

**Blue Ribbon Commission on America's
Nuclear Future
Subcommittee on Reactor and Fuel Cycle
Technology**

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Introduction

Good afternoon Chairman Domenici, Chairman Peterson, and other esteemed members of the Subcommittee on Reactor and Fuel Cycle Technology. I want to thank you for inviting me to speak with you this afternoon.

I am the Director of the West Valley Site Management Program for the New York State Energy Research and Development Authority (also known as "NYSERDA"). I've been with NYSERDA for 20 years, and, in terms of my technical background, I'm a geologist.

I'm here today because NYSERDA holds title to the Western New York Nuclear Service Center, located on 3,300 acres in Cattaraugus County (in southwestern New York State). The Western New York Nuclear Service Center is more commonly known as "West Valley", and it was the home of the only commercial nuclear fuel reprocessing facility ever to operate in the United States.

I am going to speak today about the origins and issues surrounding this facility, because the events at West Valley over the last 50 years will provide the context for my comments on the concerns and role of communities and State and local governments in the development of new fuel cycle facilities.

The Origins of the West Valley Commercial Nuclear Fuel Reprocessing facility

Soon after the passage of the Atomic Energy Act in 1954, the AEC had begun a program to encourage the private reprocessing of spent nuclear fuel as part of a program to commercialize the nuclear fuel cycle. As part of the reprocessing program, the AEC announced that it would:

- Make AEC technology on reprocessing available to private industry;
- Invite proposals by private industry to design, construct, and operate reprocessing plants; and
- Provide a baseload of fuel from AEC production reactors until the construction of additional commercial power reactors created an adequate demand for spent fuel reprocessing services.

New York State became interested in the AEC privatization program as a way to promote industrial development within the State. New York established an Office of Atomic Development in 1956, and by 1961, the OAD had acquired 3,300 acres in the Town of Ashford in Cattaraugus County with the intent of establishing a spent fuel reprocessing facility. The Town of Ashford was, and remains, a rural, economically depressed area.

The AEC announcements on reprocessing also created interest within the business community, and the Davison Chemical Company (which would be bought out by W.R. Grace and Company) set up Nuclear Fuel Services Inc. (NFS) to pursue the reprocessing venture.

Negotiations among NFS, AEC, and New York State resulted in several agreements, and in 1962, NFS filed an application with Atomic Energy Commission for a construction permit and license for the spent fuel reprocessing facility at West Valley.

Construction of the reprocessing plant began in 1963 and was completed in 1966. That same year, the Atomic Energy Commission granted a provisional operating license for the facility. NFS was licensed as the operator of the reprocessing facility, and the New York State Atomic Research and Development Authority, a predecessor agency of NYSERDA, was licensed as the owner.

The construction cost for the reprocessing facility was about \$33 million. AEC set the fee structure for NFS reprocessing services, stipulating that NFS could not charge more than 15% above the AEC-published charges for reprocessing based on a conceptual AEC reprocessing plant.

Operational History of the West Valley reprocessing facility

640 metric tons of fuel from both AEC defense reactors and commercial power reactors were reprocessed at West Valley between 1966 and 1971. Of the 640 metric tons of spent fuel, 380 metric tons were from the N-reactor at Hanford - supplied by AEC under the baseload contract with NFS.

In addition to spent fuel reprocessing, NFS established two radioactive waste disposal areas at the Center - a commercial radioactive waste disposal facility, and a separate facility that was used for the disposal of high-activity reprocessing waste with radiation levels that were too high to be buried in the commercial disposal facility.

During the time it operated, the facility experienced operational difficulties, higher than expected worker doses, and unplanned releases of radioactive material to the environment.

Shut-down and Uncertainty

After operating the facility for six years, NFS halted reprocessing operations in 1972 in order to make modifications to the plant to increase reprocessing capacity, reduce worker doses, and reduce radioactive effluents. NFS expected that these modifications would cost \$15 million.

During this shut-down period, new regulatory requirements were issued by the Atomic Energy Commission related to earthquake and tornado protection, and waste management requirements. NFS estimated that meeting these new regulatory requirements could cost \$600 million, and NFS concluded that it would not be economically viable to continue the reprocessing operation at West Valley.

In 1976, NFS informed New York State that it was withdrawing from the reprocessing business and intended to turn the West Valley facility and its waste over to New York State. At that time, the facility contained 750 spent fuel assemblies that had not been reprocessed, 600,000 gallons of liquid

high-level radioactive waste stored in two steel tanks, the highly contaminated Main Plant Process Building, and the two radioactive waste disposal areas that contained almost 3 million cubic feet of radioactive waste.

The NFS announcement that it planned to turn the West Valley facility over to New York created considerable uncertainty and anxiety within the State. New York objected, saying that the perpetual care fund that had been accumulated by NFS (less than \$4 million) was inadequate to safely care for the facilities. In addition, the agreements between the State and NFS required the waste to be in “good condition.”

In order to better understand the responsibility, cost, and technical issues surrounding West Valley, the United States Congress held hearings, directed the GAO to investigate the issues, and directed DOE to study options for the future of the Center. These activities eventually led to Congress passing the West Valley Demonstration Project Act in 1980.

It is clear that the reprocessing facility at West Valley failed to live up to its high expectations, and in retrospect, it was a combination of economic factors, technological difficulties, and an evolving regulatory framework that led to the failure of the facility.

West Valley Demonstration Project

The WVDP Act directs the U.S. Department of Energy to conduct a demonstration project at the Center. Specifically, the WVDP Act directs DOE to: develop containers to transport the high-level waste to a federal repository; solidify the high-level waste; transport the solidified high-level waste to a federal repository; dispose of the low-level waste and transuranic waste generated, and decontaminate and decommission the tanks, facilities, material and hardware used in connection with the Project in accordance with decommissioning criteria prescribed by the Nuclear Regulatory Commission.

The Clean-up – A Federal-State Partnership

In 1982, under terms of a Cooperative Agreement between DOE and NYSERDA, and in accordance with a 1981 amendment to the NRC’s License for the Center, DOE assumed control of about 180 acres of the Center to conduct the West Valley Demonstration Project.

NYSERDA is responsible for the balance of the Center property, which consists of 3,100 acres of undeveloped property, and the commercial disposal facility. As directed by the WVDP Act, the Federal Government pays 90 percent of the costs of the West Valley Demonstration Project, and New York State pays 10 percent.

Progress on the Cleanup and Status of the Site

The West Valley Demonstration Project’s decommissioning activities have been underway since 1982. There has been significant progress in the cleanup, including:

- The design, construction, and successful operation of the vitrification facility, which converted the remaining high-level waste sludge into a durable glass wasteform suitable for disposal in a high-level waste repository. At the present time, the 275 canisters of vitrified high-level waste await disposal, and are being stored at West Valley.
- The removal of a number of contaminated and uncontaminated ancillary facilities.
- The completion of an Environmental Impact Statement to evaluate decommissioning alternatives for the site, the selection of a phased-approach for the decommissioning work, and the preparation of a Decommissioning Plan to provide additional details for implementing the decommissioning alternative.

The first phase of decommissioning will take 10 years, and will involve the removal of the Main Plant Process Building; the Vitrification facility; several unlined contaminated lagoons; and the source area of a Sr-90 groundwater contamination plume. We will also be conducting additional studies that are needed to make decommissioning decisions on the remaining facilities, including the disposal areas and High-Level Waste Tanks.

The combined Federal and State cost expenditures for the Demonstration Project from 1982 to date amount to approximately \$2.6 billion. The Phase 1 decommissioning work, which will start next year, will cost about \$1 billion over the next 10 years. The cost of the Phase 2 decommissioning work is unknown at this time, but could range from \$500 million if the remaining facilities are closed in place, to as much as \$8 billion if all remaining wastes and facilities are removed. The New York State expenditures at West Valley since the initiation of the WVDP Act are now approaching \$320 million.

Local Community Concerns, based on the West Valley Experience

In regard to the Western New York Nuclear Service Center, the local community and State and local governments do have concerns related to the former reprocessing facility and the possible end state for the decommissioning project. These concerns fall into three main categories: environmental impacts and public safety, economic impacts, and long-term responsibility for the facility and its residual contamination and wastes.

Environmental Impacts and Public Safety – During the six years of reprocessing activities, the reprocessing facility experienced a number of operational difficulties that resulted in the unintentional releases of radioactive material to the environment. These included filter blowouts and stack releases that deposited Cs-137 to on-site and off-site properties; releases of high activity liquids into soils beneath the process building that formed an expanding Sr-90 groundwater plume; higher than expected effluent concentrations that contaminated creek sediments; disposal trenches that filled with water and released radioactive material to surface water streams; and incidents of worker contamination and overexposure.

The issue of environmental impacts and worker safety with an operating facility is straightforward – Unintentional releases of contamination to the environment and exposures of workers to high levels

of radiation or contamination will undermine the community's confidence in the safety of the facility. If the incidents are repeated or are not quickly addressed, negative public opinion builds, and public sentiment, both locally and regionally, can quickly turn against the continued operation of the facility.

There are also community concerns about the end-state for the cleanup of the facility. While the first phase of decommissioning will remove several significant facilities and sources of radioactive material, decisions on the end state for the Phase 2 work, including the High-Level Waste Tanks, the disposal areas, and a large portion of the groundwater plume, have not yet been made. There is strong support in both the local community and the region for the complete and immediate removal of all remaining facilities and contamination, and releasing the property for unrestricted use.

The cancellation of the Yucca Mountain project has introduced a concern in the community that the 275 HLW canisters presently stored at West Valley will remain at the site for many decades. The community lived with high-level waste in underground tanks for 40 years before the waste was finally solidified for transport and disposal, and now the community is concerned that it may have to wait another 40 or 50 years before it leaves. A local elected official recently told me that "it feels like we are starting all over again."

Economic Concerns – Local community leaders and many residents believe that they have paid a high economic price from the presence of the reprocessing facility and its remaining contamination.

Economic benefits to the area were minimal when the plant operated as NFS never employed more than 265 full-time workers (as many as 700 temporary workers were hired annually by NFS for a few years, but these workers did specific tasks for very brief periods of time, providing little economic benefit to the area). NFS made a profit only in their first year of operations at West Valley.

Residents and local elected officials believe that property values in the immediate area have been impacted due to the negative perception of the presence of a failed nuclear plant and radioactive waste disposal areas in their community. There is also a general sense that developers may look elsewhere to build homes or businesses, resulting in missed development opportunities and tax revenues for the town.

The community and region has seen an economic benefit from the West Valley Demonstration Project cleanup activities. The Demonstration Project has had annual budgets as high as \$140 million, and its peak employment reached 1,200 people in the 1990s. Today, however, annual budgets are now significantly reduced, and the number of employees has fallen to about 300. These employees reside primarily throughout a two-county region, and are not concentrated in any one community.

According to town officials, the site and its facilities and improvements represent about 90 percent of the assessed valuation of the town. Because the site is owned by New York State, however, the property and all improvements are exempt from county, town and school district property taxes. New York State does provide a \$500,000 annual Payment in Lieu of Taxes (PILOT) that is split between the town, the county, and the school system, which helps to balance tax losses. The PILOT

is appropriated annually; however, there is concern that if the PILOT ends, there would be significant impacts on the town.

In response to longstanding requests from community leaders, NYSERDA is now engaged in a process to attempt to release part of the property from the NRC license, which would allow NYSERDA to sell the property for re-use. We are working on an application for license amendment to release 185 acres of unimpacted property, along with a warehouse that is no longer used. If we are successful, this portion of the property could return to the tax rolls.

Responsibility Concerns

Another significant community and State concern relates to identifying what entity, public or private, is ultimately responsible for the facilities, the wastes, and the environmental contamination that is present at the site.

Responsibility issues were of great concern when NFS said it was withdrawing from the reprocessing business and turning the facility over to New York State. Similar issues arose during the Demonstration Project, when DOE and NYSERDA were not in agreement as to which agency was responsible for the cleanup of certain facilities and contamination. These disagreements eventually led to the filing of litigation by New York State. Although most of the responsibility issues between the State and federal governments have now been settled, there is still no agreement on two significant issues: 1) whether New York or the federal government is responsible for the payment of the HLW disposal fee; and 2) the respective long-term obligations of DOE and NYSERDA if the High-Level Waste tanks are closed in place and there is a need for additional mitigation.

If there were to be a proposal to establish a new nuclear facility in the State, I believe the community, and government representatives at all levels, would want answers to the following kinds of questions in regard to “responsibility”:

- Will the facility be designed, constructed, and operated to allow its eventual removal, or will it remain in the community forever?
- What provisions will be made to replace tax revenue if the facility is tax exempt?
- Who will be responsible for the mitigation of any hazardous or radioactive materials that are released from the facility?
- What happens if the facility shuts down or goes bankrupt? Who will fund the decommissioning, dismantlement, demolition and disposal?
- How much money will be set aside for the decommissioning, and how will the funds be held?
- What happens if the funds are not adequate?
- Will the cleanup be guaranteed by the State, the Federal government, or both?

Based on the West Valley experience, it would be important to have these types of issues clearly addressed in a written agreement.

Role to be Played by State and Local Government and the Community

In regard to the role of the State in the establishment of a new nuclear facility, there would be a direct regulatory role for the State in at least some aspects of the siting, design, construction, or operation of the facility, and we would expect the State to participate fully in that role. Regardless of the specifics of the direct regulatory role, there should be an effort to maximize the State's involvement during the siting, design, construction and operation of the facility, through some formal agreement, in order to engender the State's trust and acceptance of the facility.

Local government is also likely to have some role in the siting and environmental review process for a new facility. This review may include the consideration of issues such as impacts to the community from effluents, noise, traffic and land use changes. Other important local considerations would include the potential for long-term economic growth, jobs for local residents, changes to the tax base and property values, emergency planning and emergency response.

Because the formal local government role may be limited, mechanisms should be established to allow the community and local government to provide meaningful and comprehensive input during all phases of the project. I previously suggested maximizing State involvement in order to engender trust and acceptance of the facility, and this applies to the local community and local government as well. Issues of importance or concern to the community should be identified, discussed, and addressed in a formal agreement early in the process.

That is the end of my statement, and I want to thank the Subcommittee for allowing me to speak with you today.