Interim Waste Containment Structure Operable Unit of the Niagara Falls Storage Site
Lewiston, New York
Public Meeting for the Feasibility Study and Proposed Plan
Formerly Utilized Sites Remedial Action Program

January 13, 2016
WELCOME!

Agenda

- Introductions
- Background Information
- Evaluation of Remedial Alternatives and Preferred Alternative Selection
- Public Comments
Stakeholders

Community

U.S. Department of the Army

U.S. Army Corps of Engineers

U.S. Department of Energy

U.S. Environmental Protection Agency

New York State Department of Environmental Conservation
Acronyms

**CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act

**FUSRAP** – Formerly Utilized Sites Remedial Action Program

**IWCS** – Interim Waste Containment Structure

**NFSS** – Niagara Falls Storage Site
FUSRAP Objectives

1. Identify and evaluate sites
2. Protect human health and the environment
3. Clean up or control FUSRAP-related material
4. Protect human health and the environment
CERCLA Process for FUSRAP

Pre-Investigation Phase
- Site Referral (DOE)
  - Preliminary Assessment
    - Site Inspection
      - Site Designation

Investigation Phase
- Remedial Investigation
  - Feasibility Study
    - Proposed Plan
      - Record of Decision

Remedial Action Phase
- Remedial Design
  - Remedial Action
    - Project Completion
      - Legacy Management (DOE)

DOE – U.S. Department of Energy
NFSS and IWCS Location

- Lake Ontario Ordnance Works
- Niagara Falls Storage Site
- Interim Waste Containment Structure
NFSS Operable Units

- Interim Waste Containment Structure (IWCS)
- Groundwater (underlies site)
- Balance of Plant
NFSS CERCLA Process Timeline

Remedial Investigation (2007 and 2011)

IWCS Operable Unit

Feasibility Study (2015)

Proposed Plan (2015)

Record of Decision (2017)

Site-Wide Remedial Design/Remedial Action (TBD)

Balance of Plant/Groundwater Operable Units

Feasibility Study (2018)

Proposed Plan (2019)

Record of Decision (2020)

Site-Wide Close-Out (TBD)

Transfer Site to DOE (TBD)

Public and agency input throughout process
IWCS area prior to construction (circa 1970s)

Prior to IWCS Construction

- R-10 Residues
- Building 411
- Buildings 413 and 414
- Building 434
Placement of Wastes into the IWCS

- R-10 Residues
- Buildings 413 and 414
- Building 411

IWCS area prior to construction (circa 1970s)

- R-10 residue
- and other contaminated soil
- K-65 residues
- Other residues
- Cutoff Wall
IWCS Waste Activity vs. Volume

% Volume
- K-65 Residues (1%)
- Other waste (99%)

% Radioactivity (Ra-226)
- K-65 Residues (90%)
- Other wastes (10%)
IWCS Today
IWCS Operable Unit Remedial Alternatives Evaluation and Preferred Alternative Selection
IWCS Subunits

Subunit A
- K-65, F-32, L-30, and L-50 Residues

Subunit B
- Rubble/Debris and Contaminated Soils

Subunit C
- R-10 Residues and Contaminated Soils
Remedial Alternatives

1. No Action - (screened out)

2. Enhanced Containment of Subunits A, B, and C with Land-use Controls and Monitoring

3A. Excavation, Treatment, and Off-site Disposal of Subunit A; Enhanced Containment of Subunits B and C with Land-use Controls and Monitoring

3B. Excavation, Treatment, and Off-site Disposal of Subunit A; Excavation and Off-site Disposal of Subunit B; Enhanced Containment of Subunit C with Land-use Controls and Monitoring

4. Excavation, treatment, and off-site disposal of Subunit A; excavation and off-site disposal of Subunits B and C
Mandated CERCLA Evaluation Criteria

Threshold

Protection of human health and the environment

Balancing

Long-term effectiveness and permanence

Reduction of toxicity, mobility or volume through treatment

Modifying

Community acceptance

Selected Remedy

Cost

Implementability

Short-term effectiveness

State acceptance

Compliance with applicable or relevant and appropriate requirements

CERCLLA - Comprehensive Environmental Response, Compensation, and Liability Act
11e.(2) Byproduct Designation of Residue Material
Water Development Appropriations Act of 2004
ARARs identified for the IWCS Operable Unit specify performance requirements for 11e.(2) byproduct disposal facilities, as well as release limits for radon from such facilities:

- 10 Code of Federal Regulation Part 40, Appendix A: Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for Their Source Material Content
  - Criterion 4(c) and 4(d), Site and Design Criteria
  - Criteria 6(1), 6(2), 6(3), 6(5), 6(6), and 6(7), Closure of Waste Disposal Areas
  - Criterion 12, Long-term Site Surveillance

Cross Section Orientation
Alternative 2: Enhanced Containment of Subunits A, B, and C

- Enhancements to the existing cap such as: increasing cap thickness, drainage layers, rip-rap, improved side slopes
- Land-use controls: federal ownership, surveillance, monitoring, maintenance, security
- 1,000 years of operation and maintenance

Note: Not to scale, vertical exaggeration approximately 7:1
Alternative 2: Enhanced Containment of Subunits A, B, and C

Existing Clay Cap

Example Enhanced Containment Cap

48” Above Clay Cap
Alternative 3A: Excavation, Treatment, and Off-Site Disposal of Subunit A with Enhanced Containment of Subunits B and C

- Excavation, treatment, and off-site disposal of Subunit A
- Enhanced containment of Subunits B and C, capped like Alternative 2
- Land-use controls continue (maintenance, monitoring, etc.)
- 1,000 years of operation and maintenance

Note: Not to scale, vertical exaggeration approximately 7:1

Excavations backfilled

Subunit A (and portions B/C) removed, treated (as needed), and shipped off site

Enhanced cap installed

Brown Clay
Gray Clay

R-10 pile

411 414

K-65 Residue
F-32, L-30, and L-50 Residue
R-10 residues, contaminated soils and debris
Backfill
**Alternative 3B: Excavation, Treatment, and Off-Site Disposal of Subunits A and B**

**Enhanced Containment of Subunit C**

- Excavation, treatment, and off-site disposal of Subunits A and B
- Enhanced containment of Subunit C, capped like Alternative 2
- Land-use controls continue (maintenance, monitoring, etc.)
- 1,000 years of operation and maintenance

*Note: Not to scale, vertical exaggeration approximately 7:1*
Preferred Alternative - Alternative 4: Excavation, Treatment, and Off-Site Disposal of Subunits A, B, and C

- Excavation, treatment, and off-site disposal of Subunits A, B, and C
- No five-year reviews or land-use controls for the IWCS Operable Unit
- Eliminates future operations and maintenance, environmental surveillance, and security costs associated with the IWCS Operable Unit

Note: Not to scale, vertical exaggeration approximately 7:1

Excavations backfilled and site restored

Subunits A, B, and C removed, treated (as needed), and shipped off site

Original IWCS Surface

Brown Clay
Gray Clay

Backfill
<table>
<thead>
<tr>
<th>CERCLA Balancing Criteria</th>
<th>Alt 2: Enhanced Containment</th>
<th>Alt 3A: Partial Excavation (Subunit A only)</th>
<th>Alt 3B: Partial Excavation (Subunits A and B only)</th>
<th>Alt 4: Complete Excavation (Subunits A, B and C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term Effectiveness &amp; Permanence</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>High</td>
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<tr>
<td>Reduction of Toxicity, Mobility or Volume</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>through Treatment</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Short-term Effectiveness</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
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<tr>
<td>Implementability</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>Cost Capital</td>
<td>$23.4M</td>
<td>$259.6M</td>
<td>$318.4M</td>
<td>$490.6M</td>
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<td>Cost (O&amp;M* Discounted)</td>
<td>$44.0M</td>
<td>$44.0M</td>
<td>$44.0M</td>
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<tr>
<td>Total Cost</td>
<td>$67.4M</td>
<td>$303.6M</td>
<td>$362.4M</td>
<td>$490.6M</td>
</tr>
</tbody>
</table>

* - O&M costs are assumed for a period of 1,000 years and are discounted.
Preferred Alternative - Alternative 4: Excavation, Treatment, and Off-Site Disposal of Subunits A, B, and C

- Excavation, treatment, and off-site disposal of Subunits A, B, and C
- No five-year reviews or land-use controls for the IWCS Operable Unit
- Eliminates future operations and maintenance, environmental surveillance, and security costs associated with the IWCS Operable Unit

Note: Not to scale, vertical exaggeration approximately 7:1
NFSS Path Forward

Remedial Investigation (2007 and 2011)

IWCS Operable Unit

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Public and agency input throughout process
Comments
Operating Principles for Commenting

- Stenographer will be recording proceedings
- One person speaks at a time
- Please use the microphone when speaking
- State your name and affiliation
- Speakers are limited to three minutes to allow everyone an opportunity to speak
- Limit subject to the proposed plan
Written Comments

Written comments should be postmarked by February 6, 2016, and mailed to:

U.S. Army Corps of Engineers, Buffalo District
Special Projects Branch
Environmental Project Management Team
1776 Niagara St.
Buffalo, NY 14207-3199

or send an email by close of business February 6, 2016 to:

fusrap@usace.army.mil

please include “Niagara Falls Storage Site” in the subject line.
Responses to Comments

- We will respond to oral and written comments on the proposed plan in the responsiveness summary of the record of decision.
- Your comments will become part of the official record and be placed in the administrative record.

Administrative Record Locations

Lewiston Public Library
305 South Eighth Street
Lewiston, New York 14092

Youngstown Free Library
240 Lockport Street
Youngstown, New York 14174

By Appointment:
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207
800-833-6390 (Option 4)
For More Information

FUSRAP Questions

By phone: 800-833-6390 (Option 4)
By e-mail: fusrap@usace.army.mil
By writing: U.S. Army Corps of Engineers, Buffalo District
Special Projects Branch
Environmental Project Management Team
1776 Niagara Street
Buffalo, NY 14207

On the web:
www.lrb.usace.army.mil/Missions/HTRW/FUSRAP.aspx
Thank you for your participation