Western New York Nuclear Service Center
Background and History

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The roots of the West Valley facility can be traced back to the federal government programs of the 1950s that were created to develop peaceful uses for nuclear energy.

Atoms for Peace 1953

Atomic Energy Act of 1954
"The Commission's program," AEC chairman Lewis L. Strauss explained, "is directed toward encouraging development of the uses of atomic energy in the framework of the American free enterprise system."

In 1957, AEC announced that it would:

- Make AEC technology on reprocessing available to private industry;
- Invite proposals by private industry to design, construct, and operate reprocessing plants; and
- Provide a baseload of fuel from AEC production reactors until the construction of additional commercial power reactors created an adequate demand for spent fuel reprocessing services.
New York State became interested in the AEC privatization program as a way to promote industrial development within the State.

- By 1961, the AOD acquired 3,300 acres in the town of Ashford in Cattaraugus County with the intent of establishing a reprocessing facility.
The decision to locate the reprocessing plant in Western New York was greeted as positive economic news for the local community and the region. “Unlimited possibilities...”
Western New York Nuclear Service Center is Created

The siting of the facility also resulted in the displacement of some long-time residents of the town of Ashford.
Because the property would be State-owned and tax-exempt, a PILOT was established to defray property tax losses.
Agreements are Reached with Nuclear Fuel Services, Inc. to Build and Operate the Reprocessing Facility

The Davison Chemical Company (which would be bought out by W.R. Grace and Company) and American Machine and Foundry Co. set up Nuclear Fuel Services Inc. (NFS) to pursue the reprocessing venture.

Ground was broken in June 1963.

Governor to Head Guests At Atom Center Ceremonies
Civic, Industrial, Political Leaders to Attend June 13 Groundbreaking in Town of Ashford

By BERT FREED
WEST VALLEY, June 1—Gov. Rockefeller will head a delegation of top public officials who will attend ground-breaking ceremonies June 13 for the history-making Western New York Nuclear Service Center.

The governor’s decision to assume the key role in the 10:30 AM program was announced Friday by his office in Albany.
Reprocessing Operations Begin in 1966

- NFS was licensed under 10 CFR Part 50 as the operator of the facility, and the New York State Atomic Research and Development Authority was licensed as the owner.
- The construction cost was about $33 million.

- AEC set the fee structure for reprocessing. NFS could not charge more than 15% above the AEC-published charges based on a conceptual AEC reprocessing plant.
- Construction was completed in 1966, and the AEC granted a provisional operating license for the facility.
Western New York Nuclear Service Center During Reprocessing

Reprocessing Facilities
Managed and operated by NFS, Licensed by the AEC (NRC)

WNY Nuclear Service Center Boundary

State-Licensed Disposal Area
Managed and operated by NFS, Licensed and permitted by NYS
NFS Ends Reprocessing Operations

- NFS halted reprocessing after six years of operation to increase capacity, reduce worker dose and reduce radioactivity of effluents.
- NFS expected the modifications to cost $15 million.

- New requirements were issued by AEC related to earthquake and tornado protection, and waste management.
- NFS estimated that the requirements could cost $600 million, and said it would not resume reprocessing at West Valley.
- In 1976, NFS informed New York that it intended to turn the facility and its waste over to New York.
New York State would not accept the facility and wastes from NFS.

Congress held hearings, directed the GAO to investigate, and directed DOE to study options for the future of the Center.

Congress passed the West Valley Demonstration Project Act in 1980.

The reprocessing facility at West Valley failed to live up to its high expectations.

A combination of economic factors, technological difficulties, and an evolving regulatory framework led to the failure of the facility.
Western New York Nuclear Service Center Today
400 million years ago, Western New York is covered by a tropical sea, south of the equator.
Formation of Bedrock in Western New York

300 million years ago, Western New York has emerged from the sea.
250 million years ago, continental collision (North America and Africa) causes rock deformation and mountain building (the Appalachians) to the east.
South-dipping layers of bedrock eroded and produced east-west belts of rock across western and central New York.
Glacial Deposits in Western New York

Continental ice sheets covered Western New York during the last ice age – from ~2 million to ~12,000 years ago.

Arctic Ice Sheet
www.krug.com.by/ work-archives-arctic.html

Limit of Pleistocene Ice Sheets of North America
Driscoll, FG, 1986, Groundwater and Wells, Second Ed., Johnson Division
Glacial Deposits at the WNYNSC

Glaciers carry and deposit large quantities of sediment.

Retreating glaciers leave a complicated sequence of unconsolidated sediments.

Interbedded sand, silt and clay deposits at the Center
Western New York Nuclear Service Center

Northeast portion of Ashford Hollow, NY
7.5 Minute Quadrangle

Cross Section Line
Geologic Cross Section Through the Developed Areas of the WNYSNC

NOTE: Vertical Scale = ¼ horizontal scale.
Adapted from Dana et al. (1979a)
North Plateau Subsurface Geology
Erosion is a Significant Long- and Short-Term Issue