Objective

Present NYSERDA’s view that the West Valley waste is most accurately characterized as defense waste, since “atomic energy defense activities,” as defined in the Nuclear Waste Policy Act, were conducted at West Valley.
Recent Timeline

- June 14, 2016 – NYSERDA submitted comments in DOE’s consent-based siting process clarifying the origins and legal status of the high level waste (HLW) stored at the WVDP based on records in NYSERDA’s possession from Nuclear Fuel Services.
- October 28, 2016 – New York State’s Congressional Delegation sent a letter to DOE requesting that the waste at the WNYNSC be classified as defense related in order to correct a historical misclassification.
- January 13, 2017 – DOE responded to the Congressional Delegation letter, and stated that there is merit to considering the disposal of the West Valley HLW and defense HLW in the same repository.
- Currently – Discussions are ongoing.

Agenda

- The history and effect of the “commercial” designation
- Nuclear Waste Policy Act
- Atomic Energy Defense activities at West Valley
- The origin of the nuclear fuel reprocessed at West Valley
- West Valley’s products and their destinations
- How correcting the designation helps complete the WVDP mission
- Conclusions
History and Effect of DOE’s “Commercial” Designation for West Valley

1. The West Valley facility was created to be the nation’s first commercial spent nuclear fuel reprocessing facility, but the historical record shows that the facility had significant and important ties to the nation’s defense complex.

2. DOE first established its position that the facility is “commercial” in a 1986 report from the DOE Inspector General. This report included West Valley in a list of nondefense facilities expected to sign a contract with DOE for HLW disposal.

3. The Nuclear Waste Policy Act (NWPA) does not use the term “commercial.” Under the NWPA, waste is either “civilian” or “defense.”

History and Effect of DOE’s “Commercial” Designation for West Valley (continued)

4. The Atomic Energy Act (AEA) does include provisions to license “Commercial” facilities (Section 103 of the AEA); however, West Valley was licensed under Section 104(b) as a Research and Development facility.

5. If “commercial” means that the waste is “civilian” then:
   a) West Valley HLW would not be eligible for a defense-only repository;
   b) West Valley TRU waste could not be disposed at WIPP; and
   c) NYS would have to pay a significant fee for the disposal of the HLW.

6. Does “commercial” truly mean “civilian” under the NWPA?
The term “commercial” is not used or defined in the Nuclear Waste Policy Act. The NWPA defines the term “civilian nuclear activity,” as “any atomic energy activity other than an atomic energy defense activity.”

The term “atomic energy defense activity” is defined as “any activity of the Secretary performed in whole or in part in carrying out any of the following functions:”

(A) naval reactors development;
(B) weapons activities including defense inertial confinement fusion;
(C) verification and control technology;
(D) defense nuclear materials production;
(E) defense nuclear waste and materials by-products management;
(F) defense nuclear materials security and safeguards and security investigations; and
(G) defense research and development.

Atomic energy defense activities (D, E, and possibly C) were conducted at West Valley.

West Valley was a spent nuclear fuel reprocessing facility

Reprocessing was conducted to recover useful radioactive material (Uranium and Plutonium).
West Valley resulted from federal policy and initiatives

In 1956, the U.S. Atomic Energy Commission (AEC) announced a program to encourage the development of a non-federal nuclear fuel reprocessing industry to support the development of the nuclear power industry in the United States.

AEC incentives to industry:

- Make classified technology on spent fuel reprocessing available to private industry;
- Provide a baseload of spent fuel to keep reprocessing plants operating until additional commercial power reactors were constructed.

The NFS West Valley Plant was a Production Facility

The plant was licensed by AEC as a Production Facility.

The purpose of a production facility is to produce special nuclear material (SNM). SNM is comprised of Pu, U-233, and U-235.

NFS used the PUREX process for reprocessing at West Valley.

PUREX was a classified process developed to produce Plutonium for weapons applications and to recover Uranium for nuclear fuel.
Most of the West Valley Spent Fuel came from Hanford

Approximately 60 percent of the SNF Reprocessed at West Valley came from Hanford’s N-Reactor.

- The N-Reactor was a dual purpose reactor, generating Pu for weapons and steam for electricity.
- The initial shipments (2,390 fuel assemblies) of N-Reactor fuel came to West Valley before the N-Reactor began generating electricity. During this time period the N-Reactor’s only mission was to produce weapons-grade plutonium.
- The initial N-Reactor fuel shipments to West Valley had a very short stay-time in the reactor, which was done to produce the desired plutonium isotope for nuclear weapons.

What did NFS Produce?

**Plutonium**

80 percent of the recovered plutonium was delivered to Hanford (3,373lbs).

Initial shipments of Pu sent from West Valley to Hanford had a very high Pu-239 content (weapons grade material).
**What did NFS Produce?**

**Uranium**

*(1.4 Million Pounds)*

99 percent (1.4 million pounds) of uranium was delivered to the Fernald Feed Materials Production Plant in Fernald, OH.

1 percent (2,200 pounds) of highly enriched uranium (HEU) was delivered to the Y-12 complex at Oak Ridge, TN.

Fernald operated from 1951 to 1989, producing high-purity uranium metal products for the U.S. defense program.

There were no other recipients of uranium from the West Valley facility.

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**Atomic Energy Defense Activities were conducted at West Valley**

- **(D) Defense Nuclear Materials Production**
  - The West Valley facility was a production facility.
  - West Valley produced Plutonium and Uranium for AEC defense complex (Hanford, Fernald, Y-12).

- **(E) Defense Nuclear Waste and Materials By-Product Management**
  - The management of waste generated during the production of SNM at West Valley (HLW, TRU, LLW).

- **(C) Verification and Control Technology**
  - NFS maintained classified contracts with the U.S. Air Force throughout the various reprocessing campaigns (1966-1972) that appear to be related to intelligence support for assessing nuclear threats.
**West Valley High-Level Waste Management**

DOE stored the HLW in the Main Plant Process Building pending disposal at a national repository (1996-2016).

The HLW at the new on-site dry-cask storage facility (2016-?).

**West Valley Transuranic Waste Disposal**

Since the initiation of the WVDP, over 1 million \(\text{ft}^3\) of LLW has been shipped for disposal.

Under the WIPP Land Withdrawal Act, WIPP is authorized to demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities.

None of West Valley’s TRU waste has been shipped to WIPP.
West Valley High-Level Waste Management

• According to DOE, New York State is required to pay a disposal fee for the WV HLW.

• The 1981 Cooperative Agreement obligates NYSERDA to turn over the “perpetual care fund” to DOE upon delivery of the WV HLW to an appropriate federal repository for disposal.

• DOE identified the WV Waste as “commercial” for the first time in 1986 and said the fund would not be adequate.

• Since the 1986 Inspector General report, DOE maintains that NYSERDA must pay a HLW disposal fee, the last calculation of which was $228 million, but likely considerably higher by now with interest.

• NYSERDA has maintained the NFS perpetual care fund in an interest bearing account since NFS left the site. As of March 31, 2016, the fund contains $29.2 million.

• NYSERDA continues to be ready to turn over the perpetual care fund upon delivery of the West Valley HLW at a federal repository.

Summary

• Under the AEA, the NFS operation was licensed as a “Production Facility.”

• The West Valley facility was licensed under Section 104 b. of the AEA – Research and Development, not Section 103 - Commercial.

• “Commercial” is not a term used in the Nuclear Waste Policy Act.

• Under the NWPA, the term “civilian nuclear activity” means any atomic energy activity other than an “atomic energy defense activity.”

• Under the NWPA, “atomic energy defense activities” includes defense nuclear materials production and defense nuclear waste and materials by-products management.

• NWPA provides that “[t]he costs resulting from permanent disposal of high-level radioactive waste from atomic energy defense activities should be paid by the Federal Government.”

• Under the WIPP Land Withdrawal Act, WIPP is authorized to demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities.
Conclusion

• Atomic energy defense activities were conducted at West Valley.
• The West Valley HLW is eligible for disposal at a defense repository if one is developed.
• The federal government is responsible for the cost of disposal of defense HLW under the NWPA.
• The West Valley TRU waste is eligible for disposal at WIPP under the WIPP Land Withdrawal Act.

Questions?