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Niagara Falls Storage Site
Technical Briefing

LOOW RAB Meeting
15 September 1999

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Overview of Briefing

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- Site History
- DOE Proposed Remedy (NEPA)
- USACE Acquired Project (CERCLA)
- Summary of Needed Tasks
- Progress by USACE
- Questions by RAB Members

Niagara Falls Storage Site (NFSS)

History and Issues

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Site Location with Bordering Properties

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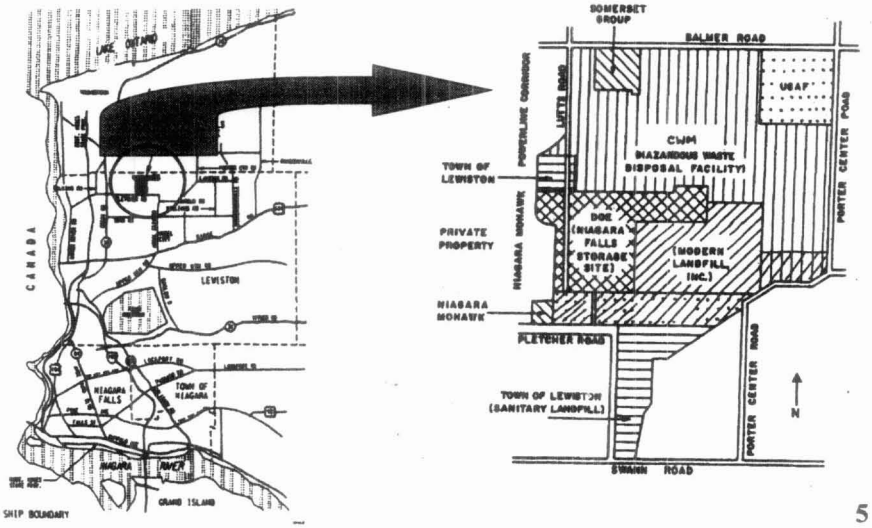

Niagara Falls Storage Site (NFSS)

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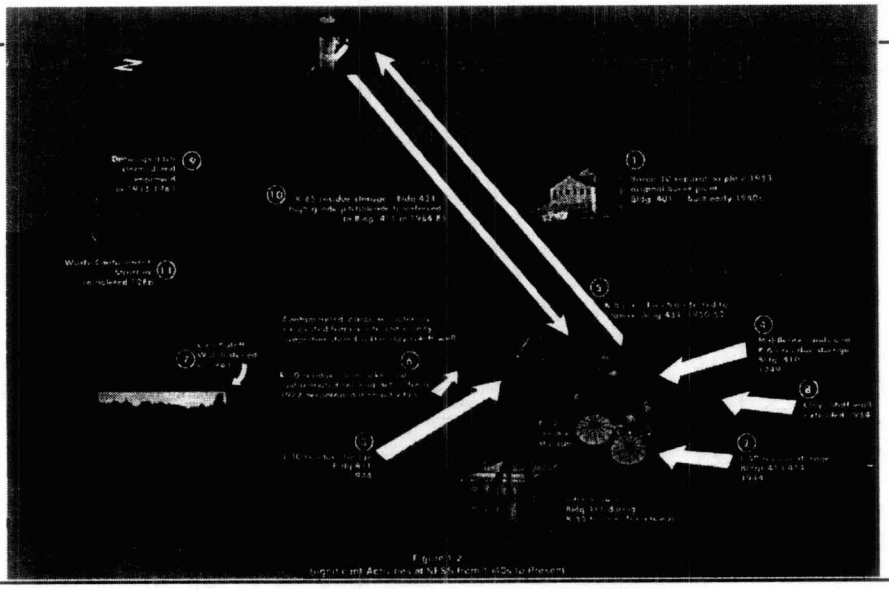

Waste Types & Radium-226, Thorium-230 Inventories in WCS

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Material	Volume Cubic Yards	pCi/g Ra-226 Dry Wt.	pCi/g Ra-226 Wet Wt.	Ra-226 Ci	pCi/g Th-230 Dry Wt.	pCi/g Th-230 Wet Wt.	Th-230 Ci
K-65 R	3,925	520,000	348,400	1,881	54,000	36,180	195
L-30 R	7,850	12,000	8,040	87	12,000	8,040	87
F-32 R	655	300	201	0.2	300	201	0.2
L-50 R	1,960	3,300	2,211	6	3,300	2,211	6
R-10 R & S	58,860	95	63.7	5	95	63.7	5
Remaining Soils	175,925	16	10.7	3	16	10.7	3
Totals	249,175						

R = residue S = soil

History of On-Site Buildings (Building 401)

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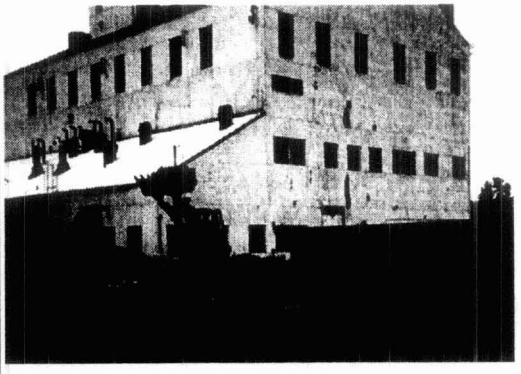

- 1943: Powerhouse for TNT Plant at LOOW
- 1953 - 1971: Manufacture of Boron-10
- Post 1971: Storage of radiological wastes

History of On-Site Buildings
(Building 403)

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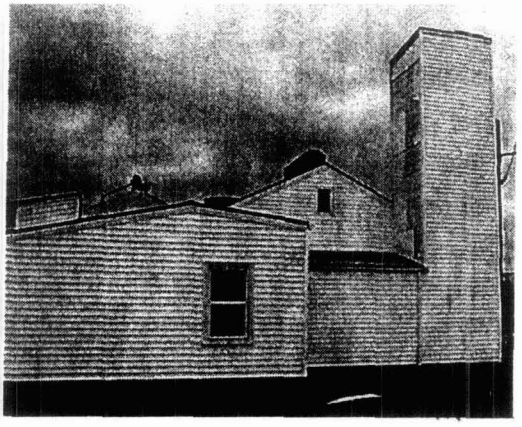

- Fire system building (hose drying tower)
- Radiological laboratory
- Office building

DOE Proposed Remedy

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- DOE installed interim cap on Waste Containment Structure (WCS)
- Proposed long-term cap on WCS as final remedy (NEPA Environmental Impact Statement)
- Put contaminated buildings on agenda for radiological decontamination and demolition
- Tasked National Academy of Sciences to study EPA objection to long-term cap
- Site cleanup did not include chemical contamination

National Academy of Sciences Report

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- Prepared in 1995 to address safety of high-level residues at NFSS
- Released to general public in public meeting, January 1998
- Emphasized that present (interim) cap is good (safe) for 25 - 50 years
- Concluded that there were site unknowns that could affect risk

Unknowns per NAS Report

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- Incomplete knowledge of local geology (pathways to underlying rock layers)
- Potential draw-down effects of pumping by neighboring landfills
  - NYSDEC has data suggesting potential flow divide
- Unpredictable behavior of residues in presence of other chemicals (e.g. sulfates of Ra-226 and Th-230)

USACE Acquires Project

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- USACE not self regulating as was DOE
- Therefore, USACE mandated to use CERCLA process
- CERCLA requires USACE to do Remedial Investigation (RI), Feasibility Study (FS), prepare a Proposed Plan (PP), and issue a Record of Decision (ROD) before doing site cleanup
- PP and ROD require public review and comment period

What is a Remedial Investigation?

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- It is a study that includes:
  - Identifying on-site contaminants
  - Determining extent of contaminants
  - Determining risk to people and the environment
  - Determining how long chemicals will persist in the environment and where they may move within the environment (fate and transport)

What is a Feasibility Study? FUSRAP

- It is a study that:
  - Identifies possible technologies for cleaning up the site
  - Selects those technologies most likely to be effective
  - Evaluates technologies for: protection of human health, compliance with regulations, long and short tem effectiveness, reduction of toxicity/mobility, cost, and acceptance by state and public
- Final remedy gets specified in the Proposed Plan

Summary of Needed Tasks FUSRAP

- Perform whole-site RI/FS
- Remediate WCS
- Clean up remaining surface soil contamination (radiological)
- Determine whether there is on-site chemical contamination, and if so, clean it up
- Decon and demolish contaminated buildings

Issues Facing USACE

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- Experts disagree: removal vs. in-place management of K-65s
- Previous site soil cleanup standards do not apply
  - Cleaned-up surficial areas may require re-cleaning
- Site requires both rad and chemical cleanup
- Surveillance and maintenance must continue at 1999 costs of $400,000 per year
- General public wants remedial action
  - Plans made by DOE and not yet implemented
  - Health and property value concerns

What Has USACE Done to Date?

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- Assembled virtual team and held strategic planning sessions
- Examined issues in more detail
  - Base case (in-place management) only one option
  - Storage cell only one part of mission
  - Unknowns defined
- Held meetings with public and Congressman
- Prepared and awarded scope for RI
  - Held Technical Project Planning workshop
  - Achieved stakeholder buy-in
    - (Virtual team, CX, NYSDEC, and Contractor)

What Has USACE Done to Date? (Cont.)

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- Is 20% through the RI
- Has decontaminated Building 403
- Has contracted for removal of palletized waste stored on site
- Continues to maintain and radiologically monitor the site

When RI is Complete

(August 00)

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- We will know if:
  - Any landfills can accept the material
  - Disposal without treatment is possible
  - Chemical contamination exists on site
  - Surrounding landfills impact subsurface
  - Chemical surveillance parameters and test frequency must be expanded

When FS is complete

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- We will know:
  - Whether buildings must be chemically decontaminated
  - Site Applicable or Relevant and Appropriate Requirements (ARARs)
  - Whether surface soils must be re-cleaned based on new ARARs
  - Whether residues can be recycled
  - Safety and effective life of current cap
    - How fast must we start remediation

Why Not Emulate Fernald?

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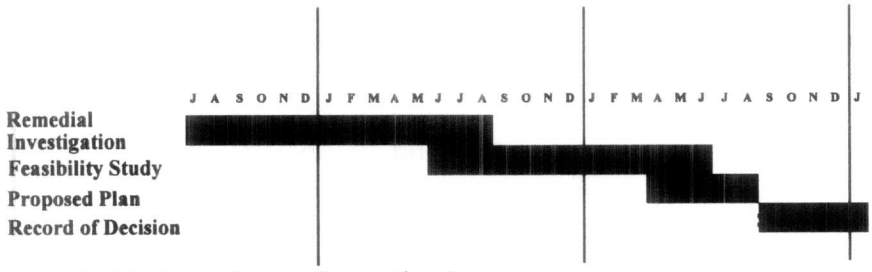
Fernald and K-65 Residues

- Large-scale pilot facility constructed; facility started up using surrogates
- Catastrophic failure of pilot plant/complete destruction of furnace
- Current plan shows K-65 residues to be stored until 2007, then subjected to treatability studies

NFSS Schedule & Approximate Costs
(without Pilot Testing)



* Schedule Dependent on Contracting Strategy

Niagara Falls Storage