Testimony Before the Subcommittee on Energy and the Environment

Committee on Interior and Insular Affairs

Presented by

William J. Dircks, Director

Office of Nuclear Material Safety and Safeguards

U. S. Nuclear Regulatory Commission

May 31, 1979

We are pleased to have this opportunity to discuss issues relating to Federal participation in decommissioning the Nuclear Fuel Services, Inc., (NFS) facility located in West Valley New York.

As we understand the amendment to the U.S. Department of Energy (DOE) Authorization for Fiscal Year 1980 recommended by the House Committee on Science and Technology, DOE would be authorized five million dollars in FY-80 to initiate a program for the solidification of liquid high-level waste currently stored at NFS. The project is to be completed within 10 years. The principal activities to be initiated in 1980 include the engineering, safety and environmental analyses necessary to design a waste solidification facility and remove the high-level waste from the storage tanks.

The Nuclear Regulatory Commission (NRC) regulatory control of the NFS West Valley site is administered through a single facility license, CSF-1. There are two co-licensees: the site owner, the New York State Energy Research and Development Authority (NYSERDA) and the site operator, Nuclear Fuel Services, Inc., a subsidiary of Getty Oil Company.

In addition to the NRC license, the State of New York exercises regulatory authority as an Agreement State over the commercial burial ground for low-level waste located at the West Valley site. The New York State authority is exercised under an agreement with the Commission pursuant to Section 274 of the Atomic Energy Act of 1954, as amended.

We are pleased to have this opportunity to discuss issues relating to Federal participation in decommissioning the Nuclear Fuel Services, Inc., (NFS) facility located in West Valley New York.

As we understand the amendment to the U.S. Department of Energy (DOE) Authorization for Fiscal Year 1980 recommended by the House Committee on Science and Technology, DOE would be authorized five million dollars in FY-80 to initiate a program for the solidification of liquid high-level waste currently stored at NFS. The project is to be completed within 10 years. The principal activities to be initiated in 1980 include the engineering, safety and environmental analyses necessary to design a waste solidification facility and remove the high-level waste from the storage tanks.

The Nuclear Regulatory Commission (NRC) regulatory control of the NFS West Valley site is administered through a single facility license, CSF-1. There are two co-licensees: the site owner, the New York State Energy Research and Development Authority (NYSERDA) and the site operator, Nuclear Fuel Services, Inc., a subsidiary of Getty Oil Company.

In addition to the NRC license, the State of New York exercises regulatory authority as an Agreement State over the commercial burial ground for low-level waste located at the West Valley site. The New York State authority is exercised under an agreement with the Commission pursuant to Section 274 of the Atomic Energy Act of 1954, as amended.

Facility License CSF-1 was issued in 1966 for operation of the reprocessing plant at the site. In 1972, NFS ceased operation of the plant. In 1976 NFS decided to withdraw from the reprocessing business altogether. Current NRC activities with respect to License CSF-1 are related primarily to: (a) investigations of the storage tanks to assure their continuing safety until such time as the waste can be removed from the tanks, (b) compilation of information concerning plant status and past performance which will be useful for construction of a solidification process as well as eventual decontamination and decommissioning, and (c) those surveillance activities necessary to assure that the plant is maintained in a safe condition while in its shutdown mode. Under the existing license, both co-licensees, NYSERDA and NFS, have certain complementary responsibilities for the care of the high-level waste and the plant.

With this as background, there are three issues I will address briefly over the next several minutes; licensing considerations for the proposed project, broad technical issues associated with that licensing, and the benefits to be derived from undertaking the project.

We note that the proposed amendment to the DOE Authorization Bill would authorize the Secretary to enter into contracts and agreements with the State of New York and others to carry out the project. The Secretary would also take title to the liquid high-level waste. It is not clear at this time whether the project would be carried out by private contactors, such as NFS, which are subject to licensing. It is also not clear at what point in the

system the Secretary would take title to the liquid high-level waste nor who would act on behalf of the Secretary to assure its safe management.

Facility License CSF-1 contains conditions called "technical specifications" which define limits of activities that are permitted under the license as well as operational safety parameters. As they now stand, these technical specifications essentially cover the operation of the reprocessing plant as it was contemplated in 1966. They do not permit NFS to transfer the high-level waste from the tanks in order to operate a waste solidification plant. Such activities involve safety and environmental questions which were not reviewed prior to issuance of the existing license. Before such operations could be initiated under the license, a safety and environmental evaluation would have to be completed and the license amended through appropriate changes in the technical specifications or a new license issued.

If DOE were to construct and operate a waste solidification plant on the West Valley site, while that site continues to be subject to regulatory control under License CSF-1, an NRC license evaluation and amendment would also be necessary. The safety and environmental interactions between those activities presently covered under the NFS license, such as the storage or transfer of the liquid high-level waste, and any new operations such as waste solidification are not separable. Also, any private contractor other than NFS which carried out the solidification process for DOE might itself be subject to licensing.

If DOE were to assume complete responsibility for that portion of the site now covered by CSF-1, the storage of commercial high-level liquid waste in the tanks, the on-site storage of that waste following solidification and the continued storage of commercial irradiated fuel in the storage pool would be subject to NRC regulatory control under the provisions of the Energy Reorganization Act of 1974, as amended. It would also be necessary to terminate the existing NFS license. Any action to terminate that license would, in itself, require the consequences of that step to be analyzed. Therefore, we anticipate that no matter how DOE proposes to implement their program, the NRC would be required to conduct substantial safety and environmental analyses and make appropriate amendments to License CSF-1 and issue new licenses to NFS, other private contactors or DOE.

There are a number of technical problems that will need to be resolved in the course of designing a solidification process. We visualize the design and construction of a solidification process to be a chemical engineering problem which would not be abnormally difficult to evaluate from a health, safety and environmental standpoint. The difficult task will be the engineering and process work necessary to remove the waste from the high-level waste tanks and to transfer it to the solidification operation. We believe that the engineering work and safety and environmental analyses should be initiated now. The work being undertaken by the staff to assess the continuing safety of the tanks will provide useful data for the waste removal task.

Another technical issue is the selection of the solidification process. Although decisions on solid waste form have not been made, we believe that work on the project can proceed for several years prior to reaching a final decision on the exact waste form. We believe there is no point in delaying this undertaking at West Valley pending future decisions on waste form.

There are a number of benefits to be derived by proceeding now with those activities leading to eventual solidification of the high-level waste stored at the site, transferring those wastes to a Federal repository, decontamination of the plant and decommissioning those parts of the plant to an extent which is compatible with whatever future use of the facility and the site is contemplated. If the wastes were to be solidified, packaged and shipped off site, it is possible that arrangements could be entered into between DOE and the co-licensees so that the co-licensees could be relieved of their respective responsibilities for care of the liquid high-level wastes.

There are obvious benefits from demonstrating solidification technology and decontamination on a pilot scale as would be the case for the NFS situation. There have been and continue to be many studies about the selection of appropriate solid waste forms and solidification technology. These studies are useful but seem to lead to extensive debate by those sponsoring competing processes. A carefully planned and well-engineered program at NFS could provide a framework in which decisions must be made. We believe also that the project would provide useful information about the

feasibility of undertaking decontamination and decommissioning at major nuclear facilities, both in the commercial sector and in operations conducted by the Federal Government. All such facilities must eventually be decommissioned in a way which minimizes the impact on future generations. The technical data and cost information the NFS project will yield could bear importantly on the future course of the nuclear energy programs.

The most important benefit, however, is neither direct benefits to the licensees nor the demonstration of a new technology. Rather, it is improved safety. While our studies of the tanks thus far indicate that storage of the liquid high-level wastes are safe and will continue to be safe over the next several decades, liquid wastes are more mobile and difficult to control than are solid wastes. There is more opportunity for something to go wrong in the system. We therefore view the DOE program principally as a remedial action with its most important benefit being improved margins of safety.

In summary, we know that as a minimum the NFS license will need to be amended and other licenses issued to private contractors or DOE, depending on how the project is carried out. We recommend that the entire West Valley project contemplated under the proposed amendment to the DOE Authorization be subject to license control. No matter who undertakes this activity, DOE or otherwise, it is particularly important that the total project be subject to an open review which permits public participation in the decision-making process. This can best be accomplished

under the existing regulatory procedures which the NRC now has in place. This open process will allow the public to participate in many of the types of policy decisions which we as a Nation must make in deciding our nuclear future.

Although specific details of the proposed DOE program will require careful safety and environmental evaluation before NRC can make a licensing decision, the NRC supports the concept of solidifying the high-level liquid wastes and shipping it off site. It leads to improved safety at the NFS site. It provides the impetus to move us from the mode of performing studies to one of taking more substantive action in solving the waste management problem. The program at NFS should provide information which can be useful in other nuclear energy programs.