

**Regulations 101**

West Valley Citizen Task Force

Colleen Gerwitz  
August 23, 2006

New York State Energy Research and Development Authority

**Understanding the Regulatory Framework at West Valley**  
**MUST ALWAYS CONSIDER CONTEXT**

When?  
Where?  
Who?  
What?

# Understanding the Regulatory Framework at West Valley

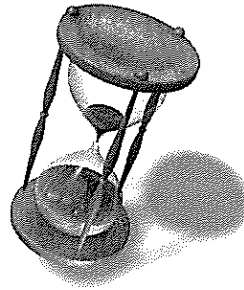
**MUST ALWAYS CONSIDER CONTEXT**

When?

Where?

Who? Who?

What?



## When?

Time Changes all Things

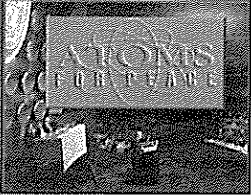


- Government goals and objectives change
- Laws and regulations are added and changed
- Agencies are created and re-created
- Regulatory authorities are delegated to the State
- Agreements are signed

**HYBERIDA**

## When?


### Government Goals and Objectives Change



**1954 Atomic Energy Act**  
federal policy to commercialize nuclear fuel cycle


**1977 Reprocessing Suspended in U.S**  
President Carter issues a Presidential Directive to indefinitely suspend commercial reprocessing and recycling of plutonium in the U.S.

**1980 WVDP Act**  
signed by Jimmy Carter to solidify HLW and decommission



#### Act Requirements

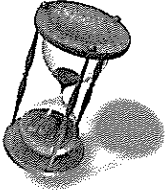
- ✓ Develop containers.
- ✓ Solidify liquid high-level waste.
- Decontaminate and decommission facilities.
- Dispose of low-level and transuranic waste.
- Transport solidified waste to a federal repository.



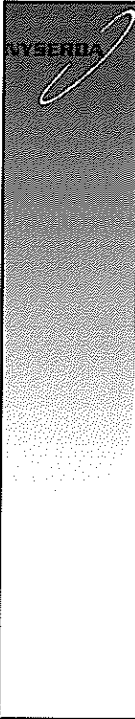
**HYBERIDA**

## When?

### Time Changes all Things



- Government goals and objectives change
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# When?

Laws and Regulations are Added and Changed

**1969 National Environmental Policy Act (NEPA)**  
Environmental Impact Statements (EIS)  
Environmental Assessments (EA)

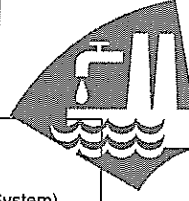
**1977 Clean Water Act (CWA)**  
Control of toxic water pollutants  
SPDES Permits (State Pollutant Discharge Elimination System)

**1976 Resource Conservation and Recovery Act (RCRA)**

**1984 Hazardous and Solid Waste Amendments (HSWA)**



Control of Hazardous Waste (chemical hazards, radionuclides are exempt under RCRA)  
Part A Permit for Interim Status Units  
Part B Permit  
RCRA 3008 (h) Consent Order  
RCRA Facility Investigations  
Corrective Measures Studies



# When?

Time Changes all Things



- Government goals and objectives change
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**NYSERDA**

# When?


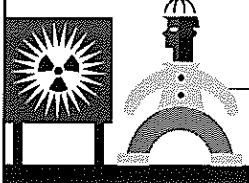
## Agencies are Created and Re-created

**1946 U.S. Atomic Energy Commission (AEC)**  
Atomic Energy Act of 1946 created the AEC and transferred the nation's atomic energy program from the Army to a civilian agency, the AEC.

Atomic Energy Act of 1954 - established the development of nuclear power for civilian purposes as a vital national goal and assigned AEC the functions of both encouraging the use of nuclear power and regulating its safety

**1974 U.S. Nuclear Regulatory Commission (NRC) and U.S. Energy Research and Development Administration (ERDA)**  
Energy Reorganization Act of 1974 - separated and assigned the nuclear power promotional and regulatory duties to ERDA and NRC, respectively

**1977 U.S. Department of Energy (DOE)**  
Department of Energy Organization Act of 1977 - ERDA merged with other federal agencies to create DOE for the purpose of coordinating and managing the federal government's energy functions

**NYSERDA**

# When?

## Agencies are Created and Recreated



**1959 Office of Atomic Development (OAD)**  
 Established to coordinated atomic regulatory and developmental functions within NYS

**1962 New York Atomic Research and Development Authority (NYARDA)**  
 Successor to Office of Atomic Development

**1964 New York Atomic and Space Development Authority (NYASDA)**

**1974 New York State Energy Research and Development Authority (NYSERDA)**

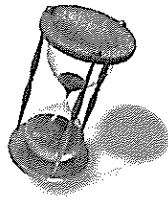
**1970 US Environmental Protection Agency**  
 Develops and enforces regulations that implement environmental laws enacted by Congress.

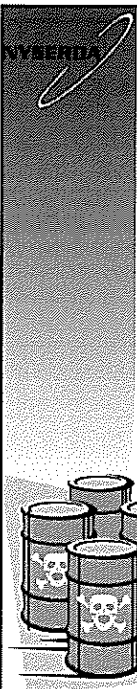


## When?

Time Changes all Things



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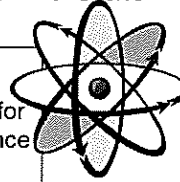


## When?

Regulatory Authorities are Delegated to the State

### 1954 Atomic Energy Act

Allows States to assume regulatory authority for most types of radioactive material in accordance with AEA compatibility requirements



### 1962 New York State became an Agreement State

### 1976 Resource Conservation and Recovery Act (RCRA)

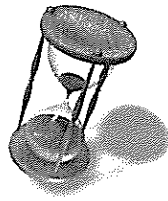
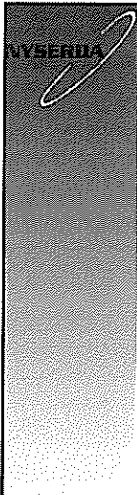
U.S. EPA regulation of hazardous wastes

### 1986 NYS Authorized by U.S.EPA to Implement RCRA

NYSDEC regulation of hazardous wastes

### 1990 NYS Granted RCRA Authority Over Mixed Waste

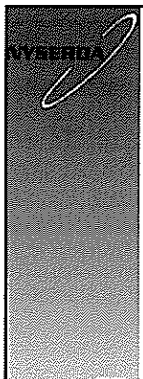
NYSDEC was granted authority to regulate the hazardous waste constituents in mixed radioactive and hazardous wastes (Mixed Wastes)



## When?

Time Changes all Things

- Government goals and objectives change
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## When?

Agreements are Signed

**1980** **Cooperative Agreement** between U.S. DOE and NYSERDA on the Western New York Nuclear Service Center

*Establish a cooperative framework for the implementation of the West Valley Demonstration Project Act*

**1991** **Supplement to Cooperative Agreement**

*Preparation of joint Environmental Impact Statement*



**1981** **WVDP Memorandum of Understanding** between the U.S. Department of Energy and the U.S. Nuclear Regulatory Commission

*Procedures for U.S.NRC review and consultation with regard to U.S.DOE activities at the WVDP*

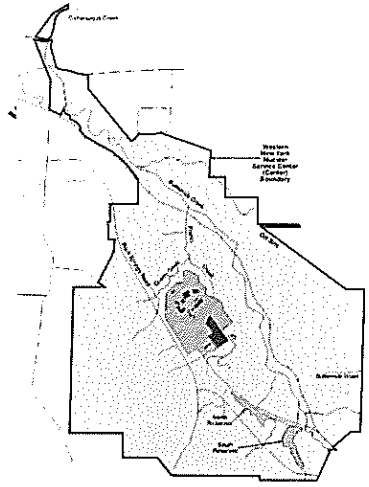
**1987** **Stipulation of Compromise Settlement** between Coalition on West Valley Nuclear Wastes & Radioactive Waste Campaign and U.S. DOE

*Scope of Closure EIS; Quarterly public meetings*

# Understanding the Regulatory Framework at West Valley

**MUST ALWAYS CONSIDER CONTEXT**

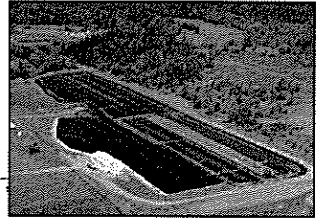
When?  
Where?  
Who? *Who?*  
What?



## Where?

Location Matters

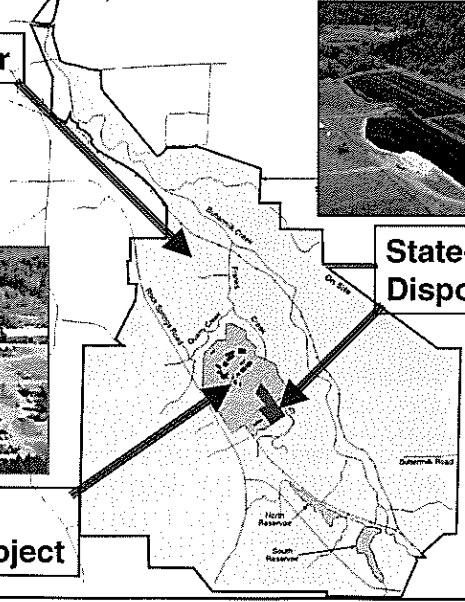
The Center



State-Licensed Disposal Area



West Valley Demonstration Project





**Pre-1975** **Where?**

**• Nuclear Fuel Services (NFS)**  
(Operator)

**• NYS Atomic Space and Development Authority (NYASDA)**  
(Owner and Lessor)

Both regulated by:

**• Atomic Energy Commission (AEC)**  
(Provisional License CSF-1)

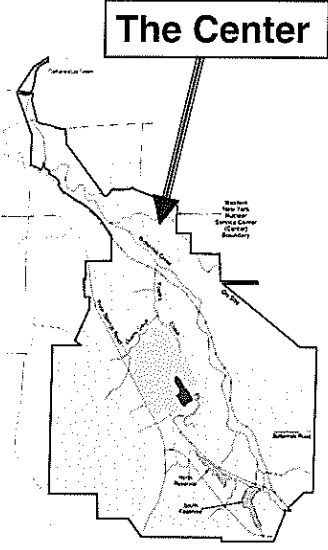
**1975 - 1982**

**• Nuclear Fuel Services (NFS)**  
(Operator)

**• NYS Energy Research and Development Authority (NYSERDA)**  
(Owner and Lessor)

Both regulated by:

**• Nuclear Regulatory Commission (NRC)**  
(Provisional License CSF-1)



The map shows the site layout with a central area labeled 'The Center' in a box. An arrow points from this box to the central area on the map. Other labels on the map include 'Western New York Nuclear Service Center (Operational Boundary)', 'Tonawanda', and 'Gettysburg'.

**1982 to Present** **Where?**

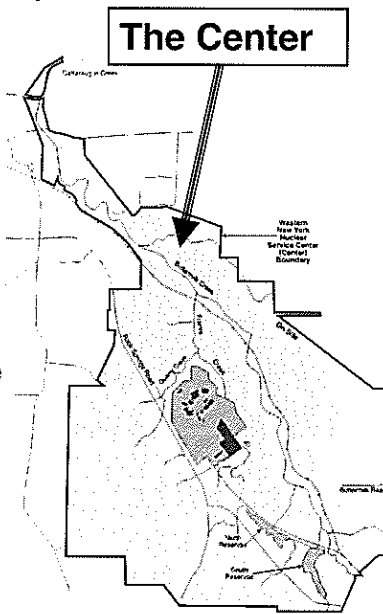
**DOE Radiological Activities**  
regulated by:

**• DOE with NRC monitoring**  
(WVDP Act, DOE Orders, Cooperative Agreement, NRC Memorandum of Understanding)

**• Until DOE surrenders possession, NYSERDA is not authorized to take any actions under the license.**  
(License CSF-1, Change No. 31)

**Non-Radiological Hazards**  
regulated by:

**• NYSDEC**



The map is identical to the one in the first slide, showing the site layout with 'The Center' highlighted in a box and an arrow pointing to it. Labels include 'Western New York Nuclear Service Center (Operational Boundary)', 'Tonawanda', and 'Gettysburg'.

**NYSERDA**

## Where?

### Pre-1975

**Nuclear Fuel Services (NFS)**  
regulated by:

- **NYS Department of Health (NYSDOH)**  
Exemption from Sanitary Code
- **NYS Department of Labor (NYSDOL)**  
Radioactive Materials License 0382-1139

### 1975 - 1983

**Nuclear Fuel Services (NFS)**  
regulated by:

- **NYS Department of Environmental Conservation (NYSDEC)**  
Radiation Control Permit #137-6  
(Part 380 Permit)
- **NYSDOL**  
Radioactive Materials License 0382-1139

**NYSERDA**

## Where?

### 1983 - 2006

**NYSERDA**  
regulated by:

- **NYS Department of Environmental Conservation (NYSDEC)**  
Radiation Control Permit #137-6  
(Part 380 Permit)
- **NYSDOL**  
Radioactive Materials License 0382-1139

### 2006

- **NYS Department of Health (NYSDOH)** assumed jurisdiction over NYSDOL Radioactive Materials License 0382-1139

**NYSERDA**

# Where?

**West Valley Demonstration Project**

**Post-1980**

**Radiological Activities**  
Self-regulated by:

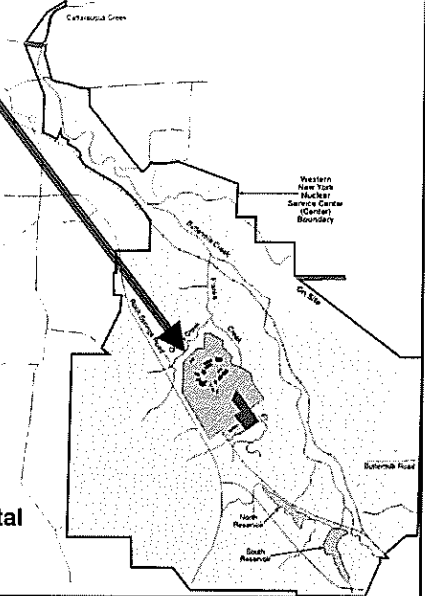
- **DOE**  
(WVDP Act, DOE Orders, Cooperative Agreement)

Monitored by:

- **NRC**  
(WVDP Act, NRC Memorandum of Understanding)

**Non-Radiological Hazards**  
Regulated by:

- **NYS Department of Environmental Conservation (NYSDEC)**



**NYSERDA**

# Understanding the Regulatory Framework at West Valley

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When?

Where?

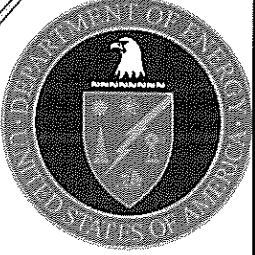
Who? *Who?*

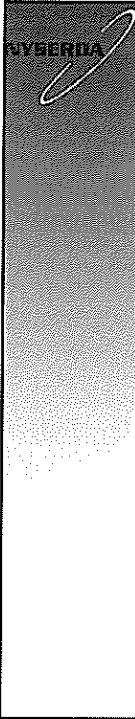
What?

*Where?*

**NYSERDA**

*What?*





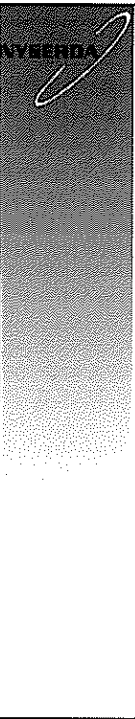
## Who?

(Regulator and Regulated)

Who You Are Determines Who You Play With

If I am **DOE**, I am regulated by:

- **MYSELF** for most radioactive contaminants
- **NYSDEC** for non-radiological air, surface water, groundwater, stormwater, and hazardous waste contaminants
- **NYSDOH** for drinking water
- **EPA** for radioactive air contaminants



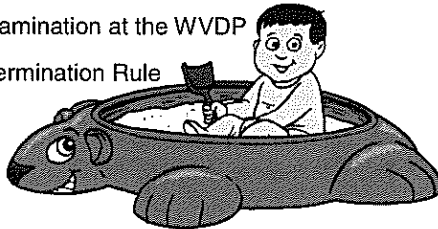
## Who?

(Regulator and Regulated)

Who You Are Determines Who You Play With

If I am **NYSERDA**, I am regulated by:

- **NYSDOH** for control of radioactive materials and protection of workers from radiation at the SDA
- **NYSDEC** for radiological and non-radiological air, surface water, groundwater, stormwater, and RCRA hazardous waste contaminants at the SDA
- **NRC**, if DOE leaves contamination at the WVDP or the Center above License Termination Rule standards, such that the NRC License must be reactivated



# Understanding the Regulatory Framework at West Valley

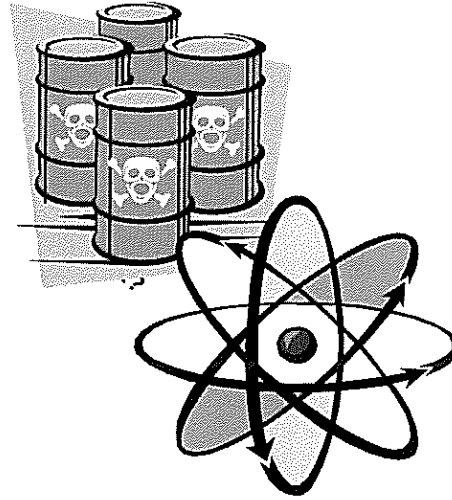
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When?

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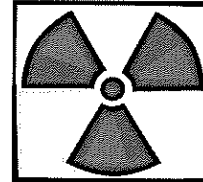
Who? Who?

What?



## What? (Type of Contaminant)

### Radiation, Radioactive Materials, and Radioactive Wastes

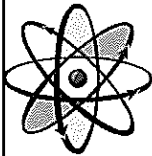


#### U.S. DOE

- Storage, Treatment and Disposal of Radioactive Wastes
- Discharge of Radioactivity to Surface Water
- Waste Incidental to Reprocessing (WIR) Determinations
- Worker Protection

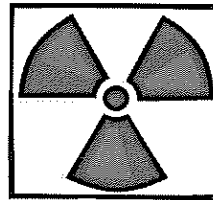
#### U.S. NRC

- License and regulate nuclear fuel reprocessing operations
- Prescribe decontamination and decommissioning criteria under the WVDP Act
- Review and consultation to DOE on the WVDP
- Monitor WVDP activities for the purpose of assuring public health and safety
- Accept DOE decommissioning alternative as meeting license termination rule criteria
- License termination or reactivation





## What? (Type of Contaminant)



### Radiation, Radioactive Materials, and Radioactive Wastes

#### U.S. EPA

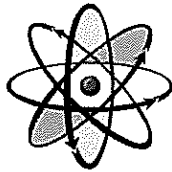
- Radionuclide air emissions at the WVDP
- Remediation to CERCLA risk range

#### NYSDOH

- Licensing and control of radioactive material activities and operations at the SDA to protect workers and the public

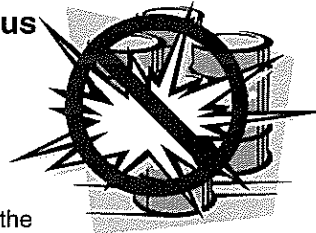
#### NYSDEC

- Control of the disposal and discharge of radioactive material to the environment from the SDA
- Best usage of fresh groundwater is as a source of potable water thus 4 mrem/yr dose limit applies at the Center



## What? (Type of Contaminant)

### Hazardous Waste and Hazardous Constituents



#### NYSDEC

- Treatment, storage and disposal of hazardous wastes at the WVDP and the SDA
- Facility investigations, interim measures, corrective measures under the RCRA 3008(h) Consent Order

#### U.S. EPA

- Facility investigations, interim measures, corrective measures under the RCRA 3008(h) Consent Order

**Understanding the Regulatory Framework at West Valley**

MUST ALWAYS CONSIDER CONTEXT

- 1969 NEPA
- 1976 RCRA
- 1977 CWA
- 1980 WVDPA

- Center
- SDA
- WVDP

- Regulator  
*USNRC, USEPA, USDOE, NYSDEC, NYDOH*
- Regulated  
*USDOE, NYSERDA*

- Radioactivity
- Hazardous Waste
- Water Discharges
- Air Discharges
- Environmental Impact Assessment

**COMPLEXITY**

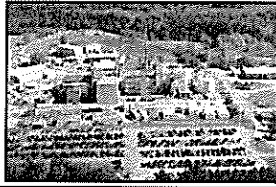
**Regulations 101**

**A Complex Site History**

## Regulations 101 – Site History

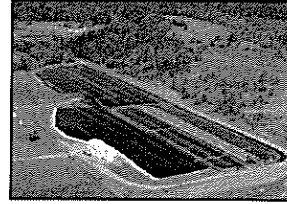
### 1961 - The Center

- State-owned
- 3,345 acres
- DOE uses and manages portions



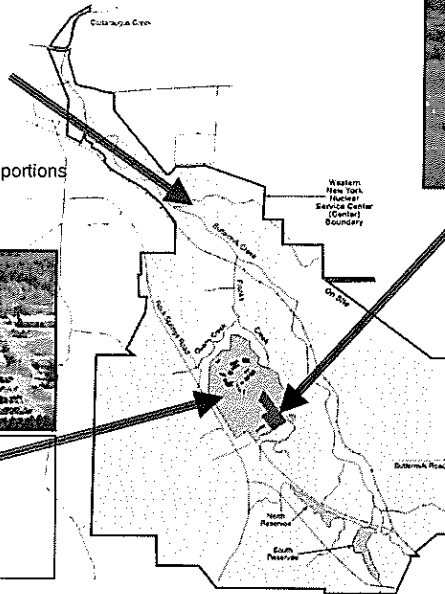
### 1980 - WVDP

- DOE-managed
- State-owned
- ~ 200 acres



### 1963 – SDA

- State-owned
- State-managed
- 15 acres



## The Center

## Regulations 101 – Site History Nuclear Fuel Services Operational Period

1950s  
& 1960s

1954

Atomic Energy Act launched a civilian nuclear power policy and established a federal policy to commercialize the nuclear fuel cycle

1956

AEC provided inducements and invited proposals from private industry for operation of nuclear fuel reprocessing plants

1959

NYS established Office of Atomic Development (OAD) to coordinate atomic regulatory and developmental functions with NYS

1961

OAD acquires 3,345 acres in WNY through eminent domain

1962

NYS Atomic Research and Development Authority (NYSARDA) established as OAD's successor

1963

AEC issued construction permit to Nuclear Fuel Services (NFS). Construction of fuel reprocessing plant began

1964

NYARDA became NY Atomic and Space Development Authority (NYASDA)





**Regulations 101 – Site History**  
Nuclear Fuel Services Operational Period

**1960s**  
continued

**The Center**

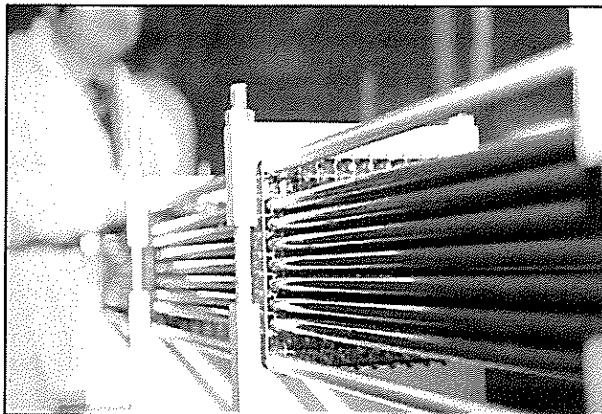
**1966**

Provisional Operating License No.CSF-1 issued by the AEC to NFS, as the operator, and to NYASDA, as the owner and lessor

Changes No. 1 to 30 to Technical Specifications of License CSF-1 are issued during the fuel reprocessing years

**1966 – 1972**

NFS reprocessed 640 metric ton of spent fuel to recover uranium and plutonium



**Regulations 101 – Site History**  
Nuclear Fuel Services Operational Period

**1960s**

**The SDA**

**1961**

OAD acquires 3,345 acres in WNY through eminent domain

**1961**

New York State becomes an Agreement State under Section 174b of AEA

**1963**

NYS Department of Labor (NYS DOL) issues Radioactive Materials License 0382-1139 authorizing NFS to bury low-level radioactive waste at the SDA

**1963**

NYS Department of Health (NYSDOH) grants an exemption from Part 16 of the NYS sanitary code to authorize the burial of low-level radioactive waste at the SDA

**1963-1969**

Northern SDA trenches (Trenches 1 through 5 and 7) were filled with wastes



**Regulations 101 – Site History**  
Nuclear Fuel Services Operational Period

**1970s**

**The SDA**

**1969 – 1975**

Southern SDA trenches (Trench 8 through 14) and Trench 6 are filled with wastes

**1975**

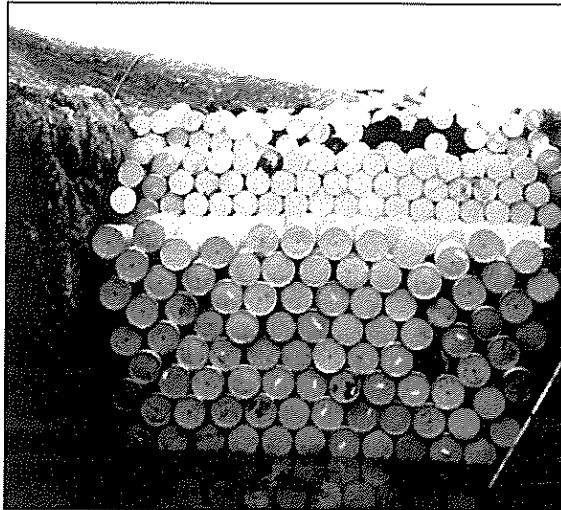
New York State Department of Environmental Conservation (NYSDEC) assumes regulatory authority from NYSDOH and converts Part 16 exemption from Sanitary Code to a Radiation Control Permit (Part 380 Permit)

**1975**

Trenches 4 and 5 overflow. NFS ceases disposal operations

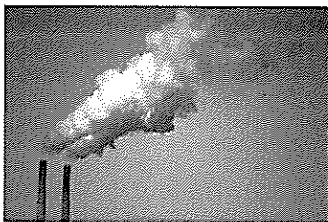
**1975 – 1981**

NYSDEC authorizes NFS to perform multiple pumping events to reduce leachate levels in the SDA trenches. Trench cap improvements were made, including the addition of 4 feet of clay and routine seeding and rolling.



**Regulations 101 – Site History**  
National Environmental Consciousness Period

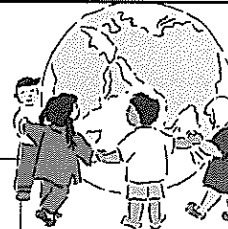
**1969 National Environmental Policy Act (NEPA)**



**1970 Clean Air Act (CAA)**

**1977 Amendments**

**1990 More Amendments**



**1974 Safe Drinking Water Act (SDWA)**

**1986 SDWA Amendments**

**1976 Resource Conservation and Recovery Act (RCRA)**

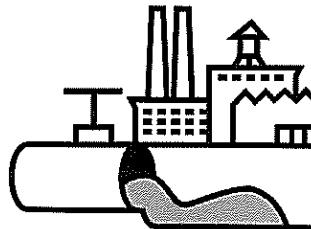
**1984 Hazardous and Solid Waste Amendments (HSWA)**



**1972 Federal Water Pollution Control Act (FWPCA)**

**1977 Clean Water Act (CWA)**

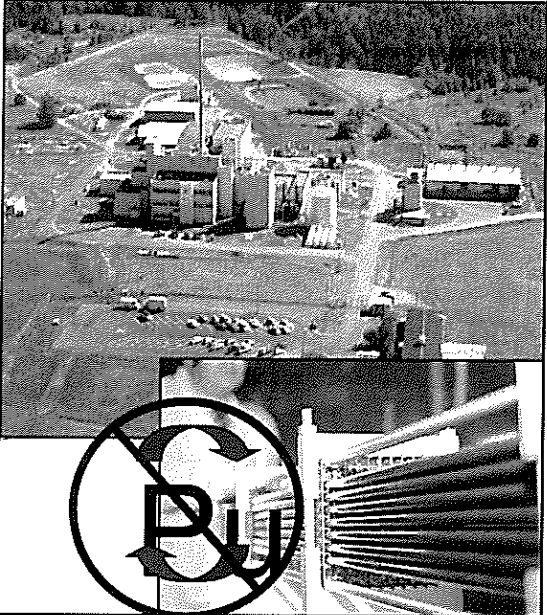
**1987 Water Quality Act**



**Regulations 101 – Site History** **1970s**  
 Nuclear Fuel Services Operational Period

**The Center**

- 1970**  
USEPA is created
- 1972**  
NFS shuts down to modify and expand operations
- 1973 -1976**  
AEC adopts significant changes in regulatory criteria
- 1974**  
AEC abolished and replaced by USERDA and USNRC
- 1974**  
NYSERDA replaces NYASDA
- 1976**  
NFS announced its decision to withdraw from the nuclear fuel reprocessing business
- 1977**  
USDOE replaces USERDA
- 1977**  
GAO Report and Congressional Hearings on West Valley
- 1977**  
President Carter announced end of commercial reprocessing and recycling of plutonium

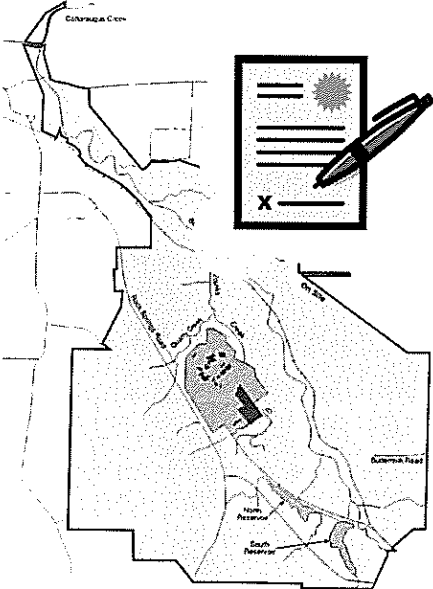


The image shows an aerial view of the West Valley Demonstration Project site. A large circular symbol with a diagonal slash through it is overlaid on the image, containing the letters 'Pu' for plutonium, indicating a ban on plutonium. The site includes several large industrial buildings and a central structure, surrounded by a fence and parking areas.

**Regulations 101 – Site History** **1980s**  
 West Valley Demonstration Project Period

**The WVDP**

- 1980**  
Congress passes the West Valley Demonstration Project Act
- 1981**  
USDOE and NYSERDA enter into Cooperative Agreement
- 1981**  
NRC issued Change No. 31 to License CSF-1 which gave DOE exclusive possession of the facility and prohibits NYSERDA from taking any actions under the license until DOE surrenders the facility
- 1981**  
NRC and DOE enter into a Memorandum of Understanding establishing procedures for NRC review and consultation on the WVDP
- 1982**  
NRC issued Change No. 32 to License CSF-1 which terminated NFS's authority and responsibility under the license leaving NYSERDA as the sole licensee



The image shows a map of the West Valley Demonstration Project site. The map includes labels for 'Columbia City', 'Highway 20', 'Highway 19', 'Highway 18', 'Highway 17', 'Highway 16', 'Highway 15', 'Highway 14', 'Highway 13', 'Highway 12', 'Highway 11', 'Highway 10', 'Highway 9', 'Highway 8', 'Highway 7', 'Highway 6', 'Highway 5', 'Highway 4', 'Highway 3', 'Highway 2', 'Highway 1', 'Highway 0', 'Highway -1', 'Highway -2', 'Highway -3', 'Highway -4', 'Highway -5', 'Highway -6', 'Highway -7', 'Highway -8', 'Highway -9', 'Highway -10', 'Highway -11', 'Highway -12', 'Highway -13', 'Highway -14', 'Highway -15', 'Highway -16', 'Highway -17', 'Highway -18', 'Highway -19', 'Highway -20'. A document icon with a pen is overlaid on the map, indicating a document or agreement.

## Regulations 101- Site History

West Valley Demonstration Project Period

## 1980s

continued

### The WVDP

**1982**

Final EIS and Record of Decision (ROD) for Management of Liquid HLW at the Center (Vitrification)

**1986**

DOE issues Environmental Assessment (EA) for disposal of LLW in Drum Cell tumulus

**1987**

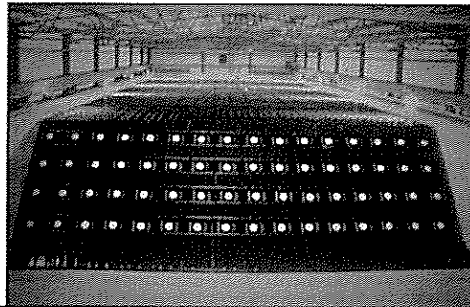
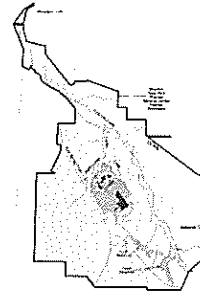
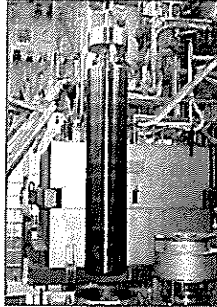
Stipulation of Compromise Settlement between Coalition and DOE

**1988**

Notice of Intent for Closure EIS

**1988 – 1995**

Operation of Cement Solidification System with generation and storage of nearly 20,000 LLW drums in the Drum Cell



## Regulations 101- Site History

West Valley Demonstration Project Period

## 1980s

### The SDA

**1983**

NYSERDA assumes operational responsibility for the SDA

**1983**

NYSDEC Radiation Control Permit (Part 380 Permit) transferred from NFS to NYSEERDA

**1983**

NYS DOL Radiation Materials License transferred from NFS to NYSEERDA

**1986**

Rapid leachate level increases in Trench 14 prompts subsurface investigations and removal of a subsurface sand and gravel unit along the western edge of Trench 14



## The SDA

## Regulations 101- Site History

1990s

West Valley Demonstration Project Period

**1990**  
NYSDEC granted RCRA Authority over hazardous waste components of radioactive and hazardous mixed wastes

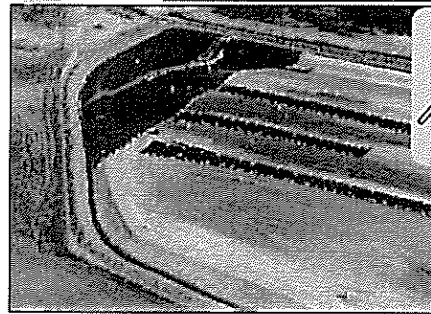
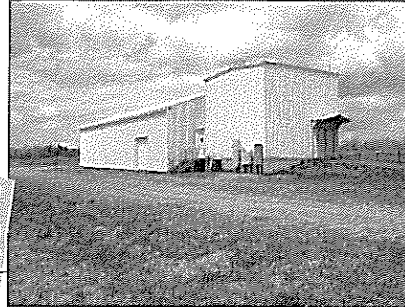
**1990**  
NYSERDA submits RCRA Part A Permit for the SDA

**1990 -1991**  
NYSERDA constructs two buildings with 50,000 gallons of tank storage capacity and pumps 7,500 gallons from Trench 14 into one of the tanks

**1992**  
EPA and NYSDEC issues DOE and NYSERDA a RCRA 3008(h) Order requiring corrective action

**1992 - 1995**  
NYSERDA installs geomembrane covers and slurry wall as interim measures under the RCRA Consent Order to control water infiltration into the trenches

**1993**  
RCRA Facility Investigation for the SDA is completed and the Corrective Measures Study is deferred to the EIS.



## The WVDP

## Regulations 101- Site History

1990s

West Valley Demonstration Project Period

**1990**  
NYSDEC granted RCRA Authority over hazardous waste components of radioactive and hazardous mixed wastes

**1990**  
DOE submits Resource Conservation and Recovery Act (RCRA) Part A Permit for the WVDP

**1992**  
EPA and NYSDEC issue DOE and NYSERDA a RCRA 3008(h) Consent Order requiring corrective action

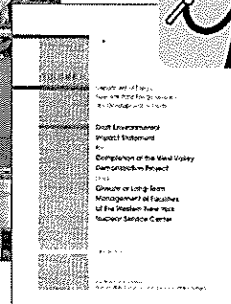
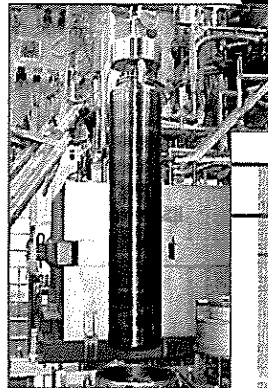
**1993**  
CERCLA Preliminary Assessment completed for the WVDP; Hazard Ranking score of 25.87

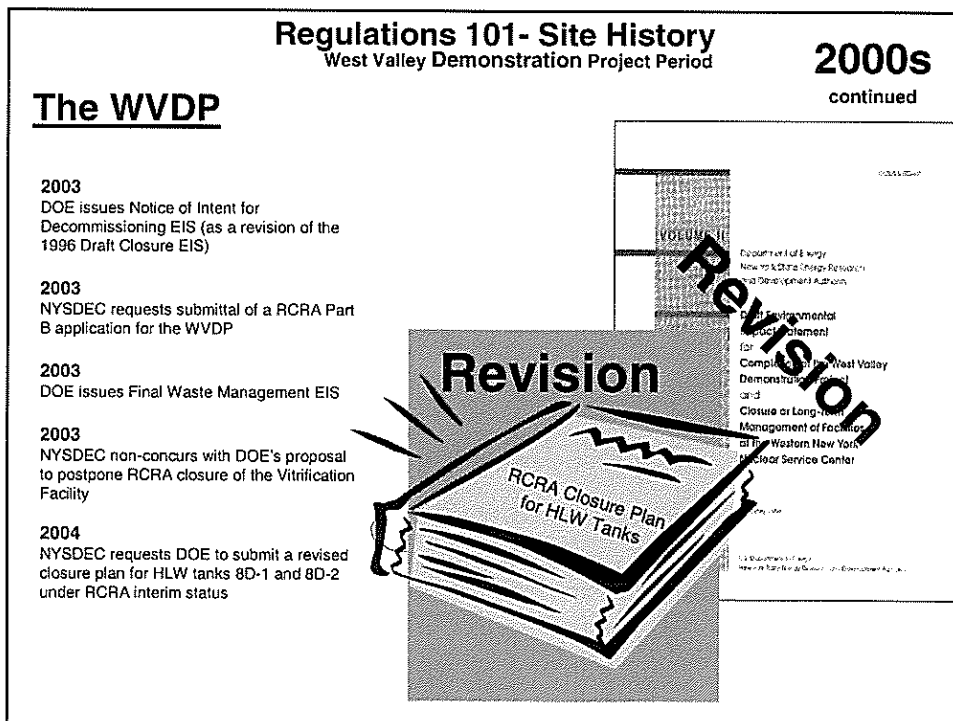
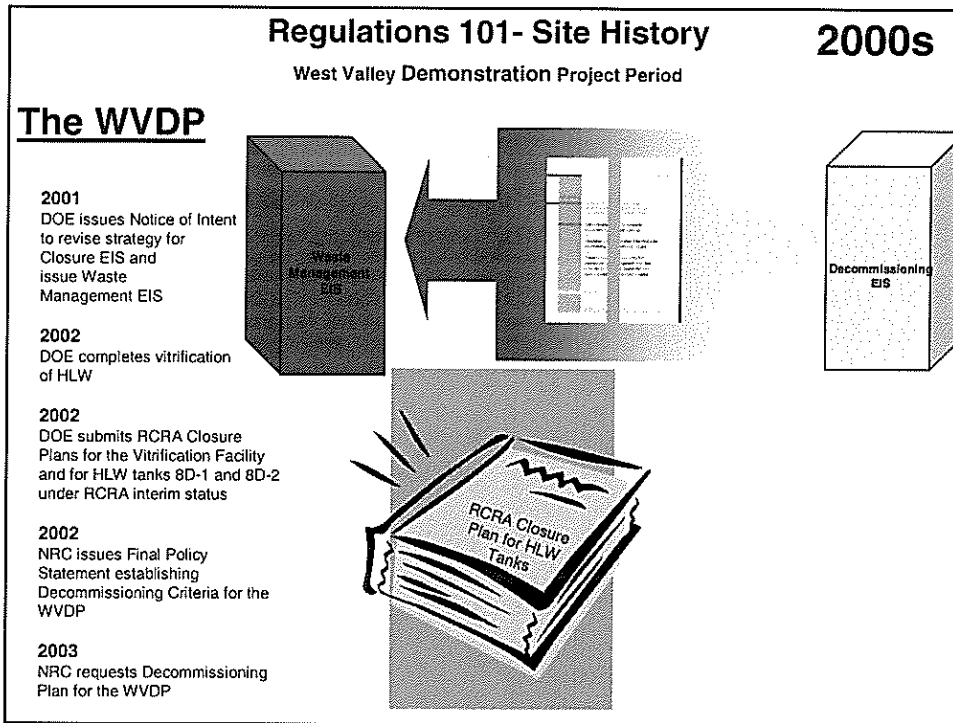
**1993 - 1997**  
RCRA Facility Investigations for WVDP are completed. Corrective Measures Study deferred to EIS

**1996**  
Draft EIS issued for public comment

**1996**  
DOE initiates vitrification of HLW

**1997**  
NRC finalizes License Termination Rule





## Regulations 101- Site History

West Valley Demonstration Project Period

### The WVDP

**2004**

DOE, as operator and NYSERDA, as owner submit RCRA Part B Application for the WVDP

**2005**

DOE issues ROD for Waste Management EIS

**2005**

NYSDEC requests CMS be conducted separate from EIS

**2005 -2006**

DOE submits Draft CMS Work Plan for the WVDP to NYSDEC and revises to address NYSDEC comments

**2006**

DOE issues draft Environmental Assessment (EA) for 42 Facilities



## Regulations 101- Site History

West Valley Demonstration Project Period

### The SDA

**2002**

NYSERDA and NYSDEC initiate Part 380 Permit renewal process

**2005**

NYSDEC issues State Pollution Discharge Elimination System (SPDES) Permit for storm water discharges from the SDA

**2005**

NYSERDA submits Notification of Claim for RCRA Storage and Treatment Conditional Exemption

**2005**

NYSDEC requests CMS be conducted separate from EIS

**2006**

NYSERDA submits Draft Corrective Measures Study Work Plan for the SDA to NYSDEC



## Citizen Task Force

Involvement Matters

Closure Processes Worth Watching

- NEPA Processes

Environmental Impact Statements

Environmental Assessments

- RCRA Permitting

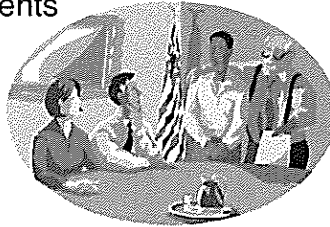
Part A Permit Changes

Part B Permit Issuance

- RCRA Closure Plans

Interim Status Closure Plans

Part B Permit Closure Plans



## Citizen Task Force

Involvement Matters

Closure Processes Worth Watching

- RCRA 3008(h) Consent Order

Corrective Measures Studies

Solid Waste Management Unit (SWMU)

Assessments

- Decommissioning Actions

Decommissioning Criteria

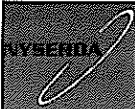
WIR Criteria

Decommissioning Plan

- Regulation & Regulatory Guidance Changes







Regulations 101

# Congratulations Graduates!!

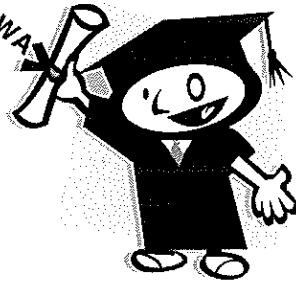


NERA

AEA

RCRA

CWA



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