

U.S. Department of Energy

Oak Ridge Office of Environmental Management
(OREM)

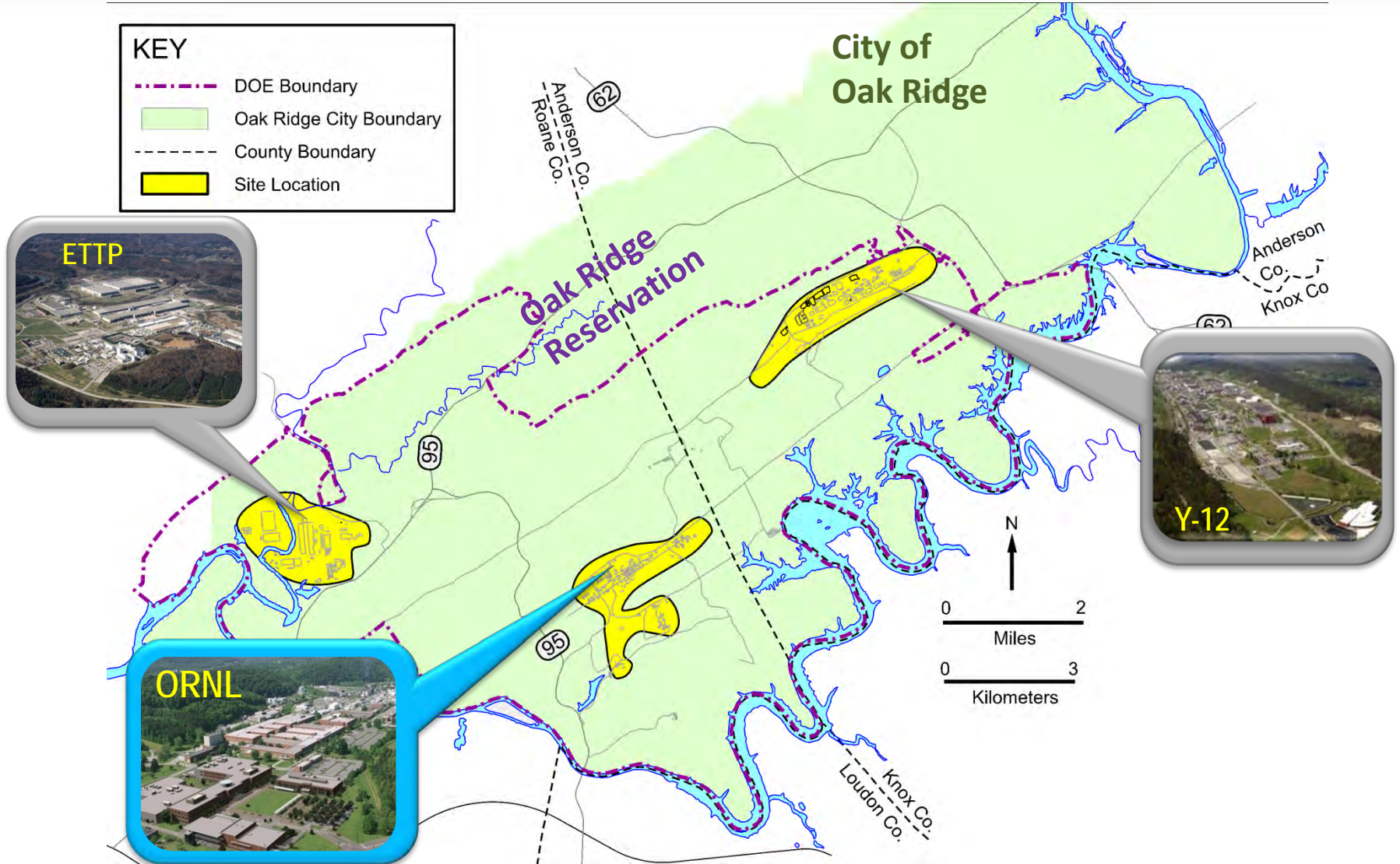
Oak Ridge National Laboratory Portfolio Plan

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Oak Ridge National Laboratory (ORNL) is DOE's largest science and energy laboratory



The ORNL Cleanup Strategy

FY 13 - 24

- Continue operations and maintenance of critical systems for waste treatment and environmental monitoring activities
- Complete removal and disposition of existing legacy waste and material

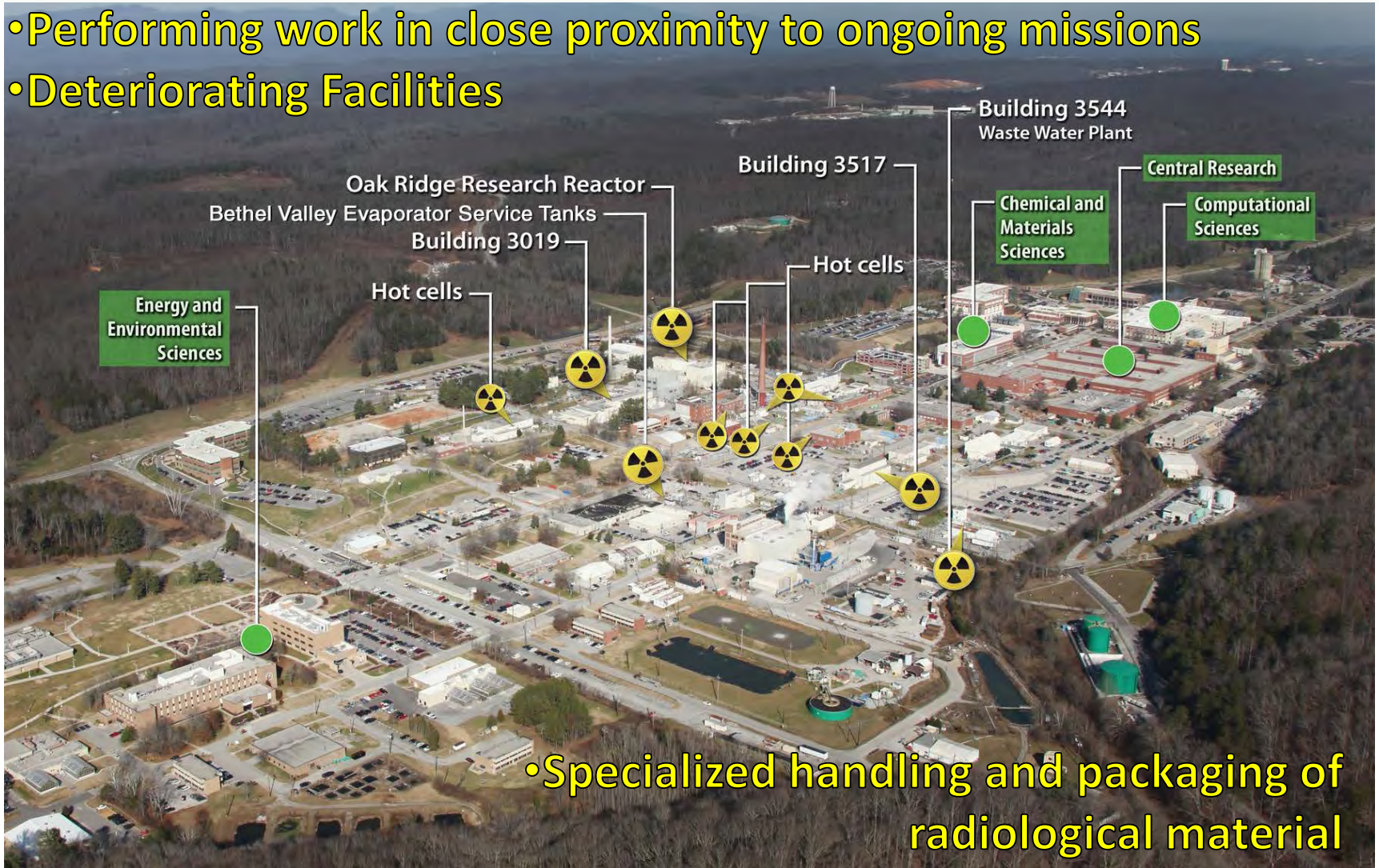
FY 24 - 45

- Complete demolition of excess facilities
 - ORNL Central Campus
 - Melton Valley
- Complete remediation of media
- Release strategic acreage for ORNL redevelopment





Execution Challenges

- Performing work in close proximity to ongoing missions
- Deteriorating Facilities



- Specialized handling and packaging of radiological material

 = Facilities/areas to be remediated  = Research Facilities/Government Investments

Two on-going projects to process and/or remove radioactive waste and materials from ORNL

- **Transuranic Waste Disposition**

- ✓ Processing and/or repackaging solid transuranic waste on-site at the Transuranic Waste Processing Center, then shipping it off-site for disposal in Nevada or New Mexico
- ✓ Future construction to provide facility for processing tank sludges (~500,000 gallons) for off-site disposal in Nevada



Transuranic Waste Processing Center
in Melton Valley



Loading Zero Power Reactor
Plates (U-233 Disposition)

- **Uranium-233 Disposition**

- ✓ To date, ~10% of containers have been removed from site (sent for reuse)
- ✓ Another ~40% will be sent off-site for reuse or disposal by 2016
- ✓ Remaining 50% of inventory to be processed by down-blending

ORNL cleanup is conducted within two valleys

- Bethel Valley (includes Central Campus)

Number of facilities	160
Demolition area (sq ft)	799,441
Decontamination area (sq ft)*	31,138

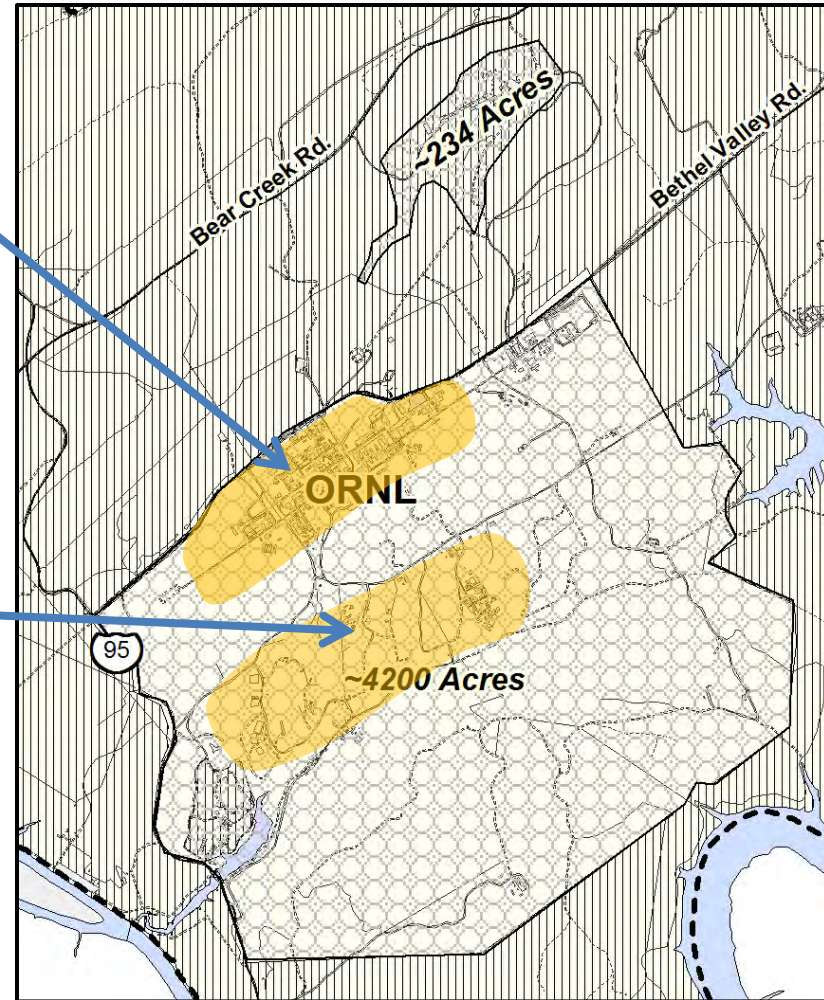
**To be kept for historical purposes*

- Melton Valley

Number of facilities	108
Demolition area (sq ft)	455,885
Decontamination area (sq ft)*	10,240

**To be kept for reuse*

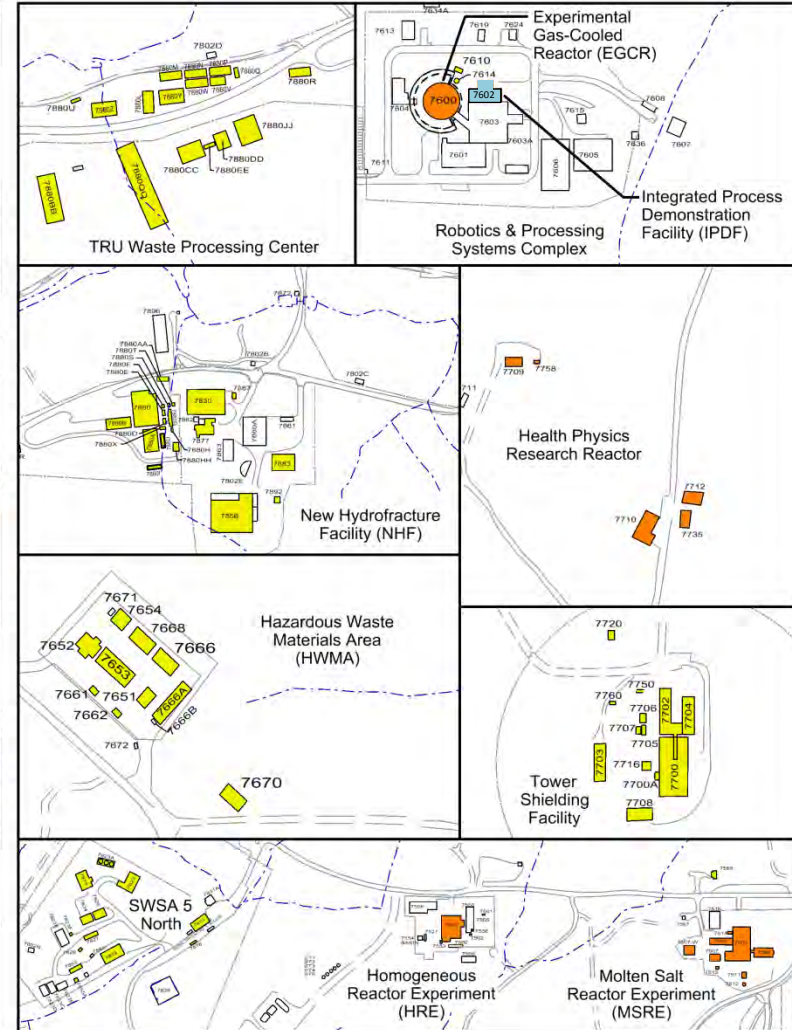
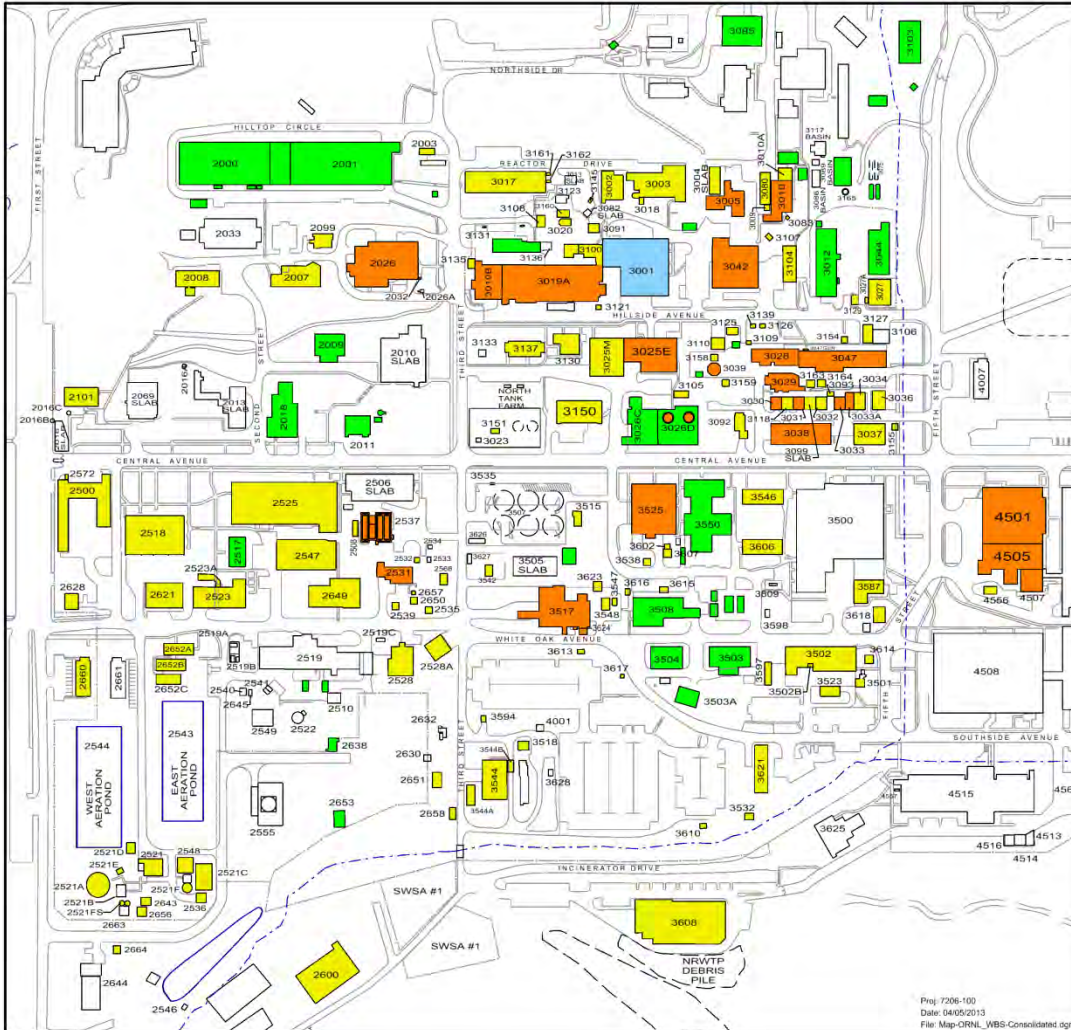
- Total 268 facilities and about 1.3 million sq ft to demolish
- Soils and sediment in Bethel Valley will require remediation



Facilities to be demolished in two valleys

Bethel Valley/Central Campus

Melton Valley



- To be Demolished
Reactor/Hot Cell/High
Risk Facilities
- To be Demolished
Balance of Facilities
- Completed
Demolition
- Historical Preservation (3001)
Decontaminate Only (7602)

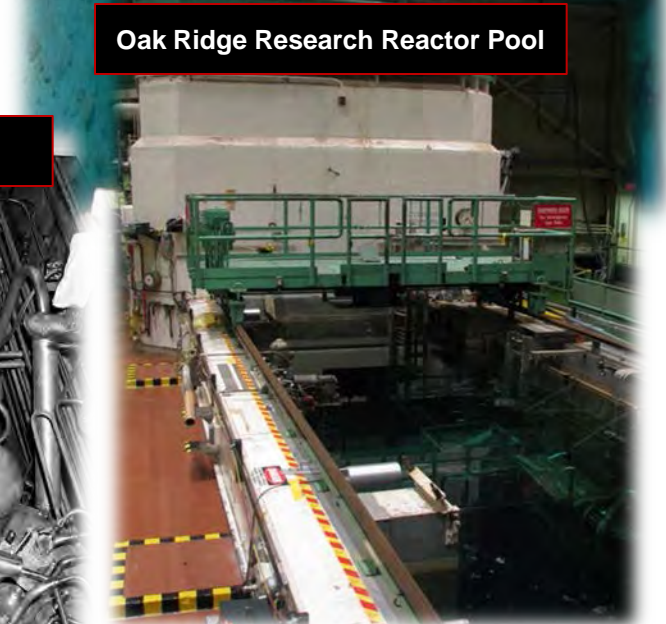
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ORNL demolition/remediation in Bethel Valley

- Bethel Valley (32 projects)
 - ✓ Isotope processing facilities with hot cells
 - ✓ Reactor facilities with reactor pools (all defueled)
 - ✓ Radioactive gas handling equipment and 250 ft stack
 - ✓ Miles of underground piping and underground tanks
 - ✓ Radioactive liquid processing equipment and facilities
 - ✓ Contaminated soils
 - ✓ Stand alone hot cells (Building 3026)
 - ✓ Isotopic variety



Bulk Shielding Reactor Pool

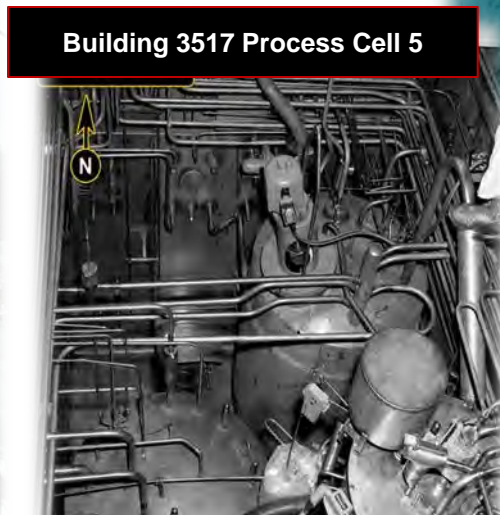


Oak Ridge Research Reactor Pool



2 X 2005

3039 Stack and Gas Handling Equipment



Building 3517 Process Cell 5

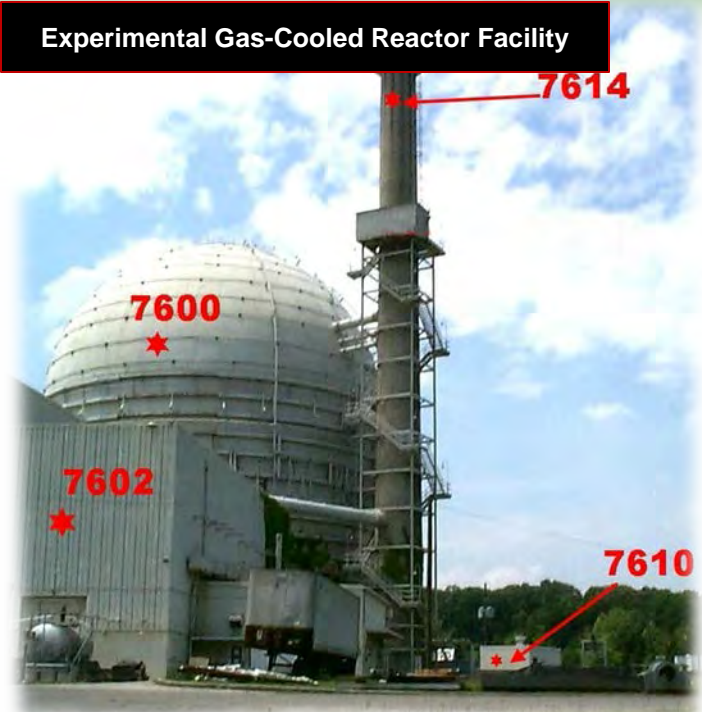
ORNL demolition/remediation in Melton Valley

- Melton Valley (17 projects)
 - ✓ Reactor facilities
 - ✓ Molten Salt Reactor Experiment, contaminated salts removal and disposal
 - ✓ Tanks and contents, contaminated resins
 - ✓ Radioactive waste processing facilities
 - ✓ Radioactive waste storage facilities
 - ✓ Isotopic variety

Shielded Transfer Tanks



Experimental Gas-Cooled Reactor Facility




MSRE Salt Drain Tanks



Schedule for the ORNL Portfolio Plan

Oak Ridge Environmental Management Baseline – ORNL	Fiscal Years (2013 – 2048)					
	13 - 17	18 - 22	23 - 27	28 - 32	33 - 37	38 - 46
Waste and Materials Processing Scope						
U-233 Material Disposition	[Red dotted]		[Red dotted]	[White dotted]	[White dotted]	[White dotted]
Transuranic Waste Disposition	[Dark red dotted]		[Dark red dotted]	[White dotted]	[White dotted]	[White dotted]
Bethel Valley D&D and RA Scope						
Central Campus Facilities D&D	[Dark green dotted]	[White dotted]	[Dark green dotted]	[Dark green dotted]	[Dark green dotted]	[White dotted]
Other Bethel Valley Facility D&D	[White dotted]	[White dotted]	[Dark green dotted]	[Dark green dotted]	[Dark green dotted]	[Dark green dotted]
Bethel Valley RA and RODs	[White dotted]	[White dotted]	[Light green dotted]	[Light green dotted]	[Light green dotted]	[Light green dotted]
Melton Valley D&D and RA Scope						
Melton Valley Facility D&D	[White dotted]	[White dotted]	[White dotted]	[Orange dotted]	[Orange dotted]	[Orange dotted]
Melton Valley and Other Locations RA and RODs	[White dotted]	[White dotted]	[White dotted]	[Yellow dotted]	[Yellow dotted]	[Yellow dotted]
Operations and Maintenance Scope						
S&M, Environmental Monitoring, Treatment Operations	[Blue dotted]	[Blue dotted]	[Blue dotted]	[Blue dotted]	[Blue dotted]	[Blue dotted]

 = Records of Decision (RODs)

Completion of the ORNL Portfolio Plan

- Removal and disposition of existing legacy waste and material
- Demolition of all excess, contaminated facilities
- Completed remedial actions, including finalized records of decision for groundwater and surface water
- Release of acreage for future re-development in critical areas

