

WIPP



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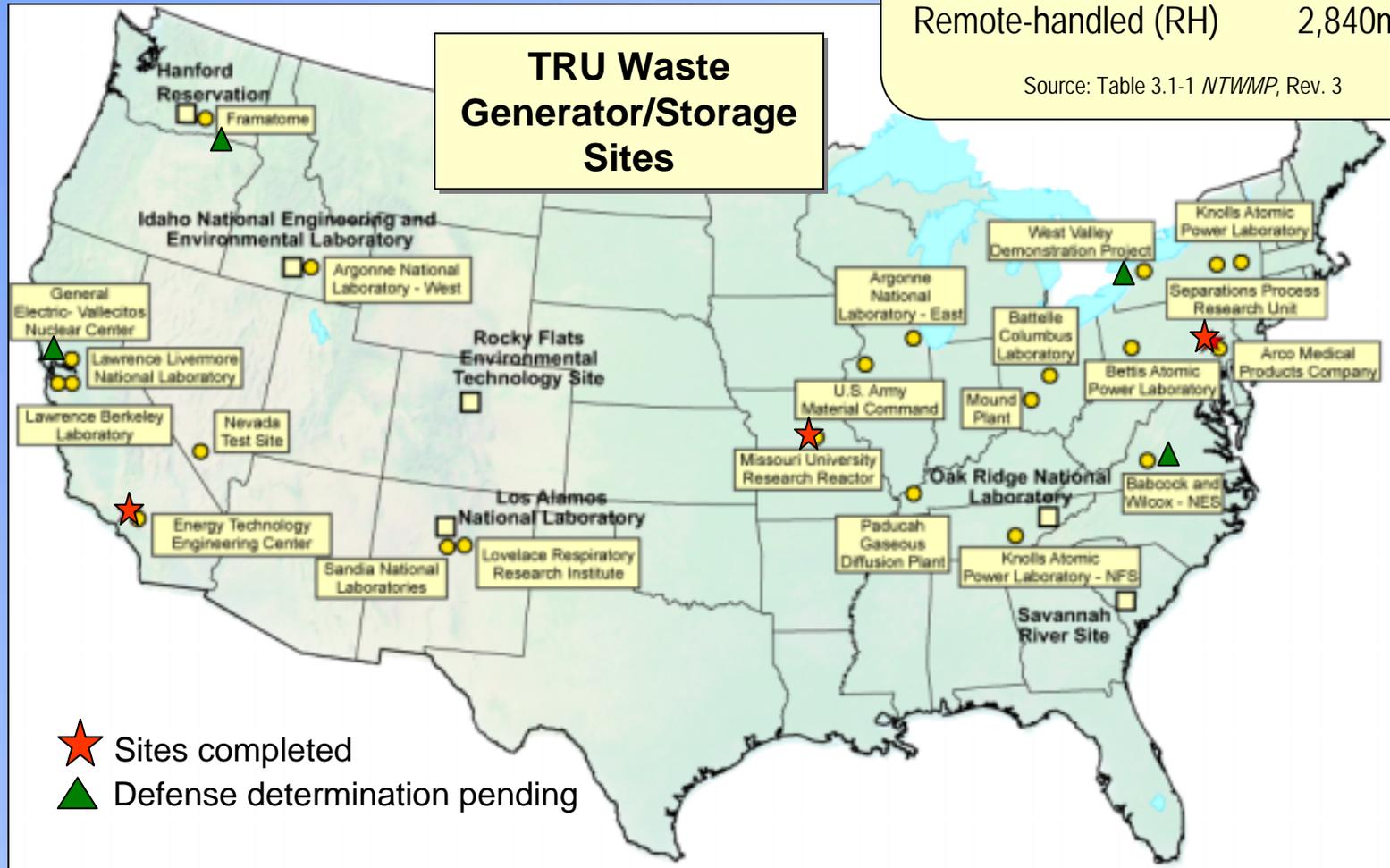
TRU Waste Sites

TRU Waste Inventory

Contact-Handled (CH) 110,095m³

Remote-handled (RH) 2,840m³

Source: Table 3.1-1 *NTWMP*, Rev. 3



Waste Cycle



TRU waste was generated during the production of nuclear weapons at DOE facilities across the country



The waste was put into containers such as 55-gallon drums and stored in above-ground and shallow-burial facilities



The contents of waste containers are determined before they are shipped to WIPP



The waste containers are loaded into a shipping container (TRUPACT-II) and trucked to WIPP



The waste containers are unloaded at WIPP and placed in disposal rooms 2,150 feet underground



Acceleration Plan

28 sites completed early or on schedule

20 years ahead of original schedule

\$8B savings

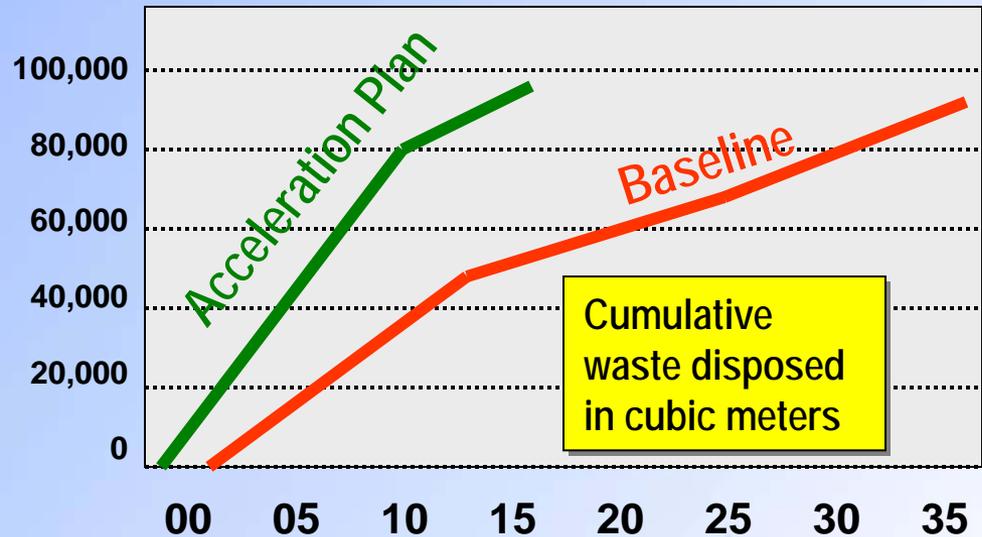
\$3.6B from completion 20 years early

\$2.1B regulatory improvements

\$1.2B TRUPACT-III and rail

\$0.6B mobile/modular equipment

\$0.5B Central Confirmation Facility



Modular/Mobile Waste Characterization

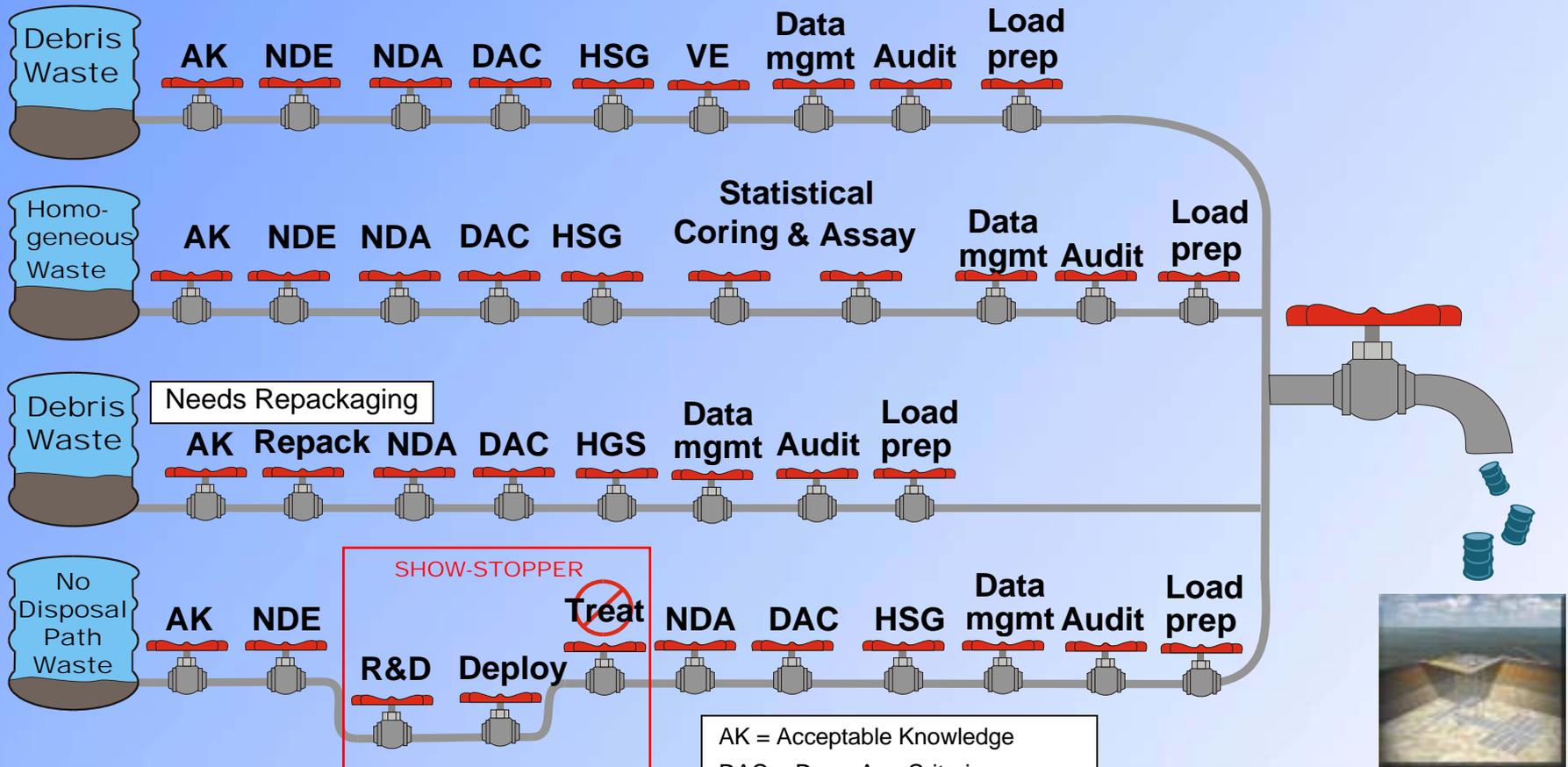


- **Mobile systems developed to perform waste characterization at sites that lack equipment, and to supplement sites with fixed systems**
- **Systems currently deployed at Savannah River Site (SRS), Argonne-East, and Hanford**
- **The system at SRS currently characterizing 180 waste containers per week**
- **These systems eliminate the need to build costly fixed sites, saving taxpayers millions**
- **Systems are cost effective: currently per-container characterization cost is \$2,750 (cheaper than most fixed sites)**

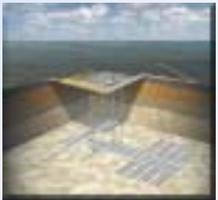


Waste Characterization

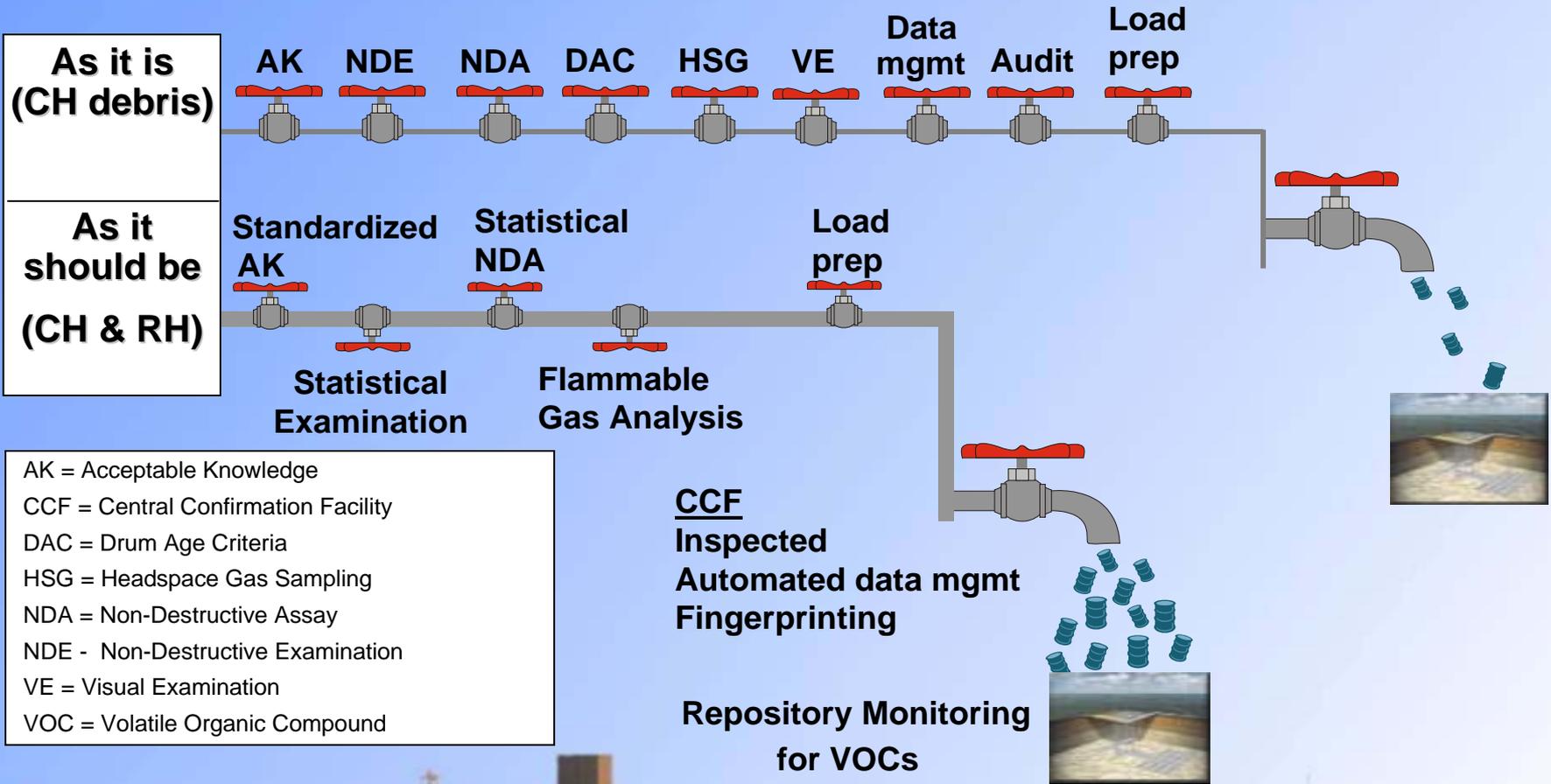
Contact-Handled TRU Waste Process



AK = Acceptable Knowledge
 DAC = Drum Age Criteria
 HSG = Headspace Gas Analysis
 NDA = Non-Destructive Assay
 NDE = Non-Destructive Examination
 VE = Visual Examination

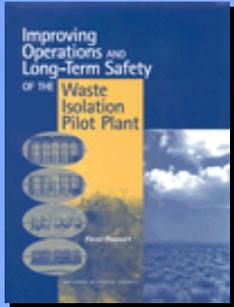


Proposed Changes



Support for Change

The National Academy of Sciences has twice recommended the elimination of waste characterization requirements that add little or no value and increase the potential for worker radiological exposure and contamination:



"Many requirements having to do with waste characterization and packaging, lack a safety or legal basis."

"The committee recommends that DOE's efforts to review waste characterization and packaging requirements continue, and changes be implemented."

From the National Research Council Final Report,
"Improving Operations and Long-Term Safety of the
WIPP", June 2001

Waste Characterization - continued

Streamlined Characterization Concepts



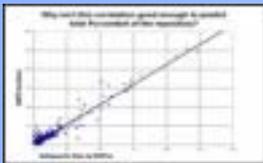
Elimination of HSG sampling for thermally treated waste at Rocky Flats allows shipment of all residues



Composite headspace gas sampling



Use real-time radiography for newly packaged waste



Utilization of safeguards data for radiological characterization



Repository monitoring in lieu of headspace gas sampling



Streamlining the Regulatory Framework

As it is

**Characterization
NMED & EPA**

**Transportation
NRC, DOT,
State agreements**

**Disposal
NMED & EPA**

- **Not performance driven**
- **Force-fit into pre-existing RCRA regulations**
- **Thousands of requirements not based on safety or legal considerations**
- **Only one Class 3 Permit Mod approved to date (613 days)**
- **Six Class 2 Permit Mods approved to date (120 days each)**

**As it
should be**

- **Performance-driven characterization, transportation, and disposal requirements**
- **Define RCRA compliance for TRU Waste Characterization**



Lessons to Share



- **Recognize that the regulatory framework in place at the time of opening will be considered the baseline . . . and it will be difficult to change**
- **Work to obtain a less detailed, less prescriptive permit**
- **Factor in future acceleration, innovation, and operational efficiencies when determining throughput capacity**
- **Learn the details of the waste inventory *early***
- **Communicate with the generator/storage sites *early* about transportation equipment interfaces**
- **Ensure that safety remains the #1 priority**

