Uranium Management Center (UMC) Materials Disposition

A presentation for the

Portsmouth Site Specific Advisory Board

Waste Disposition Subcommittee

September 2009

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

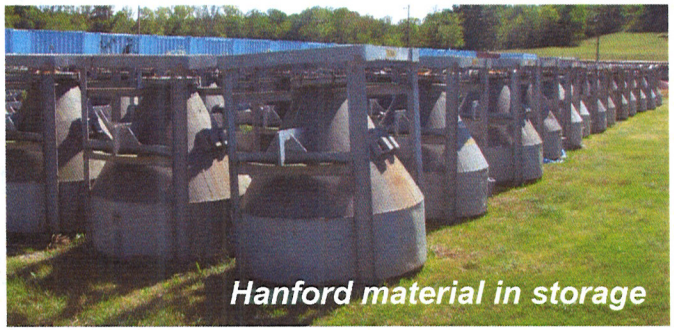
www.em.doe.gov

Source of the uranium materials inventory

- The Portsmouth site has stored surplus, uranium materials consolidated from other DOE sites until the materials could be permanently disposed, reused, or sold.

metric ton

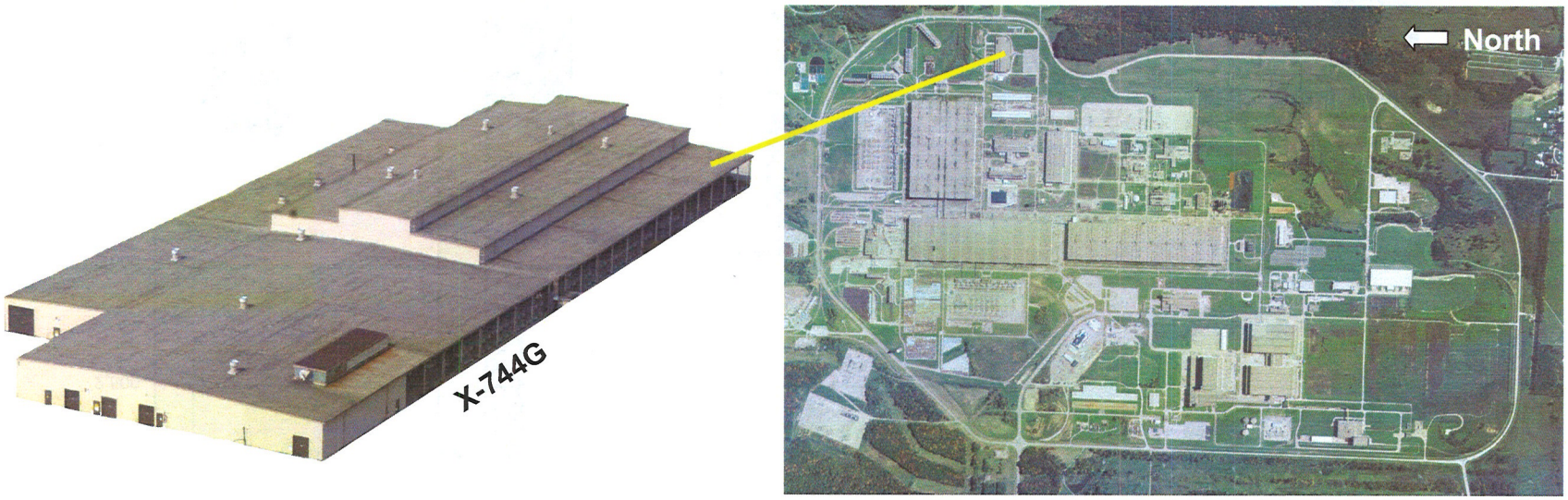
- Approximately 4,457 MTU were received between 1999 and 2002 from DOE's Fernald and Hanford sites and various universities to support closure activities and consolidation.


Hanford material in storage

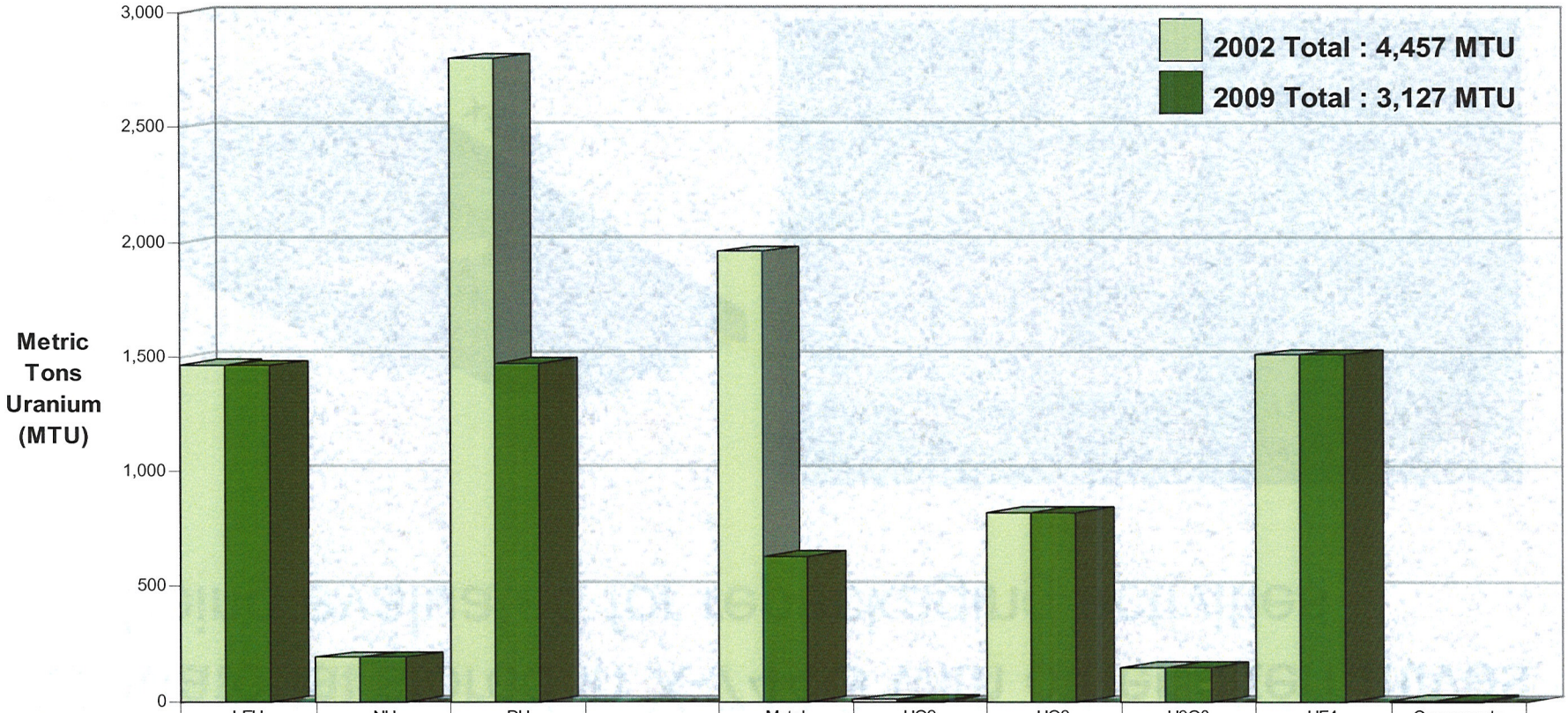
Fernald material in storage

Project Activities

- Material stored in X-744G with other alternatives being evaluated for repackaging activities



UMC Inventory – 2002 & Current



	LEU	NU	DU		Metal	UO2	UO3	U3O8	UF4	Compounds
2002	1,465	192	2,800		1,960	7	824	149	1,511	6
2009	1,462	192	1,472		633	4	824	149	1,511	6

LEU=Low Enriched Uranium NU=Natural Uranium DU=Depleted Uranium UO_2=Uranium Dioxide UO_3=Uranium Oxide

U_3O_8=Triuranium Octaoxide UF_4=Uranium Tetrafluoride

Past Disposition

- 2004 : Shipped 3 MTUs of Uranium Dioxide to Pacific Northwest National Laboratory for blend stock

- 2008 : Shipped 1,327 MTUs Depleted Uranium Metal to Nevada Test Site for disposal

Future Disposition

Table 1 – UMC Lots Identified for Future Disposition				
Lot #	**Description (%U235)**	**Metric Tons Uranium (MTUs)**	**Disposition Path**	**Time Frame**
1	Low Enriched Metal, Hanford in SBWSC*	235	Disposal at Nevada Test Site	FY11 to FY12
4	Depleted UF4, Fernald in TOC*	1,278	Recycle at International Isotopes Inc. (INIS)	No later than FY13
5	Depleted UF4, Fernald in Sealand Containers	194	Recycle at International Isotopes Inc. (INIS)	No later than FY13
11A	Low Enriched Metal, Fernald in SBWSC (1.25%)	346	Disposal at Nevada Test Site	FY11 to FY12
		Total : 1,859		

**TOC = Thorium Over-pack Containers* **SBWSC = Steel Banded Wooden Shipping Containers*

American Recovery and Reinvestment Act (ARRA) of 2009

- ARRA disposition of surplus uranium:
  - Verification and certification of Department of Transportation (DOT) authorized packages
  - Repackaging of formerly authorized DOT packages
  - Load and ship packages to Nevada Test Site (NTS) as waste

UMC Inventory for Disposal at NTS Under ARRA

Lot #	Description (% U235)	Metric Tons Uranium (MTUs)
2	Low Enriched Hanford UO_3 Powder in T-Hoppers (0.81% to 0.95%)	667
3C	Low Enriched Hanford UO_2 in 7A drums (1.76% to 17.8%)	0.1
9	Normal Compounds, Fernald in drums (0.711%)	2.3
10	Normal Metal, Fernald in TOC* and SBWSC* (0.711%)	184.5
11A (2) – Drums	Low Enriched Metal, Fernald in 7A drums (1.25%)	28.6
11B	Low Enriched Metal, Fernald in drums (0.947%)	26.7
11C	Low Enriched Metal, Fernald in drums (1.0% to 1.22%)	1.4
12	Low Enriched U_30_8, Fernald in TOC* (0.85% to 1.00%)	149
13	Low Enriched UF_4, Fernald in drums (1.05% to 1.95%)	36.5
14	Low Enriched UO_3, Fernald in drums (1.10% to 1.99%)	157.4
15A	Normal Metal, University Material in drums (0.711%)	2.0
15B	Normal Metal, University Material in drums (0.711%)	2.5
15C	UO_2 fuel rods and pellets in 6M and 7A drums (unirridated, 2.35%)	1.7
15D	Low Enriched Metal, University Material in drums (0.947%)	2.2
16	UO_3 & UF_4 (0.79% to 0.99%)	6.1
	Total	**1,268**

**TOC = Thorium Over-pack Containers* **SBWSC = Steel Banded Wooden Shipping Containers*

ARRA Project Activities

- Disposal at NTS of approximately 169,000 ft^3 of waste in final form
- Shipments to begin late September 2009
- Approximately 800 truck shipments total