



West Valley Demonstration Project

West Valley Environmental Services

Environmental Regulations at the Center

March 26, 2008
West Valley Citizen Task Force Meeting

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Western New York Nuclear Service Center



West Valley Demonstration Project Premises
DOE-managed
~ 200 acres



State-Licensed Disposal Area
State-managed
16 acres

Retained Premises
State-managed
~ 3100 acres



Objectives

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- ◆ Brief regulatory site history
- ◆ Identify key environmental laws that apply to the WVDP
- ◆ How do they impact the WVDP today?
 - Management of materials or waste to protect public health and environment
 - Radioactive materials – Manages use of the radioactive materials as well as waste
 - Toxic substances – Manages use of materials as well as waste
 - Hazardous waste – Manages all aspects of wastes but not use of hazardous materials
 - Federal and state decision-making requirements
 - National Environmental Policy Act (NEPA)
 - State Environmental Quality Review (SEQR)
 - Protection of environmental media – to protect public health and environment
 - Water Quality (surface water, groundwater, and drinking water)
 - Air Quality



Regulatory-Site History

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- ◆ **1954**
 - Atomic Energy Act – Civilian nuclear power and commercialization of fuel cycle policy
- ◆ **1961**
 - New York's Office of Atomic Development (later becomes NYSERDA) obtained 3,345 acres near West Valley through eminent domain – the Center
- ◆ **1963**
 - Atomic Energy Commission (AEC) issued construction permit to NYSERDA and Nuclear Fuel Services (NFS) to construct nuclear fuel reprocessing plant
- ◆ **1966 – 1972**
 - NFS processed 640 metric tons of spent fuel to recover uranium and plutonium under AEC License Commercial Spent Fuel-1 (CSF-1)
- ◆ **1980**
 - West Valley Demonstration Project Act – Congress creates WVDP and directs DOE to operate
- ◆ **1981**
 - DOE and NYSERDA enter into a Cooperative Agreement
 - DOE and NRC sign a Memorandum of Understanding – Procedures for NRC to provide review and consultation to DOE
 - NRC puts Technical Specifications of CSF-1 license in abeyance – DOE to operate under AEC authority
 - NYSERDA and NFS remain as NRC licensee
- ◆ **1982**
 - NFS removed from license; NYSERDA sole licensee
 - Final Environmental Impact Statement (EIS and Record of Decision (ROD) issued for management of HLW

West Valley Demonstration Project
Regulatory-Site History
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1954
 New York State Office of Atomic Development (predecessor to NYSERDA) obtained 3,345 acres near West Valley through eminent domain – referred to as the Western New York Nuclear Service Center (WNYNSC) or the Center

1961
 Atomic Energy Act – Civilian nuclear power and commercialization of fuel cycle policy

1963
 Atomic Energy Commission (AEC) issued construction permit to NYSERDA and Nuclear Fuel Services to construct nuclear fuel reprocessing plant

1966
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1980
 WVDP Act signed by President Jimmy Carter

1981
 DOE / NYSERDA Cooperative Agreement
 DOE / NRC Memorandum of Understanding
 – Procedures for NRC to provide review and consultation to DOE
 NRC Technical Specifications for License CSF-1 placed in abeyance
 – DOE to operate under AEC authority

1982
 NFS removed from license; NYSERDA sole licensee
 Final EIS and ROD issued for HLW management

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West Valley Demonstration Project
West Valley Demonstration Project Act - 1980
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DOE – Section 2. (a)

- (1) The Secretary shall solidify in a form suitable for transportation and disposal, the high level radioactive waste at the Center by vitrification or by such other technology which the Secretary determines to be the most effective for solidification. **Complete**
- (2) The Secretary shall develop containers suitable for the permanent disposal of the high level radioactive waste solidified at the Center. **Complete**
- (3) The Secretary shall, as soon as feasible, transport, in accordance with applicable provisions of law, the waste solidified at the Center to an appropriate Federal repository for permanent disposal. **Pending**
- (4) The Secretary shall, in accordance with the applicable licensing requirements, dispose of low level radioactive waste and transuranic waste produced by the solidification of the high level radioactive waste under the project. **Pending**
- (5) The Secretary shall decontaminate and decommission –
 - (A) the tanks and other facilities of the Center in which the high level radioactive waste solidified under the project was stored,
 - (B) the facilities used in the solidification of the waste, and
 - (C) any material and hardware used in connection with the project
 – In accordance with such requirements as the Commission may prescribe. **Underway**

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West Valley Demonstration Project Act - 1980

DOE and NRC Section 2. (c)

- ◆ Within one year from the date of the enactment of this Act, the Secretary shall enter into an agreement with the Commission to establish arrangements for review and consultation by the Commission with respect to the project: Provided, that review and consultation by the Commission pursuant to this subsection shall be conducted informally by the Commission and shall not include nor require formal procedures or actions by the Commission ...



West Valley Demonstration Project Act - 1980

Oversight

- ◆ NRC/DOE Memorandum of Understanding (1981) Section B. 1.

The NRC review, consultation, and monitoring established by this Agreement will provide the Department with independent analyses to assist the Department in fulfilling its responsibility for public health and safety.

- NRC conducts periodic monitoring reviews and analysis of WVDP activities and issues public report documenting results of each monitoring visit.



West Valley Demonstration Project Act - 1980

Decommissioning Plan (DP)

◆ NRC

- Prescribed the License Termination Rule (LTR) as the decommissioning criteria for the WVDP and the goal for the entire NRC-licensed site
- Decommissioning criteria provide flexibility with demonstration that compliance with LTR is technically impractical or prohibitively expensive
- Will review DP developed by DOE against LTR
 - Request additional information as needed
- Issue Technical Evaluation Report
- Will conduct concurrent review of Decommissioning EIS and determine whether to adopt or supplement EIS and issue NRC environmental decisions

◆ DOE

- Prepare Decommissioning Plan (DP) and issue at time of Draft Decommissioning EIS
- Notify public of DP
- Respond to NRC requests for additional information
- Revise / supplement, DP as necessary
- Issue Phase 1 ROD that provides basis for DP



Radioactive Materials (Including Waste) Management at WVDP (DOE is Self Regulating)

◆ Federal - Atomic Energy Act of 1954 as amended

- DOE regulates its use of radioactive materials, including waste, to protect workers, the public and environment (water and air quality included)
- NRC regulates the commercial use of radioactive materials including waste to protect workers, public and environment (water and air quality included)
- NRC and U. S. Department of Transportation (DOT) regulate the transportation of radioactive materials including waste



Radioactive Materials (Including Waste) Management at WVDP (DOE is Self Regulating)

DOE regulations and orders control all activities at site involving the management of radioactive materials

- ◆ **Radioactive Waste Management** (DOE Order 435.1)
 - Sets standards and procedures for the management of all of DOE radioactive waste (HLW, Transuranic and Low Level)
- ◆ **Environmental Protection Program** (DOE Order 450.1)
 - Establishes process and procedures for DOE's stewardship of its environmental resources. Requires each site to have an Environmental Management System
- ◆ **Radiation Protection of the Public and the Environment** (DOE Order 5400.5)
 - Sets limits of exposure for protection of public and environment through in part Derived Concentration Limits
- ◆ **Occupational Radiation Protection** (10 CFR Part 835)
 - Sets standards and procedures for protection of workers at DOE facilities
- ◆ **Nuclear Safety** (10 CFR Part 830)
 - Sets standards, requirements, and procedures that must be followed with the management of nuclear materials
- ◆ **Others** – all aspects of managing radioactive materials

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Radioactive Materials and Waste Management – New York's Authority

- ◆ **New York – New York Environmental Conservation Law and Public Health Protection Law**
 - New York State Department of Environmental Conservation (NYSDEC) regulates disposal of commercial (definition of commercial includes state) radioactive waste as an agreement state with NRC
 - New York State Department of Health (NYSDOH) regulates commercial radioactive materials (low-level radioactive waste) as agreement state (1961) with NRC (NRC retains authority over fuel cycle facilities)
 - New York City Department of Health and Mental Hygiene
- ◆ **SDA (which is not part of WVDP) is regulated through:**
 - New York Public Health Law – NYSDOH (formerly authority with NYSDOL) – Licensed low-level radioactive waste disposal at the SDA (Radioactive Materials License 0382-1139 issued in 1963)
 - Environmental Conservation Act – NYSDEC (formerly part of the NYSDOH) – authorized burial of low-level radioactive waste (1963 initial exemption became Part 380 Permit 137-6)

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Management of Hazardous Waste and Hazardous Constituents

- ◆ Federal – RCRA 1976 – As amended
 - Regulates the generation, transportation, treatment, storage and disposal of hazardous wastes (radioactive wastes not included)
 - Solvents
 - Toxic metals – cadmium, lead, chromium, arsenic, mercury
 - Regulates mixed wastes (hazardous waste portions) - 1990
 - Regulates releases of hazardous constituents under corrective action authority Section 3008(h) of RCRA
 - EPA may authorize states to carry out the provisions
 - New York is an authorized state and EPA oversees their implementation

- ◆ New York – Environmental Conservation Law – Implements RCRA in New York
 - New York authority to implement EPA's hazardous waste regulations
 - Requirements must be at least as stringent
 - New York is an authorized state for RCRA implementation

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Hazardous Waste Management at the WVDP

- ◆ RCRA (Hazardous Waste)
 - NYSDEC regulates hazardous waste in New York – EPA provides oversight to NYSDEC

 - Two types of units are regulated:
 - Hazardous Waste Management Units (HWMUs) – any unit within the Center that manages (treat, store, dispose) hazardous waste and must be permitted and managed to protect public health and the environment

 - Solid Waste Management Units (SWMUs) – *any unit at the facility "from which hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid and/or hazardous wastes"*

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Hazardous Waste Management at the WVDP

◆ Hazardous Waste Management Units (HWMUs)

— For the WVDP

- Part A permit application submitted (1990) to NYSDEC listing all of the HWMUs, which allows DOE to operate under interim status
 - Specific set of regulations that provide for the protection of public health and the environment during interim status for all activities
- 373 (Part B permit) application submitted (2004) by DOE, NYSERDA, and West Valley Environmental Services Company (WVNSCO) for the WVDP

— For the SDA

- Part A permit application submitted (1990) to NYSDEC
- NYSERDA files for and receives conditional exemption (2006) from EPA and NYSDEC

Hazardous Waste Management at the WVDP

◆ Solid Waste Management Units (SWMUs)

— EPA, NYSDEC, NYSERDA and DOE entered into a RCRA 3008(h) Order on Consent

- WVDP SWMUs for (listed on map)
- SDA SWMUs for SDA retained premises

— Consent Order required:

- Perform RCRA Facility Investigations (RFIs) to determine nature and extent of releases – Performed 1994 – 1997. No units required immediate action
- Perform Corrective Measures Studies (CMS) – Five identified and are ongoing (e.g., Demineralizer sludge pond)
- Perform Interim Measures (e.g., the NDA interceptor trench and new cap on NDA) to reduce or eliminate any threats

— Implementation of Corrective Measures requires NEPA coverage

RCRA 3008(h) Order
 The regulator (EPA / NYSDEC) can require "corrective action or such other response which he deems necessary to protect human health or the environment, if, on the basis of any information, he determines that there is or has been a release of hazardous waste or hazardous constituents..."



Mixed Waste Management at the WVDP

- ◆ Federal Facility Compliance Act (FFCA) Consent Order (1996; WVES, DOE, NYSDEC are signatories)
 - Addresses management of mixed wastes (both hazardous and radioactive) at the WVDP
 - WVDP submits Annual Site Treatment Plan to NYSDEC for approval



National Environmental Policy Act

- ◆ Requires federal agencies to evaluate impacts to decisions, consider alternatives, identify a preferred alternative, and involve the public prior to making a decision
- ◆ NEPA Implementation at WVDP
 - DOE
 - Decommissioning EIS required (other NEPA documentation used for other actions in progress or taken)
 - Alternatives bound impacts and range of possible solutions
 - Preferred alternative to be proposed
 - Public involvement and comment
 - Response to comments
 - Final EIS (FEIS) and ROD
 - ROD becomes enforceable document
 - NRC
 - Review DOE Decommissioning EIS – Decide whether to adopt or supplement EIS and issue Federal Register Notice regarding the environmental decision before issuance of Technical Evaluation Report on Decommissioning Plan



State Environmental Quality Review Act (SEQR)

- ◆ SEQR applies to state or local agencies who have authority to issue discretionary permits or if an agency funds or undertakes a project

- ◆ Impacts at the WVDP
 - NYSDEC must meet SEQR requirements for decision on hazardous waste permitting (373 Permit)
 - DOE EIS information can be used to meet SEQR requirements
 - SEQR findings provide basis for permit decision
 - Public review and comment required
 - NYSERDA, under SEQRA, plans to evaluate the range of reasonable alternatives in the EIS to address their respective responsibilities at the Center



Water Quality

- ◆ Federal Clean Water Act of 1977 as amended – Surface water only
 - Protects the quality of waters of the United States/New York
 - Requires any discharges to have permits, meet standards, and be monitored
 - Does not cover radioactive materials (protection provided under Atomic Energy Act (AEA) through DOE)

- ◆ New York – Environmental Conservation Act – Water Quality portion – Both surface water and groundwater
 - Establishes New York's authority for protecting water quality
 - Allowed New York to become an "Authorized State" for implementation of federal requirements



Groundwater – Soil Remediation

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- ◆ **Federal**
 - Safe Drinking Water Act allows designation of “Sole Source Aquifer” that requires consideration of any activity using federal money
 - RCRA (Hazardous constituents) - protect against any release; corrective action – protect public health and the environment

- ◆ **New York – Environmental Conservation Law – Water Quality**
 - Standards for discharges to groundwater to protect drinking water
 - 380 Permit (issued for SDA to NYSERDA) sets requirements for monitoring and maintenance of the SDA

- ◆ **New York – NYSDEC - Guidance for Remediation**
 - Technical Administrative Guidance Memorandum 4003 - soil remediation for radiological constituents (DOE facilities excluded)
 - 6 NYCRR Part 375 or TAGM 4046 Soil Guidance Values
 - Technical and Operational Guidance Series (TOGS) 1.1.1 provides groundwater cleanup standards (drinking water)

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Water Quality at the WVDP

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- ◆ **Cattaraugus Creek Basin Aquifer designated sole source**
- ◆ **WVDP has a New York State Pollution Discharge Elimination System (SPDES) Permit**
 - Sets standards for all discharges for surface water

 - Permit provides for NYSDEC notification and review of water quality prior to discharge

 - Sets waste water treatment systems within WVDP compliance requirements

 - Regulates storm water discharges

 - Requires approval of the closure of waste water units
 - Some units are also regulated as Solid Waste Management Units under NYSDEC's hazardous waste program
 - Several units to be closed under SPDES (e.g., Laundry and cooling towers)
 - Anticipated that SPDES closure requirements will be consistent with RCRA corrective action requirements

 - SDA has a New York SPDES Permit
 - Regulates stormwater discharge from SDA

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Air Quality

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- ◆ **Federal - Clean Air Act of 1970 as amended**
 - Protects public and environment from air pollution
 - Requires permits for air emission sources of certain sizes
 - National Emission Standards for Hazardous Air Pollutants – Radionuclides
 - DOE facilities

- ◆ **New York – Environmental Conservation Act – Air Quality**
 - Protects Public Health and Environment from air pollution
 - Allows New York to receive primacy for managing federal Clean Air Act program
 - New York has not received delegation to manage DOE radionuclide part of NESHAP
 - New York regulates other air pollutants
 - Particulate, sulfur dioxide, oxides of nitrogen, carbon monoxide – Demolition, construction, fuel burning
 - Standards
 - Hazardous air pollutants – other than radionuclide emissions from DOE sources
 - Standards

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Air Quality at the WVDP

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- ◆ **Federal Clean Air Act – EPA**
 - Existing NESHAPs permits for emissions of radionuclide point sources
 - Main Plant Process Building (MPPB), including Vitrification and Off-gas
 - Vitrification ventilation system
 - 01-14 Building ventilation
 - Contact Size-Reduction Facility
 - Supernatant Treatment System/Permanent Ventilation System
 - Portable Ventilation Units
 - Permits will cover all emissions including demolition
 - Specific stack monitoring required from emission sources
 - During demolition ambient monitors will be used to ensure compliance with permit conditions
 - Annual report to EPA demonstrates compliance with EPA standard

- ◆ **Must Meet State Standards and Requirements**
 - Air Facility Registration Certificate – Size of sources below threshold requiring permit
 - must revise if activities increase emissions
 - Fuel burning sources
 - Construction activities
 - Transportation vehicles

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Drinking Water – Requirements and Impacts

- ◆ Federal – Safe Drinking Water Act

- ◆ New York – Public Health Law - Safe Drinking Water
 - New York is an authorized state for federal program
 - Cattaraugus County Health Department implements at WVDP
 - Requires WVDP to meet construction, operation, and quality standards for site drinking water
 - Regular monitoring to ensure quality is achieved

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Toxic Substances – Requirements and Impacts

- ◆ Federal (EPA) – Toxic Substances Control Act
 - Controls use of asbestos and PCBs
 - WVDP must manage both asbestos and PCBs according to these implementing regulations
 - Use
 - Inventory
 - Removal
 - Disposal

- ◆ New York – New York State Department of Labor
 - Regulates the hazards to the public safety and health during removal, encapsulation, enclosure, repair or the disturbance of friable and non-friable asbestos (NYS Code Rule 56)
 - WVDP must comply with Code Rule 56 by:
 - Training/certification of asbestos project workers
 - Request for variance due to radiological hazards

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Regulatory – Wrap up

- ◆ Regulatory framework provides protection of public health and environment
- ◆ Radioactive Materials
 - Regulated by a multitude of DOE Orders and regulations
 - NRC oversight of DOE activities
 - NYSDEC / NYSDOH regulations for SDA
- ◆ Decommissioning
 - Criteria, LTR, set by NRC
 - DOE process requires EIS/ROD
 - Decommissioning plan to be developed by DOE and reviewed by NRC against the LTR criteria
- ◆ Hazardous Waste including corrective actions regulated by NYSDEC with EPA oversight
- ◆ Air and Water quality protected through EPA and NYSDEC
- ◆ Confirmation of compliance through reports and inspections