranium is extracted from uranium ore at uranium mills. About 85 percent of the radioactivity in uranium ore remains in the tailings after the milling process. Radium--the major radioactive waste product in the tailings--takes thousands of years to decay.

There are currently 16 mills processing uranium ore in the United States with a combined processing rate of about 31,000 tons of ore per day. By the 1980s, a rapid expansion of the uranium milling industry is expected. By the year 2000, NRC estimates that about 109 mills with a combined capacity of 381,500 tons of ore per day will be needed if the uranium and plutonium in spent fuel are not recycled. Through 1976, an

estimated 130 million tons of uranium mill tailings had been produced by 42 mills in 10 western States. Unless tailing piles at these mills are effectively controlled and stabilized, radioactivity can spread to the environment by wind and water erosion, ground water, and deliberate removal and unauthorized use of tailings material.

Uranium mills are licensed by either NRC or agreement States. NRC and agreement States require licensees to isolate tailing piles from sources of water, contain them by using suitable ground cover, and restrict public access to areas around the tailing piles. Since these procedures were not uniform, in our May 1975 report 1/on Federal and State efforts to control the radiation hazards from uranium mill tailings, we recommended that NRC (1) assess the capability and willingness of public health authorities or other State agencies to assume responsibility for control programs and to adequately carry them out for the long-term monitoring of tailing piles, and for correcting any problems in tailings stabilization and control; and (2) determine whether additional Federal authority is needed to improve such programs.

We believe those sections of S. 3146 dealing with uranium mill tailings have merit. We want to bring to your attention, however, that in 1977 NRC adopted a policy of not issuing or

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1/"Controlling the Radiation Hazard From Uranium Mill Tailings" (RED-75-365, May 21, 1975).

renewing uranium mill licenses unless the mill owner submits a reclamation plan for tailing piles and a bonding arrangement to finance reclamation activities when mill operations cease. NRC is also preparing a generic environmental impact statement on mill tailings with a draft target date of August 1978. The statement will address land use control around tailing piles, the type of financing required for long-term management, the adequacy of State regulations and resources to provide long-term control, and the need--if any--for the Federal Government to assume responsibility for perpetual care of such sites. As a result, you may want to consider requiring NRC to report the results of the environmental impact to this Subcommittee, including suggestions, if any, for program or legislative changes.

I would also like to point out that we are currently preparing a report on the need for, and adequacy of, the proposed Residual Radioactive Materials Act of 1978 (H.R. 12535). This proposed legislation would allow DOE to enter into cooperative agreements with a number of States to clean up mill tailings at 22 inactive uranium mills. The Federal Government would pay 75 percent of the cost of the program--estimated at $80 to $125 million--and the States would pay 25 percent. The Federal Government would pay 100 percent of the costs for cleaning up tailings on Indian land. We expect to issue our report by the end of June 1978.

LOW LEVEL WASTE

A large volume of waste classified as low level--including some that is long lived and highly toxic--is disposed at six licensed commercial facilities and five principal Federal facilities in the United States. While some of these sites have been operating for more than 30 years, it is still not known what mixture of hydrogeological characteristics and engineering features offer the greatest assurance that radioactivity, once disposed of underground, will not migrate and create a possible public health hazard.

Although NRC and DOE are evaluating existing burial sites to determine their ability to retain radioactive waste, monitoring and maintaining the sites will be required for many centuries. It is important, therefore, that long-term care requirements be identified and adequately funded before terminating and decommissioning sites. However, in January 1976, we reported 1/ that neither NRC nor five of the six agreement States that license commercial disposal sites has established long-term care requirements or determined the adequacy of long-term funding arrangement to meet such requirements. Currently, when operations at commercial sites are completed, the facilities decommissioned, and the licenses terminated, the

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1/"Improvements Needed in the Land Disposal of Radioactive Wastes--A Problem of Centuries" (RED-76-54, January 12, 1976).

States assume responsibility for the long-term care of the commercial sites.

Because some of these sites were releasing radioactivity into the environment, GAO recommended to NRC and DOE that they (1) undertake a comprehensive study of existing disposal sites, (2) develop site selection criteria for future sites, (3) identify long-term site care requirements and assist States in planning for funding such requirements, and (4) establish a policy describing the extent of Federal financial and technical involvement in taking corrective actions at commercial low level waste disposal sites.

As a result of our report and testimony from Federal and State officials, the House Government Operations Committee, Subcommittee on Conservation, Energy and Natural Resources has recommended that the Congress and the Executive Branch consider legislation which would (1) "reassert Federal jurisdiction and the regulatory authority" of NRC over "commercial land burial sites" and (2) assign title to commercial facilities and leases governing such sites to DOE.

NRC then committed itself to reassess the roles of the Federal and State Governments in the regulation and operation of the commercial burial grounds. In March 1977 NRC published the results of a task force study on low level waste burial grounds. The task force report proposed Federal ownership and federally-administered perpetual care programs of the low level burial grounds. NRC has not been able to tell us if and when

the task force's recommendations will be implemented. In this respect, NRC is setting up an interagency group--with DOE, the Environmental Protection Agency, and the United States Geological Survey--to study existing disposal sites and develop criteria for selecting future disposal sites. NRC has also begun a study to determine the long-term care requirements for low level disposal sites. An NRC proposed policy on Federal involvement in corrective actions at existing disposal sites will not be forthcoming until NRC decides whether or not to recommend Federal ownership of disposal sites.

The February 1978 DOE draft report also recommends Federal ownership of low level disposal sites, subject to NRC licensing. This is in line with our previously stated position that all DOE waste facilities receive independent oversight.

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In conclusion, Mr. Chairman, the extent and role of Federal agencies, State Governments, and private industry in nuclear waste management need to be clarified. We cannot delay much longer over these very difficult decisions. While dialogue is important, action is critical if we are to develop an adequate and comprehensive national nuclear waste management program in a timely manner. We believe that positive, straight-forward decisions need to be made on nuclear waste. We believe they need to be made soon. Senate bills S. 3146 and S. 2804 are certainly steps in the right direction.

The importance of these bills and this hearing is underscored by what is currently happening at West Valley, New York--the only commercial reprocessing facility that has operated in the United States. This is a classic example of institutions not foreseeing the long-term implications of radioactive waste management. The closing of this facility raised the immediate question of the respective financial and technical roles of the Federal Government and the State of New York in managing the high and low level wastes stored at this facility.

At a minimum, the Federal Government will have to provide technical assistance to New York to resolve the outstanding waste management issues. If the Federal Government adopts a policy to accept full financial responsibility for the West Valley site, it potentially raises a bigger issue concerning whether or not, and to what extent, the Federal Government should provide financial assistance to the nuclear industry by taking over the cost of managing activities in the so-called "back end" of the fuel cycle.

Mr. Chairman, this concludes my prepared statement. We will be glad to respond to your questions.