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Title:	TA-03-0016 Ion Beam Facility D&D Sphere of Influence
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Intended for:	Powerpoint presentation to address contract direction from DOE EM on the impact of the demolition of 03-0016 Ion Beam to surrounding buildings.
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TA-03-0016 Ion Beam Facility D&D

Sphere of Influence

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Denise Liechty
7/26/2023

TA-03-0016 Ion Beam Facility D&D

TA-03-0016 Ion Beam Facility

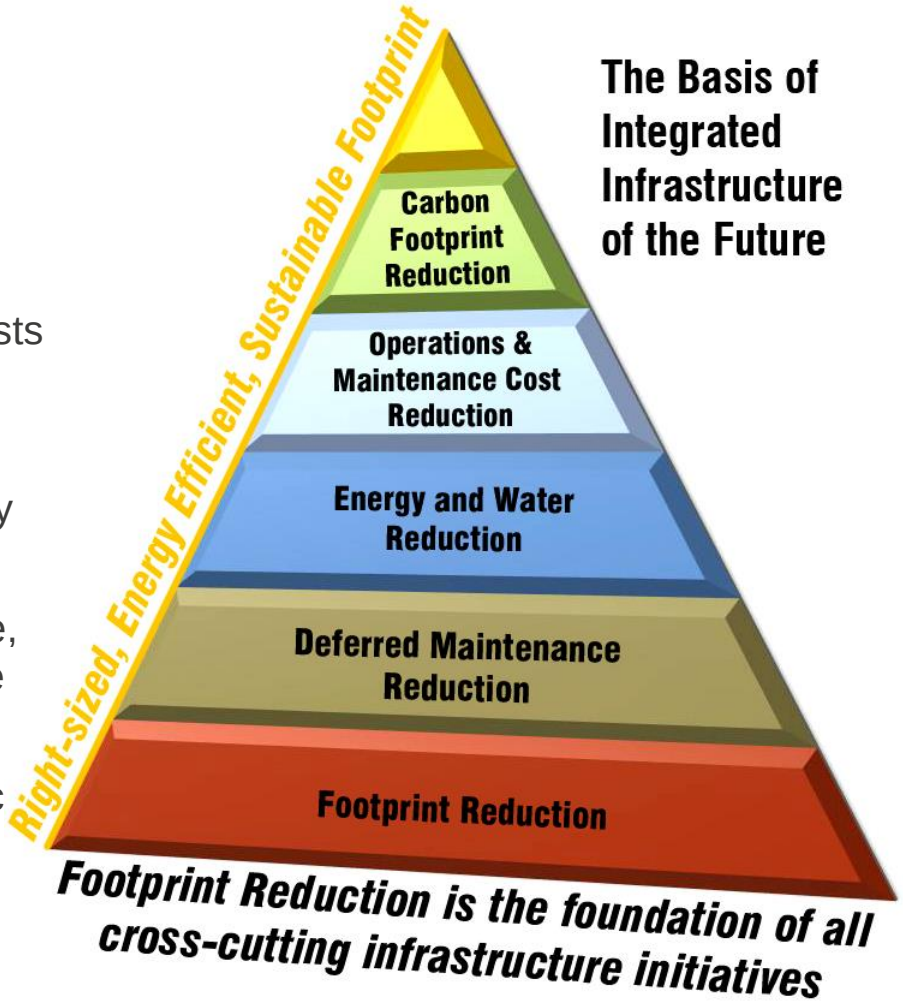
This structure is 70 years old and has been vacant since 1994 and was excessed in 1999. The Ion Beam Facility (IBF) was built in 1953 to support essential post-World War II scientific research and houses LANL's original vertical and tandem Van de Graaff accelerators. The vertical Van de Graaff accelerator was built under the direction of Joseph McKibben from 1948 to 1952 and was used for applied nuclear physics experiments. The Ion Beam facility is considered by NNSA as one of its highest risk process contaminated facilities within the complex. Ion Beam is a radiological facility adjacent to the LANL Occupational Medicine Facility on the south side of TA-3, the most populated technical area at LANL. It poses an undesirable fire risk, especially given its close location to a rugged wooded canyon and difficulties in fighting a wildland fire in such a location. Demolition of this structure will provide a constructable site for critical mission radiological laboratory spaces.

Why D&D is Important

Footprint Reduction

(ending the life-cycle of obsolete structures)

- Eliminates risk, legacy process contamination
- Redirect funding to operating structures and mission – Ion Beam shutdown for 24 years
  - Eliminates operating costs
  - Eliminates surveillance & maintenance costs
  - Avoids associated deferred maintenance
- Contributes to all site and national goals associated with reductions in water and energy used, Green House Gas and carbon footprint
- Addresses waste disposal as soon as possible, thereby avoiding continued escalation of those costs
- Creates available land for future programmatic needs.
- Improves the quality of the site, benefiting retention/recruitment of scientific staff



Preliminary Milestone Schedule

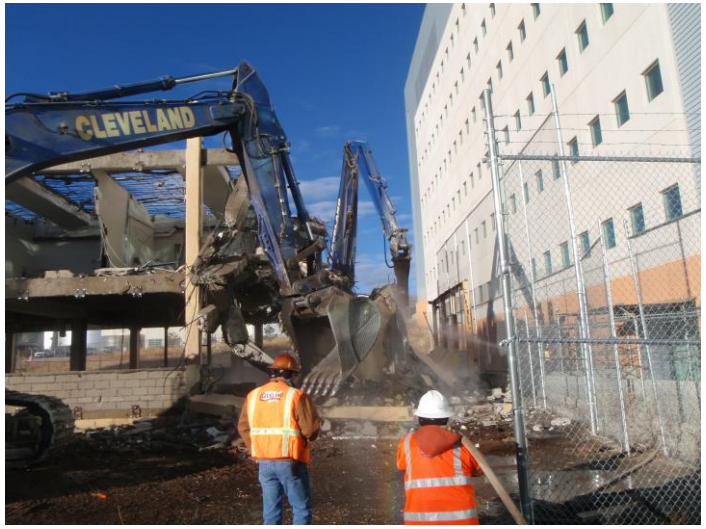
Milestone	DATE
Subcontractor Walk Down	April 18, 2023
Notice of Award/Contract Executed	July 2023
Mobilization	~December 2023
Complete Regulated Material Removal	TBD
Start Structural Demolition	TBD
Substantial Completion	~2026
Demobilization	~2027

DOE EM to update after Subcontract Award

Assumptions

- Utilization of Traditional demolition techniques
  - Based on previous years of demolition at LANL and TA-3 no impacts are expected to programmatic activities.
  - Previously demolished complicated structures immediately adjacent to mission critical programmatic missions
  - TA-03-0043, SM-43 Administration Building, adjacent to NNSB TA-03-1400 and CCF TA-03-0132
    - TA-03-0035, Press Building adjacent to TA-03-0066, SIGMA,
    - Transportable complex in the parking lot adjacent to the TA-03-0040, Physics building.
- Geography is similar across TA-03 and most of the LANL site. Tuff layer varies, usually encountered between 6’ and 12’ in depth.
- Laydown area will be within the TA-03-0016, Ion Beam, site boundary and not impact surrounding facilities.
- Traffic plan will be provided to LANL by EM subcontractor.
- Communications flow from the EM subcontractor to the impacted parties through the IF FOD Plan of the Day, Plan of the Week.

TA-03-1400 NSSB



TA-03-0043 Administration Building

Structural Demolition

This is what you will not see at LANL

Out with the old

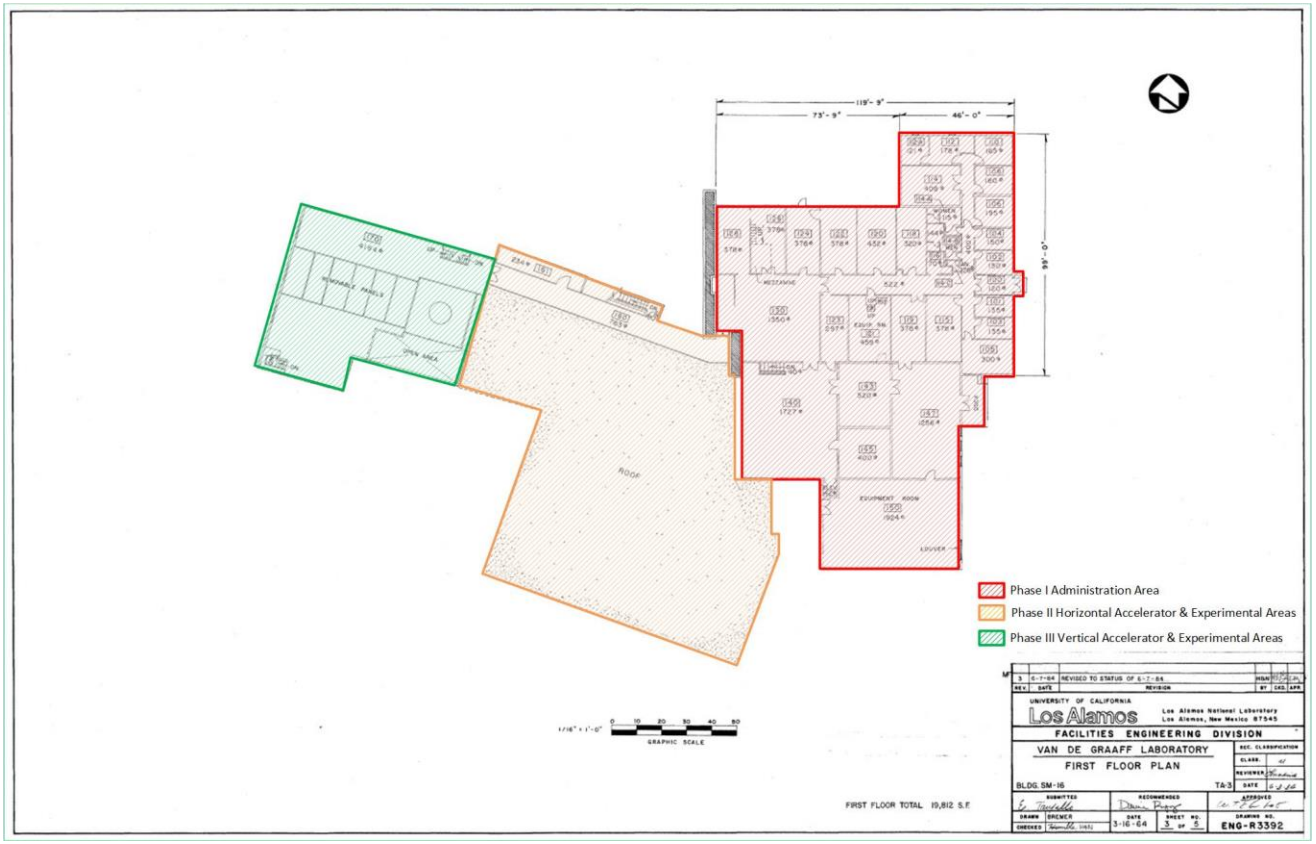
Workers demolish a house in Nanjing, located in eastern China's Jiangsu province, on Tuesday, March 27.

Leo Lang / Reuters

This is what you will see at LANL

Scope

- Demolish and dispose of all demolition generated material
- Phased approach to demolition
  - Demolish administration area
  - Demolish horizontal accelerator and experimental areas
  - Demolish vertical accelerator and experimental areas
- Ship waste
- Site restoration
  - constructable site



LANL Traditional Demolition using Excavators with Hydraulic Hammers and Processors

TA-03-0043 AD Building

TA-55-0041

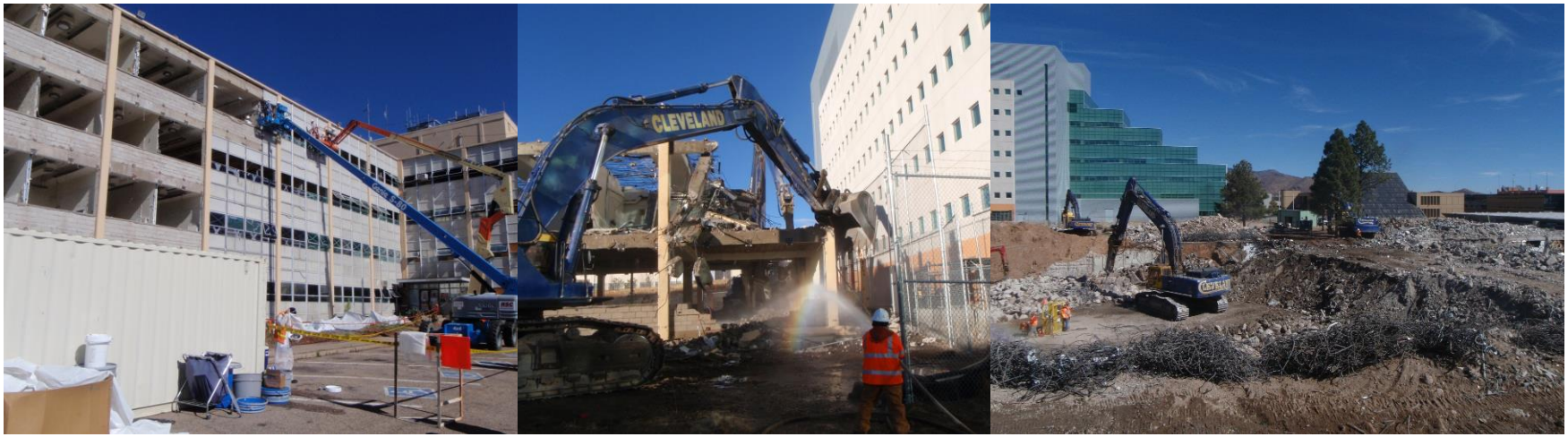
TA-55-0041

TA-03-1550

TA-18-0227

18-0032 CASA 2

Large Structure D&D in TA-03



TA-03-0043 Administrative building

TA-03-0035 Press Building

Other D&D in TA-03 Using Traditional Equipment

TA-03-0461, 0462, 0467 Transportable Building D&D

TA-03-0469 and 0471 Transportable D&D

• Oversized Load Waste Shipping Examples

• Expected Types of Waste Trucks & Containers

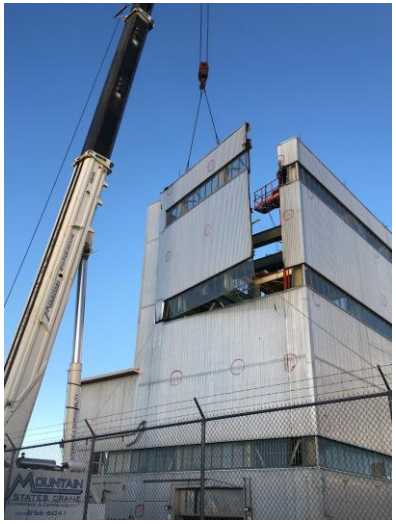
Flat Bed

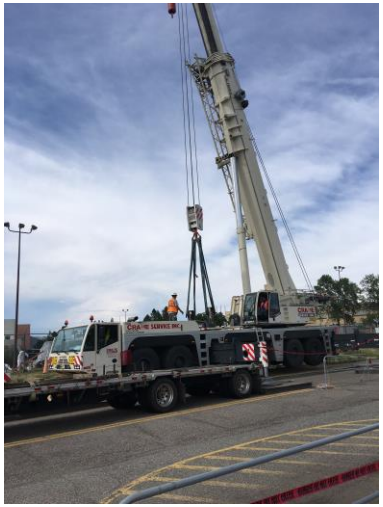
Forklift For Bin Handling

End Dump

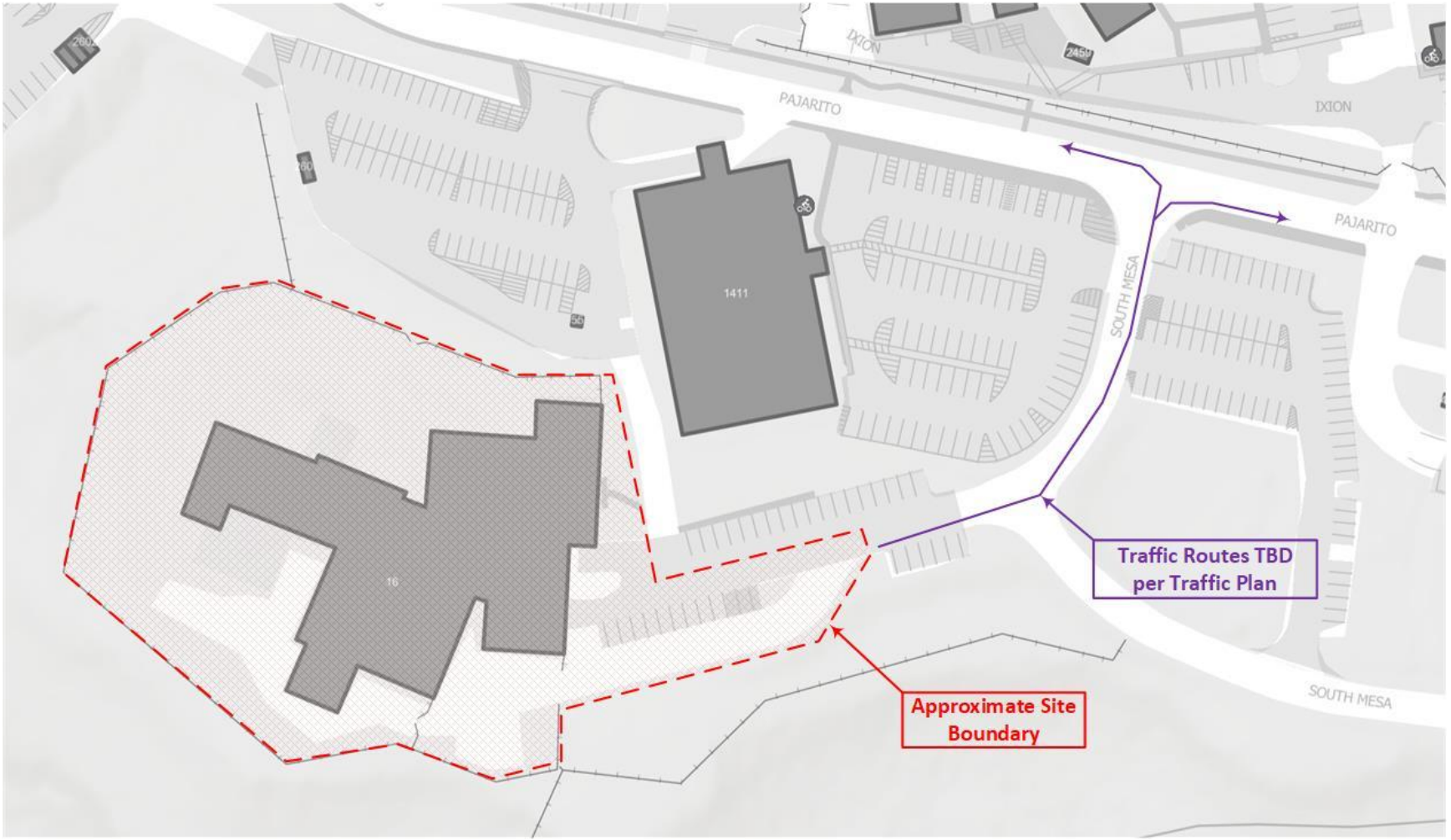
Roll Off Trailer

• Typical Crane D&D & Oversized Waste Loading

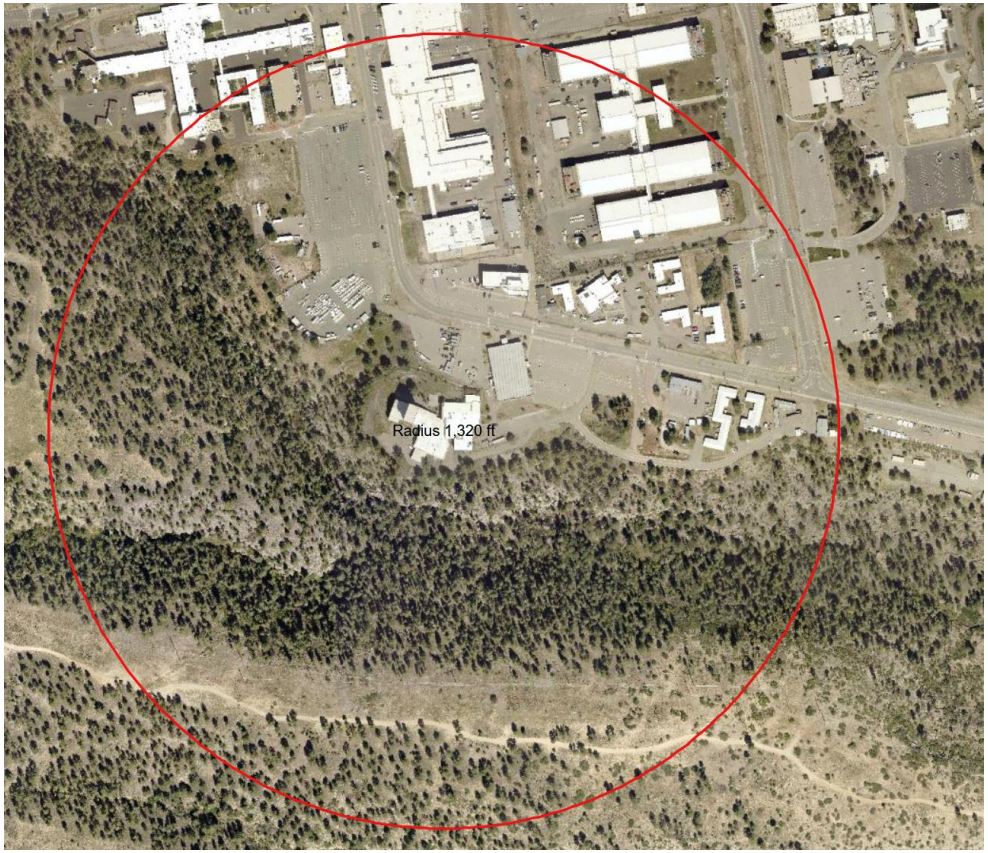




IBF D&D Site Footprint



Programmatic Activities and Facilities for POD, POW Notifications



Structure Number(s)	Program	FOD
03-1411	OCC MED	IF-DO
03-0316	ALDFO	STO-DO
03-1522, 1762	ALDFO	IF-DO
03-0029	ALDCELS	TA55-DO
03-0039, 0102	ALDWP (Shops, Calibration)	STO-DO
03-1353, 1409, 0440, 0468, 0470, 0474, 0495, 0496, 0512, 0513, 0514,	Security	IF-DO
03-0065, 03-0130, 2006, 2007, 2008, 2009, 2010	Radiation Protection	IF-DO
03-1701, 1762, 2003, 2004, 2005	ALDFO	IF-DO
03-0215, 0253	ALDFO	STO-DO
03-0502	ISR	STO-DO

Typical D&D Air Monitoring

Air Monitoring Summary (Cumulative)

OEL – Occupational Exposure Limit (OSHA or ACGIH)

PPE – Occasional exposure

Worker Exposure Monitoring

- Asbestos
- Particulates (total and respirable)
- PCBs
- Noise
- Mercury
- Carbon Monoxide
- Chemical (mastic remover and toluene)

Site Perimeter Monitoring

- Asbestos
- Particulates (total and respirable)
- PCBs
- Noise
- Radiological (CAM)

Site End State Restoration Options

Rip-Rap and Basecourse

Seeded and Regrowth of Native Grass

LANL's Ultimate Goal - Footprint Reduction to New Construction

Inefficient underutilized and obsolete facilities are identified, functions are relocated, and the facility is shutdown in preparation for D&D.

TA-3-0035 Press Building Demolition
The Press Building was constructed in 1954 to house a 5,000 ton double action Lake Erie hydraulic press and a uranium casting area. Missions supported included uranium activities associated with the Nuclear Weapons program, the Rover Rocket programs and other uranium materials science programs.

The demolition of the high bay structure was done using a crane instead of conventional D&D methods. This approach reduced the risk of premature collapse and was a safer approach.

The Lake Erie press was over four stories tall with an additional 13' 9" below grade. The press, at 1.4 million pounds, was the last piece of the demolition process and yielded pieces ranging in weight from 40,000 pounds to 173,000 pounds. Upon final disassembly, LANL was able to remove 4,154 cubic yards of radiologically contaminated waste, thus reducing environmental risk and opening up the site to future construction.

D&D complete, site ready for construction of a new facility.

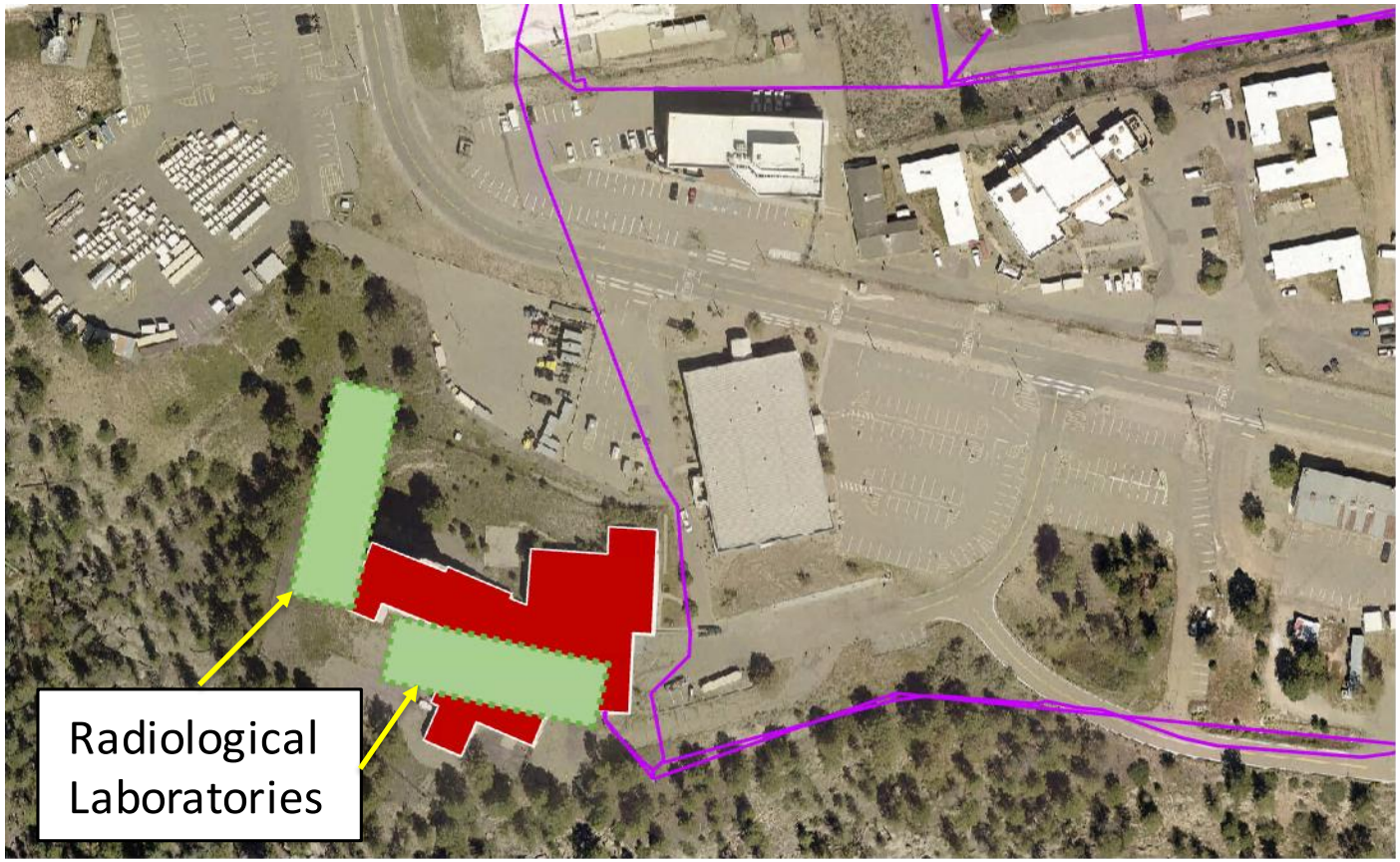
Site work and foundation installation for a new LEED Gold combination office/lab facility to consolidate BSL2 research.

TA-3-2587 Commercially Engineered Facility Construction Complete 2020.

Obsolete, aging facilities are replaced by modern facilities that meet today's mission needs, reduces deferred maintenance, and allows resources to be redirected to new and enduring facilities.

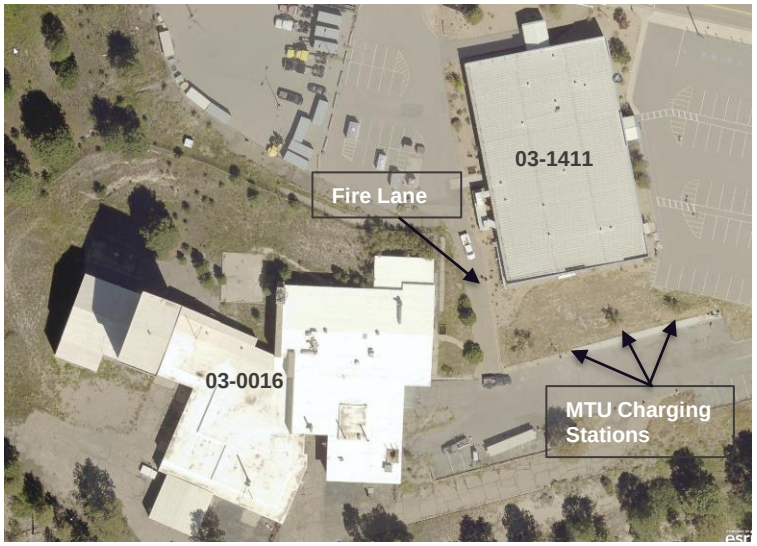
Future Construction

- LANL Campus Master Plan has 2 new radiological laboratory buildings planned for the Ion Beam Facility site.



Recap Slide

- Summary of Findings
  - Traditional demolition techniques/processes will not impact ongoing programmatic missions
- Constraints
  - Waste removal, truck traffic - TA03 High traffic area.
    - Concurrent road construction projects (Diamond Drive Widening and Pajarito Road Roundabout
    - Real Time project integration between Demolition Project and concurrent Road and Construction Projects within TA03 and Pajarito Corridor
  - Occupation Medicine (03-1411) and Mobile Testing Unit (MTU) Charging Stations Immediately Adjacent to Demolition activities
    - Road between 03-1411 and 03-0016, Ion Beam, must always remain open, it is fire lane
    - Three MTU charging stations must not be blocked
  - Limited Laydown Area Availability
- Restrictions/Requirements
  - PRID, EXID, and SWPPP documents



Mobile Testing Unit

Questions?