

SILOS 1 & 2

Background

- **Concrete silos contain 8,900 cubic yards of Bentogrout and residues generated by recovery of uranium from ore at Fernald and Mallinckrodt Chemical Works in St. Louis**
- **Thorium 230, Radium 226 and Lead 210 are the predominant radionuclides of concern**
- **Exhibits leachability of lead**
- **Silty, clay-like material**
- **The primary hazards are radon generation and external dose**
- **DOE classified material as 11e.(2) by-product**
- **ROD issued in 1994; ROD Amendment issued in 2000**

CURRENTLY APPROVED CLEANUP PLAN

- **Silos 1 & 2 waste removal**
- **Treatment using chemical stabilization/solidification to meet RCRA Toxicity Characteristic Leaching Procedure (TCLP) limits and disposal facility Waste Acceptance Criteria (WAC)**

CURRENTLY APPROVED CLEANUP PLAN

- **Off-site disposal at NTS**
- **Removal and disposal of Silos 1 & 2 structures and treatment systems as outlined in OU3 ROD**
- **Cleanup of underlying soil to final remediation levels (FRLs) as stated in OU5 ROD**

PROPOSED NEW CLEANUP PLAN

What has NOT changed

- **Silos 1 & 2 waste removal**
- **Compliance with worker and public health and safety requirements**
- **Treatment using chemical stabilization to meet disposal facility WAC**
- **Disposal in an off-site engineered disposal facility**
- **Removal and disposal of Silos 1 & 2 structures and treatment systems**
- **Cleanup of underlying soil to meet OU5 FRLs**

PROPOSED NEW CLEANUP PLAN

What's new ?

- **Removes TCLP test as treatment performance measure**
- **Allows disposal at permitted commercial disposal facility in addition to NTS**
- **Clarifies Silo residual heel treatment requirements**

PROPOSED NEW CLEANUP PLAN

Why make the change?

- **RCRA regulations exclude 11e.(2) by-product material**
 - **TCLP test is not applicable to this waste material**
- **NTS revised its Waste Acceptance Criteria (WAC) and is now accepting available exemptions under RCRA**
 - **Previously, all material accepted by the facility, regardless of its exempt or non-exempt status, had to pass the TCLP test**
 - **NTS issued a letter stating it will accept 11e.(2) waste**
- **Commercial disposal of residues may emerge as viable option**
- **Will reduce transportation risks if commercial disposal is made available: rail vs. truck**
- **Will reduce costs by reducing waste sampling and decreased transportation costs if commercial disposal is available**
- **Will improve schedule if commercial disposal becomes available**

PROPOSED NEW CLEANUP PLAN

Revised remedy will:

- **Comply with all applicable requirements**
- **Comply with all health and safety requirements for both the workers and public**
- **Remove the hazard from site**
- **Provide a long-term permanent protective solution**
- **Provide treatment to meet WAC**

NEED FOR TREATMENT OF SILOS 1 & 2 MATERIAL

- **CERCLA statutory preference for treatment**
- **DOT shipping limits**
- **Disposal facility WAC**

PROPOSED NEW CLEANUP PLAN

A snapshot

- **Waste will be retrieved from the Transfer Tank Area and stabilized with flyash and Portland Cement**
- **Target waste loading in the final mix: 17 to 25 percent**
- **Waste generation rate: 30 containers a day; 7,000 total**
 - **6 foot diameter, 6.5 foot high, half-inch thick-cylindrical carbon steel containers**
 - **Maximum weight: 21,950 pounds**
 - **Container design meets DOT IP-2 requirements**
- **Truck shipment: 2 containers per truck, 15 trucks a day, 7 days a week**
- **Rail shipment: 6 containers per flatcar, 60 flatcars per unit train, train leaves every 16 days**

PROPOSED NEW CLEANUP PLAN

Look Ahead

- **Explanation of Significant Differences (ESD)**
 - **August 27 to September 26: Public comment period**
 - **September 9: Public hearing**
 - **October: Submit ESD to EPA for final approval**

- **September 2003: Container tests**

- **October 2003: Integrated Fill Room mock up testing**

- **September 2004 to November 2004: Operations**

SILOS 1 & 2

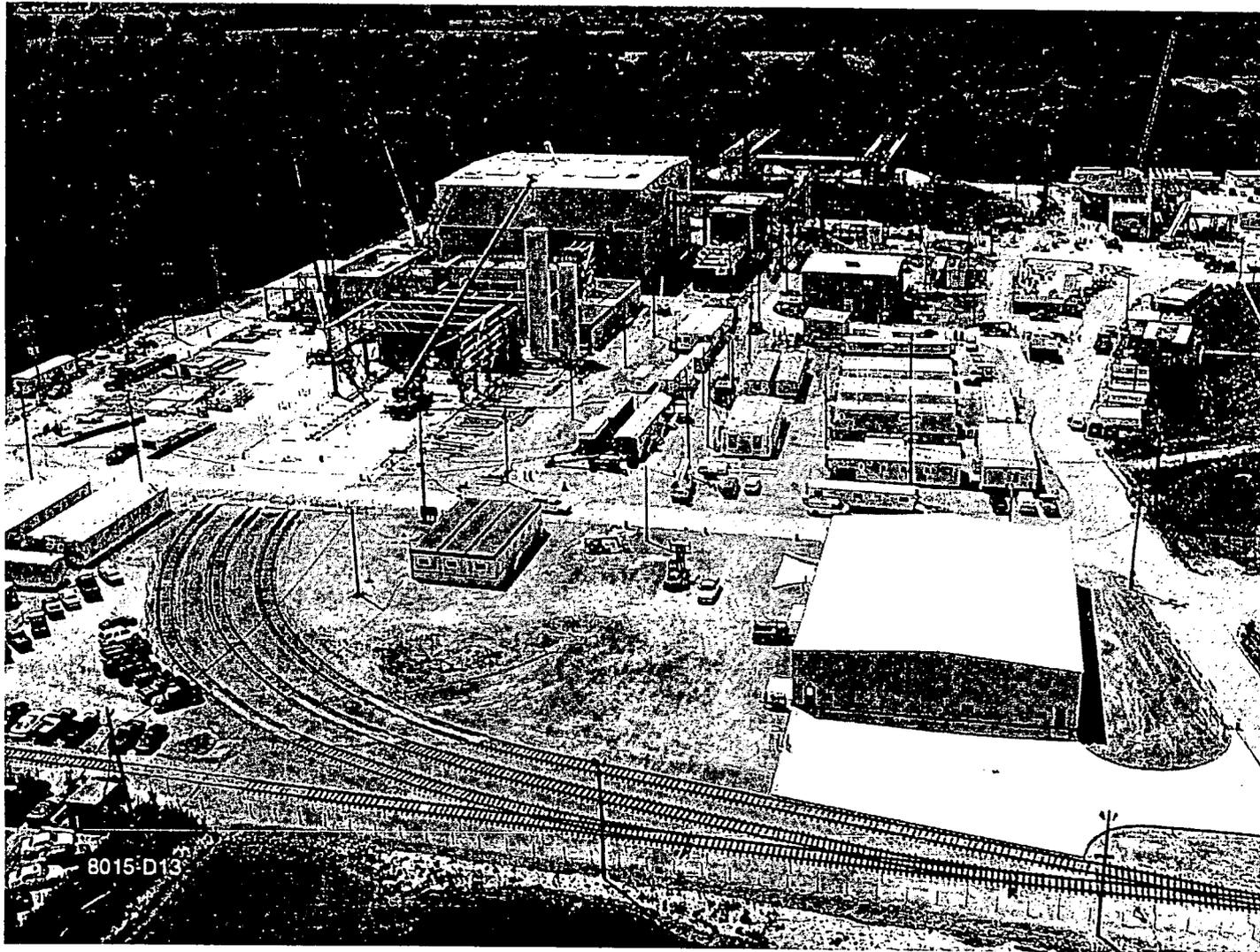


Photo taken August 2003

Graphic 7939.11

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SILOS 1 & 2 BRIDGE INSTALLATION

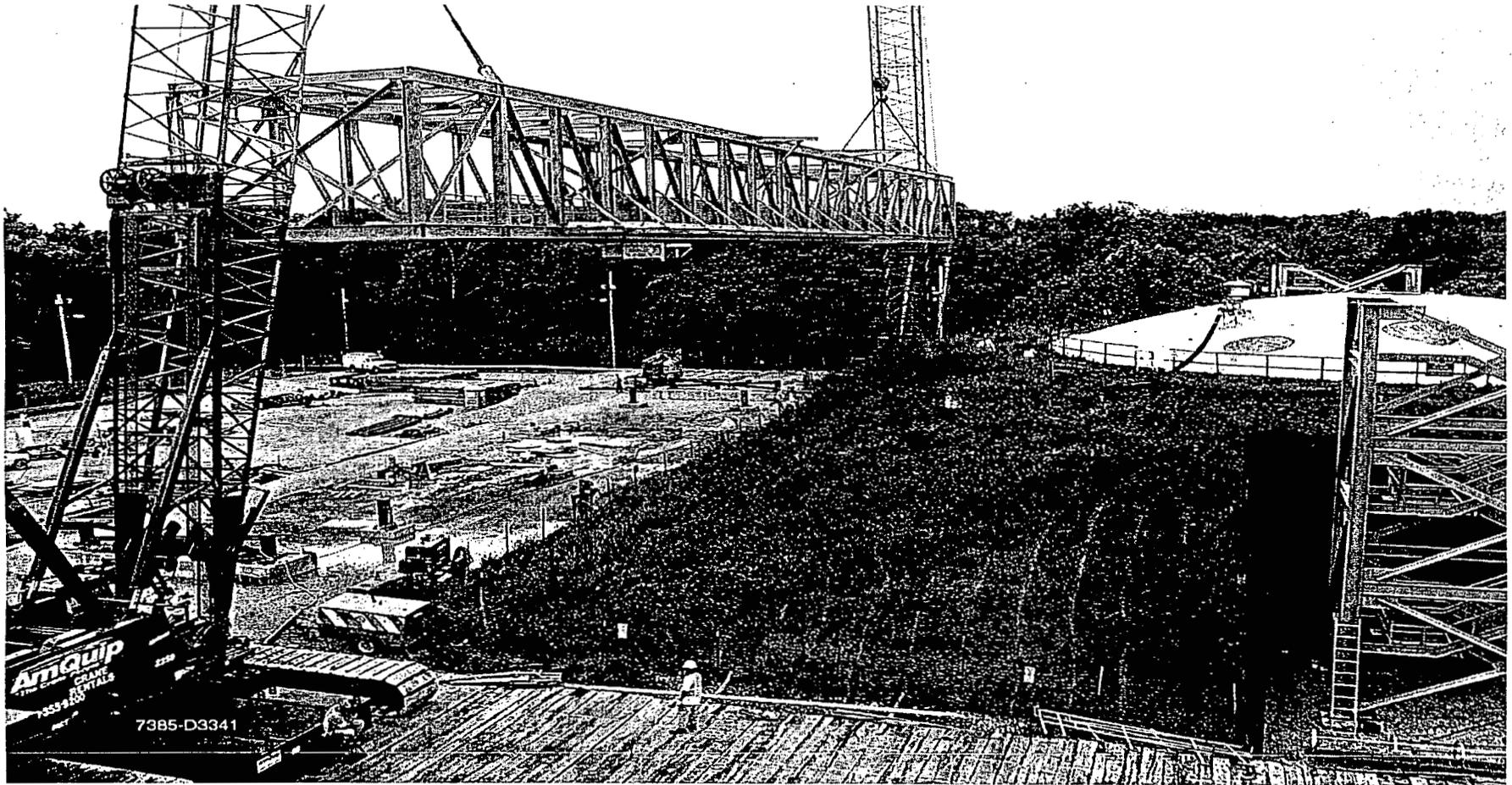


Photo taken July 2003

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SILOS 1 & 2 SHIPPING CONTAINERS

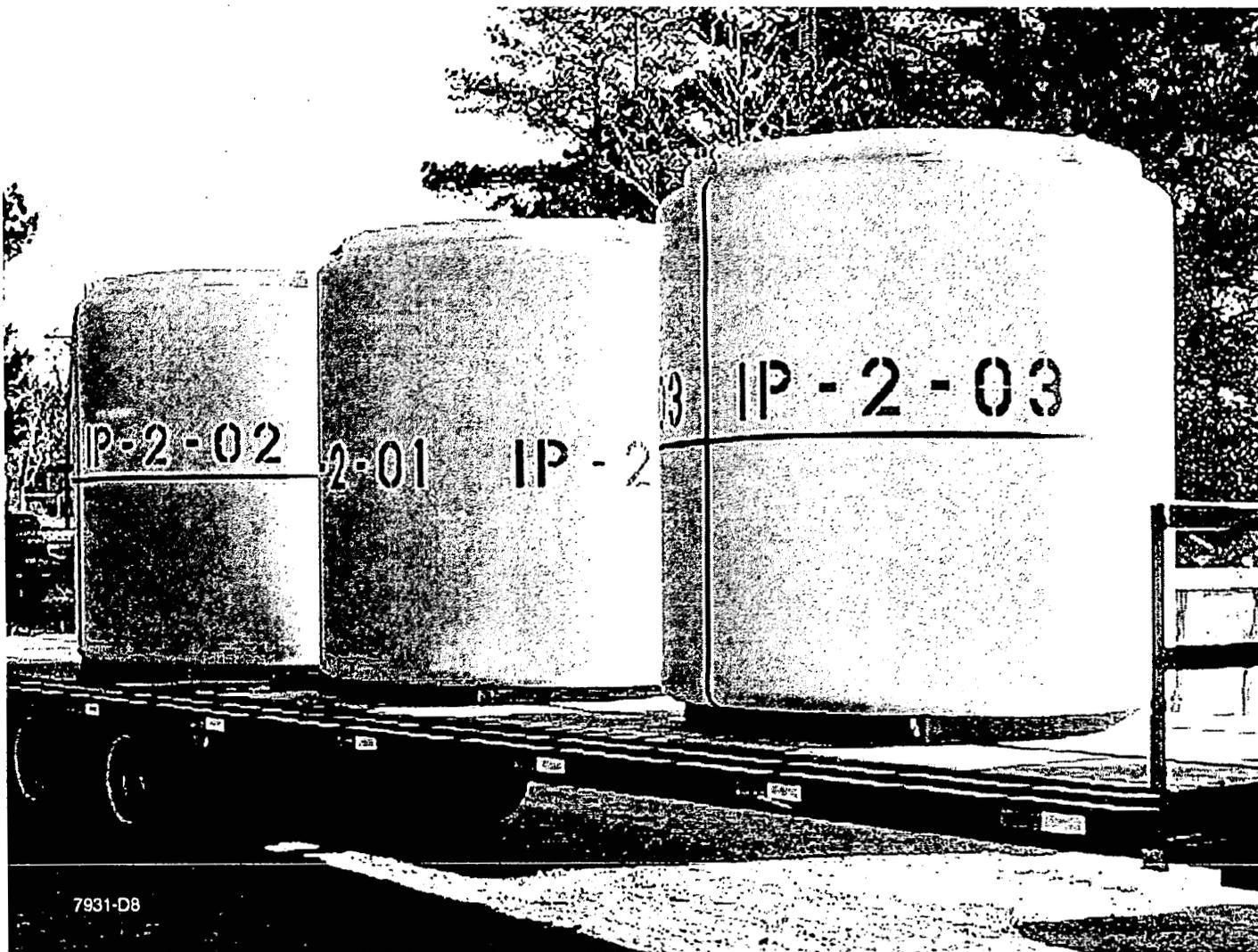


Photo taken February 2003

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