

Regulations 101


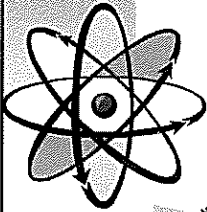

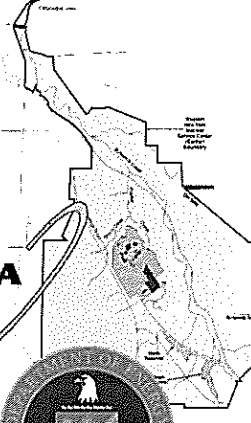
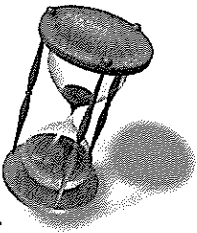
West Valley Citizen Task Force

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?



NYSERDA

Understanding the Regulatory Framework at West Valley

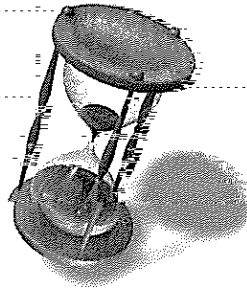
MUST ALWAYS CONSIDER CONTEXT

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

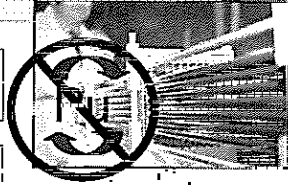
When?

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.

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.

When?

Changes all Things

goals and objectives change

regulations are added and change

agencies are created and re-created


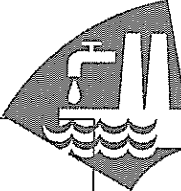

- Regulatory authorities are delegated to the State
- Agreements are signed

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)

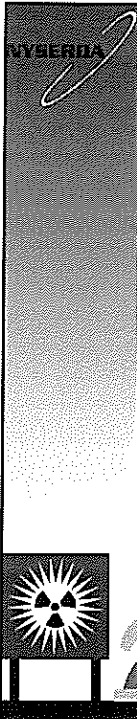
1976 Resource Conservation and Recovery Act (RCRA)
1984 Hazardous and Solid Waste Amendments (HSWA)
Control of Hazardous Waste (chemical hazards, radionuclides are exempt under RCRA)
Part A Permit for Interim Status Units
Part B Permit
RCRA 3008 (h) Consent Order
RCRA Facility Investigations
Corrective Measures Studies

When?
Time Changes all Things

- Government goals and objectives change
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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.

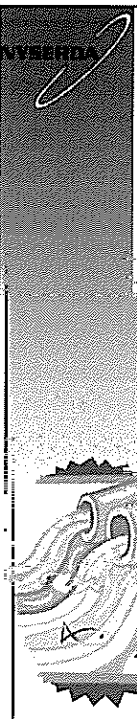
Atomic Energy Act of 1954 - established the development of nuclear power for civilian purposes as a vital national goal and assigned AEC the functions of both encouraging the use of nuclear power and regulating its safety

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



When?

Agencies are Created and Re-created



1959 Office of Atomic Development (OAD)

Established to coordinate atomic regulatory and development functions within NYS.

1962 New York Atomic Research and Development Authority (NYARDA)

Successor to Office of Atomic Development

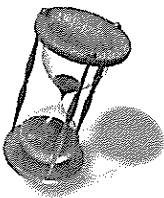
1964 New York Atomic and Space Development Authority (NYASDA)

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.

NYSDEC



When?

Time Changes all Things

- Government goals and objectives change
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NYSDEC

When?

Regulatory Authorities are Delegated to the State

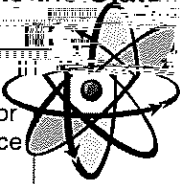

1954 Atomic Energy Act
Allows States to assume regulatory authority for most types of radioactive material in accordance with AEA compatibility requirements

1962 New York State became an Agreement State

1976 Resource Conservation and Recovery Act (RCRA)
U.S. EPA regulation of hazardous wastes

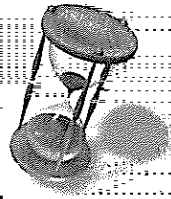
1986 NYS Authorized by U.S.EPA to Implement RCRA
NYSDEC regulation of hazardous wastes

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)



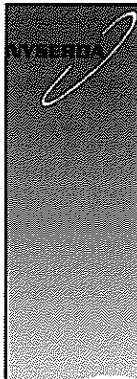
When?



Time Changes all Things

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

- Agreements are signed



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

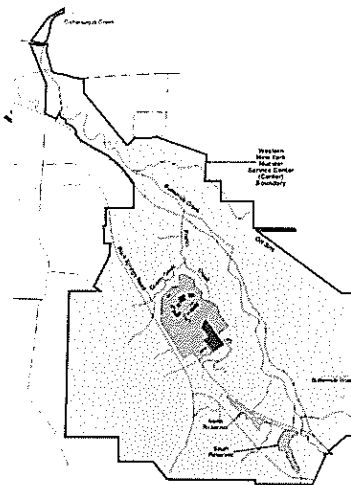
MUST ALWAYS CONSIDER CONTEXT

When?

Where?

Who? ^{Who?}

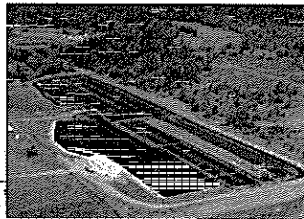
What?



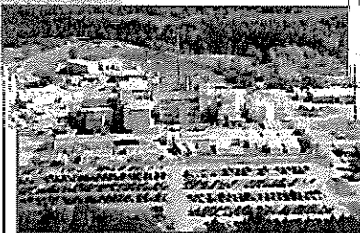
Where?

Location Matters:

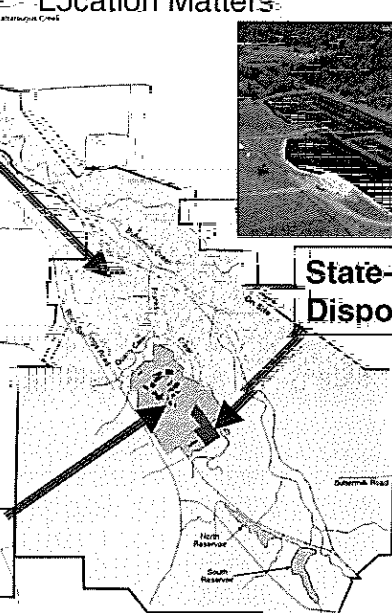
The Center



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:

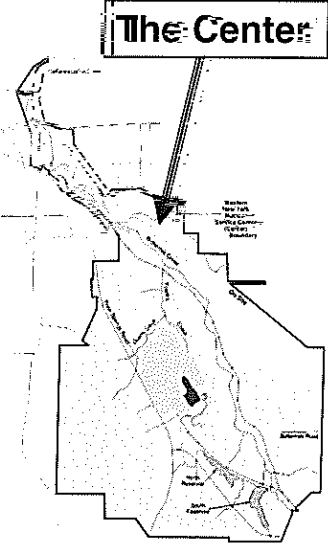
- **Atomic Energy Commission (AEC);**
(Provisional License CSF-1)

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)



1982 to Present **Where?**

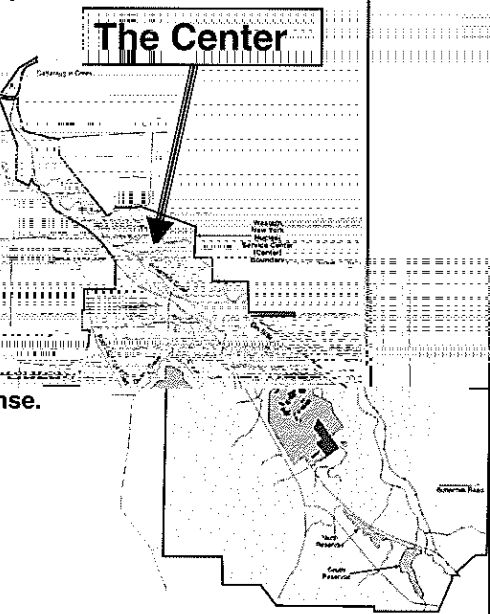
DOE Radiological Activities
regulated by:

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

• **UNNEDC 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**



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

Where?

West Valley Demonstration Project

Post-1980

Western New York Nuclear Service Center Boundary

Tonawanda Creek

Tonawanda Road

Buffalo Road

North

South

Radiological Activity
 Self-regulated by:
 • **DOE**
 (WVDP Act, DOE Order Agreement)
 Monitored by:
 • **NRC**
 (WVDP Act, NRC Memorandum of Understanding)

Non-Radiological Hazards
 Regulated by:
 • **NYS Department of Environmental Conservation (NYS DEC)**

Understanding the Regulatory Framework at West Valley
MUST ALWAYS CONSIDER CONTEXT

When?

Where?

Who? *Who?*

What?

NYSERDA



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



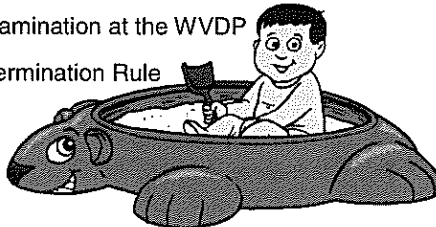
Who?

(Regulator and Regulated)

Who You Are Determines Who You Play With

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

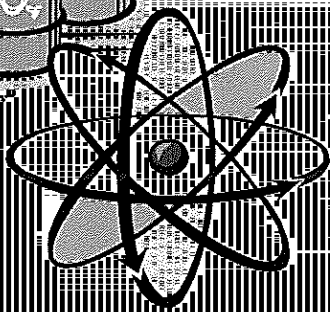
- **NYSDOH** for control of radioactive materials and protection of workers from radiation at the SDA
- **NYSDEC** for radiological and non-radiological air, surface water, groundwater, stormwater, and RCRA hazardous waste contaminants at the SDA
- **NRC**, if DOE leaves contamination at the WVDP or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



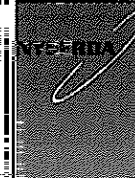
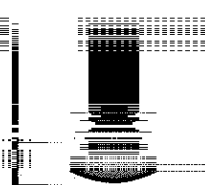
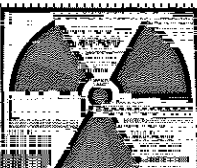
Understanding the Regulatory Framework at West Valley

ALWAYS CONSIDER CONTEXT

When?
Where?
What?
How?



What?
(Type of Contaminant)
Radioactive Materials, and
Wastes



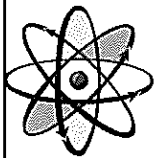
Radiation, Health,
and Radioactive

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

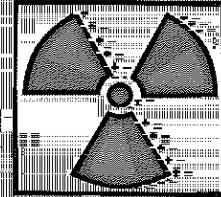




What?

(Type of Contaminant)

Radiation, Radioactive Materials, and Radioactive Wastes



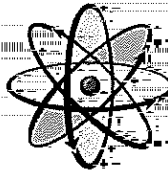
U.S. EPA:

- Radionuclide air emissions at the WYDP
- 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:



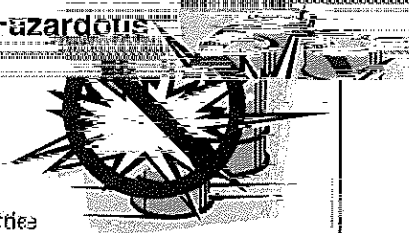
- Control of the disposal and discharge of radioactive material to the environment from the SDA
- Best usage of fresh groundwater is as a source of potable water thus 4 mrem/yr dose limit applies at the Center



What?

(Type of Contaminant)

Hazardous Waste and Hazardous Constituents



NYSDEC:

- Treatment, storage and disposal of hazardous wastes at the WYDP 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

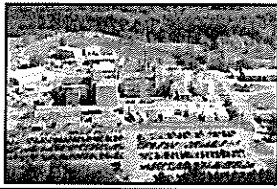
Regulations 101

A Complex Site History

Regulations 101 – Site History

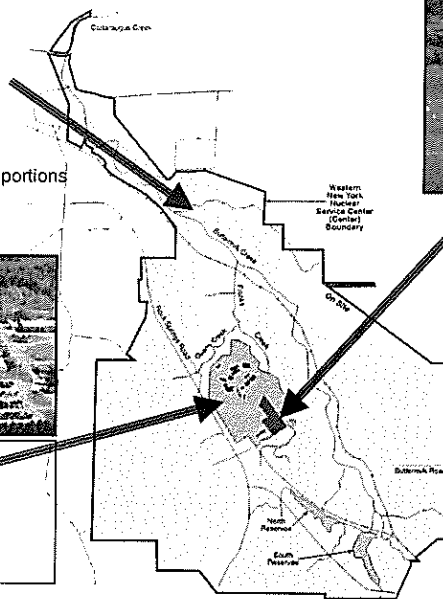
1961 - The Center

- 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

NYSARDA became NY Atomic and Space Development Authority (NYASDA)



Regulations 101 – Site History

Nuclear Fuel Services Operational Period

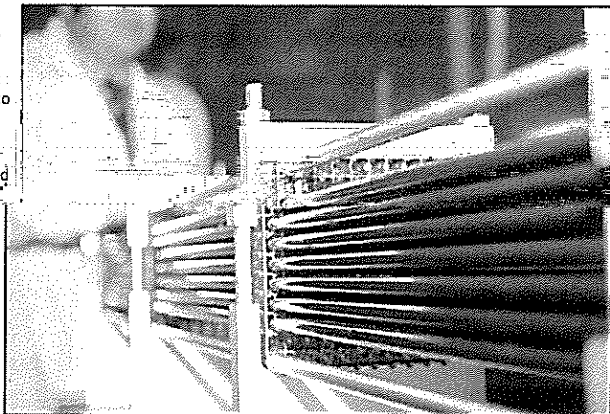
1960s
continued

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 year.

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

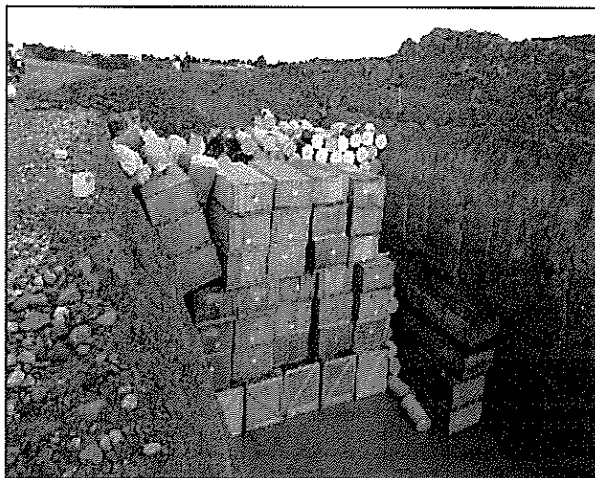
1961
OAD acquires 3,345 acres in WNY through eminent domain

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 (NYS DOH) 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 1970s
 Nuclear Fuel Services Operational Period

The SDA

1969 – 1975

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

1975

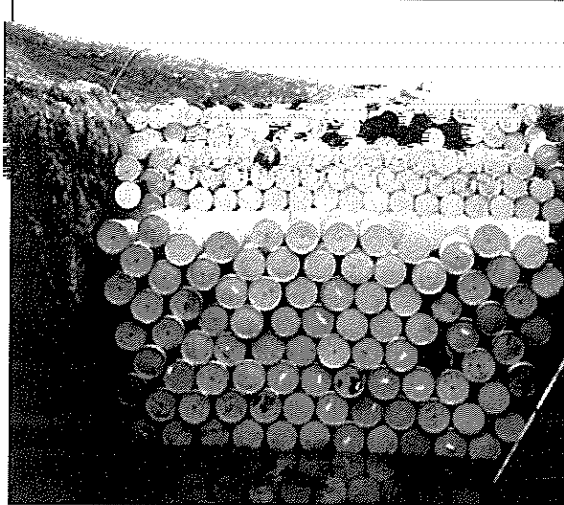
New York State Department of Environmental Conservation (NYSDEC) assumes regulatory authority from NYSDEC Part 380 exemption from Sanitary Code to a Radiation Control Permit (Part 380 Permit)

1975

Trenches 4 and 5 overflow. NFS ceases disposal operations

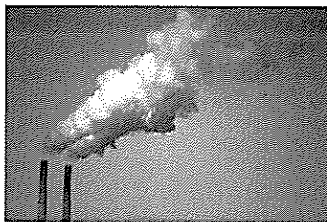
1975 – 1981

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

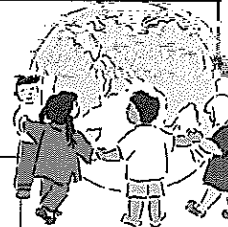
1969 National Environmental Policy Act (NEPA)



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)

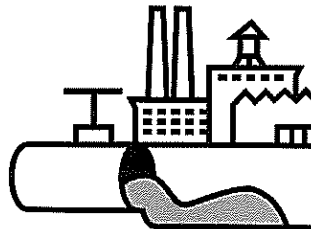
1984 Hazardous and Solid Waste Amendments (HSWA)



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

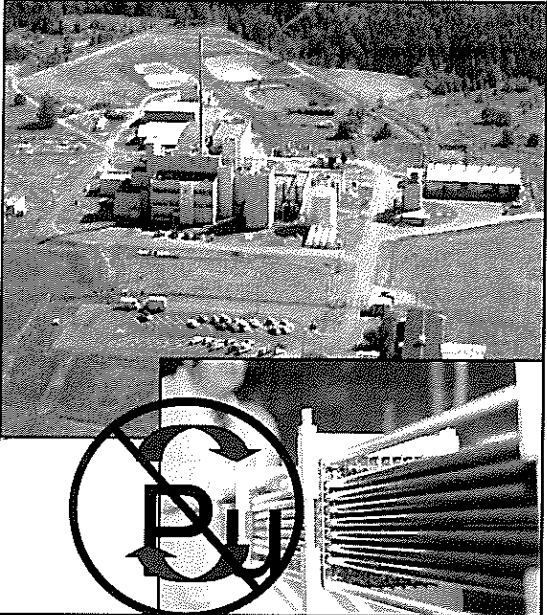
1974
NYSERDA replaces NYASDA

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



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

The WVDP

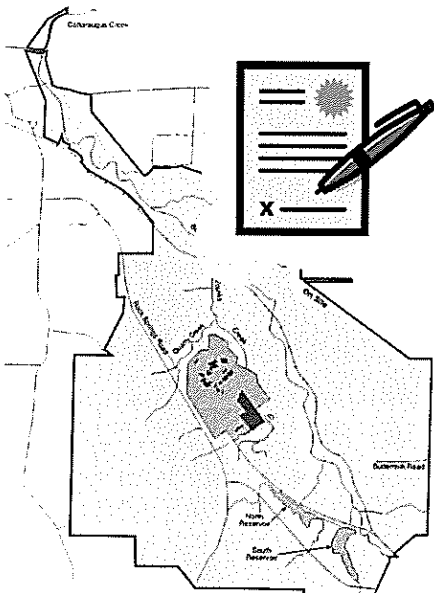
1980
Congress passes the West Valley Demonstration Project Act

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



Regulations 101- Site History

1980s

West Valley Demonstration Project Period

continued

The WVDP

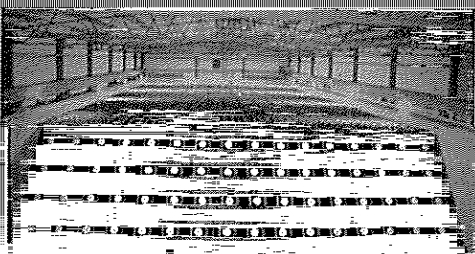
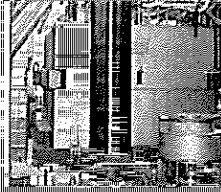
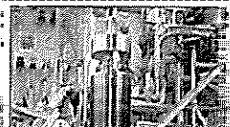
1982
Final EIS and Record of Decision (ROD) for Management of Liquid HLW at the Center (Verification)

1986
DOE Issues Environmental Assessment (EA) for disposal of LLW in Drum Cell tunnels

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

1980s

West Valley Demonstration Project Period

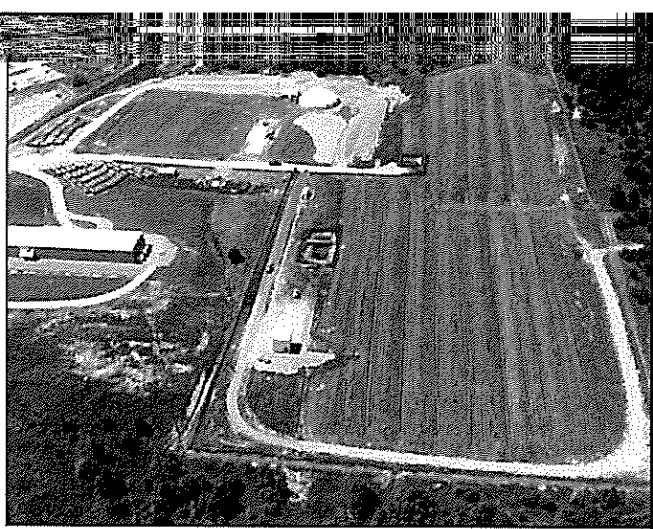
The SDA

1982
NYSERDA assumes operational responsibility for the SDA

1983
NYSDEC Radiation Control Permit (Part 380 Permit) transferred from NFS to NYSERDA

1983
NYS DOL Radiation Materials License transferred from NFS to NYSERDA

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



1980s

Site History — **1990s**



The SDA — **Regulations 101-S**
West Valley Demonstration

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

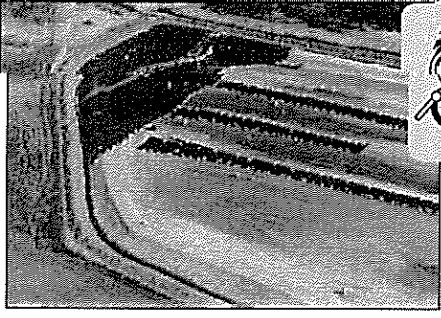
1990 - 1995
NYSERDA constructs two buildings with 50,000 gallons of tank storage capacity and pumps 7,500 gallons from 14 into one of the tanks



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

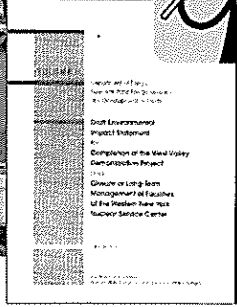
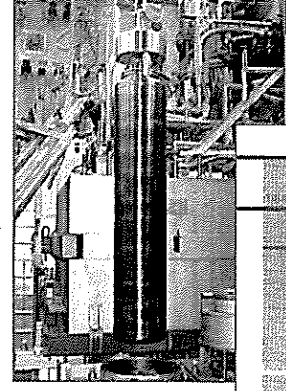
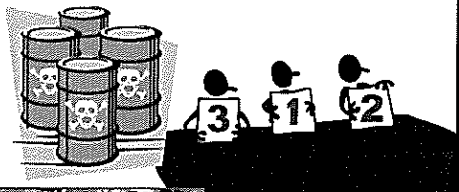
1993
CERCLA Preliminary Assessment completed for the WVDP; Hazard Ranking score of 25.87

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

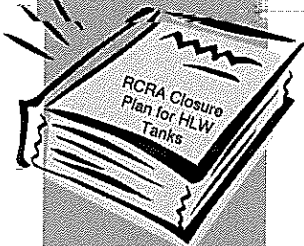
1997
NRC finalizes License Termination Rule



Regulations 101 - Site History - 2000s

West Valley Demonstration Project Period

The WVDP



DOE issues Notice of Intent to revise strategy to Closure EIS and Issue Waste Management Criteria

2002
DOE completes vitrification of HLW

2002
DOE submits RCRA Closure Plans for the Vitrification Facility and for HLW tanks 8D-1 and 8D-2 under RCRA interim status

2002
NRC issues Final Policy Statement establishing Decommissioning Criteria for the WVDP

2003
NRC requests Decommissioning Plan for the WVDP

Regulations 101 - Site History

West Valley Demonstration Project Period

2000s

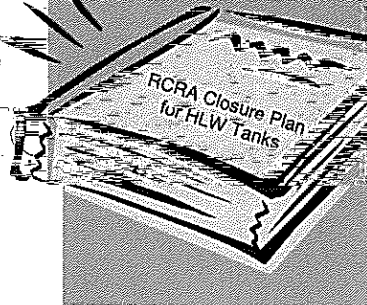
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The WVDP

2003
DOE issues Final Waste Management EIS

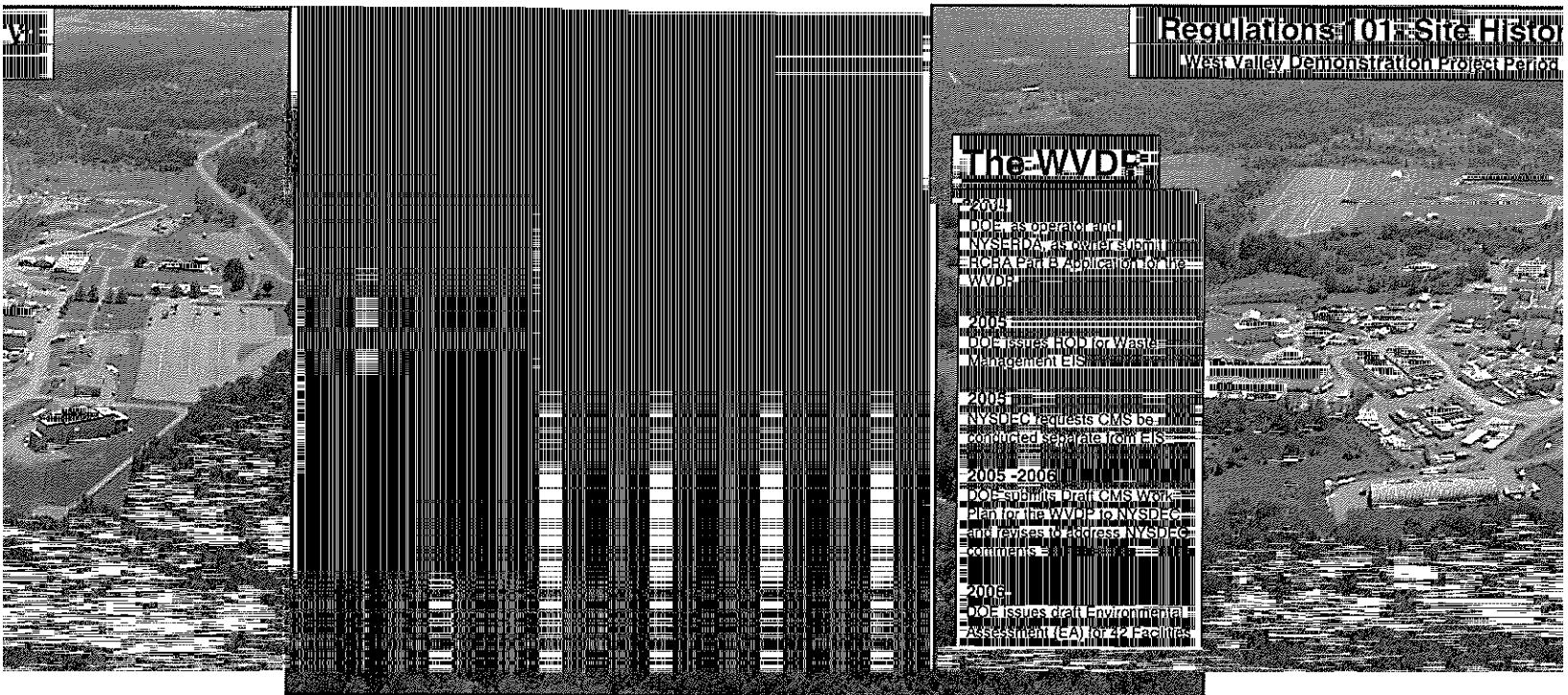
2003
NYSDEC non-concurs with DOE's proposal to postpone RCRA closure of the Vitrification Facility

2004
NYSDEC requests DOE to submit a revised closure plan for HLW tanks 8D-1 and 8D-2 under RCRA interim status



2003
DOE issues Notice of Intent for Decommissioning EIS (as a revision of the 1996 Draft Closure EIS)

2003
NYSDEC requests submittal of a RCRA



Regulations 101 - Site History
West Valley Demonstration Project Period

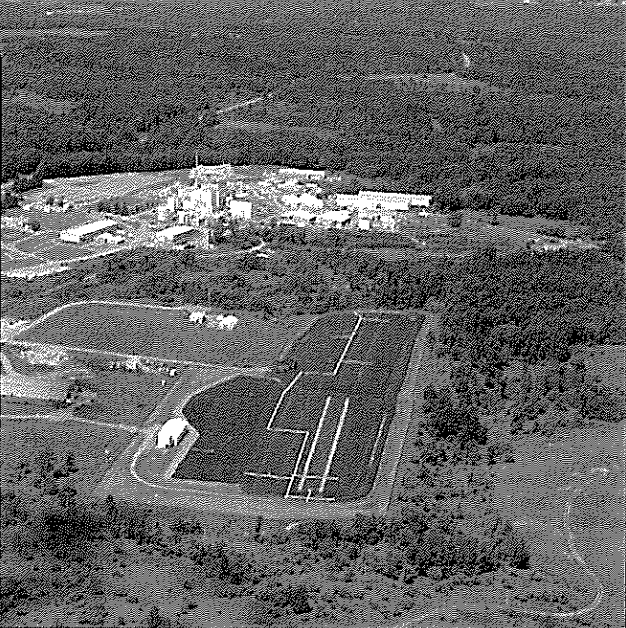
The WVDP

- 2001
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 22 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

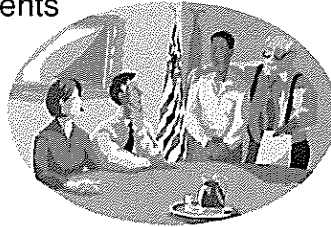


Citizen Task Force

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



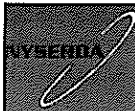
Citizen Task Force

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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