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BY THE COMPTROLLER GENERAL

Report To The Chairman, Subcommittee On Energy And  
Power, Committee On Interstate And Foreign Commerce,  
House Of Representatives  
OF THE UNITED STATES

# Status Of Efforts To Clean Up The Shut-Down Western New York Nuclear Service Center RELEASED

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Eight years after the Nation's only commercial nuclear fuel reprocessing facility stopped operations at West Valley, New York, neither the industrial operator, the State of New York, nor the Federal Government has accepted responsibility for dealing with 600,000 gallons of high-level liquid nuclear wastes, two solid waste burial grounds, a spent-fuel storage facility, and a reprocessing plant. The need for a timely decision is increasing because the industrial operator wishes to transfer its responsibility for the site to the State of New York by December 31, 1980. The State opposes the transfer and has asked for a Federal takeover.

GAO believes that the most practical solution calls for the Federal Government and the State of New York to share responsibility for implementing a comprehensive West Valley cleanup program which recognizes legitimate State and national interests. This arrangement would involve Federal financial and technical resources. At the same time, New York would make available the spent-fuel and low-level waste burial facilities to help solve its own and national waste management problems.



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COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-198111

✓ The Honorable John D. Dingell  
Chairman, Subcommittee on  
Energy and Power  
Committee on Interstate and  
Foreign Commerce  
House of Representatives

105E02303

Dear Mr. Chairman:

As requested in your November 7, 1979, letter, this report discusses the problems at the Nuclear Fuel Services, Incorporated, fuel-reprocessing facility at West Valley, New York, those responsible for dealing with them, and the progress that relevant Government agencies have made in addressing them. The report contains a matter for congressional consideration aimed at settling responsibility for West Valley.

As requested by your office, we did not obtain written agency comments on a draft of the study. However, we provided the Department of Energy, the Nuclear Regulatory Commission, the State of New York, and Nuclear Fuel Services, Incorporated, an opportunity to review the draft of this report. We obtained their comments and views orally and considered them in finalizing the study. As arranged with your office, we are sending copies of this report to the Secretary of Energy, the Chairman of the Nuclear Regulatory Commission, the Governor of New York, and the Vice President of Nuclear Fuel Services, Inc. Copies will also be available to other interested parties who request them.

Sincerely yours,

Comptroller General  
of the United States

CNG 00827  
AGC 00067  
AGC 00912  
DL 901196

COMPTROLLER GENERAL'S REPORT  
TO THE CHAIRMAN, SUBCOMMITTEE  
ON ENERGY AND POWER, HOUSE  
COMMITTEE ON INTERSTATE AND  
FOREIGN COMMERCE

STATUS OF EFFORTS TO  
CLEAN UP THE SHUT-  
DOWN WESTERN NEW YORK  
NUCLEAR SERVICE CENTER

D I G E S T

Eight years after the West Valley, New York, commercial nuclear fuel reprocessing facility stopped operating, neither the industrial operator, the State of New York, nor the Federal Government has accepted responsibility for decommissioning and disposing of the facilities and nuclear waste at the site--a task that could cost between \$42 million and \$1.1 billion. Besides the contaminated reprocessing plant, the West Valley site includes about 600,000 gallons of high-level nuclear wastes stored in two tanks, a spent-fuel storage facility, and two solid waste burial grounds. (See pp. 1 and 2, and 15 and 16.)

The operator of the West Valley site, Nuclear Fuel Services, Inc., has a contract with the State of New York which permits it to transfer the responsibility for the site and the facilities to the State on December 31, 1980, if the condition of the facilities complies with contract terms and Nuclear Regulatory Commission (NRC) requirements are met. The State, which owns the site, believes that the Federal Government should assume a large portion of the responsibility for cleaning up West Valley because it has legal responsibility and the necessary technical and financial resources.

GAO found that the Department of Energy is working on many tasks necessary to plan for the retrieval and solidification of the high-level waste at West Valley. In fiscal year 1980 alone, the Department will spend about \$3 million to characterize the waste problem there and to determine how best to deal with it.

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In addition, the Congress is now considering an amendment to the Department's fiscal year 1980 authorization bill and separate bills in the House and Senate which would direct the Department to conduct a high-level waste retrieval and solidification "demonstration" project at West Valley. This would, in effect, establish the Federal responsibility for the wastes and require the Department to assume almost full technical and financial responsibility for the project.

GAO believes that the most practical solution to the West Valley question would involve a cooperative program between the Federal Government and the State of New York. Although the Federal Government has no contractual responsibility for the site, the Nation can benefit from using its facilities.

State and Federal agencies believe that with further analysis, the West Valley low-level waste burial ground and spent-fuel storage facilities can probably be safely reopened and expanded to accommodate at least the waste and spent fuel generated within the State of New York and may be useful in resolving some of these storage problems for the entire northeastern part of the country.

Thus, making a commitment of Federal resources to resolve the high-level waste problem at West Valley contingent upon the State's resolving some of its own, and possibly its region's, nuclear waste burial and storage needs represents a practical solution to the West Valley problems.

GAO also determined that:

--The Federal Government should rightfully play some role in the site's cleanup, since it encouraged West Valley's development and has the needed technical and financial resources to deal with its problems.

--NRC believes that the high-level wastes can continue to be safely stored at West Valley for some time. However, there is nothing to be gained from delaying their solidification.

--A permanent solution to the entire site could cost between \$41.6 million and \$1.1 billion, depending on the cleanup option selected. The most reasonable estimate seems to be \$180 million.

--The Federal Government has no contractual responsibility for West Valley and a West Valley cleanup project will have limited use for the Department's high-level waste program.

MATTERS FOR CONSIDERATION  
BY THE CONGRESS

The Congress may choose among three broad options for taking care of all the problems at West Valley: (1) full State and Nuclear Fuel Services, Inc., responsibility; (2) full Federal responsibility; and (3) a middle course, which GAO believes preferable. In this case, the Congress would authorize the Federal Government to help deal with West Valley as part of an overall solution which would also require New York to make available the spent-fuel storage and low-level waste burial facilities, if they pass full safety inspections.

The issues involved at West Valley provide an opportunity for an innovative solution with national, regional, and State benefits. Making Federal assistance for West Valley contingent on New York's making the facilities available to help solve its own and national waste management problems is a practical solution. But it must be recognized that the perspective of the parties at West Valley are complicated by such factors as the specter of having long-term responsibilities for the contaminated

site. Therefore, these parties' views of a solution to West Valley are influenced more by how they can minimize their own responsibilities than arriving at the most practical solution for all.

#### AGENCY COMMENTS

The Energy Department, NRC, the New York State Energy Research and Development Administration, and Nuclear Fuel Services, Incorporated reviewed a draft of this report. The Department, Nuclear Fuel Services, and the State objected to one or all of GAO's positions on (1) linking Federal participation to the State's agreeing to reopen the spent-fuel storage and low-level waste facilities, (2) characterizing the high-level liquid waste solidification as a demonstration, and (3) characterizing the Federal Government's legal responsibility for West Valley. (See pp. 25 to 27.)

Linking the West Valley facilities for combined action generated strident disagreement from the State, the Department of Energy, and Nuclear Fuel Services. They said each facility should be considered on its own merits. The Department and Nuclear Fuel Services said that the State's strong opposition to linking would make linkage counterproductive to the solution of West Valley problems.

GAO continues to believe that, as a practical solution that would involve Federal financial and technical resources to clean up the high-level liquid waste at West Valley, the Congress should require New York to make available the West Valley spent-fuel storage and low-level waste facilities.

GAO, in reaching this position, considered the West Valley situation from the perspective of established legal views and responsibility, the status of high-level waste programs, the expected technical benefits of a West Valley demonstration project, the recognized storage problems involving low-level waste and spent

fuel and, lastly, a sense of fairness as seen by an uninvolved party.

As stated earlier, the parties at West Valley, to a large degree, are influenced more by their desire to minimize their own responsibilities than arriving at the most practical solution. GAO also points out that, in March 1979, the Department of Energy and a New York State agency reached an "agreement in principle"--which was never implemented--for taking care of the West Valley problems that closely resembles the practical solution that GAO believes should be pursued.



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ABBREVIATIONS

DOE	Department of Energy
EIS	environmental impact statement
EPA	Environmental Protection Agency
GAO	General Accounting Office
NEPA	National Environmental Policy Act
NFS	Nuclear Fuel Services, Incorporated
NRC	Nuclear Regulatory Commission
NYSERDA	New York State Energy Research and Development Authority

## CHAPTER 1

### INTRODUCTION AND DESCRIPTION

#### OF THE PROBLEM

The Nuclear Fuel Services, Incorporated (NFS), plant at West Valley, New York, is the only commercial nuclear fuel reprocessing facility to have operated in the United States. NFS closed the plant in 1972 and in 1976 determined not to reopen it because of cost-prohibitive safety measures which the Nuclear Regulatory Commission (NRC) imposed. During the plant's 6 years of operation, about 640 metric tons of nuclear spent fuel were reprocessed, generating about 600,000 gallons of high-level liquid nuclear waste. This liquid nuclear waste, along with spent fuel and solid nuclear wastes, are still being stored at the site. In addition, the plant's main process building contains equipment and structures contaminated during reprocessing.

Although the wastes are now safely stored and the facilities are being safely maintained, a solution must be found to deal with them. The Department of Energy (DOE) estimated that a permanent solution for the entire site could cost between \$41.6 million and \$1.1 billion, depending on the decommissioning options selected. 1/ The latter figure assumes that all waste will be removed from the burial site--an option that was never considered when the site was opened and which may neither be practical nor necessary. Extended care, rather than removal, would reduce the total cost to about \$180 million. 2/ (See p. 17.)

Under the complex contractual arrangements surrounding West Valley, no Federal, State, or private entity has accepted responsibility, either individually or cooperatively, for dealing with the issues. This prevents the orderly planning of decommissioning action, prevents the high-level waste at West Valley from being cleaned up, and poses an immediate concern because, subject to NRC approval, NFS wishes to leave the site by December 31, 1980, when its contract with the State of New York expires.

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1/The range is for initial costs. Some options have yearly maintenance costs ranging from \$0 to \$40 thousand, with one as high as \$480 thousand.

2/This is a rough DOE estimate expressed in 1978 dollars.

## HISTORY OF WEST VALLEY

NFS began reprocessing operations at West Valley in 1966 under contract with the predecessor of the New York State Energy Research and Development Authority and under licenses from the State, and from the Atomic Energy Commission, whose regulatory functions are now carried out by NRC. In fact, the State of New York and the Federal Government encouraged the plant's development because it was expected to be a boon for the local economy and a vital and profitable part of the growing nuclear industry.

In 1972, NFS temporarily stopped operations for modifications estimated to cost about \$15 million and to take about 2 years to complete. Not long after, however, NRC imposed new and more stringent earthquake and safety criteria on the plant, eventually raising the cost of modifications to an NFS estimate of \$600 million. In September 1976, NFS announced its decision to terminate its nuclear fuel reprocessing activities, citing rising costs and uncertain regulatory requirements as key factors. The plant is currently being maintained in a shutdown condition.

## ISSUES TO BE DISCUSSED

In 1977 we reported <sup>1/</sup> on the safety of the West Valley high-level radioactive liquid waste tank storage system, specific tasks that must be initiated at West Valley to provide a basis for waste solidifications, and goals that must be achieved in the national waste management program to support an immobilization project at West Valley. The report also discussed the problems of the other facilities at West Valley. This report updates the issues presented in the earlier report and discusses options for dealing with the site.

## SCOPE OF REVIEW

Our report was prepared in response to a November 7, 1979, request from the Chairman, Subcommittee on Energy and Power, House Committee on Interstate and Foreign Commerce. We identified four objectives needed to respond to the request.

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<sup>1/</sup>"Issues Related to the Closing of the Nuclear Fuel Services, Incorporated, Reprocessing Plant at West Valley, New York" (EMD-77-27, Mar. 8, 1977).

Our first objective--updating recommendations in our 1977 report on West Valley--would provide information on site safety and specific work needed, at West Valley and in national waste programs, to solidify the high-level nuclear liquid waste. To meet this objective, we interviewed NRC and DOE officials and NFS employees, and reviewed NRC- and DOE-sponsored studies. We also visited the West Valley facilities.

Our second objective--updating the national high-level liquid waste management program--would provide information on whether the national waste program had progressed to the point where West Valley's high-level liquid waste could be solidified and disposed of permanently. To meet this objective, we interviewed DOE, NRC, and Environmental Protection Agency (EPA) officials responsible for developing waste forms and repositories. We also visited DOE's Savannah River Operations Office and waste solidification development facilities.

Our third objective--updating administrative decisions on West Valley--would provide information on site responsibility and future plans for the site. To meet this objective, we interviewed NFS representatives and State of New York, DOE, and NRC officials, and reviewed various documents, including past GAO and DOE legal positions and past legislation.

Our fourth objective--relating the facilities at West Valley to national waste programs--would provide information on what could be done with the various facilities at West Valley. To meet this objective, we interviewed DOE and NRC officials responsible for nuclear waste programs; interviewed State officials responsible for West Valley; reviewed the testimony of, and correspondence between, State and DOE officials; and integrated results from various GAO reports.

## CHAPTER 2

### A SOLUTION TO WEST VALLEY'S MAJOR PROBLEM

#### IS IN SIGHT BUT NOT IN HAND

Federally sponsored work aimed at understanding fully the nature of the high-level nuclear waste problem at West Valley and how best to deal with it is underway. At the same time, federally funded efforts are now being pursued to solve the high-level waste problem on a national scale. Much work still needs to be done in the national program before basic questions, such as "where and in what form will the waste be stored," can be answered. Once answered, they will influence how best to deal with the West Valley situation. While available data indicate that the West Valley wastes can be safely stored in their current tanks for several decades, prudence dictates that work to solidify those wastes should begin now.

#### HIGH-LEVEL NUCLEAR LIQUID WASTE CAN BE STORED SAFELY FOR THE NEXT SEVERAL DECADES

NRC continues to believe that the West Valley tanks storing the high-level liquid waste are in good condition and can store the waste over the next several decades without threat to public health and safety. Although NRC held this position in 1977, we recommended at that time that it assess the tanks' seismic integrity, related stress-relieving data, and the condition of the vault and soil characteristics surrounding the tanks. NRC has completed some of these assessments and is working on others. NRC officials told us that while the information available to date corroborates their earlier findings, they are conducting other important studies which they consider necessary to provide a more conclusive assessment of tank safety.

#### Seismic integrity

The seismic integrity of the tanks became an issue in 1973 as a result of upgraded seismic criteria. DOE's Lawrence Livermore Laboratory studied the condition of the tanks for NRC and concluded in May 1978 that they can withstand the most severe earthquake reasonably expected to occur in the area. NRC hired an engineering consulting firm which reviewed and concurred in the results of the Livermore study.

### Stress-relieving data

In our 1977 report, we expressed concern that stress corrosion cracking in tanks at West Valley could compromise their life span and therefore recommended that available stress-relieving data be reviewed to determine if stress corrosion cracking poses a problem. Subsequently, a Lawrence Livermore Laboratory analysis also identified stress corrosion cracking as a potential problem in the West Valley tanks and made a similar recommendation.

In response to this recommendation, NRC sponsored studies, some of which have been completed and others still in progress. The information developed to date has shown that waste chemical compositions and tank steel characteristics are such that the waste tank system is operating under conditions where stress corrosion cracking would not be a potential problem. NRC is conducting other tank studies which it considers very important to fully corroborate the earlier findings of satisfactory safety.

### Soil characteristics

Soil characteristics needed to be examined to determine whether the soil surrounding the vault system would contain the waste if the tank system were breached. The New York Geological Survey and others have been and are conducting numerous soil studies at the plant site. The studies have characterized the soil as having features, such as low permeability and high ion exchange capability, which would act to contain radioactivity in the event of a leak and prevent it from reaching man's accessible environment in dangerous concentrations.

### Vault system condition

NRC believes that the underground, steel reinforced concrete vaults and the impermeable soil that surrounds the tanks could safely contain the high-level nuclear liquid waste if the tanks were breached. These vaults experienced structural stress and cracking years ago that was caused by flooding in the area around the vault during construction. Corrective action was taken which consisted primarily of grouting underneath the vaults to remove bending stresses and repair the vaults' cracks.

NRC later asked two separate consultants to analyze the earthquake resistance of the tanks and vaults. Based on their analyses, NRC has concluded that the tanks will not rupture and the vaults will maintain their structural

integrity. Consequently, the storage system will continue to contain the waste.

#### SOLIDIFICATION OF WEST VALLEY WASTE SHOULD BEGIN NOW

Despite NRC's judgment that the high-level liquid waste can be safely stored for some time, a program to solidify these wastes should begin now. Since 1970 NRC has not regarded storage of liquid high-level wastes in tanks as constituting an acceptable method of long-term storage basically because tanks can deteriorate and leak. Further, liquid wastes offer a more serious potential for dispersal in the unlikely event of an accident, and present far more difficulty for recovery and decontamination than do solidified wastes.

Other information at West Valley also suggests that solidification should be started promptly. Most importantly, investigations of the tank system have shown that the second of three barriers in the tank system would not contain the waste if the tank were to leak. While the other two barriers--the tank and vault--appear to be in good condition, the loss of one barrier represents a decrease in safety. That decrease has been offset somewhat by an improved capability to detect a leak and, in the event of a leak, to transfer the wastes to a spare tank. Furthermore, while the tanks are safe now, the solidification process will take perhaps 10 years, a long period over which an unforeseen problem might arise.

#### SUPPORT WORK FOR WEST VALLEY WASTE SOLIDIFICATION IS PROGRESSING

Our 1977 report identified several tasks needed to provide a basis for solidifying the high-level nuclear liquid waste at West Valley. These tasks were (1) characterizing the physical and chemical properties of the waste sludge, (2) developing techniques for removing the sludge, and (3) identifying alternative processes for managing the waste. Other needed tasks included preconceptual design, equipment studies for waste solidification, and waste transportation studies. Work on these and several other tasks has started, but none of the work has been completed. DOE and NRC will spend about \$4 million in fiscal year 1980 alone conducting studies for West Valley.

#### Waste characteristics

DOE has contracted for studies to characterize the liquid waste at West Valley. The studies were begun



in November 1979 and will consist of essentially two phases. During the first phase, the contractor will identify and develop the equipment needed to sample the waste. The contractor will also determine the number of samples to be taken, how to obtain them, and from what areas of the tanks to extract them.

During the second phase, the contractor will actually obtain waste samples and analyze them to determine their physical and chemical characteristics. The contractor expects to begin sampling by mid-1981 and to complete analyses late in the year.

### Sludge removal techniques

The West Valley waste and tank structure presents a difficult problem. The waste is a combination of liquid in the upper portion of the tank and sludge in the lower portion. Its removal is complicated by the fact that a latticed pattern of internal structural supports rests on the bottom of the tank. These crisscrossing supports make it difficult to get at the sludge and remove it from the tank. Similar structural impediments are not found in other tanks such as those at Savannah River. 1/

DOE has awarded a contract to conduct further tests on the best method to remove the waste sludge from West Valley's tanks. Under the contract work, begun in December 1979, the contractor will determine (1) the kind of mock-up tank model needed to study sludge removal, (2) if a new model must be built, or (3) if existing models at Savannah River can be used. The contractor expects to complete this phase by spring 1980.

### Alternative waste management techniques

DOE is considering, in the context of a draft environmental impact statement (EIS), alternative waste management processes to deal with the West Valley high-level liquid waste. DOE began developing the EIS in November 1979. The major alternatives which DOE is considering are

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1/DOE's waste at Savannah River is similar to West Valley waste, both physically and chemically, but its sludge removal techniques may not be completely applicable to West Valley's latticed tanks.

- solidification to a final form and shipment to a final repository;
- solidification to an intermediate form suitable for off-site shipment for conversion to a final form;
- in-tank solidification for permanent disposal at West Valley; and
- continued storage, as is, indefinitely or until a repository is decided on.

DOE expects to publish a draft EIS by the end of 1980 and a final statement by September 1981. DOE also expects to conduct a supplemental environmental review on selection of the waste form and expects to issue its results in 1983-84.

DOE also sponsored an advisory panel which determined the technical support needed for choosing among the various options. The panel, made up of representatives from 11 DOE laboratories and contractors, made two recommendations that seem particularly important. First, it determined that the intermediate form of solidification had enough potential advantages to be considered as an option. Unfortunately, less information is available on this alternative than on any of the others. The panel, therefore, recommended that a program be developed to upgrade information on this option. DOE is considering implementing such a program.

The second important recommendation of the panel highlighted the need for NRC, EPA, and DOE to develop waste-form performance criteria. These criteria will be discussed in a later section.

#### Other tasks in progress

DOE has contracted for several studies in addition to those we recommended in our 1977 report. For example, DOE contracted for design studies for such things as the equipment and facilities which could be used in a waste solidification project at NFS facilities. The studies were begun in January 1980; DOE expects them to be completed about a year later.

An engineering contractor is also conducting several in-depth studies to answer the following questions:

- What options are available for decontaminating the existing NFS main process building to permit equipment changeover for the solidification project?

- What options are available for decontaminating and decommissioning the building after the solidification project is completed?
- What options are available for disposing of the low-level waste resulting from the proposed program?
- What options are available for providing interim storage of the solidified waste?

In addition, the contractor will review available earthquake analysis information relating to the building. The contractor began conducting studies in December 1979 and expects to have a draft report ready in May 1980.

Another contractor is examining problems in transporting solidified waste, either in interim or final form. The contractor began the examination in December 1979 and expects to complete it by late 1981.

NEEDED ELEMENTS OF NATIONAL  
HIGH-LEVEL NUCLEAR WASTE  
PROGRAM ARE BEING DEVELOPED

To permanently dispose of high-level nuclear wastes, DOE is developing a multi-barrier containment system that is expected to compensate for the uncertainty in predicting geologic behavior over long periods of time. It will consist of essentially two parts: a man-made portion and a natural, or geologic, portion. The man-made portion will consist of the solidified waste form, a canister or other container, and additional containers and physical barriers. The natural portion will consist of the surrounding geology. Each portion is expected to be able to independently satisfy NRC and EPA standards, i.e., to function as if the other portion did not exist. As a final measure of protection, the waste would be retrievable for as long as 50 years after the repository stops receiving new waste.

EPA, NRC, and DOE are currently developing the regulations and technology needed to support DOE's waste management program, both nationally and at West Valley. Although the program is making progress, the following sections identify the tasks that must be performed before a waste form decision can be made and the waste ultimately placed in a Federal repository. The main obstacle will likely be selecting and operating a Federal repository.

## EPA standards expected in 1981

EPA is developing generally applicable environmental standards with which NRC's waste performance criteria must be compatible. Its standards will provide numerical guidance on the total allowable release of radioactivity to the accessible environment which includes the air, land surface, surface water, and some categories of ground water. It does not include releases of radioactivity to the immediately surrounding subsurface geology which is considered part of the containment system.

EPA's standards have been drafted and are receiving internal review and comment. EPA expects to publish a draft for public review and comment in spring 1980 and final standards in mid-1981.

## NRC performance criteria may be delayed

NRC plans to publish a final rule which provides the technical requirements for licensing a containment system/geologic repository for the permanent disposal of high-level radioactive waste in late 1981, a target which seems optimistic. (DOE is planning to issue its draft waste performance criteria in mid-1980.) These requirements are necessary before DOE can select a final waste form for the high-level liquid wastes.

Currently, DOE is considering various alternative forms for solidifying the millions of gallons of high-level radioactive liquid waste at Savannah River and West Valley. Borosilicate glass is being used as the reference waste form because more is known about it than any other waste form. An advisory panel which Savannah River organized for DOE concluded that while glass is a satisfactory terminal form for West Valley waste, other alternatives (including interim waste forms) should be more fully investigated before a final decision is reached. For this reason, the final waste form at West Valley will not be selected until 1983 or 1984 after all alternatives are investigated. This timing could be delayed even further, however, if NRC fails to issue its performance criteria on schedule.

As it now stands, NRC plans to develop its technical rule in three parts. It plans to publish an Advance Notice of Proposed Rulemaking in spring 1980 to invite public comment followed by a proposed technical rule and a supporting draft EIS in January 1981. The third step will be the publication of the final rule with a supporting final EIS in January 1982.

It is questionable, however, that this schedule can be met. An NRC official told us that for such a complex rule, it might more likely take about 3 years to go from an advanced notice of a proposed rule to a final rule. The current schedule proposes completing the process in about half the time. Furthermore, NRC must make its standards consistent with the EPA standards that are not expected to be issued in final form until mid-1981. Although NRC is coordinating its work with EPA, developing concurrent standards runs the risk of having to revise them if they are not consistent with EPA's.

Timing of repository operations  
will likely hold up completing West  
Valley high-level waste solution  
if those wastes are put in final  
form at West Valley

In February 1980, the President initiated a new program to identify and bring into operation a high-level nuclear waste repository for permanent disposal. The program will develop information on various types of underground formations. It hopes to identify four or five candidate sites in 1984-85. The first repository would then be selected from those sites. A key element of the President's plan is to closely involve State officials in the selection process. Close State participation may help reduce public opposition to the siting of permanent high-level radioactive waste disposal facilities in specific locations.

The Government's ability to meet its waste repository development schedules, however, is likely to further delay completing a solution for disposal of West Valley's high-level nuclear liquid waste if those wastes are solidified to a final form at West Valley. Nuclear waste management history provides little confidence that targets for operating waste repositories will be met. <sup>1/</sup> During the last year alone, the target date for operating a repository has slipped twice from 1988 to 1992 to the mid-1990s. The second slip results from the President's decision to postpone selecting a candidate waste repository site until about 1985. Also, since 1957 when the National Academy of Sciences proposed burying nuclear waste in underground geologic formations, DOE and its predecessor agencies have not been successful in siting and constructing repositories.

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<sup>1/</sup>"The Nation's Nuclear Wastes--Proposals for Organization and Siting" (EMD-79-77, June 21, 1979).

In all of the following cases, the projects failed or problems surfaced because of public opposition:

- In the 1960s, the Atomic Energy Commission investigated bedrock formations underlying its Savannah River Reservation as a potential repository. This investigation ended in 1972.
- In June 1970, the Atomic Energy Commission announced it would build a Federal waste repository at Lyons, Kansas.
- In 1976 the Energy Research and Development Administration, successor to the Atomic Energy Commission, attempted to screen possible disposal sites in Michigan and undertook a 36-State search to identify suitable repositories.

Public opposition, which still runs strong, may well continue to block efforts to site a repository. New York State continued to discourage DOE from examining underground salt deposits in western New York State to determine their suitability as a possible high-level radioactive waste repository site. At least nine other States have enacted legislation constraining waste repository siting. The Federal Government has not attempted to exercise Federal supremacy in selecting a site, but has not ruled that out as an option.

Selection of an interim waste form or development of potential, final forms for solidifying West Valley's radioactive waste can go forward even if a specific repository is not identified. But the selection of a final waste form may require identifying the final repository.

The Interagency Review Group on Nuclear Waste Management 1/ recommended to the President that the geologic environment, repository, and waste form be selected concurrently as part of a system. This recommendation suggests that a repository must be identified before selection of a final waste form.

DOE officials and DOE contractors told us that the waste form can be developed independently of specific site selection. If the form is designed to meet NRC criteria in the worst environment likely to be considered, it should be acceptable in any better environment. Furthermore, engineering barriers, such as the canister containing the

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1/Report to the President by the Interagency Review Group on Nuclear Waste Management, October 1978.

waste, and man-made structures in the repository, can match a waste form to a specific environment.

NRC anticipates that its requirements will be for the waste package as a whole and thus will not necessarily require a site to be selected before the waste form is selected. However, NRC officials point out that achieving satisfactory waste package performance without selecting a waste form compatible with a specific emplacement environment has not been demonstrated. Until it can be shown that differences in waste package performance in different emplacement environments are not significant, perhaps a final waste form cannot be selected before a repository site is selected. Thus, for DOE to select a final waste form for West Valley before a repository site is selected, it would first have to demonstrate that engineered barriers could accommodate uniqueness in the repository environment.

### CONCLUSIONS

While NRC, DOE, and EPA are conducting programs which will allow West Valley's high-level nuclear waste to be solidified and finally transferred to a final repository, much needs to be done at West Valley and in the national radioactive waste program before these actions can take place. Fortunately, NRC's ongoing studies of the high-level liquid waste storage system have led it to conclude that the waste can be safely stored at West Valley while the needed work is accomplished.

Even though available data indicate that the wastes can probably be safely stored for some time, there is nothing to be gained from delay and much to be gained in the way of improved safety from prompt solidification.

Developing a Federal repository is the most likely task that will delay completing a terminal disposal solution to West Valley's high-level liquid waste problem. The Federal Government has been trying unsuccessfully to develop a program for the permanent disposal of high-level radioactive waste since the early 1960s. The main reason for its many failures has been public opposition, which remains strong today.

### CHAPTER 3

## THE FEDERAL GOVERNMENT AND STATE WORKING AS PARTNERS CAN DEVELOP A MUTUALLY BENEFICIAL SOLUTION FOR WEST VALLEY

Lack of an agreement by New York, NFS, and the Federal Government on who is responsible for West Valley is the main obstacle to resolving the issues there. Three broad options are available for taking care of all of the problems at West Valley: (1) full State and NFS responsibility, (2) full Federal responsibility, and (3) a middle course which we believe preferable. In this case, the Federal and State governments would develop a mutually beneficial solution for all aspects of West Valley.

### RESPONSIBILITY GOES UNRESOLVED

NFS believes that it is not contractually responsible for permanent storage of radioactive waste or for long-term waste-related issues at West Valley. A company spokesman told us that under its contract, New York is responsible for these matters. Subject to the terms of its lease and NRC approval, NFS wishes to transfer responsibility for operating and maintaining West Valley to the State by December 31, 1980. However, an official of the State Energy Authority stated flatly that the agreements do not require New York to take possession of the facilities at West Valley on December 31, 1980, given the present levels of contamination and the maintenance and operation requirements that exist at the facilities today.

DOE similarly believes that the State, acting through one or more of its instrumentalities, has residual responsibility for care of the waste storage facilities, subject to NRC approval, at the conclusion of NFS's lease. Our 1977 report also viewed the matter as one in which New York, under the terms of the lease, has residual responsibility for waste storage. We did not, however, suggest that all responsibilities arising out of the West Valley situation were beyond doubt. In this connection, we point out that the State's responsibility under the contract is tempered by the need for NRC approval and NFS's contractual responsibility to render West Valley acceptable for the State's assumption of the facility's operation or ultimate disposition.

In any event, the State of New York believes that the Federal Government--while not a party to the NFS lease--has



legal responsibility for West Valley. In this regard, a State Authority official stated that the operative contracts are of little assistance in apportioning the costs of cleaning up West Valley among the various parties to the venture, because the terms of the contracts bear no relationship to the facts as they exist today. He said that the express terms of these 1963 agreements are of little help because the parties at West Valley (including the Federal Government) contemplated a successful venture and did not specifically address in the contracts their respective liabilities for the radically different situation which exists at West Valley today.

He further stated that the respective roles of the Federal Government (represented by the Atomic Energy Commission), New York State, and NFS, in bringing about the project, make West Valley a joint venture and that a court would look at facts surrounding the undertaking for assistance in apportioning liabilities for the failed venture. In his view, a court would take into consideration the benefits each party expected from the venture, what each brought to the venture, and the present capabilities of the parties in fashioning a remedy. On this basis, they admit some non-Federal (NFS and State) responsibility, but attribute a very high level of responsibility to the Federal Government.

The question of legal responsibility, particularly outside the terms of the contract, can only be conclusively determined by the courts in what would likely be a protracted litigation. Therefore, a timely solution to the issues at West Valley depends on the parties voluntarily reaching an agreement on responsibility among themselves rather than waiting for court action.

#### COST OF DEALING WITH WEST VALLEY ISSUES

In a November 1978 study prepared for the Congress, DOE identified technical options for dealing with West Valley which defined the potential high and low limits of financial responsibility. DOE cost figures, which it cautioned were based on preliminary estimates using available information and experience rather than detailed designs, are presented in the following table. Inflation since 1978 and more detailed design estimates will probably escalate each cost element in the table.

Waste Management Options Impact Summary for the  
Western New York Nuclear Service Center (note a)

<u>Site area</u>	<u>Option</u>	<u>One-time cost to implement</u>  (millions)	<u>Recurring annual costs</u>  (thousands)
High-level liquid wastes	1. In-tank solidification	\$ 21.00	<u>c</u> /\$750/70
	<u>b</u> /2. Immobilization in glass	130.00	0
High-level waste tanks	1. On-site stabilization	3.30	25
	2. Dismantlement	20.00	0
NRC-licensed burial area	1. Extended care	0.15	35
	2. Exhumation	340.00	0
NYS-licensed burial area	1. Extended care	0.11	40
	2. Exhumation	570.00	0
Plant and ancillary facilities (note d)	1. Protective storage	17.00	480
	2. Dismantlement	46.00	0

a/These options represent the potential low and high limit of financial impact of what might be done at West Valley. They are not a complete list of what could be done.

b/Includes waste retrieval.

c/\$750,000/yr. until about 1996; \$70,000/yr. after entombment.

d/Includes spent-fuel storage facility.

While the table shows that initial costs could range between \$41.6 million by summing the low options and \$1.1 billion by summing the high options, most parties agree that a more reasonable initial cost would be around \$180 million. Additional funds would be required to support developmental activities. Extended care rather than exhumation of the NRC- and State-licensed solid waste burial grounds would reduce the initial maximum cost by about \$910 million (\$340 million for the NRC area and \$570 million for the State area). The extended care program would include monthly inspection and maintenance and quarterly radiological sampling. Although DOE has concluded that exhumation is technically feasible, a committee of the National Academy of Sciences has warned that exhuming radioactive wastes that were buried without the intent of being exhumed may be more hazardous to man and his environment than if the wastes are left in place. DOE's estimates of occupational and population doses <sup>1/</sup> associated with the various options presented above appear consistent with the Academy's assessment.

If exhumation were ruled out, \$180 million would still be needed to immobilize the high-level liquid waste in glass, stabilize on-site the emptied high-level liquid waste tanks, dismantle the plant and ancillary facilities, and provide extended care for the NRC- and State-licensed burial areas. Most interested parties, including State and Federal officials, generally agree that the liquid waste should be immobilized and that borosilicate glass is currently the most advanced candidate waste form. Decisions have not been made regarding disposition of the tanks and to what extent the building should be decontaminated and decommissioned. However, the above option appears to represent a reasonable scenario.

SHARED FEDERAL/STATE RESPONSIBILITY  
IS THE MOST PRACTICAL CHOICE

The Congress can respond to the State of New York's request for the Federal Government to assume responsibility for West Valley in three broad ways.

- The Congress could choose to provide no Federal assistance, on the grounds that the Federal Government has no contractual responsibility.

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<sup>1/</sup>Western New York Nuclear Service Center Study, U.S. Department of Energy, Nov. 1980, p. 15.

--It could characterize West Valley as a remedial action program, based on past Federal actions and precedents, <sup>1/</sup> and accept full Federal, technical, and financial responsibility for the site. Based primarily on DOE estimates, a likely cost for this option would be about \$180 million.

--Finally, the Congress could choose a third option we consider preferable and accept a Federal share in a joint Federal/State program to deal with all the issues at West Valley.

#### Full State responsibility

Leaving responsibility for West Valley with the State does not appear to be an unreasonable option. If DOE ran the cleanup, it would hire a contractor to manage the entire operation, and hire another contractor to monitor the first contractor's performance. DOE's laboratories would provide their expertise on a consulting basis. The State could similarly hire contractors and obtain consulting expertise from DOE's laboratories. Furthermore, the Federal Government has no contractual responsibility, and whether a court would find that it has legal responsibility for West Valley is, at this point, uncertain. The State also has the primary responsibility for providing solutions for its own low-level waste and spent fuel needs.

#### Full Federal responsibility

Little reason exists for full Federal responsibility. In the context of remedial action costing about \$180 million, it is not the only entity with the financial capability, nor is it the only entity with the needed technical capability. Although the Federal Government has no contractual responsibility, there is a basis for the Federal Government to accept some responsibility for the site because few disagree that it encouraged the initial development of the site, took steps to increase its operating cost through increased safety requirements, and then terminated reprocessing through a national policy decision.

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<sup>1/</sup>The Uranium Mill Tailings Radiation Control Act of 1978 (42 U.S.C. 7901), November 8, 1978.

Federal/State partnership  
has many advantages

When the entire West Valley facility is viewed from both the national and State points of view, a reasonable basis exists for a Federal/New York State effort to provide a mutually beneficial solution for all the issues at West Valley. In March 1979, DOE's Acting Deputy Assistant Secretary for Energy Technology, and the Chairman, New York State Energy Research and Development Authority, reached an agreement which we believe provides a reasonable basis for resolving the issues at West Valley. In summary, the agreement provides for solidifying the high-level liquid waste to a final form and shipping it to a final repository, decontaminating and decommissioning the reprocessing facilities, and reopening the spent-fuel storage pool and low-level waste burial area. (See app. I for the detailed agreement.) DOE pointed out that it did not intend, at the time of this agreement or now, for it to be a quid-pro-quo agreement for West Valley. Rather, it intended the agreement to be a framework within which solutions for each part of West Valley would be sought. DOE further pointed out that the location of low-level waste burial grounds should be the responsibility of the States, and that DOE does not believe it should impose a solution on New York State.

The Federal Government should pay part of the cleanup cost for West Valley because of its past actions affecting the site. Furthermore, precedent exists for Congress authorizing DOE to use Federal resources to correct local nuclear waste problems. In November 1978, the Congress passed the Uranium Mill Tailings Radiation Control Act which authorized DOE to enter into cooperative agreements with various States to clean up residual radioactive materials--commonly called uranium mill tailings--at 22 inactive uranium mills. The act authorizes the Federal Government generally to pay up to 90 percent of the cleanup costs.

On the other hand, the State, the northeastern part of the country, and the Nation as a whole would benefit from the State's reopening the spent-fuel storage pool and low-level waste burial ground to serve State and regional needs. For example, as early as 1981, a western New York nuclear reactor will have exhausted its spent-fuel storage capacity, and each successive year, more utilities in New York and the eastern and northeastern United States will exhaust their spent-fuel storage capacities. Thus, there will be an increasing demand for storage space to satisfy the region's needs. As for low-level waste, there are no operating low-level waste facilities in New York or the

northeastern quarter of the United States, although the area generates large quantities of such waste.

New York could reopen the West Valley spent-fuel storage pool

The State should make available the spent-fuel storage facility at West Valley, if it is found to be technically adequate. On March 31, 1980, DOE reported to the Congress that by 1983, between 240 and 620 metric tons of away-from-reactor storage will be necessary, even if NRC approves current utility plans to expand the storage capacity at each reactor. DOE pointed out that since it would take 8 years to bring into operation new storage facilities, new facilities could not be used to meet near-term needs. It therefore reviewed available facilities and concluded that three existing facilities could meet this early demand. They are West Valley; Barnwell Nuclear Fuel Plant, South Carolina; and Morris Operation, Illinois. They can be expanded to 1,500, 1,750, and 750 metric tons capacity, respectively. DOE further pointed out that these three potential sites provide the opportunity for a regional approach to spent-fuel storage.

New York and the surrounding States have a near-term need for spent-fuel storage. For example, as early as 1981, a western New York nuclear reactor will have exhausted its spent fuel storage capacity. DOE estimates that reactors in Massachusetts, Pennsylvania, Connecticut, Maine, and New Jersey will also need away-from-reactor storage space between now and 1985.

To deal with these spent-fuel storage needs, DOE has legislation pending before the Congress asking for the authority to accept and take title to limited quantities of commercial spent fuel and to build or acquire away-from-reactor storage facilities. DOE feels this program is necessary because of the Federal decision not to reprocess spent fuel and because of Federal delays in providing geologic repositories for the ultimate disposal of spent fuel--now estimated to be in the mid 1990s at the earliest. The program is designed to provide storage facilities for those utilities which do not have the option of expanding on-site facilities. If DOE gains congressional approval of this program, one option that DOE is considering is the purchase and expansion of the West Valley spent-fuel storage pool to serve as one of several federally owned and operated interim storage facilities.

New York could also reopen its  
low-level waste burial ground

While New York is one of the largest generators of low-level waste, neither it nor the entire northeastern quarter of the United States has an operating low-level commercial waste burial site. As late as 1975, six commercial low-level waste burial sites were licensed to operate in the United States. Only three sites remain open--one each in Washington, Nevada, and South Carolina. Of these three, two were temporarily shut down during the past year, and the third has restricted the annual volume of waste it will receive.

The recent site closings have raised the specter that medical services that use radioactive materials may have to be stopped or seriously cut back if no space exists to dispose of the waste. About 25 percent of the volume of low-level waste comes from institutions, many of which use radioactive isotopes to treat or diagnose illness. Some institutions, including one in New York, claimed that in 1979 they were within 2 weeks of stopping their nuclear medical services and would have stopped had not the two closed sites reopened. Other sources of low-level waste, such as nuclear powerplants, were similarly complaining about a lack of disposal space.

The State could provide a vital service to its region and itself by agreeing to make the West Valley low-level waste burial ground available for use. By permitting the operation of the burial facility, the State would also be accepting responsibility for its own waste.

DOE reported in its November 1978 study of West Valley that its continued use as a waste burial ground looks attractive, based on the considerable information available and experience gained using the site. New York State Geological Survey studies also show that the West Valley site appears to be a good candidate for a low-level waste burial facility.

While the low-level waste burial area appears to be a favorable one, it is not free of problems. It has experienced some water seepage into the waste burial trenches. However, indications are that the seepage can be controlled without endangering public health and safety.

The seepage was noticed in 1975, when radioactively contaminated water accumulated to a point where it broke through the soil cover overlying the burial trenches. At that time, NFS pumped the water out of the affected trenches and treated it in the site's low-level liquid waste treatment plant. Since then, NFS has been regularly monitoring

the water level in all the trenches and pumping it out as needed.

Pumping water out of the trenches is a temporary solution that would permit the low-level waste burial area to be operated safely until a permanent solution can be found.

Using West Valley's low-level waste burial ground would also be consistent with a recommendation in a recently issued GAO report aimed at preventing needless expansion of nuclear waste sites. This report recommends that acceptable existing sites should be used to solve national low-level waste needs before more locations are contaminated with new burial sites. 1/

#### THE PROPOSED DOE DEMONSTRATION AT WEST VALLEY HAS SEVERAL DRAWBACKS

An amendment to the fiscal year 1980 DOE authorization provides for DOE to assume nearly full technical and financial responsibility for a demonstration program to immobilize the high-level liquid waste at West Valley.

Because passage of the authorization is unlikely, its sponsors have reintroduced the proposal as a separate bill in each house. While the demonstration would begin solving West Valley's problems, it mischaracterizes the project as a demonstration.

In our view, the proposed project at West Valley should more logically be described as a remedial action program with some demonstration value than as a demonstration worthy of full Federal support. While dealing with West Valley's high-level liquid waste may build public confidence that commercial high-level waste can be permanently disposed of, the technical demonstration benefits of this project are limited.

To a large extent, the technology for immobilizing high-level liquid waste into glass is already highly developed. DOE has converted such waste to glass on a laboratory scale at Savannah River. At its Pacific Northwest Laboratory, DOE converted high-level liquid waste to glass on a scale very similar to that which could be used at West Valley. At Savannah River, DOE has constructed the equipment it will use to solidify 22 million gallons of waste. The scale of this

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1/"The Problem of Disposing of Nuclear Low-Level Waste: Where Do We Go From Here?" (EMD-80-68, Mar. 31, 1980).



equipment, used for non-radioactive testing, is twice that of the equipment that is likely to be used at West Valley.

The technical benefits the Savannah River project--which is designed to solve this Nation's high-level liquid waste problem--would receive from the proposed West Valley project would be largely related to the timing of waste solidification at each location. DOE plans to begin solidifying the liquid waste at Savannah River in about 1989-90, about the same time period planned for beginning solidification at West Valley. DOE officials told us that if both projects progress simultaneously, West Valley will provide little benefit to Savannah River. However, the longer the Savannah River project is delayed (and delay is likely), the more technical benefits West Valley would provide. Of course, these benefits would be negated if the West Valley project faces similar delays.

It is important to note also that DOE officials pointed out that the Savannah River program was planned independently of West Valley. Having a West Valley scale project as part of the Savannah River program was never intended, and its schedule will not be adjusted to take full advantage of information developed at West Valley.

#### CONCLUSION

The best solution for the issues at West Valley can be achieved through a joint Federal/State partnership to deal with the entire site. The main factor impeding a solution to the issues at West Valley is the inability of the involved parties to agree on who is responsible for dealing with West Valley. While the courts might eventually have to settle the question of responsibility, the courts' answer would likely come only after lengthy litigation. By taking on-site responsibility in partnership, progress in dealing with the issues at West Valley can begin quickly.

The partnership should allow DOE to apply Federal financial and technical resources to clean up the high-level liquid waste and related facilities. While these wastes can probably remain safely stored at West Valley for some time, there is nothing to be gained from delaying their solidification.

The partnership should also authorize DOE and NRC to help the State assess the safety of its low-level waste and spent-fuel storage facilities, and the feasibility of bringing those facilities back into use. DOE, NRC, and NRC told us these facilities can probably be safely reopened. Both facilities could be very useful in solving the spent-fuel

and low-level waste storage problems. DOE estimates that away-from-reactor spent-fuel storage facilities will be needed by 1983 and that it would take 8 years to build a new one. Its studies to date indicate the West Valley site appears to be an ideal candidate. Also, New York is one of the largest generators of low-level waste and neither it nor the northeast region has a low-level waste burial facility. Furthermore, West Valley already is, and will continue to be, a contaminated nuclear facility which should be used before more sites are contaminated.

#### MATTERS FOR CONSIDERATION BY THE CONGRESS

The Congress may choose among three broad options for taking care of all the problems at West Valley: (1) full State and NFS responsibility; (2) full Federal responsibility; and (3) a middle course, which we believe preferable. In this case, the Congress would authorize the Federal Government to help deal with West Valley as part of an overall solution which would also require New York to make available the spent-fuel storage and low-level waste burial facilities, if they pass full safety inspections. In view of the (1) lack of any Federal contractual responsibility for West Valley and (2) limited use of a West Valley cleanup project to DOE's overall high-level waste program, giving Federal assistance without securing New York's commitment to help solve other nuclear waste problems is not a fair arrangement.

The issues involved at West Valley provide an opportunity for an innovative solution with national, regional, and State benefits. Making Federal assistance for West Valley contingent on New York's making the facilities available to help solve its own and national waste management problems is a practical solution. But it must be recognized that the perspectives of the parties at West Valley are complicated by such factors as the specter of having long-term responsibilities for the contaminated site. Therefore, these parties' views of a solution to West Valley are influenced more by how they can minimize their own responsibilities than arriving at the most practical solution for all.

#### AGENCY COMMENTS

DOE, NRC, the New York State Energy Research and Development Administration, and NFS reviewed a draft of this report. Those comments which we believe would assure the technical factualness of the report have been included as appropriate. NRC generally agreed with the positions taken in the report. DOE, NFS, and the State objected to one or

all of our positions on (1) linking Federal participation to the State's agreeing to reopen the spent-fuel and low-level waste facilities, (2) characterizing the high-level liquid waste solidification as a demonstration, and (3) characterizing the Federal Government's legal responsibility for West Valley.

#### Linking Federal/State actions

Linking the West Valley facilities for combined action is the point which generated the broadest and most strident disagreement. The State and DOE stated that each aspect of West Valley should be considered on its own merits. DOE and NFS stated that New York's opposition to previous DOE efforts at a combined solution for West Valley would make requiring linkage counterproductive to the current solution of the West Valley problems. In this regard, DOE said it does not make sense to slow down a high-level liquid waste solution to try and speed up low-level waste and spent-fuel solutions. DOE does not want to mandate which sites the States should use to deal with their low-level waste and spent-fuel storage needs, and does not want to impose a solution on New York. DOE told us it believed the States were making progress recognizing their need to deal with their own problems and that linking solutions at West Valley would impede that progress.

As an example of State progress, DOE pointed out that the State Planning Council on Radioactive Waste Management, which the President created in February 1980, is considering recommending legislation. It would authorize groups of States to join compacts so that member States could refuse to accept low-level waste from non-member States. DOE said this legislation, should it pass, would force New York to deal with its low-level waste even without a linked solution at West Valley.

We continue to believe that when looking at the facilities at West Valley, their needs, and their potential for dealing with various waste management issues, it is reasonable for the Congress to require, as part of the solution that would involve Federal financial and technical resources to clean up the high-level liquid waste at West Valley, that New York make available the West Valley spent fuel storage and low-level waste facilities. Opening those facilities would be contingent on their passing required safety reviews and being needed to deal with local and regional spent fuel and low-level waste needs. The States, in general, and New York, in particular, have shown little willingness, at least until recently, to deal with their own nuclear waste problems. For example, if New York were interested in dealing with its

own low-level waste, it could reopen the West Valley burial ground at any time. Reopening the spent-fuel storage and low-level waste facilities would concretely demonstrate that New York has taken responsibility for its own problems.

It is important to mention how we arrived at our conclusion that the best way to deal with West Valley is through a joint Federal/State partnership. We viewed the West Valley solution from the perspective of established legal views and responsibility, the status of high-level waste programs, the expected technical benefits of a West Valley demonstration project, the recognized storage problems involving low-level waste and spent fuel and, lastly, a sense of fairness as seen by an uninvolved party.

It is apparent that the perspectives of the parties involved in the West Valley situation are influenced more by how they can minimize their own responsibility than arriving at the most practical solution. Also, it should be pointed out that in March 1979, the DOE Deputy Assistant Secretary and the Chairman, New York State, Energy Research and Development Authority reached an "agreement in principle" for taking care of the West Valley problems. This agreement resembles closely the practical solution that we believe should be pursued.

#### Demonstration value from solidifying high-level liquid waste

The State and DOE believe that the program to solidify the high-level liquid wastes should be characterized, at least to a large extent, as a demonstration project because it will prove to the public that high-level waste can be dealt with permanently and because the program will provide technical information for use in DOE's defense waste solidification program.

We agree that the project can have some demonstration value, but we do not believe it has enough value to justify nearly full Federal funding. In terms of the project's technical contributions to the waste program, we agree that West Valley could provide some technical benefits for DOE's waste program at Savannah River and that those benefits may increase the longer the Savannah River program is delayed. However, the potential technical contribution from West Valley must be considered in the context of DOE's plans for the Savannah River program. DOE pointed out that it never planned to include a West Valley scale project as part of the Savannah River waste program, the Savannah River program does not need West Valley, and its schedule will not be adjusted to take advantage of information developed at

West Valley. For these and other reasons, it does not appear that the technical advantages of West Valley can be so large as to justify it as a demonstration.

Legal responsibility  
of Federal Government

The State takes a very strong position that the Federal Government has a large legal responsibility for West Valley. The State asserts that Federal responsibility would be established in the courts on the basis of equity considering factors other than the contracts and leases. (See pp. 15 and 16.)

While the courts are the proper place to deal with such issues, the process would likely involve lengthy litigation which would delay a solution at West Valley. Furthermore, the outcome of that litigation cannot be predicted. We believe that congressional authorization for DOE to enter a partnership with the State to share responsibility would be a preferable approach because it would generate quick action for dealing with West Valley.

AGREEMENT IN PRINCIPLE BETWEEN DOE  
AND THE NEW YORK STATE ENERGY RESEARCH  
AND DEVELOPMENT AUTHORITY FOR WEST VALLEY

DOE's Acting Deputy Assistant Secretary for Energy technology, and the Chairman, New York State Energy Research and Development Authority, reached an "agreement in principle" in March 1979 concerning what program elements each would pursue with his superiors to provide an overall disposition of West Valley's many issues. The agreement has received strong opposition from New York State and has made little progress. This agreement provides a reasonable basis for resolving the issues at West Valley in a manner worthy of Federal support. Following is their agreement as the Chairman presented it in May 1979 hearings held by the House Committee on Science and Technology:

"The existing reprocessing plant and necessary ancillary facilities would be converted to a high-level/waste solidification facility for the purpose of solidifying West Valley wastes only. After solidification, solidified wastes would be temporarily stored at the site until ultimate disposal in a permanent Federal repository.

"The spent-fuel storage pool for the interim storage of spent fuel would be temporarily placed in operation as authorized by the Spent Nuclear Fuel Act of 1979 (now pending in Congress) until ultimate disposal in a permanent Federal repository. The pending legislation contemplates that operation of spent fuel pools (called away-from-reactor storage or AFR's) will be under Federal control and, therefore, could serve other states in the region as well as New York.

"Both the solidified high-level wastes and stored spent fuel would be transferred to a Federal repository when available. The solidification facility and the interim spent fuel storage facility would be decontaminated and decommissioned after wastes are removed to a Federal repository.

"The reprocessing plant and ancillary facilities would be decontaminated to facilitate conversion to support a waste solidification project and ultimately decommissioned after solidification is completed.

"Equipment necessary to transfer high-level liquid wastes on site from storage tanks to the solidification demonstration facility would be installed.

"Upon emptying, the high-level waste tanks would be decommissioned, probably by entombment in place.

"The disposal of low-level wastes from nuclear medicine programs and research and industrial facilities would be resumed under State license using the existing low-level burial ground.

"A passive management monitoring system for decommissioned facilities would be established and maintained.

"Spent fuel buried in the high-level burial ground would be exhumed by Nuclear Fuel Services and placed in retrievable storage and transferred to a permanent Federal repository as soon as practical. No further operation of the high-level burial ground would be permitted.

"The liquid wastes and sludge from high-level waste tanks would be removed and transferred to the solidification facility.

"Analyses would be performed by the Nuclear Regulatory Commission and Nuclear Fuel Services to determine if materials in addition to buried spent fuel assemblies would be exhumed from the Nuclear Regulatory Commission licensed burial area in order to place the burial area in a condition requiring only passive management.

"All activities would proceed in accordance with NEPA requirements and other applicable processes tailored to the particular circumstances at West Valley.

"Annual progress reports by DOE and NYSERDA to Congress and the New York State Legislature would be made on the disposition program.

"A nuclear information and monitoring center using the NYSERDA storage facility would be established and operated at the site.

"Previously announced suspension of Federal consideration of the Finger Lakes area salt formation as a permanent waste repository site would be continued in effect; DOE's previous commitment that the proposed location of any nuclear waste geologic disposal will be subject to State concurrence would be affirmed.

"Estimated commencement date of the demonstration program: July 1, 1980."



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