TECHNICAL REPORT

Aging Infrastructure at DOE Sites

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DISCLAIMER

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INTRODUCTION

> "Many areas of the roof have structural failures (openings) in the asphalt of the roof membrane, felt membrane, insulation board, felt vapor seal, and asphalt for insulation board and vapor seal. These failures allowed water from rain and melting snow to leak through the openings, causing weakening of the roof panel sections. This leakage has caused concrete failure; some concrete has fallen exposing the rebar, which is now severely corroded. Other roof openings have been made by purposefully cutting through the concrete and rebar. This causes additional concerns with regards to roof structural and weather integrity."
>
> "Should the roof collapse, fixed contamination from inside the facility could eventually become loose contamination from constant exposure to the weather. Furthermore, since the south end is at least nominally attached to the north end (which is still an occupied building), it is possible the north end could sustain damage if the south end roof collapsed. Finally, it is important to keep the building as intact as possible to facilitate further demolition; demolition of a structurally unsound building can be hazardous and costly."
>
> -- *Maintenance of Inactive Hanford Facilities* (September 2002) which cites the *Isolation Plan for the Southern Portion of Building 313*, issued in February 1997 by Bechtel Hanford.

The description above which described conditions at the Hanford Building 313 (Metal Fabrication Building) is representative of the issues that arise from the aging infrastructure across the U.S. Department of Energy (DOE) complex. Over its history, DOE (including predecessor agencies) built and used more than 20,000 facilities, including buildings, support structures and equipment. Many of these facilities became contaminated with radionuclides and/or chemicals during the course of nuclear weapons production and other activities. In more recent years, DOE has evaluated the status and long-term plans for many of its facilities. As of 1996, DOE had identified approximately 5,000 of its 20,000 facilities as surplus (Linking Legacies 1997). In the future, additional facilities will become surplus as they become obsolete or are no longer needed. During March 1992 budget hearings, DOE's former Assistant Secretary for EM projected that DOE might ultimately close as many as 7,000 facilities (Abbots et al. 2002). Surplus facilities are managed by the Office of Environmental Management (EM) as well as other DOE program offices.

For many of the DOE's inactive facilities, the poor physical condition and the presence of hazardous materials pose serious risks to workers in and around them and will require significant maintenance, such as roof repairs and electrical work, while they wait for decontamination and decommissioning. The condition of specific inactive facilities depends on such factors as weather conditions, facility age and operating history, and construction techniques and maintenance practices. While allocating funds for surveillance and maintenance will prove cost effective over the long term, limits in immediate budgets may also limit surveillance and maintenance activities. Moreover, managers may face a need to balance conflicting considerations with facilities expected to be demolished in the near term. As long as demolition

proceeds on schedule, then it may be cost-effective to defer immediate maintenance requirements. However, the longer demolition is delayed, the more a facility may deteriorate, with the consequences that decontamination and demolition may become more difficult and more expensive. Thus, challenges to maintaining schedules (and associated funding) for remediation activities can also represent challenges to implementing surveillance and maintenance activities (Abbots et al. 2002). Figure 1 shows the locations of surplus facilities across the U.S.

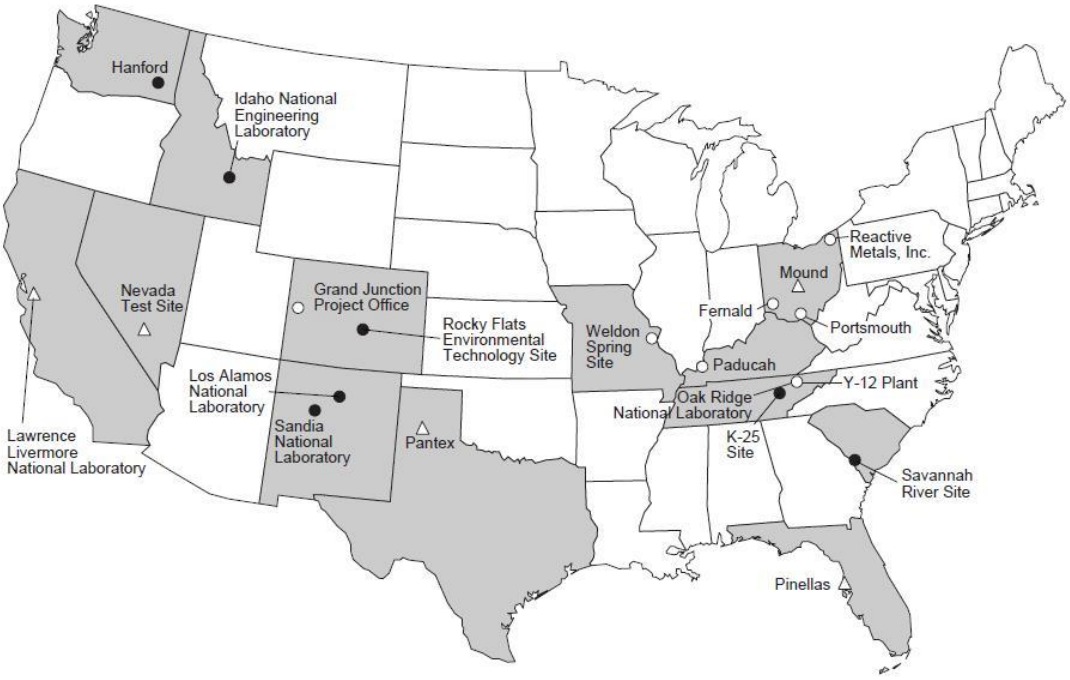


Figure 1. Location of surplus facilities as of 1996 (Source: Linking Legacies, 1997)

METHODOLOGY

This study was conducted to gather information on the issue of aging infrastructure across the DOE Complex. ARC researchers performed a literature/internet search and contacted the major DOE sites to determine what efforts are being implemented to:

a) identify all the excess facilities,

b) prioritize the maintenance/surveillance activities,

c) prioritize D&D when funding becomes available, and

d) whether they have used a commercial product or developed their own process for making these determinations.

A list of resources were developed to aid in the implementation of the research. The resulting information has been compiled into this report to provide an overall picture on the status of aging infrastructure across the DOE complex.

The resources utilized included the following:

- DOE Information Bridge, Office of Scientific and Technical Information (OSTI) (http://www.osti.gov/bridge/)
- D&D Knowledge Management Information Tool (D&D KM-IT) (www.dndkm.org)
- Waste Management Symposium Proceedings – archived online (www.wmsym.org)
- WM13 and WM14 programs for new papers not yet archived online
- EFCOG DD/FE Working Group meeting notes
- Contact with EFCOG DD/FE Working Group members
- General internet searches via Google
- U.S. Government Accountability Office (www.gao.gov)
- Websites for DOE sites, including document libraries, where available
- DOE Reading Rooms and Information Centers

RESULTS

Much of the data and information compiled for this report focuses on excess DOE facilities. However, information is also included, where available, on the issue of aging infrastructure that is still active and needed for the sites' current and future missions. One reference from the Defense Nuclear Facilities Safety Board entitled, "Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities," includes information on the highest priority aging infrastructure issues at operating facilities. Information from this reference is highlighted in this report in the relevant sections in an indented green box.

In addition, where specific information was available on specific products and/or processes that were being used by DOE sites to identify and prioritize their aging infrastructure issues, this information is highlighted in this report in the relevant sections in an indented peach box.

OVERVIEW

A comprehensive document that presents an overview of DOE's complex-wide deactivation and decommissioning (D&D) program, referred to as the D&D Program Map, provides details on facility D&D project locations, scope, and issues and consolidates program data from multiple locations into a single definitive reference. The information is displayed graphically and in tabular format; and is supplemented with numerous pictures (Urland et al. 2010). The D&D Program Map referenced in this report is the 2011 edition. Data and figures from the D&D Program Map are used to present an overview of the D&D program in this section as well as site specific information in the relevant DOE site sections.

With a large inventory of aging nuclear and radiological facilities needing final disposition, EM's goal is to reduce the safety and environmental hazards, facility and infrastructure footprint, and the associated surveillance and maintenance costs by removing these facilities from the DOE inventory (Urland et al. 2010). Figure 2 shows the typical conceptualized cost profile for the stages of facility disposition where the facility is transitioned from operations and deactivated to a low cost minimum surveillance and maintenance holding period until decommissioning funding is available (DOE 2011). Extending the time that a facility remains in the long-term storage and surveillance phase increases the probability of requiring and costs associated with providing life-extending restoration. Figure 3 shows the impact of delaying D&D as well as the benefits associated with timely D&D (DOE 2011). A delay in D&D impedes schedule, increases cost due to linger surveillance and maintenance (S&M) as well as escalation factors, and increases risk to workers and the environment from an increased likelihood of contaminant release. On the other hand, timely D&D provides schedule efficiency, a physical footprint reduction, a reduction in curies and risk, and eliminates S&M costs.

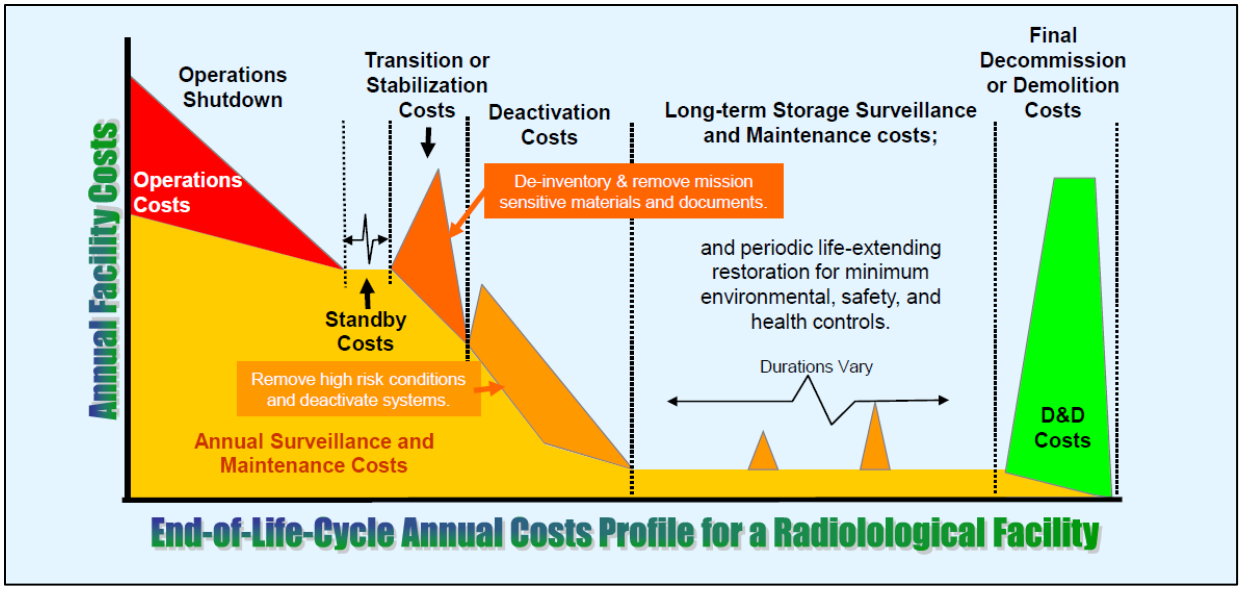


Figure 2. Typical End-of-Life Phases of a Nuclear Facility (Source: DOE 2011)

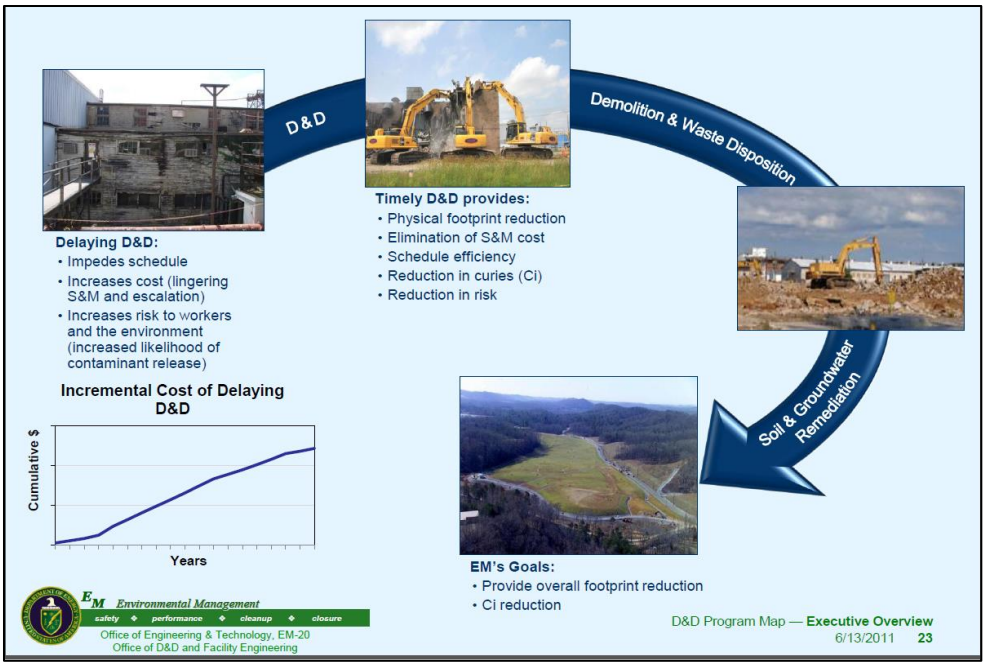


Figure 3. Footprint reduction supports EM's focus on risk and cost/schedule reduction (Source: DOE 2011)

EM continues to make progress in reducing the footprint of aging facilities. A total of 1,446 facilities have completed D&D as of FY09 (see Table 1). However, much work remains to be done; the EM baseline indicates that 3,113 facilities awaiting D&D remain, with an additional 235 planned facility transfers (see Table 1). Figure 4 shows a graphic of the facilities planned for D&D as of 2009, including current EM baseline and facilities planned for transfer to EM for D&D, while Table 1 provides a breakdown of these facilities by site (DOE 2011).

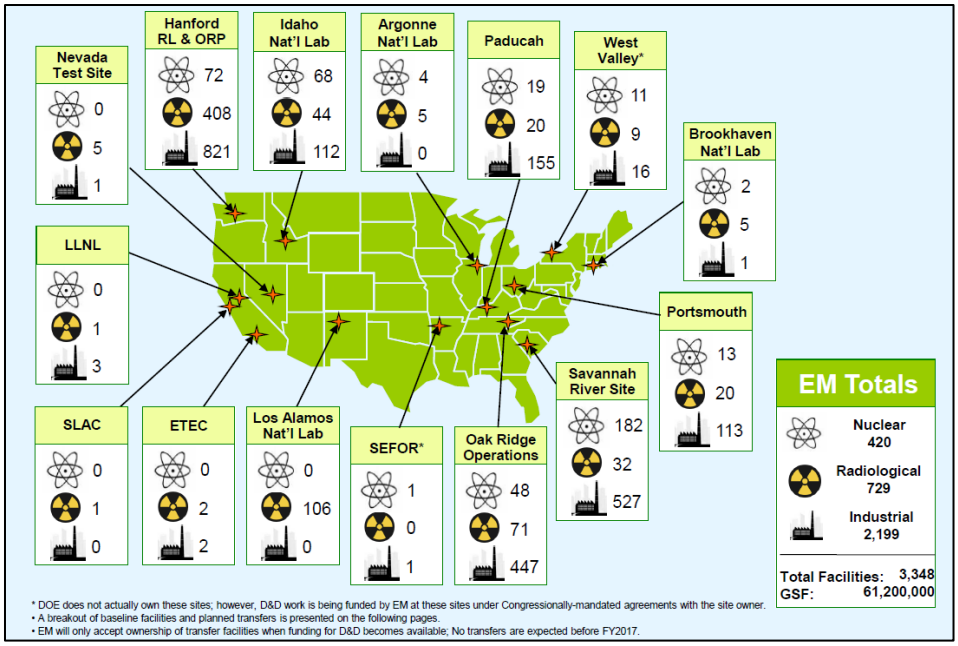


Figure 4. Facilities planned for D&D as of 2009, including current EM baseline and facilities planned for transfer to EM for D&D (Source: DOE 2011)

Table 1. Breakdown of Facilities in EM D&D Projects by Site (Source: DOE 2011)

Current Baseline						Planned Transfers		Totals	
EM Site	Type	Lifecycle	Completed as of FY 09	Remaining	Gross Square Feet (1000's)	Facility Transfers	Gross Square Feet (1000's)	Facilities	Gross Square Feet (1000's)
Argonne National Laboratory	Nuclear	0	0	0		4			
	Radiological	80	78	2		3			
	Industrial	0	0	0		0			
	Site Total	**80**	**78**	**2**	**4,500**	**7**	**1,275**	**9**	**5,775**
Brookhaven National Laboratory	Nuclear	1	0	1		1			
	Radiological	11	10	1		4			
	Industrial	0	0	0		1			
	Site Total	**12**	**10**	**2**	**50**	**6**	**95**	**8**	**145**
Energy Technology Engineering Center	Nuclear	0	0	0		0			
	Radiological	6	4	2		0			
	Industrial	26	24	2		0			
	Site Total	**32**	**28**	**4**	**70**	**0**	**0**	**4**	**70**
Hanford (RL+ORP)	Nuclear	100	28	72		0			
	Radiological	460	52	408		0			
	Industrial	1197	376	821		0			
	Site Total	**1,757**	**456**	**1,301**	**16,000**	**0**	**0**	**1,301**	**16,000**
Idaho	Nuclear	92	28	64		4			
	Radiological	68	35	33		11			
	Industrial	255	143	112		0			
	Site Total	**415**	**206**	**209**	**3,000**	**15**	**79**	**224**	**3,079**
Lawrence Livermore National Laboratory	Nuclear	0	0	0		0			
	Radiological	0	0	0		1			
	Industrial	0	0	0		3			
	Site Total	**0**	**0**	**0**	**0**	**4**	**150**	**4**	**150**
Los Alamos National Laboratory	Nuclear	0	0	0		0			
	Radiological	105	0	105		1			
	Industrial	0	0	0		0			
	Site Total	**105**	**0**	**105**	**300**	**1**	**56**	**106**	**356**
Nevada Test Site	Nuclear	0	0	0		0			
	Radiological	0	0	0		5			
	Industrial	0	0	0		1			
	Site Total	**0**	**0**	**0**	**0**	**6**	**19**	**6**	**19**
Oak Ridge	Nuclear	25	8	17		31			
	Radiological	76	26	50		21			
	Industrial	635	329	306		141			
	Site Total	**736**	**363**	**373**	**8,000**	**193**	**3,713**	**566**	**11,713**
Paducah	Nuclear	19	0	19		0			
	Radiological	22	2	20		0			
	Industrial	172	17	155		0			
	Site Total	**213**	**19**	**194**	**3,400**	**0**	**0**	**194**	**3,400**
Portsmouth	Nuclear	13	0	13		0			
	Radiological	27	7	20		0			
	Industrial	121	8	113		0			
	Site Total	**161**	**15**	**146**	**12,000**	**0**	**0**	**146**	**12,000**
Savannah River	Nuclear	191	11	180		2			
	Radiological	40	8	32		0			
	Industrial	759	232	527		0			
	Site Total	**990**	**251**	**739**	**7,000**	**2**	**72**	**741**	**7,072**
Southwest Experimental Fast Oxide Reactor	Nuclear	1	0	1		0			
	Radiological	0	0	0		0			
	Industrial	1	0	1		0			
	Site Total	**2**	**0**	**2**	**1,000**	**0**	**0**	**2**	**1,000**
Stanford Linear Accelerator Center	Nuclear	0	0	0		0			
	Radiological	0	0	0		1			
	Industrial	0	0	0		0			
	Site Total	**0**	**0**	**0**	**0**	**1**	**100**	**1**	**100**
West Valley	Nuclear	14	3	11		0			
	Radiological	13	4	9		0			
	Industrial	29	13	16		0			
	Site Total	**56**	**20**	**36**	**400**	**0**	**0**	**36**	**400**
EM Totals	Nuclear	456	78	378		42			
	Radiological	908	226	682		47			
	Industrial	3,195	1,142	2,053		146			
	TOTALS	**4,559**	**1,446**	**3,113**	**55,720**	**235**	**5,559**	**3,348**	**61,279**

ARGONNE NATIONAL LABORATORY

The information presented in this section for Argonne National Laboratory (ANL) was received from the site contact participating in the Energy Facility Contractors Group (EFCOG) D&D and Facility Engineering Working Group. The excess facilities listed in Table 2 are excess facilities from ANL that were accepted for transfer into the EM program. These excess facilities are shown as demolition projects and are listed in order of priority. This excess facilities list was published in DOE EM's January 2009 Report to Congress as facilities from Argonne that were nominated for possible transfer to EM.

Table 2. ANL Excess Facilities Accepted for Transfer to EM

Project #	Scope	$ K	Square Footage
1	**200 MA/MB Wing Demolition**	**$ 21,641**	**42,045**
2	**IPNS Complex (6 Buildings)**	**$ 39,894**	**58,955**
	IPNS Facilities Demolition (361, 361A)	$ 13,711	24,899
	IPNS Facilities Demolition (375, 375A Proton Tunnel, 2nd Floor)	$ 14,989	26,246
	IPNS Facilities Demolition (391, 391A)	$ 11,193	7,810
3	**Bldg 331 & 331A Demolition**	**$ 33,524**	**39,381**
4	**Bldg 212 ABCDE Wing Demolition**	**$ 50,058**	**154,572**
5	**Bldg 212 FGH Wing Demolition**	**$ 57,397**	**152,948**
6	**Bldg 200 D&D Demolition**	**$ 101,962**	**314,844**
7	**Bldg 306 D&D Demolition**	**$ 17,505**	**46,646**
8	**Bldg 205 D&D Demolition**	**$ 84,224**	**260,073**
Total		**$ 446,098**	**1,128,419**

Projects 1 and 2 are ready for immediate transfer and funding. Both facilities have a detailed facility characterization report and detailed engineering cost and schedule estimates. Project 1 is a very large hot cell facility and Project 2 is an accelerator and an experimental area. ANL has aggressively proposed funding for FY15-19 to complete demolition; however, no admittance into the baseline and no positive indications of a funding decision has been communicated to the site as of yet. When EM does agree to accept excess facilities, wastes and materials for disposition, the excess facilities officially enter the program once funding becomes available for disposition. In a 2012 Report to Congress called "Status of Environmental Clean-up of Non-Defense Small Sites and Sponsored Facilities," EM indicated that the earliest they could consider funding for these Argonne facilities is 2017, and an extension beyond that is likely.

For the remaining priorities (Projects 3 through 8), the facilities are either in the process of removing wastes and materials (as is the case with Building 212 AGHCF, the highest significance issue proposed for entrance into the EM baseline) or are currently performing a research and development (R&D) program support function until such time as the actual transfer year is negotiated with EM. These cost estimates are in various stages of development. Projects 3 through 5 have formal rough-order-of-magnitude (ROM) engineering estimates and have

characterization plans developed. Characterization work and reporting and detailed engineering cost estimates are still yet to be performed. Projects 6 through 8 have parametric ROM cost estimates developed.

In regards to S&M, for Projects 1 and 2, Argonne has procedures and resources assigned to performing S&M for the two facilities that are shovel ready for transfer to EM. The costs for managing this list of contaminated excess facilities is about $450K annually. Until funding becomes available to disposition the excess facilities, Argonne has been performing the S&M and is covering the S&M costs.

Argonne developed its excess facilities list as part of the site modernization planning initiative. The modernization projects will replace or rehabilitate aging and inadequate facilities and infrastructure. According to the *Ten-Year Plans for the Office of Science National Laboratories*, the average age of the facilities at ANL is 39.7 years, with more than 64% of the facilities more than 40 years old. The asset condition for buildings at ANL is rated as "adequate" while the asset condition for other infrastructure (including site utilities and civil infrastructure) is rated as "good" (DOE 2013).

HANFORD

The aging and challenging infrastructure at Hanford was largely built during World War II, so many of the utilities, pipelines and facilities are now 65 years old. The methods and materials used in building infrastructure components during 1943-1945 satisfied the requirement for speed over quality. Today and into the future, the Hanford cleanup mission still has a critical need for dependable roads, utilities, pipelines, heating, ventilation and cooling (HVAC) systems, electrical, communications and other systems. The challenge for the Hanford Site has been and continues to be providing the utilities, infrastructure and support services necessary to sustain the cleanup, while aggressively reducing those same functions and saving any non-essential expenses that could be directed at waste remediation (Hanford website, 2014).

The serious potential consequences of years of inadequate maintenance and deteriorating infrastructure conditions became a tragic reality in April 1992 when a Hanford worker fell to his death when a concrete roof panel of the 48-year-old inactive reactor building he was inspecting collapsed. During the 27 years the building had been inactive, repair projects had generally been deferred because of higher priority work elsewhere on site. As a result, the building's roof panels were no longer protected from the weather and had become weakened. As a result of this fatality, DOE contractors began a study of the physical condition of Hanford inactive facilities which revealed that other Hanford facilities were older than their design life and were deteriorating rapidly while awaiting D&D. In addition, Hanford inactive facilities that had not been transferred to EM were not receiving maintenance consistent with DOE orders, which required that all contaminated facilities have a formal surveillance, inspection, and maintenance program to keep them safe. Specific issues at the inactive facilities included active electrical equipment that could jeopardize workers entering the buildings, leaks in the roof that allowed water to drip on an electrical box, water from a leaking roof that ran down a wall near a severed electrical cable, and crumbling roofs with concrete and reinforcing rods from the roofs scattered over the floor or the ground outside (Abbots 2002).

The Facility Stabilization Project was initiated at Hanford to move Hanford facilities from conditions where maintenance is costly to states that are safe and cost effective pending final disposition. In order to reduce the amount of funds committed to maintaining structures and equipment, the goal was to demolish the facilities where possible or to at least remove the most hazardous materials. During a public presentation for the Fiscal Year 2001 budget, it was reported that, "Numerous issues and legacies exist with these old facilities which present hazards and risks to the employees and public." Such issues include facilities deteriorating with age, residual inventories of radioactive and hazardous materials, surveillance and maintenance costs that may be excessive with time, and final facility decommissioning dates that may be decades away. The Facility Stabilization Project at Hanford shows that DOE/RL recognizes the hazards associated with deteriorating buildings, and has active programs for surveillance and maintenance in facilities. However, budget limitations can represent challenges. Although actions to stabilize and repair facilities can reduce maintenance costs over the long run, funding limitations may have the effect of postponing individual facility stabilization projects (Abbots 2002).

Another prominent effort at Hanford is the Infrastructure Services Analysis Plan (ISAP), which is the net result of hundreds of interviews and data gathering sessions with Hanford's service users. The annually updated ISAP gives a complete sitewide assessment and is essential in projecting and forecasting multi-year infrastructure and service needs across the site (Flynn 2012)

In addition, DOE included a key function to provide a continual "right-sizing" of the Hanford infrastructure as part of the Mission Support Contract (MSC). Continual analysis is done to determine what infrastructure, equipment or services are needed, how long they will be needed, if they need updating or modernizing and what costs will be incurred. A number of tools have been developed to obtain feedback from the field to determine the working condition of its equipment on a continual basis. For example, keeping aging water lines and one-of-a-kind cranes in working condition is a huge challenge at a site where some of the infrastructure has been in place since the early 1940s. The infrastructure must be maintained or replaced to keep services available to the cleanup contractors. As funding is available, the site removes obsolete infrastructure and installs equipment and materials that will provide dependable service (Flynn 2012).

Figure 5, from the D&D Map, shows the number of D&D projects remaining at the Hanford Site. A total of 1,497 D&D projects are remaining for the Richland Field Office and 260 for the Office of River Protection, for a grand total at Hanford of 1,757 remaining D&D projects as of FY09. Figures 6 and 7 provide a breakdown by project and the budget and schedule profile.

D&D Projects

Hanford-Richland Field Office		
Facility Type	**Completed as of FY 09**	**Remaining (Life-cycle)**
Nuclear	28	82
Radiological	52	346
Industrial	376	1,069

Hanford-Office of River Protection		
Facility Type	**Completed as of FY 09**	**Remaining (Life-cycle)**
Nuclear	0	18
Radiological	0	114
Industrial	0	128

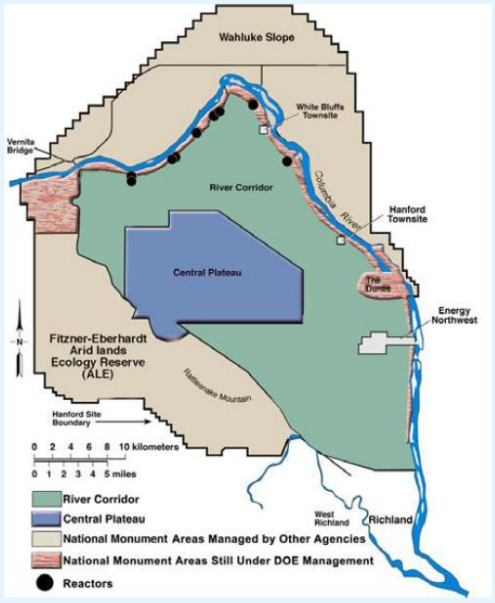


Figure 5. Remaining (Life-cycle facilities for D&D at Hanford-Richland Field Office and Office of River Protection (Source: DOE 2011)

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Richland Field Office	411	Zone 5 (B Plant Zone)	$983,931	13	2015	2041
Richland Field Office	407	Zone 17 (T plant Zone)	$860,331	11	2018	2044
Richland Field Office	403	Zone 11 (PUREX Zone)	$737,734	9	2015	2024
Richland Field Office	331	PFP Disposition (D4)	$536,855	7	2010	2016
Richland Field Office	406	Zone 12 (REDOX Zone)	$528,723	16	2015	2047
Richland Field Office	402	Zone 1 (200-E Admin Zone)	$407,639	11	2016	2048
Richland Field Office	417	FFTF D4	$353,052	21	2010	2030
Richland Field Office	418	Sodium Disposition	$307,206	15	2015	2029
Richland Field Office	408	Zone 18 (U Plant Zone)	$211,862	12	2010	2022
Richland Field Office	410	Zone 26 (400 Area)	$145,084	6	2018	2036
Richland Field Office	412	Zone 7 (CSB Zone)	$121,384	6	2017	2033
Richland Field Office	336	K West Basin D&D	$61,563	4	2015	2018
Richland Field Office	409	Zone 23 (100 Area)	$25,905	2	2024	2025
Richland Field Office	413	Zone 9 (ETF Zone)	$12,400	4	2017	2020

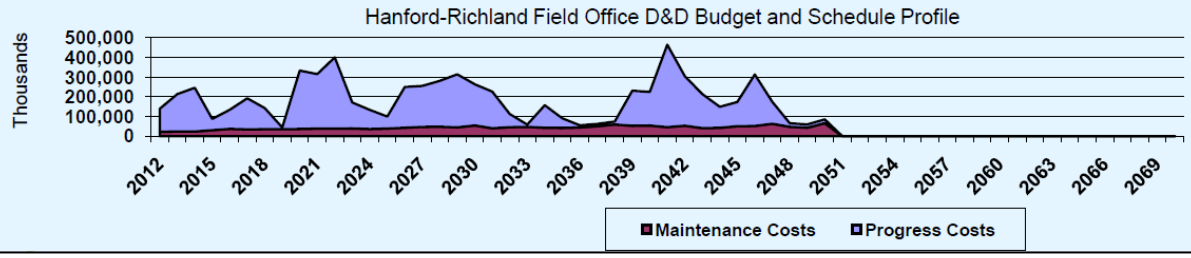
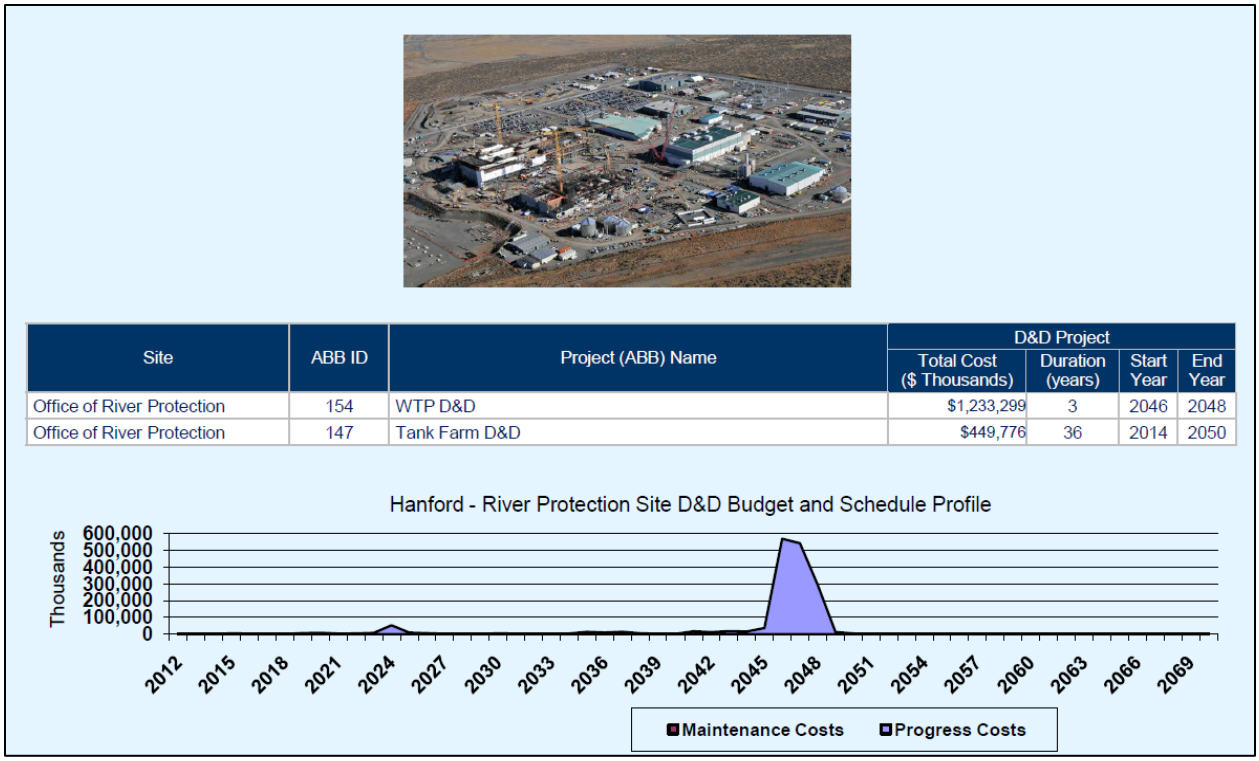


Figure 6. D&D Projects and Budget/Schedule Profile for Hanford-Richland Field Office (Source: DOE 2011)



Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Office of River Protection	154	WTP D&D	$1,233,299	3	2046	2048
Office of River Protection	147	Tank Farm D&D	$449,776	36	2014	2050

Figure 7. D&D Projects and Budget/Schedule Profile for the Hanford-Office of River Protection (Source: DOE 2011)

According to the *Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities* by the Defense Nuclear Facilities Safety Board, the following facilities are among the most significant safety-related aging infrastructure issues that exist today in the DOE defense nuclear complex. These operating facilities are at or near the end of life, but still must carry out national security and legacy waste cleanup missions (DNFSB 2013).

Hanford Site, Single-Shell and Double-Shell Tank Farms

Began service: 1943-1986

Remaining service: Until cleaned and closed: 2019-2052.

Infrastructure weakness: The older single-shell tanks containing high-level radioactive waste are beyond their design lives and some have leaked. Some double-shell tanks, though newer, are beyond their design lives, and the waste in one such tank has leaked into the secondary containment of the tank.

Hanford Site, T Plant (Waste Storage, Treatment, and Packaging Operations)

Began service: 1944

Remaining service: Until storage mission is complete, to be determined.

Infrastructure weakness: The T Plant is almost 70 years old and portions of the T Plant structure do not meet minimum building code requirements for structural concrete and are susceptible to failure in an earthquake. Structural failures pose a risk to facility workers.

INL

Land and facility use planning and decisions at the Idaho National Laboratory (INL) Site are guided by a comprehensive site planning process, and as part of this effort, INL maintains a Facility Planning Database. All land and facility use projects planned at the INL Site are considered through a formal planning process that supports the Ten-Year Site Plan. The land use planning process identifies the current condition of existing land and facility assets and the scope of constraints across INL and in the surrounding region. In addition, a breakdown of building ownership showing DOE-EM-owned buildings assigned to the Idaho Cleanup Project (ICP) versus DOE-NE-owned buildings is available in the Facility Information Management System (FIMS) database. As of March 2013, the FIMS database showed 123 DOE-EM-owned buildings and trailers at INL assigned to ICP, with a total area of 1,279,717 ft^2. An overview of the current conditions of existing DOE-EM buildings assigned to ICP are illustrated in Figure 8 (INL 2013).

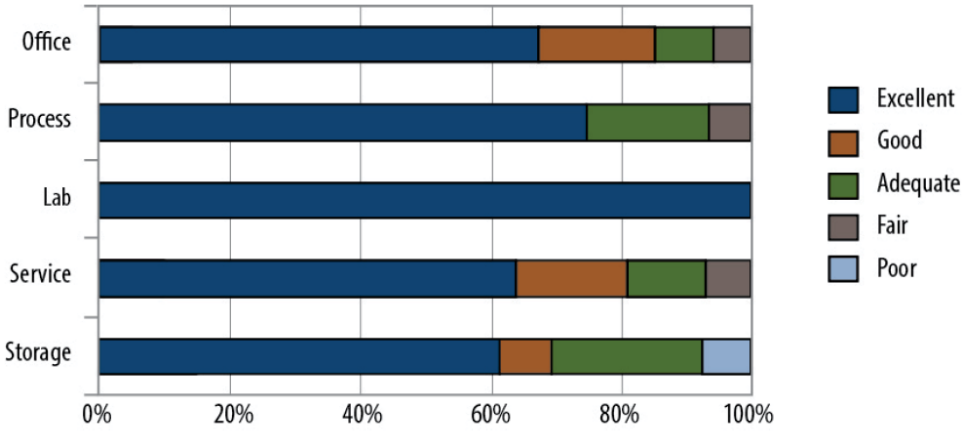


Figure 8. Current conditions of existing DOE-EM buildings assigned to the Idaho Cleanup Project (Source: INL 2013)

ICP maintains mission essential facilities/utility systems at the site; facilities/utility systems that no longer have a defined mission, and are considered candidates for decommissioning, will continue to undergo surveillance and maintenance adjustment (INL 2013). ICP implements a graded approach surveillance and maintenance commensurate with the facility/utility system's condition, mission need, and schedule for demolition. Maintenance, whether preventive, predictive, or corrective, is performed at a level to sustain property in a condition suitable for the property to be used for its designated purpose (INL 2013).

Figures 9 and 10, from the D&D Map, show the number of D&D projects remaining at INL and provides a breakdown by project and the budget and schedule profile. A total of 209 facilities remain for D&D (life-cycle). Table 3 provides a description of the buildings assigned to ICP and their overall operating status, size, age, usage, and hazard description (INL 2013).

Test Area North (TAN) Technical Support Facility (TSF) Complex before demolition

Test Area North (TAN) Technical Support Facility (TSF) Complex after demolition (May 2008)

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	28	64
Radiological	35	33
Industrial	143	112

Figure 9. Remaining (Life-cycle) facilities for D&D at INL (Source: DOE 2011)

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Idaho National Laboratory	106	INTEC D&D	$169,472	14	2025	2038
Idaho National Laboratory	2014	AMWTP D&D	$82,185	4	2021	2024
Idaho National Laboratory	2016	Misc. Facilities	$15,293	5	2021	2025
Idaho National Laboratory	2015	MFC D&D	$7,148	4	2021	2024
Idaho National Laboratory	110	RWMC D&D	$2,249	4	2021	2024

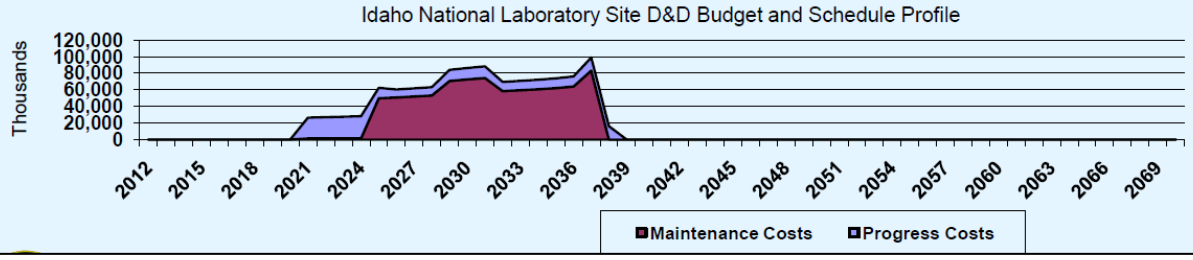


Figure 10. D&D Projects and Budget/Schedule Profile for INL (Source: DOE 2011)

Table 3. Idaho Cleanup Project Facilities Pending D&D, in Deactivation, or Pending Disposal

ID	Name	Type	GSF	Year Built	Usage	Hazard Category
Idaho Cleanup Project Operating Facilities Pending D&D						
CPP-1636	Warehouse	Building	4,799	1989	General Storage	Not Applicable
CPP-1646	Anti-C Safety Handling	Building	3,707	1991	Nuclear Contaminated Storage	Not Applicable
CPP-1651	Operations Training Facility	Building	6,241	1992	Specialized Training Buildings	Not Applicable
CPP-1662	Remote Insp. Engr. Facility	Building	3,173	1992	Large Scale Demonstration/Research Building	Not Applicable
CPP-1666	Engineering Support Office	Trailer	7,168	1993	Office	Not Applicable
CPP-1678	Contractors Lunch Room	Building	2,044	1994	Change Houses	Not Applicable
CPP-618	Tank Farm Measure/Control Bldg	Building	248	1955	Other Service Buildings	Radiological Facility
CPP-623	Tank Farm Instrument House	Building	63	1960	Other Service Buildings	Radiological Facility
CPP-628	Tank Farm Control House	Building	1,551	1953	Other Service Buildings	Radiological Facility
CPP-632	Instrument House Tank Farm Area	Building	66	1960	Other Service Buildings	Radiological Facility
CPP-635	Waste Station WM-187-188	Building	330	1960	Other Service Buildings	Nuclear Facility Cat 2
CPP-636	Waste Station WM-189-190	Building	363	1965	Other Service Buildings	Nuclear Facility Cat 2
CPP-674	UREP Substation #40	Building	425	1983	Other Service Buildings	Not Applicable
CPP-698	MK Offices/Warehouse	Building	23,957	1984	Office	Not Applicable
CPP-TR-19	Office Trailer	Trailer	300	1974	Office	Not Applicable
WMF-601	Radcon Field Office	Building	5,044	1976	Office	Radiological Facility
WMF-603	Pump House	Building	1,434	1977	Other Service Buildings	Not Applicable
WMF-604	Instrument Shop	Building	1,271	1977	Maintenance Shops, General	Not Applicable
WMF-609	Heavy Equip. Storage Shed	Building	11,133	1979	Shed Storage	Not Applicable
WMF-619	Communication Building	Building	945	1989	Communications/Control Centers	Not Applicable
WMF-620	Work Control Center, Trailer	Trailer	1,577	1988	Office	Not Applicable
WMF-621	Work Control Support, Trailer	Trailer	1,538	1988	Office	Not Applicable
WMF-622	Office Annex, Trailer	Trailer	1,604	1985	Office	Not Applicable

ID	Name	Type	GSF	Year Built	Usage	Hazard Category
WMF-637	Operations Control Building	Building	24,262	1995	Office	Not Applicable
WMF-639	Firewater Pump House #2	Building	1,811	1995	Other Service Buildings	Not Applicable
WMF-645	Operations Support Trailer	Trailer	1,568	1991	Office	Not Applicable
WMF-646	Operations Support Trailer	Trailer	1,568	1991	Office	Not Applicable
WMF-653	Office Annex #2, Trailer	Trailer	1,512	1993	Office	Not Applicable
WMF-655	Material Handling Facility	Building	5,482	1995	General Storage	Not Applicable
WMF-656	Maintenance Facility	Building	4,998	1995	Maintenance Shops, General	Not Applicable
WMF-657	Operations Support Trailer	Trailer	1,568	1960	Office	Not Applicable
WMF-658	DOE Office	Building	4,518	1995	Office	Not Applicable
WMF-661	Hazardous Material Storage	Building	128	1996	Hazardous/Flammable Storage	Not Applicable
WMF-680	Construction Trailer	Trailer	720	2001	Office	Not Applicable
WMF-681	Construction Support Trailer	Trailer	720	2001	Office	Not Applicable
Idaho Cleanup Project Facilities Shutdown Pending D&D						
MFC-766	Sodium Boiler Building	Building	14,546	1962	Laboratories, General (Nuclear)	Radiological Facility
MFC-767	EBR-II Reactor Plant Building	Building	18,967	1963	Research Reactor	Radiological Facility
MFC-770C	Nuclear Calibration Lab[a]	Building	240	1963	Equipment Calibration Shops	Not Applicable
Idaho Cleanup Project Facilities in Deactivation						
MFC-799	Sodium Process Facility[a]	Building	7,329	1986	Laboratories, General (Nuclear)	Radiological Facility
MFC-799A	Caustic Storage Tank Building[a]	Building	562	1979	Other Service Buildings	Radiological Facility
Idaho Cleanup Project Facilities Pending Disposal						
CPP-691	Fuel Processing Restor. Fac.	Building	160,611	1992	General Storage	Not Applicable
WMF-1612	Retrieval Enclosure II	Building	46,038	2007	Nuclear Waste Processing and/or Handling Bldg.	Nuclear Facility Cat 2
WMF-1614	Retrieval Enclosure III	Building	35,040	2007	Nuclear Waste Processing and/or Handling Bldg.	Nuclear Facility Cat 2
WMF-TR-5	RadCon Trailer	Trailer	229	2004	Office	Not Applicable

[a] Secretarial ownership of the identified facilities is in the process of being transferred from NE to EM.

(Source: INL 2013)

LANL

The Los Alamos National Laboratory (LANL) has developed a twenty-five year strategy for sustainable infrastructure supporting the capabilities at LANL that includes the compliance and reinvestment in enduring structures; the replacement of end-of-life cycle facilities; and new construction of modern facilities that are adaptable to changing missions. LANL will continue to face a significant challenge over the next 25 years in balancing near-term needs while transforming the infrastructure to ensure long-term viability. A unique array of facilities and infrastructure, built during the Cold War to accommodate weapons scientific research and development, are now obsolete and need to be refurbished. Approximately 37% of the remaining permanent structures at LANL are more than 50 years old and 84% of the remaining trailers/transportable are over 20 years old. The large number of existing facilities will continue to age while safety, security, and compliance requirements will increase (LANL 2013).

One challenge facing LANL related to their aging infrastructure is that current and out year operations and sustainment budget targets are not adequate to support the level of preventive and corrective maintenance required to avoid the growth of deferred maintenance (DM). An internal program titled New Requirements & Major Maintenance Projects will focus funding on reducing DM on mission critical/mission dependent facilities and improving efficiency through consolidation and footprint reduction initiatives, which will redistribute funds to facilities with high priority maintenance needs (LANL 2013).

LANL prepares an Annual Maintenance Work Plan for each facility to identify needed maintenance activities and resources; this work plan then supports the annual update to the Ten Year Site Plan. Disposition funding will continue to eliminate obsolete/nonsustainable facilities, allowing for the avoidance of associated DM while directing maintenance funding toward enduring facilities. Condition assessments will continue to provide a better understanding of facility condition and consequently will equip LANL with better information to prioritize maintenance spending. Future strategic planning will include reinvestment to update aging building infrastructure, replace equipment, and upgrade facility systems to ensure continued support of programmatic missions (LANL 2012).

In FY2010, the LANL Director initiated an institutional program to reinvest in the aging facilities and infrastructure (F&I). The strategy of this program is to identify F&I most essential to LANL's missions, determine capability gaps (existing and future), and structure a consolidated plan of targeted investment to address the existing gaps and mitigate predicted future gaps in capability. This multi-year program includes prioritized investments in refurbishment and repurposing of existing facilities, consolidation of like work scope into common facilities and centralization of related scope functions, removal of poor facilities from active status, replacement of end-of-life cycle facilities, new construction as appropriate, disposition of excess facilities, and modernization of utilities. Although funding for this institutional reinvestment plan is adjusted annually based on resource availability, the prioritized list of F&I needs will ensure that investment of available dollars will go to areas with the highest infrastructure need. Highlights from this institutional program include: removing excess temporary buildings, upgrading aging utility systems, improving roads and parking lots, recapitalizing on major plants and equipment, and completing other targeted facility life

extension projects in high-capability facilities (such as the Sigma (03-0066) and Radiochemistry Laboratory (48-0001) buildings) (LANL 2013).

The planned elimination of obsolete facilities is a key element in the accomplishment of several complementary infrastructure/business goals, including DM reduction, energy intensity reduction, greenhouse gas reduction, workspace environment improvement, targeted maintenance investment in enduring facilities, and reduced risk associated with aged structures. The institutional footprint reduction program is currently targeting $5M annually for excess and disposition of temporary facilities. Although this budget is insufficient for disposition of large permanent facilities, it allows for the excess of permanent structures in the near term. LANL is continuing to seek other funding sources for disposition of currently excessed permanent facilities (LANL 2012). Figure 11 shows some representative aging/obsolete facilities at LANL.

Figure 11. D&D of temporary structures (left), aging/obsolete facility at Fenton Hill (middle), aging/ obsolete laboratory at TA-35-0002 (right) (Source: LANL 2012)

During the FY 2014–23 timeframe, the Laboratory anticipates the removal of over 250k gsf with currently identified funding sources, primarily EM and Institutional funding. Approximately 500k gsf is proposed for FDP-funded disposition during this timeframe. An implication equally important to square footage removal is the minimization of activities and the planned removal of most structures at six TAs: TA-18, TA-21, TA-41, TA-43, TA-46, and TA-54. The elimination of most existing trailers and transportable buildings across the institution is also a goal during this timeframe. Eliminating obsolete facilities over the next 10 years will continue to be a basic business strategy that accomplishes more than reducing operating and surveillance and maintenance (S&M) costs (LANL 2013).

For an enduring site such as Los Alamos National Laboratory, the removal of obsolete structures as soon as possible following completion of the shut-down/excessing processes is the best approach for reducing cost, minimizing risk, and maximizing program opportunities. Over time, all enduring sites will have structures that reach the end of their viable lifetimes and need to be removed. A national program (such as the proposed FDP) created to address the elimination of obsolete structures quickly, before a significant backlog is realized, would provide a practical and efficient infrastructure means to address this issue. The outyears will provide continued challenges for the replacement and removal of major structures that will have been in service for 70 years or more. The highest-profile project will be the removal of the CMR facility. This nuclear facility was constructed in 1953 and consists of ~570k gsf within the most populated TA of the Laboratory. Currently, deferral of the CMRR-NF project will delay removal of the existing

CMR. Many other major nonnuclear research facilities will be in a similar situation, requiring investment for life extension, replacement, and eventual removal. These facilities, constructed in the early 1950s, include the Crafts/ Shops facility (115k gsf, constructed in 1952) and the Tech Shop (154k gsf, constructed in 1954). Institutional multi- program facilities, such as the Physics building (187k gsf, constructed in 1953) and the Receiving & Distribution Center (115k gsf, constructed in 1952) present numerous challenges that are driving replacement strategies as early as possible within the 25-year timeframe. In total, these five structures amount to more than 1.1M gsf. (LANL 2013)

In response to an NNSA request that the sites identify any facilities that require more than the current level of surveillance and maintenance to protect the mission, workers, public, or the environment, LANL responded with information on three facilities that met these criteria: Critical Assembly and Storage Area (CASA) 2, CASA 3, and the Ion Beam Facility (Figure 12). The site provided a summary of the risks posed by each facility and activities necessary to manage these risks. The 3 facilities represent a total of approximately 65K GSF with average age of 58 years. Risks include degrading roofs that risk contamination spread inside buildings, locations close to wooded areas and steep geography that complicates response to wildfires, structural failure likely to release radiological contamination, and potential impact to nearby mission critical facilities from an event (Couchman-Griswold and Underwood 2014).

Figure 12. CASA 2 and CASA 3 at LANL (Source: Couchman-Griswold and Underwood 2014)

Figure 13, from the D&D Map, shows the number of D&D projects remaining at LANL and provides a breakdown by project and the budget and schedule profile. A total of 105 facilities remain for D&D (life-cycle).

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Los Alamos National Laboratory	486	TA-54 D&D	$21,867	6	2010	2015

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	0	0
Radiological	0	105
Industrial	0	0

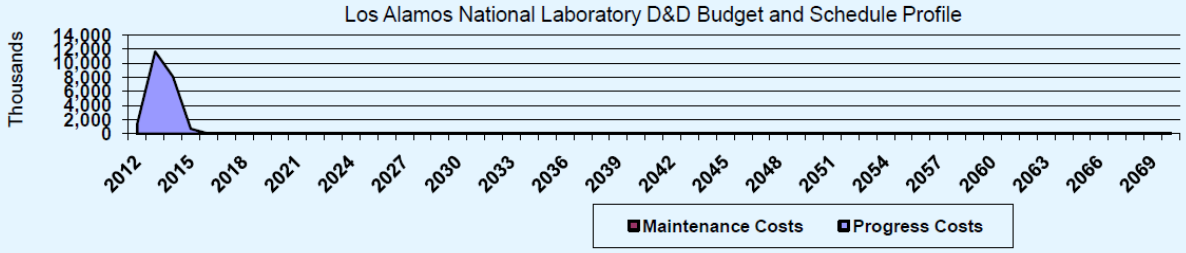


Figure 13. Remaining (Life-cycle) facilities at LANL for D&D and budget/schedule profile (Source DOE 2011)

According to the *Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities* by the Defense Nuclear Facilities Safety Board, the following facilities are among the most significant safety-related aging infrastructure issues that exist today in the DOE defense nuclear complex. These operating facilities are at or near the end of life, but still must carry out national security and legacy waste cleanup missions (DNFSB 2013).

Los Alamos National Laboratory, Plutonium Facility (PF-4)

Began service: 1978

Remaining service: Approximately 30 years

Infrastructure weakness: Seismic analysis identified building vulnerabilities that could result in loss of confinement or facility collapse with resulting high radiological dose consequence to workers and the public. In addition, the facility lacks a set of safety controls (fire suppression system and active confinement ventilation system) that would adequately protect the public and workers from the consequences associated with post-seismic accidents. [The LANL Ten-Year Site Plan states that seismic improvements are being completed at PF-4 (LANL 2013).]

LANL, Chemistry and Metallurgy Research (CMR) Facility

Began service: 1952

Remaining service: Until replaced by CMR Replacement Project, date to be determined. DOE deferred funding for the CMR Replacement Project for a minimum of five years and expects to operate the existing CMR Facility through 2019.

Infrastructure weakness: There is a 1 in 55 chance of seismic collapse during a 10-year timeframe, which would result in release of nuclear material and injury/death of facility workers.

LANL, Radioactive Liquid Waste Treatment Facility (RLWTF)

Began service: 1963

Remaining service: Until replaced by the Radioactive Liquid Waste Treatment Upgrade Project, expected in 2020.

Infrastructure weakness: The TLWTF has reached its end of life and, despite ongoing life-extension efforts, requires replacement to support future laboratory missions reliably. Equipment failures pose a risk to facility workers.

LLNL

Many of the permanent facilities at LLNL are reaching their end-of-lifecycle, requiring refurbishment, modernization, or replacement. Future Readiness in Technical Base and Facilities (RTBF) funding projections are challenging for LLNL to strike a balance with the needs for reinvestment in an aging infrastructure. Without a balanced investment portfolio, the deferred maintenance backlog will continue to increase. Transition and disposition is another integral element of infrastructure lifecycle management. LLNL has an inventory of single-use facilities well beyond end-of-life and in a cold and dark state that prohibit efficient use of the site. Based on the current outyear projections of RTBF funding, the LLNL will be unable to carry out facility risk reduction activities. Without sustainment funding, LLNL's facilities and infrastructure condition is expected to degrade, which will present significant challenges to accomplishing mission (LLNL 2013).

Given the high cost to repair seismic and technological deficiencies, in addition to the size of the backlog in deferred maintenance, building a new facility can be the most cost-effective solution, providing the needed capabilities and reducing the deferred maintenance backlog. The long-term strategy at LLNL is to vacate all WWII barracks and trailer facilities as well as pursue seismic upgrades and modernization of permanent enduring facilities. Figure 14 identifies all buildings at the LLNL Site 200 campus that have been shown by structural evaluation to have an expected seismic performance of poor to very poor, requiring various levels of seismic rehabilitation to mitigate life-safety hazards for their occupants during earthquakes. Figure 15 illustrates the overall facility conditions at the site (LLNL 2013).

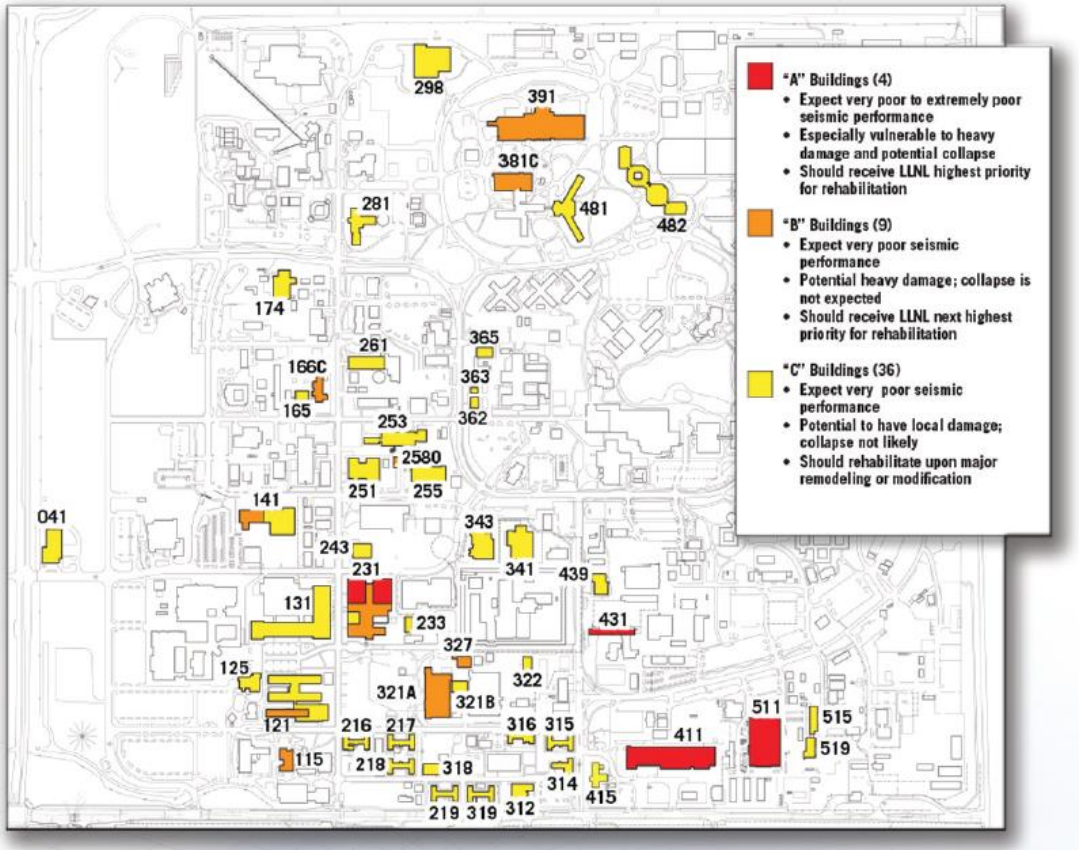


Figure 14. LLNL Site 200 buildings rated very poor in expected seismic performance. (Source: LLNL 2013)

In addition, LLNL's fire alarm systems, emergency voice alarm systems, and direct digital control of HVAC systems are between 10 to 40 years old, and many systems are no longer supported by their vendors. Building sprinkler systems require replacement of sprinkler heads at the 50 year mark which will impact many facilities in the next 10 years. Major investments are required to prevent major system failures. The electric utility system deferred maintenance backlog has been greatly reduced over the past ten years by replacing aged and obsolete components; however, it is expected that over the next ten years a significant amount of electric utility system equipment will require replacement as it will either be at the end of its useful life or become obsolete as technology changes. Mechanical utility systems will require significant near term investments such as: refurbishment/replacement of cooling towers, pumps, and electrical gear (LLNL 2013).

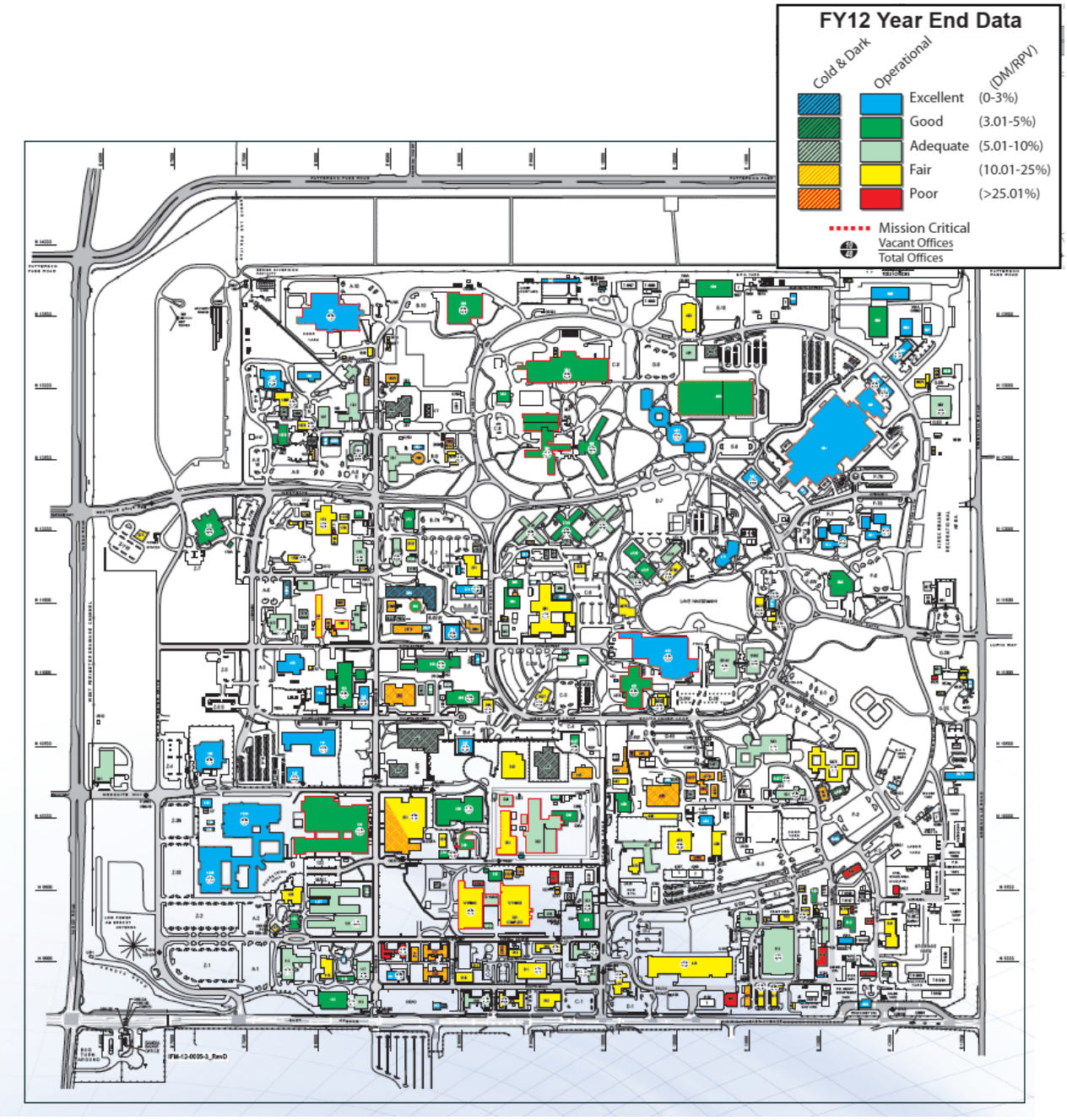


Figure 15. Facility conditions at LLNL (Source: LLNL 2013)

Deferred maintenance (DM) is managed by identifying and maintaining a comprehensive deficiency inventory based on field condition assessments. The Condition Assessment Survey (CAS) process at LLNL— identified as a best practice by the Government Accountability Office and the National Research Council—includes a detailed inspection and evaluation of all facilities on a continuing three-year cycle. Also, nuclear facilities and facilities with special hazards remain on an annual inspection cycle. Each inspected asset is tracked by multidiscipline

inspection efforts (i.e., mechanical, electrical, architectural, roofing, and civil surveys). In the past, LLNL could stabilize its DM through effective facility management practices, including an aggressive internal reinvestment program. However, current budget of record projections do not allow this level of flexibility. Currently, major trade-offs relating to 'run to fail' versus replacement maintenance are being made. These trade-offs have longer term impacts on the capability of many F&I assets to support enduring missions. LLNL continues to annually prioritize every deficiency in its total DM using the same mission-owner rating process with maintenance-specific ranking definitions. This prioritization process has become a best practice that allows LLNL to direct its limited funding to its most important maintenance replacements (LLNL 2013).

LLNL has many process contaminated, failing, and obsolete facilities from past activities; these facilities were closed in support of NNSA's enterprise-wide footprint reduction directive (Table 4) (LLNL 2013).

Table 4. Closed Facilities at LLNL (Source: LLNL 2013)

Total closed facilities	Facilities (of the total) that pose significant risk to ongoing mission, workers, the public, and/or the environment
127 facilities	32 facilities
769,478 GSF	584,395 GSF
$706,359,783 RPV	$491,271,374 RPV

In addition, LLNL is an active participant and supporter of the NA-00-20 Facilities Disposition Prioritization (FDP) Working Group in which effort has focused on establishing an enterprise-wide legacy facilities risk prioritization process. A footprint prioritization process was established in 2012 and updated in 2013 to reflect a risk based prioritization. LLNL has ranked its legacy facilities using the FDP Working Group criteria, which includes risk, cost and political consequence. Table 5 shows the top ten legacy facilities at LLNL. Legacy encumbered is used for abandoned contaminated programmatic equipment and/or buildings requiring significant safety systems and ES&H oversight to ensure containment, monitoring, as well as limited remediation of legacy contamination. Access to these facilities is limited to trained and authorized personnel only. Legacy site aspect is generally a residual slab or below grade system that is managed similarly to legacy encumbered facilities. (LLNL 2013)

Table 5. Top 10 Legacy Facilities at LLNL (Source: LLNL 2013)

	Facility	Gross Sq. Ft.	Net Sq. Ft.	Federal Owner	Status
1	251*	31,128	21,968	NNSA	Legacy Encumbered
2	292	20,811	16,886	NNSA	Legacy Encumbered
3	280	5,469	5,307	EM	Legacy Encumbered
4	175	10,778	9,284	NNSA	Legacy Encumbered
5	212	3,770	2,761	NNSA	Legacy Encumbered
6	341	44,184	33,091	NNSA	Legacy Encumbered
7	865	61,360	54,923	NNSA	Legacy Encumbered
8	OS212	71,001	71,001	NNSA	Legacy Site Aspect
9	OS222	0	0	EM	Legacy Site Aspect
10	OS412	13,700	13,720	NNSA	Legacy Site Aspect

*Recognized by the FDP in the Integrated Project List as a top candidate for action as funds become available.

Federal funding is not anticipated until FY15. Planned future projects include addressing roof failure at B251 and B292 (Figures 16 and 17) as well as characterization and systems stabilization at B292 target rooms (LLNL 2013).

Figure 16. Roof failure at LLNL B251 (Source: LLNL 2013)

Figure 17. Roof failure at LLNL B292 (Source: LLNL 2013)

In response to an NNSA request that the sites identify any facilities that require more than the current level of surveillance and maintenance to protect the mission, workers, public, or the environment, LLNL responded with information on four facilities that met these criteria. The site provided a summary of the risks posed by each facility and activities necessary to manage these risks. The 4 buildings represent approximately 75K GSF and average 45 years in age. Risks include deteriorated and leaking roofs over contaminated areas, radiological compounds captured in the roof mounted HEPA filters at risk of release if roofs fail, private residences ½ mile away, and buildings not fully characterized due to inaccessible contaminated areas (Couchman-Griswold and Underwood 2014). Figure 18 shows some images from these facilities.

Figure 18. Images from S&M intensive facilities at LLNL: improvised water capture (left), decommissioned reactor building (middle), and deteriorated roof (right). (Source: Couchman-Griswold and Underwood 2014)

In order to maintain the conditions of facilities and infrastructure, LLNL is working with DOE/NNSA and collaborating with the U.S. Army Corps of Engineers to develop and implement inspection-based facility sustainment modeling. Inspection-based methodology includes accurate estimating of sustainment requirements and related costs by assets throughout their lifecycles. LLNL plans to continue to develop, refine, and share this process as a tool, partnering with its DOE sponsors and other DOE sites. This type of modeling has the ability to identify, forecast, and plan preventive, major repair and replacement maintenance requirements. LLNL has also developed a set of time-dependent, full lifecycle models for real property and programmatic equipment. These computer models will be used to project infrastructure resource requirements from acquisition through mission lifecycle (operations, maintenance and repair, recapitalization) and transition and disposition (LLNL 2013).

One particular Livermore product that plays an integral role in supporting decision making is the Nuclear Weapons Enterprise Model which provides a comprehensive view of the entire complex and enables better strategic decision making at the highest levels of management. The model comprises a comprehensive database coupled to dynamic stockpile, infrastructure, and workforce models. The enterprise data include information about NNSA's assets, including its buildings, personnel, and the weapons themselves. (Rath 2013).

Figure 19 illustrates the replacement value of NNSA's major infrastructure by the age of facilities and location. Enterprise modeling indicates that critical infrastructure built in the 1940s and 1950s at the Kansas City Plant, Savannah River Site, Los Alamos National Laboratory, and Y-12 now need to be replaced at considerable cost. The model's optimization tools allow NNSA to illustrate how it can allocate a limited budget under a variety of scenarios. The model can provide insight into the consequences of deferring maintenance or delaying the construction of a new facility. The entire life cycle of facilities from acquisition through mission use to demolition and decontamination are represented (Rath 2013).

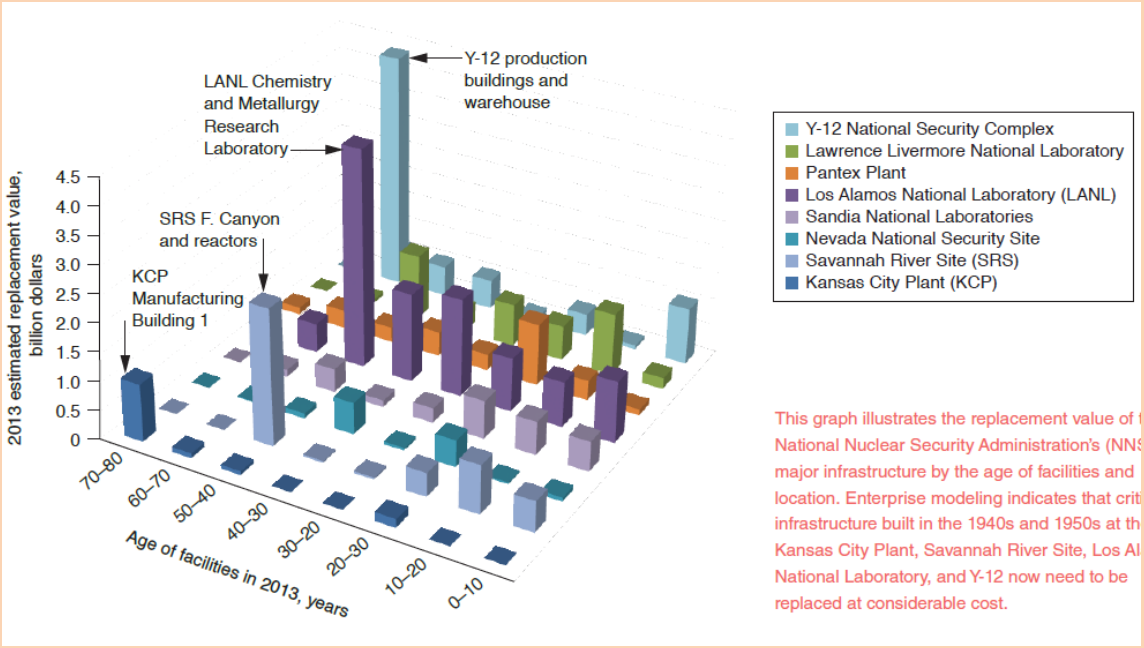


Figure 19. Replacement value of NNSA major infrastructure by age of facilities and location. (Source: Enterprise Modeling article)

To further enhance LLNL's asset management program, an effort is under way to migrate to a new top-rated off-the-shelf computerized asset management software, InforEAM. The software functionality is extremely robust, can incorporate many of LLNL's current systems and will pave the way for future enhancements and improve efficiencies (LLNL 2013).

NNSA

The information presented in this section was primarily compiled from a paper on the National Nuclear Security Administration's (NNSA) Risk-Based Nuclear Security Enterprise-wide Facility Disposition Program (Couchman-Griswold and Underwood 2014). It presents information and activities for the NNSA sites a whole. Information specific to a site is included in that site's section.

The facilities in NNSA's inventory include contaminated or otherwise complicated facilities with minimal surveillance and maintenance due to constrained budgets. The continued degradation of the buildings has led to steadily increasing risks to workers, the public, environment, and NNSA mission. The Facility Disposition Program was established in July 2011 and the Facilities Disposition Working Group (FDWG) was chartered in October 2013 in an effort to address the growing excess NNSA facility backlog. Figure 20 shows NNSA's future funded facilities disposition compared to the planned disposition (Couchman-Griswold and Underwood 2014).

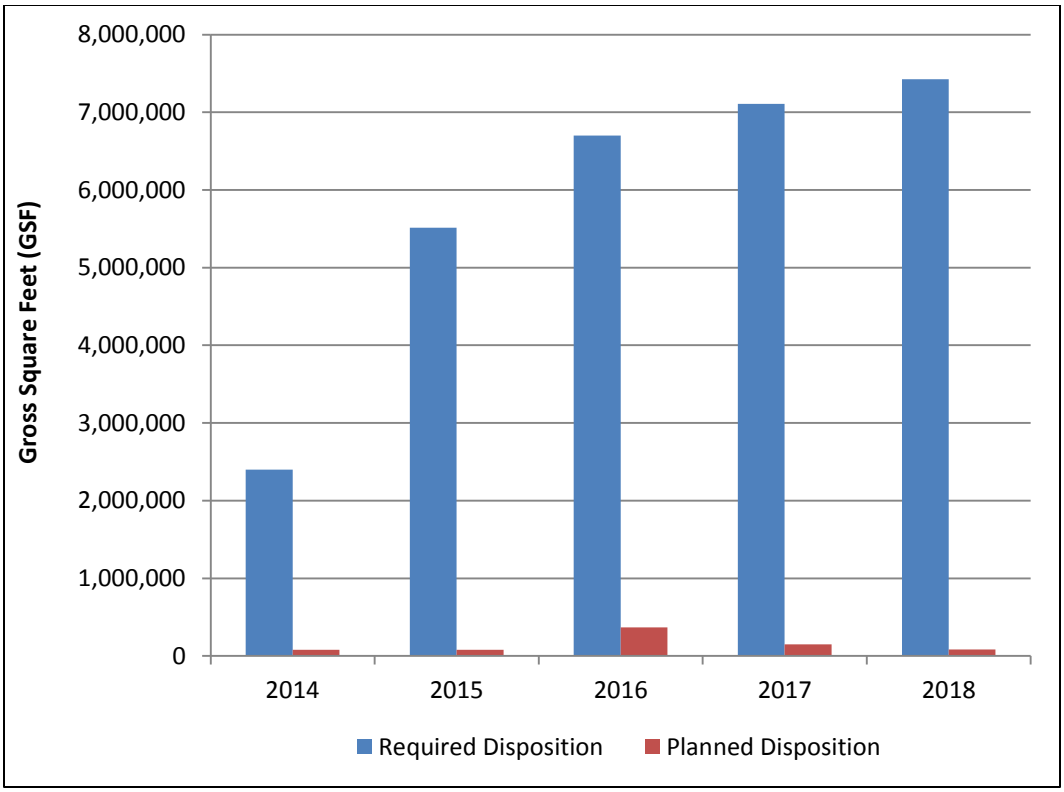


Figure 20. NNSA's Funded Facilities Disposition Compared to the Cumulative Requirement (Source: Couchman-Griswold and Underwood 2014).

Nearly 400 NNSA facilities are currently shutdown or excess with over 50% built prior to 1967. As these 40-year-old plus buildings continue to degrade, the work necessary to keep them in a safe shutdown condition increases. Figure 21 shows the age of the NNSA buildings and Figure 22 illustrates the amount of unfunded disposition anticipated at each of the NNSA sites over the next 25 years. The surveillance and maintenance costs for these unneeded facilities can be significant, nearly $5M annually for the Alpha 5 building at the Y-12 plant. Regardless, the facility continues to degrade, potentially leading to higher demolition costs and increased risk to demolition workers (Couchman-Griswold and Underwood 2014).

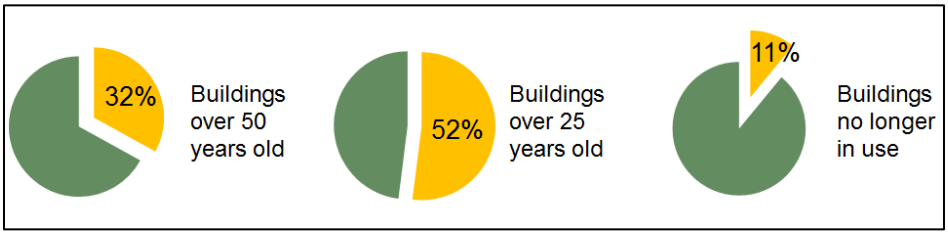


Figure 21. Age of NNSA Buildings (Source: Couchman-Griswold and Underwood 2014).

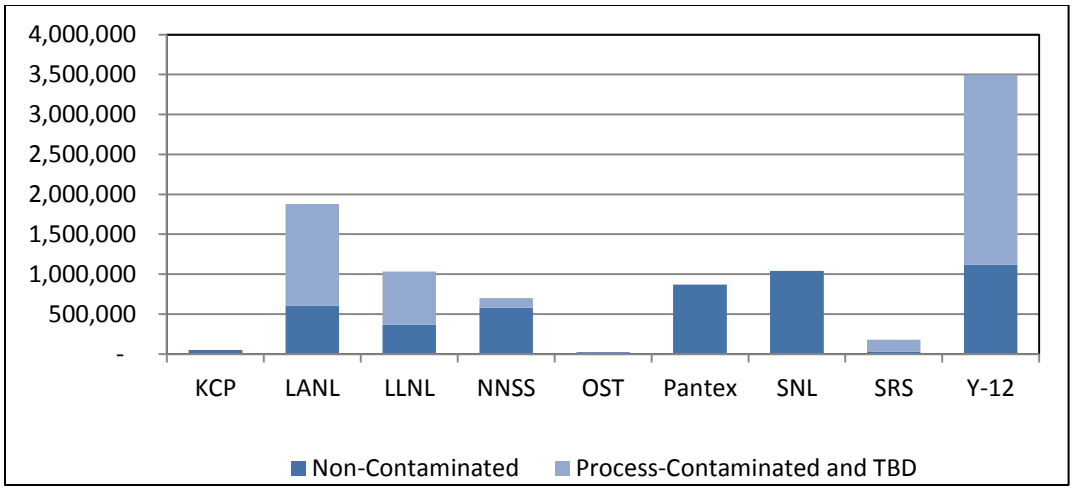


Figure 22. Square Feet of NNSA Unfunded Disposition by Site (Source: Couchman-Griswold and Underwood 2014).

An approach for prioritizing the disposition of facilities was developed by the FDWG in order to develop a uniform process for ranking the facilities based on risk and other critical factors. A pairwise comparison technique was used to select five criteria and assign weights to them:

1. Mission/Environment, Safety, & Health Risk (40%)
2. DOE Goals/Mission Need (25%)
3. Investment (20%)
4. Deferred Maintenance Reduction (10%)
5. Reinvestment Impact (5%)

The NNSA facilities expected to become excess in the next 25 years were assessed using these criteria and then ranked by priority. However, this approach did not focus on the facilities that pose an imminent risk to human health and the environment. To incorporate this focus, NNSA developed a list of facilities that require more than the current level of surveillance and maintenance to protect the mission, workers, public, or the environment; the most "at risk" facilities identified have been prioritized for funding. The Y-12, Savannah River Site, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory provided information on nineteen facilities that met these criteria. (Couchman-Griswold and Underwood 2014).

Examples of the types of risks identified by the sites for these facilities include the following:

- Leaking roofs leading to the spread contaminants and mold
- Exposure or spread of contaminants in the case of a fire
- Inability to address subsurface contamination beneath buildings
- Impact to nearby workers and mission activities from significantly deteriorated structures

Because a majority of NNSA's highest risk facilities are process-contaminated they will become EM's responsibility to decontaminate and demolish. NNSA and EM have been discussing approaches for addressing these facilities and their eventual disposition. Focusing on the human health and environmental risk posed by the degradation of excess facilities provides a compelling

driver that can compete for funding with mission activities (Couchman-Griswold and Underwood 2014).

NNSS

The information presented in this section for the Nevada National Security Site (NNSS) was received from the site contact participating in the EFCOG D&D and Facility Engineering Working Group. NNSS currently has the following inactive buildings in their D&D surveillance and maintenance program.

Engine Maintenance, Assembly, and Disassembly (EMAD) Facility
EMAD Building (Building 25-3900)
Locomotive Storage Shed (Building 25-3901)

Test Cell C (TCC) Facility
Equipment Building (Building 25-3220)
Motor Drive Building (Building 25-3230)
Pump Shop (Building 25-3231)
Cryogenic Lab (Building 25-3232)
Ancillary Structures (e.g., dewars, water tower, piping, tanks)

These facilities have been declared excess and are in various stages of deactivation (characterization and cleanup). The only activity at this time is surveillance and maintenance. No formal prioritization has been performed. However, the EMAD facility has the greater potential for the future release of contamination.

According to the *Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities* by the Defense Nuclear Facilities Safety Board, the following facilities are among the most significant safety-related aging infrastructure issues that exist today in the DOE defense nuclear complex. These operating facilities are at or near the end of life, but still must carry out national security and legacy waste cleanup missions (DNFSB 2013).

Nevada National Security Site, Device Assembly Facility

Began service: 1996

Remaining service: Enduring facility – remaining service date to be determined

Infrastructure weakness: The water tank is degraded and cannot be relied upon to provide fire suppression water in the event of a fire, which poses a risk to facility workers. In addition, the fire-suppression system lead-ins are corroding and cannot be relied upon to provide water in the event of a fire. Three lead-ins are leaking and the associated portion of the fire suppression system is out of service.

OAK RIDGE

Figures 23 and 24, from the D&D Map, show the number of facilities remaining for D&D at the Oak Ridge Reservation, provide a breakdown by project, and show the budget and schedule profile. A total of 373 facilities remain for D&D (life-cycle) at ORR (DOE 2011).

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	8	17
Radiological	26	50
Industrial	329	306

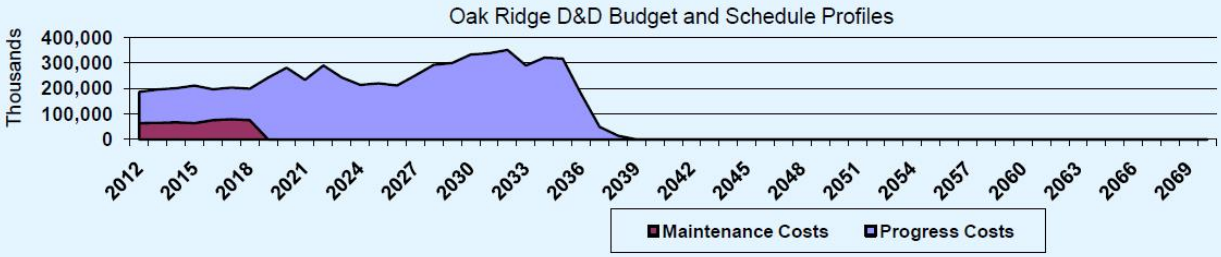


Figure 23. Remaining (Life-cycle) facilities at ORR for D&D and budget/schedule profile (Source: DOE 2011).

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Oak Ridge Reservation	280A New	Alpha Buildings D&D	$1,050,823	15	2018	2034
Oak Ridge Reservation	284A New	Central Campus Area and Other BV Facilities D&D	$907,726	20	2018	2037
Oak Ridge Reservation	280D New	Process Facilities	$877,720	15	2019	2035
Oak Ridge Reservation	280B New	Beta Buildings D&D	$637,338	16	2018	2037
Oak Ridge Reservation	274 Existing	K-25 Building D&D	$475,500	5	2011	2015
Oak Ridge Reservation	284D New	3019 Complex D&D	$385,767	10	2025	2034
Oak Ridge Reservation	269 Existing	ETTP Balance of Site D&D	$268,969	8	2011	2018
Oak Ridge Reservation	284A Existing	Central Campus Area and Other BV Facilities D&D	$263,768	14	2018	2031
Oak Ridge Reservation	284B Existing	Melton Valley and MV Reactors D&D	$258,246	17	2020	2036
Oak Ridge Reservation	284B New	Melton Valley and MV Reactors D&D	$203,547	11	2022	2038
Oak Ridge Reservation	284C New	Waste Treatment Facilities D&D	$145,943	15	2020	2034
Oak Ridge Reservation	280A Existing	Alpha Buildings D&D	$144,984	6	2018	2023
Oak Ridge Reservation	280C New	Biology & Lab Complex	$109,523	5	2026	2030
Oak Ridge Reservation	273Existing	ETTP Main Plant D&D	$108,300	4	2011	2018
Oak Ridge Reservation	280D Existing	Process Facilities D&D	$24,480	6	2024	2029
Oak Ridge Reservation	275 Existing	K-27 Building D&D	$10,000	3	2010	2018

Figure 24. Remaining D&D Projects at ORR (Source: DOE 2011).

ORNL

ORNL has 150 excess facilities, including 4 reactors and over 60 hot cells as well as 2 MCi of legacy radiological inventory (Schneider 2012). These legacy materials and aging excess facilities are a major risk to human health, safety, and ORNL's continued mission. Figure 25 shows the proximity of the legacy contamination risks at ORNL to the mission-critical facilities. A substantial amount of chemical and materials research is still conducted in laboratories constructed in the 1950s and 1960s and laboratory space needs to be upgraded to meet today's fire safety, design, and utility requirements. Vulnerabilities associated with aging utility systems also need to be addressed. Many distribution systems and their components were installed in the 1950s and 1960s with some dating back to the 1940s. A failure of the aging radiological liquid waste treatment systems would have significant environmental consequences as the extensive underground liquid waste pipelines are contaminant sources. Four (4) Ci/year of Cs-137 and Sr-90 are removed by the Process Waste Treatment System each year; however, another 1.5 Ci/year is discharged offsite from legacy sources. Figure 26 shows the underground pipelines at ORNL (Schneider 2012). Several projects to address aging infrastructure have been recently completed at ORNL and several more are in the planning stages. Recognizing the inherent vulnerability of these systems and the negative impacts of their failure, ORNL maintains an intensive preventive, predictive, and corrective maintenance program for these systems (DOE 2013).

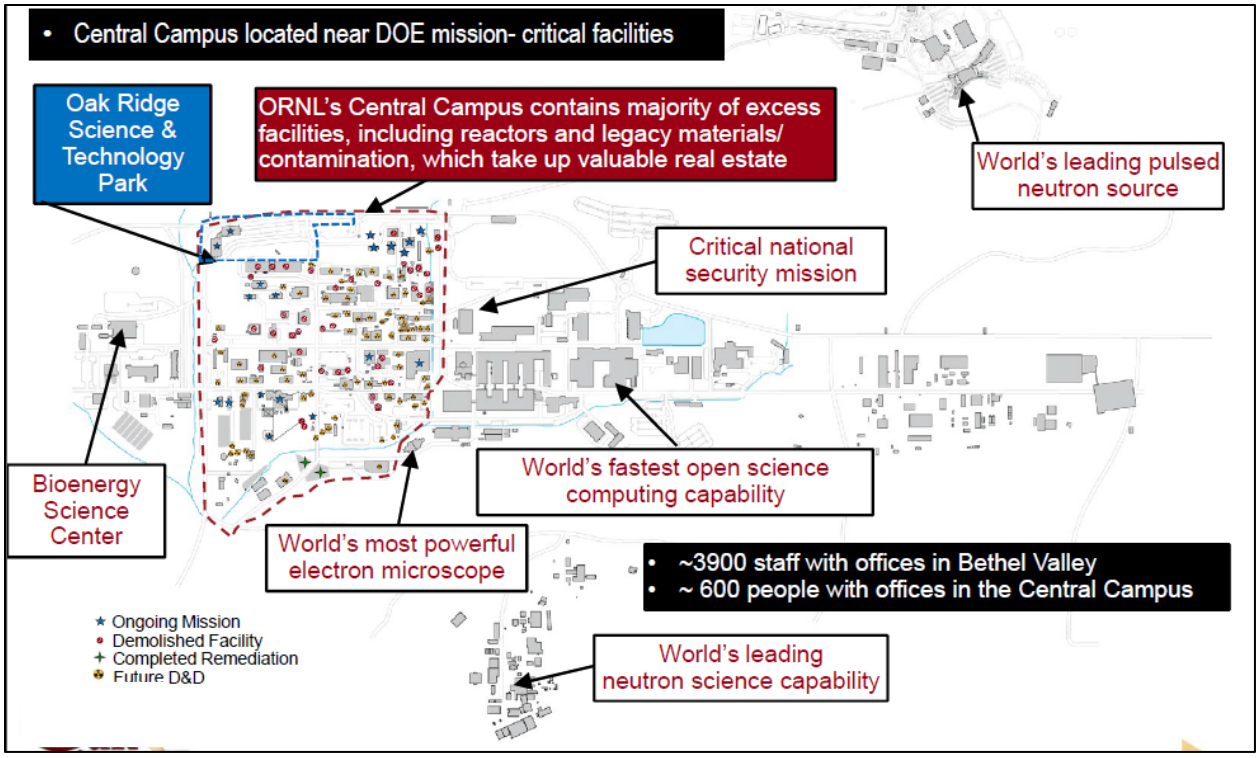


Figure 25. Mission-critical facilities at ORNL are immediately adjacent to the area containing the majority of excess facilities (Source: Schneider 2012).

Figure 26. Underground pipelines at ORNL: liquid low-level waste lines in magenta and process waste pipelines in orange (Source: Schneider 2012).

As shown in Figure 27, additional significant infrastructure challenges at ORNL include the Building 3517 Process Cell 5, Homogenous Reactor High Bay, Molten Salt Reactor Fuel Salt Storage Tank Thimbles, Oak Ridge Research Reactor Pool, and the Bulk Shielding Reactor Pool (Schneider 2012).

After a fatal worker accident at the Oak Ridge East Tennessee Technology Park site, Oak Ridge National Laboratory (ORNL) implemented an improved surveillance and maintenance program for unoccupied excess facilities to monitor the facilities during the transition and disposition period to provide hazard mitigation and risk reduction. The S&M program assures that facilities are assessed to determine condition and known hazards and to perform periodic surveillance for facility maintenance and stabilization. The S&M Program reflects the recommendations and requirements from an assessment of the structural conditions of excess facilities at ORNL (EFCOG 2007).

A large challenge at ORNL is estimating and securing adequate funding for the maintenance of abandoned, inactive facilities. The challenge includes identifying and estimating the costs of the minimum maintenance required to keep the facility in stable condition as well as the uncertainty of how long the building must be maintained prior to demolition. For example, repair of a small roof leak could be deferred if the facility is to be demolished the next year; however, if the demolition date is unknown, it may be better to repair the roof and stop further deterioration (EFCOG 2007).

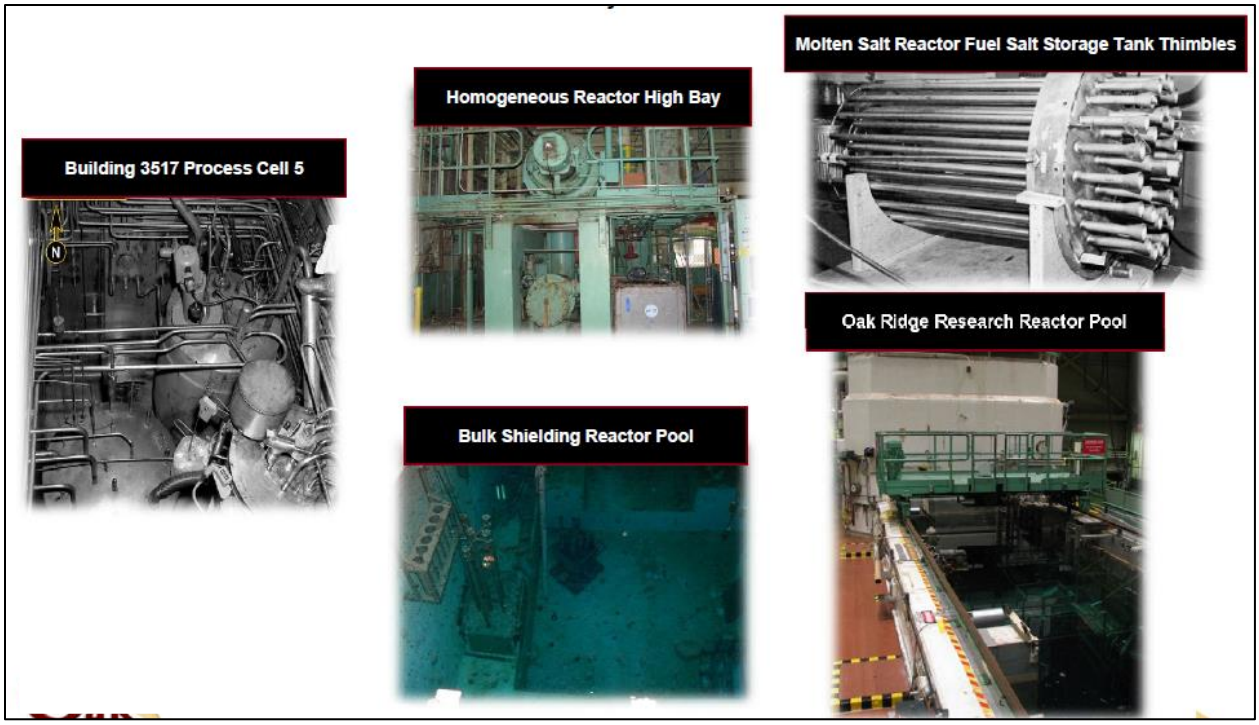


Figure 27. Significant challenges from aging infrastructure at ORNL (Source: Schneider 2012)

During 2008 and 2009, a study was conducted by FIU in collaboration with ORNL to provide the EM federal project directors and their contractors with a decision support tool to aid in prioritizing S&M investment across a site's excess facilities so that the limited budget available can be used most effectively. The analytical hierarchy process was used to derive the weight of importance of a defined list of risk-based criteria and typical S&M activities. A total of 10 facilities at the ORNL, varying in perceived hazards and conditions, were chosen to pilot the tool by evaluating them with respect to each risk criterion and combining these results with the weight of importance of the S&M they require. The final result was a rank of S&M activities to be performed on all the facilities based on the relative weight of importance of the activity coupled with the risk posed by the facility. This method addressed the needs of all of the facilities without ignoring the S&M activities of the lower risk facilities. The *Prioritization Tool for S&M Investment in Excess Facilities* can be a starting point to determine how to distribute S&M budgets, to help make consistent and risk-based decisions and to provide documentation for future reference and review (Velez and Conley 2009).

PADUCAH AND PORTSMOUTH

Figures 28 through 30, from the D&D Map, show the number of facilities remaining for D&D at Paducah and Portsmouth, respectively, provide a breakdown by project, and show the budget and schedule profile. A total of 194 facilities remain for D&D (life-cycle) at Paducah and 146 at Portsmouth (DOE 2011).

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	0	19
Radiological	2	20
Industrial	17	155

The plant was opened in 1952 as part of a U.S. government program to produce highly enriched uranium to fuel military reactors and produce nuclear weapons. Enrichment at Paducah originally was limited to low levels, and the plant served as a "feed facility" for other defense plants in Oak Ridge, TN, and Piketon, OH, where the enriched uranium was processed. That mission changed in the 1960s, when Paducah, along with its sister plant in Piketon, began to enrich uranium for use in commercial nuclear reactors to generate electricity.

The former gaseous diffusion plant buildings are in the process of being transitioned to D&D by the existing site remediation contractor. D&D will first require the removal and disposition of hundreds of large centrifuges.

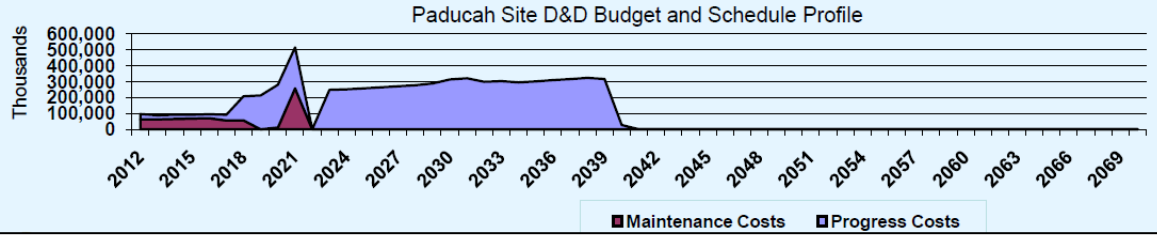
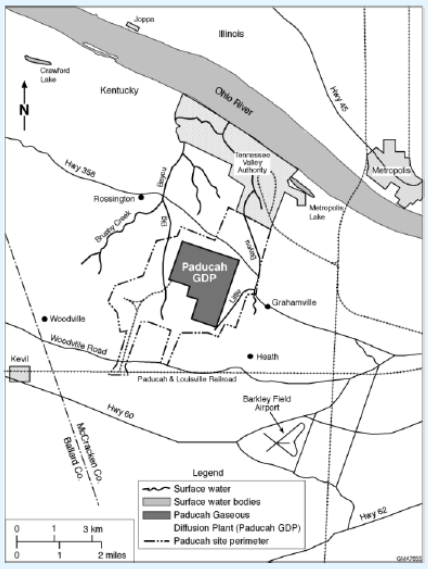


Figure 28. Remaining (Life-cycle) facilities at Paducah for D&D and budget/schedule profile (Source: DOE 2011).



Paducah Site Infrastructure Support, D&D and Remediation are managed by the Portsmouth-Paducah Project Office (PPPO), in Lexington, Kentucky:

- Site remediation and D&D is contracted to Paducah Remediation Services (PRS).
- Site Infrastructure Support service is contracted to Swift & Staley Team (SST).
- DUF6 Treatment Plant is being built and started up by Uranium Disposition Services (UDS).

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Paducah	199	D&D of the Gaseous Diffusion Plant (GDP)	$6,242,476	29	2012	2040
Paducah	200	Inactive Facility D&D	$43,992	8	2010	2017

Figure 29. Remaining D&D Projects at Paducah (Source: DOE 2011).

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	0	13
Radiological	7	20
Industrial	8	113

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Portsmouth	166	D&D Balance of Plant	$1,631,838	20	2010	2029
Portsmouth	167	D&D of the Process Buildings	$568,492	18	2012	2029

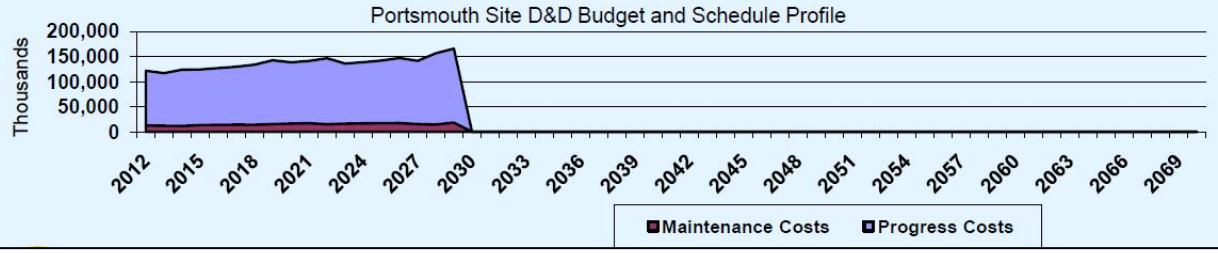


Figure 30. Remaining (Life-cycle) facilities at Portsmouth for D&D and budget/schedule profile (Source: DOE 2011).

SRS

The mission critical facilities at SRS include older, Cold War-legacy facilities as well as more modern facilities. The older facilities and associated infrastructure are expensive to maintain, larger than necessary, and energy-inefficient. The tritium facilities in particular face challenges with sustaining the infrastructure with increasing deferred maintenance ($96.9M in FY2012), much of the cost associated with 35 H-Area old Manufacturing (HAOM) facility glovebox oxygen monitors that need replacing (NNSA 2013).

Deactivated facilities at SRS are maintained in a cost-effective long-term surveillance and maintenance (LTSM) mode to take advantage of radioactive decay of tritium. Building 232-H (71,966 GSF) is currently deactivated with LTSM costs approximately $250K per year. A similar minimal cost is expected for LTSM of the HAOM Facility when it is deactivated. Because of the LTSM strategy, deactivated buildings are not declared excess until they are funded for disposition. Other facilities will be deactivated that either were not exposed to tritium or had low levels of tritium and could be demolished with dedicated funding. The SRS strategy is to maximize utilization of available funding to relocate remaining functions from the older facilities into the more modern facilities. Facilities that could be declared excess and demolished within the 10-year planning period are shown in Table 6 (NNSA 2013). Additional information on SRS facilities can be found in Appendix A, including: Table A-1 - SRS D&D

Facilities/Remnants that May Warrant Response Action, Table A-2 - SRS D&D Facilities to be Decommissioned, and Table A-3 - SRS D&D Facilities / Remnants that Require No Further Evaluation.

Table 6. SRS Tritium Facilities that Could Be Declared Excess within 10 Years (Source: NNSA 2013)

Building	Earliest FY	Footprint Reduction (GSF)
232-H	2014	11,622
Modular Offices (4 total)	2014	5,037
236-H	2016	1,622
237/238-H	2017	16,672
701-3H	2019	3,128
233-22H	2021	6,156
Total		**44,237**

Figure 31 and 32, from the D&D Map, show the number of facilities remaining for D&D at SRS, provide a breakdown by project, and show the budget and schedule profile. A total of 739 facilities remain for D&D (life-cycle) at SRS (DOE 2011).

Facility Type	Completed as of FY 09	Remaining (Life-cycle)
Nuclear	11	180
Radiological	8	32
Industrial	232	527

Reactor Name	Start-up Date	Shutdown Date	D&D Start Date
R-reactor	1953	1964	2014
P-reactor	1954	1988	2014
K-reactor	1954	Standby 1992	2020
L-reactor	1954	1988	2024
C-reactor	1955	1985	2015

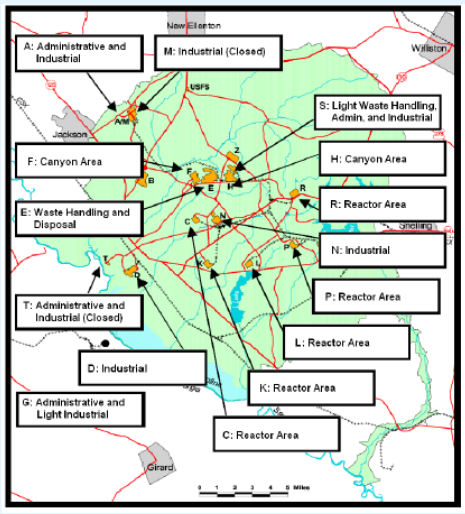


Figure 31. Remaining (Life-cycle) facilities at SRS D&D (Source: DOE 2011).

Site	ABB ID	Project (ABB) Name	D&D Project			
			Total Cost ($ Thousands)	Duration (years)	Start Year	End Year
Savannah River	62	H-Area D&D: Non-Area Completion	$1,540,834	18	2014	2032
Savannah River	60	F-Area D&D: Non-Area Completion	$970,392	16	2012	2032
Savannah River	70	S-Area D&D: Non-Area Completion	$276,656	6	2027	2032
Savannah River	64	K-Area D&D: Non-Area Completion	$217,759	9	2020	2030
Savannah River	63	J-Area D&D: Non-Area Completion	$204,378	6	2027	2032
Savannah River	65	L-Area D&D: Non-Area Completion	$154,410	9	2024	2032
Savannah River	57	C-Area D&D: Non-Area Completion	$136,857	9	2015	2030
Savannah River	55	A-Area D&D: Non-Area Completion	$79,351	6	2021	2031
Savannah River	67	N-Area D&D: Non-Area Completion	$74,850	8	2022	2031
Savannah River	56	B-Area D&D: Non-Area Completion	$67,811	4	2028	2031
Savannah River	73	Z-Area D&D: Non-Area Completion	$43,993	4	2029	2032
Savannah River	61	G-Area D&D: Non-Area Completion	$21,852	10	2014	2031
Savannah River	59	E-Area D&D: Non-Area Completion	$21,315	5	2027	2031
Savannah River	72	U-Area D&D: Non-Area Completion	$9,262	4	2021	2024

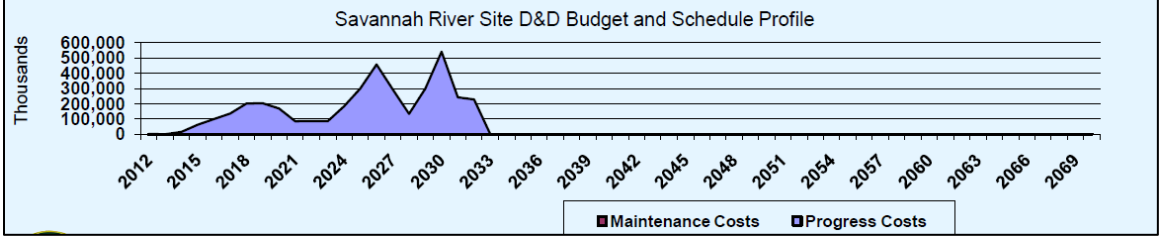


Figure 32. D&D projects remaining at SRA and the budget/schedule profile (Source: DOE 2011).

According to the *Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities* by the Defense Nuclear Facilities Safety Board, the following facilities are among the most significant safety-related aging infrastructure issues that exist today in the DOE defense nuclear complex. These operating facilities are at or near the end of life, but still must carry out national security and legacy waste cleanup missions (DNFSB 2013).

Savannah River Site, H-Canyon

Began service: 1955

Remaining service: Until processing mission is complete, to be determined.

Infrastructure weakness: H-Canyon is exhibiting degradation of systems and structures that if not addressed, could challenge safe operations and post a risk to facility workers. Several components showing localized degradation include the canyon wall concrete, electrical wiring and the canyon roof liner.

Savannah River Site, Tank Farms

Began service: 1954-1962

Remaining service: Until removed from service, 2028.

Infrastructure weakness: The Type I, II, and IV tanks containing high-level radioactive waste are beyond their design lives and some have leaked.

Savannah River Site, A-Area, Fire Protection Water Supply Systems

Began service: 1950s

Remaining service: Until upgrades are complete, to be determined.

Infrastructure weakness: The pumps used for the fire protection water supply have degraded and are no longer code-compliant. The water supply tank has rusted and no longer has the required thickness in some areas.

Y-12 NATIONAL SECURITY COMPLEX

Most of Y-12's mission critical facilities are more than 60 years old (Figure 33) so Y-12 has been consolidating operations, modernizing facilities and infrastructure, and reducing the legacy footprint. Since 2002, more than 1.4 million sq. ft of excess facilities have been demolished at Y-12. However, due to extended schedules for replacement facilities and infrastructure, new risk mitigation and sustainment strategies are needed to ensure continued mission capability. With many aging facilities being declared excess to NNSA mission needs, a viable DOE/NNSA program needs to be implemented to disposition legacy facilities and materials. There are currently still more than 1 million sq. ft of NNSA facilities at Y-12 available for D&D (Y-12 2013).

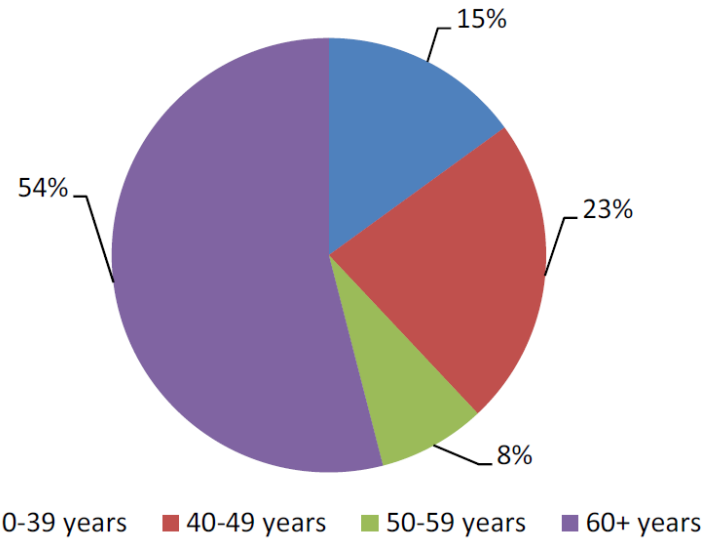


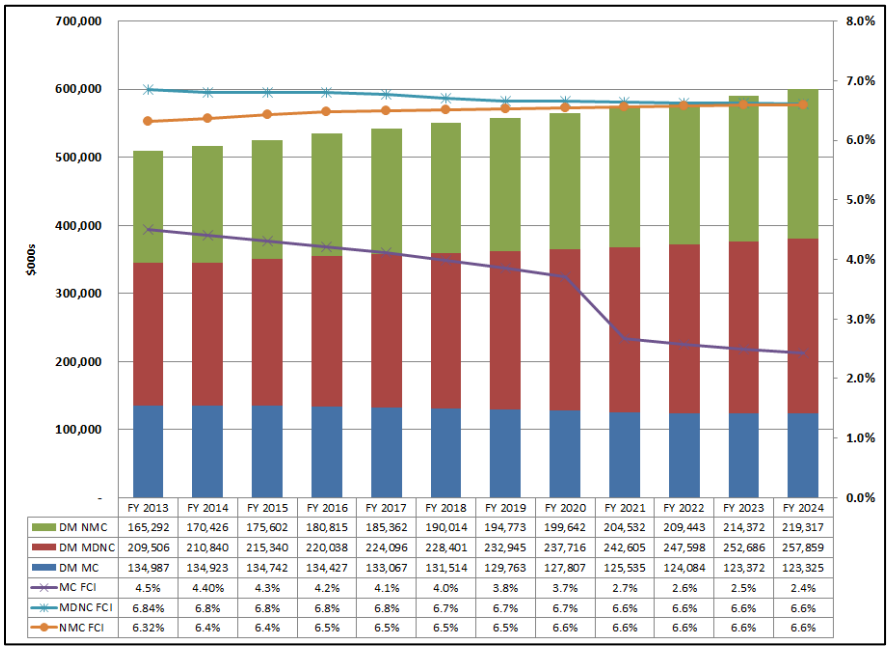
Figure 33. Age of Y-12's mission-critical facilities (Source: Y-12 2013)

During FY 2012, several buildings were vacated in preparation for eventual demolition. These facilities were beyond design life and were beginning to experience costly failures. Building 9204-03, under management responsibility of the Office of Nuclear Energy and designated a

National Historic Landmark, has been vacated and will be placed in cold standby. Buildings 9213, 9401-02, and 9201-04 are shutdown, awaiting cleanup and demolition. The Office of Science also continues to actively pursue shutdown of their facilities at Y-12, including Building 9201-02, which is being readied for eventual demolition. Building 9204-01 was vacated in 2010 and is now cold and dark. The Biology Complex has been cold and dark for several years and awaits a funded demolition program. Building 9401-01, once transitioned back to the Office of Science, will also be readied for demolition. These facilities have no future mission relevance to the Oak Ridge National Laboratory and will be transitioned to EM (Y-12 2013).

Mission critical operations are scattered across multiple facilities that are oversized, contain technologically obsolete equipment of low reliability, and require excessive maintenance. Much of the critical infrastructure is approaching or is beyond the expected design life. The continued investment in equipment and facility improvements for the aging mission-critical infrastructure is necessary to prevent a potential decline in condition. As an example, Building 9204-02 and the mission-critical capability it provides will be needed to support production operations for another 10-15 years (Y-12 2013).

The Condition Assessment Survey program has been incorporated at Y-12 and inspections are performed on a 3-year cycle. The resulting DM data are annually reported to the Facility Information Management System. Figure 34 provides an out-year projection of the anticipated changes in DM and associated FCI. The DM and FCI are expected to increase steadily unless a specific funding mechanism to buy down DM and demolish unneeded infrastructure is put in place (Y-12 2013).



	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
DM NMC	165,292	170,426	175,602	180,815	185,362	190,014	194,773	199,642	204,532	209,443	214,372	219,317
DM MDNC	209,506	210,840	215,340	220,038	224,096	228,401	232,945	237,716	242,605	247,598	252,686	257,859
DM MC	134,987	134,923	134,742	134,427	133,067	131,514	129,763	127,807	125,535	124,084	123,372	123,325
MC FCI	4.5%	4.40%	4.3%	4.2%	4.1%	4.0%	3.8%	3.7%	2.7%	2.6%	2.5%	2.4%
MDNC FCI	6.84%	6.8%	6.8%	6.8%	6.8%	6.7%	6.7%	6.7%	6.6%	6.6%	6.6%	6.6%
NMC FCI	6.32%	6.4%	6.4%	6.5%	6.5%	6.5%	6.5%	6.6%	6.6%	6.6%	6.6%	6.6%

Figure 34. Out-year projection of DM and FCI at Y-12

In response to an NNSA request that the sites identify any facilities that require more than the current level of surveillance and maintenance to protect the mission, workers, public, or the environment, Y-12 responded with information on three facilities that met these criteria. The site

provided a summary of the risks posed by each facility and activities necessary to manage these risks. The 3 buildings represent approximately 1 M GSF and are 68+ years old. Risks include leaking roofs leading to the spread of contaminants and mold inside the building, impeded ability to address subsurface mercury contamination beneath buildings, risk to nearby workers and mission activities from significantly deteriorated structures (Figure 35) (Couchman-Griswold and Underwood 2014).

Figure 35. Mold due to leaks (left), ceiling deterioration in Bldg 9206 (top right), and deteriorating infrastructure at Beta 4 (bottom right) (Source: Couchman-Griswold and Underwood 2014).

According to the *Summary of Significant Safety-Related Aging Infrastructure Issues at Operating Defense Nuclear Facilities* by the Defense Nuclear Facilities Safety Board, the following facilities are among the most significant safety-related aging infrastructure issues that exist today in the DOE defense nuclear complex. These operating facilities are at or near the end of life, but still must carry out national security and legacy waste cleanup missions (DNFSB 2013).

Y-12 National Security Complex, 9212 Complex

Began service: 1951

Remaining service: Until replaced by the Uranium Processing Facility (UPF). Full replacement of the 9212 Complex process capability is expected no earlier than 2025.

Infrastructure weakness: The 9212 Complex, comprised of Building 9212 and thirteen collocated buildings, is more than 60 years old and is continuing to deteriorate; it has

reached its end of life. Facility systems and components continue to deteriorate and further increase operational safety risk. In addition, the building structure would not withstand performance category-2 seismic loads and many of the building's systems and components have insufficient seismic restraint. The roof would also be damaged by a performance category-2 wind event. Failure of the buildings or systems could lead to unacceptable consequences for facility workers.

CONCLUSION

The challenges presented by aging infrastructure across the DOE complex are multifaceted. Limited funding requires difficult decisions be balanced across multiple priorities, including reducing footprint and risks by completing D&D of deteriorated excess facilities, repairs and surveillance and maintenance for empty facilities as needed to reduce risk to future D&D workers, as well as refurbishment and modernization to aging operating facilities and infrastructure needed for the current and future site missions. The approaches and processes used to make these determinations vary from one DOE site to the next. Efforts to gain an understanding of the challenges and needs complex-wide include FIMS, the D&D Map, and a current undertaking between DOE and NNSA to develop a comprehensive identification and prioritization process for the aging infrastructure across the complex.

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Appendix A

Table A-1: SRS D&D Facilities/Remnants that May Warrant Response Action

Table A-2: SRS D&D Facilities to be Decommissioned

Table A-3: SRS D&D Facilities / Remnants that Require No Further Evaluation.

Table A-1. SRS D&D Facilities/Remnants that May Warrant Response Action (Source: SRS FFA, Rev 0, Appendix C.4 for FY2014)

SRS Index Number	Number	D&D Facility/Remnant
A Area		
1000	305-A	Test Pile Facility [2]
1035	716-A	Automotive Repair Shop
1060	725-A	Paint Shop
1094	740-A	Salvage and Reclamation Building (Including 740-1A PCB Storage Facility) [2]
1097	743-A	Rigging Storage [2]
1128	777-10A	Site Utilities Office Facility (Physics Assembly Laboratory) [2]
B Area		
1156	710-1B	Hazardous Chemical Storage [1]
1157	710-2B	Hazardous Chemical Storage [1]
1158	710-3B	Storage [1]
2003	770-U	Heavy Water Components Test Reactor (HWCTR) (aka Test Reactor Building) [2]
C Area		
2256	710-C	Pre-Manufactured Metal Shelter
1201	717-C	Contaminated Maintenance Facility
2255	NBN	Containment Tank C803-7-1
D Area		
1212	420-2D	Rework Handling Facility
1214	420-D	Concentrator Building
1215	421-2D	Moderator Handling and Storage
1218	421-D	Finishing Building
1250	772-D	Control Laboratory and Supervisors Office
F Area		
1275	211-2F	Control and Check House
1276	211-3F	Waste Truck Unloading House
1277	211-7F	Chemical Handling Facility
1279	211-F	Outside Facilities (Including the 805 and 820 Tank Cells)
1293	222-F	Cold Feed Preparation Area
1352	246-F	Equipment Test Facility
1355	247-7F	EC Process Building
1356	247-8F	Compressed Gas Storage Building
1357	247-F	Manufacturing Building
1480	647-G	Warehouse
1412	707-2F	Regulated Shops
1425	723-F	Laundry Facility
1426	728-F	Uranium Oxide Storage Building
1428	730-F	Uranium Oxide Storage Building

H Area		
1555	230-H	Demonstration Waste Incinerator (Beta-Gamma Incinerator)
M Area		
1794	313-M	Canning Building (Slug Production Facility) [2]
1795	315-4M	Hazardous/Mixed Waste Storage Pad [2]
1798	316-M	Drum Storage Facility [2]
1799	320-M	Alloy Building [2]
1800	321-M	Manufacturing Building [2]
1801	322-M	Metallurgical Laboratory [2]
1803	324-M	Vertical Press Building [2]
1806	330-M	Slug Warehouse [2]
1804	331-M	Core Storage Warehouse [2]
1805	340-M	Laboratory Waste Treatment Facility [2]
1807	341-1M	Tank Farm Containment Cover (Interim Treatment and Storage Facility) [2]
1808	341-8M	Vendor Treatment Facility [2]
1809	341-M	Dilute Effluent Treatment Facility [2]
N Area		
1850	711-3N	Pipe Warehouse
1861	714-6N	Miscellaneous Storage (SYLCOR)
1869	717-11N	Electrical Linemen's Office/Warehouse
1870	717-12N	Construction Sort Building
P Area		
2222	105-1P	No. 2 and 5 Basin Deionizers Pad [2]
2225	710-P	Radiation Zone (RZ) Storage Facility [2]
2220	717-9P	Pipe Fabrication Shop [2]
2212	904-86G	Emergency Cooling Water Retention Basin [2]
R Area		
1924	109-R	Purge Water Storage Basin [2]
1925	122-R	Process Storage Building [2]
T Area		
1984	607-46T	Organic Removal Facility [2]
1986	671-T	Service Tankage Facilities, TNX [2]
1977	672-T	DWPF Semi-Works Building [2]
1987	673-T	Containerization Equipment Dev Facility, TNX [2]
2001	675-T	Glass Melter Building [2]
1978	677-T	Pilot Plant Building [2]
1980	678-T	Chemical Semi-Works Building [2]
1989	679-8T	Pump House [2]
1981	679-T	Engineering Test Facility (CMX) [2]
1991	682-T	Manufacturing Building [2]
1990	904-T	TNX Effluent Treatment Plant [2]

Notes: SRS Index Number is a unique identifier assigned to each individual Unit
This number is used by SRS for tracking and is not meant to imply a ranking or priority.

[1] These building are collectively referred to as Building 710-B, Hazardous Waste Storage Facility (HWSF). Since 710-B operated under a Resource Conservation and Recovery Act (RCRA) Part B Permit, the RCRA closure process will be used to verify that acceptable clean-up levels have been met.
[2] These D&D Facilities (or Remnants) are part of an Area Operable Unit where the Final Record of Decision has been issued

Table A-2. SRS D&D Facilities to be Decommissioned
(Source: SRS FFA, Rev 0, Appendix K.1 for FY2014)

SRS Index Number	Number	D&D Facility to be Decommissioned
A Area		
1014		Central Computing Center
1045		Central Alarm Station (CAS)
1053		Plant Alternative Alarm Center
1009	703-37A	Cooling Water Pump Enclosure A Compressor Room [1]
1010	703-38A	Cooling Water Pump Enclosure B Compressor Room [1]
1011	703-41A	DOE Office Building
1012	703-42A	A&BA Office Building
1013	703-43A	Publications Building
1015	703-45A	Support Services Building
1016	703-46A	Administrative Control Building
1017	703-47A	Administration Support
1018	703-71A	Pump House [1]
1019	703-A	Administration Building [1]
1020	705-A	Engineering Office Building
1026	711-A	Steel and Pipe Storage Building
1027	712-A	Lumber Storage
1032	715-A	Gasoline Station
1033	716-2A	Support Services Lower 700-G
1034	716-4A	Regulated Vehicle Maintenance Building
1037	717-11A	CSWE Works Engineering Facility Upper 700
1038	717-4A	Varnish Dip Tank Facility
1039	717-7A	Maintenance Warehouse
1040	717-8A	Storage Building Lower 700-A
1041	717-9A	Storage Building MUM
1048	722-1A	Electrical Repair Shop
1049	722-4A	Motor Shop and Balancing Facility
1050	722-5A	Computer & Communications Repair Building
1051	722-7A	Storage Building
1052	722-8A	Storage Building
1053	722-A	Electrical Repair Shop
1054	723-15A	Fixture & Equipment Storage Facility
1070	735-A	Radiological & Environmental Science Lab (Including 735-6A) [3]
1095	742-A	Office Building
1103	754-10A	Diesel Generator
1104	754-11A	Propane Generator
1105	754-5A	UPS/Generator Enclosure
1106	754-8A	Diesel Generator
1131	780-1A	Chemical Feed Building West of 784-A
1132	780-2A	Chlorine Feed Building for 785-A
1134	782-2A	Domestic Water Storage Tank

1135	782-3A	A-Area Domestic Water Central Treatment Plant
1136	784-1A	Maintenance Shop Boiler House
1137	784-3A	E&I Storage Building
1138	784-4A	Coal Handler Observation Building
1139	784-A	Boiler House
1140	785-2A	Cooling Tower No. 2
1141	785-6A	Chiller
1142	785-A	Cooling Tower
B Area		
1147	607-2B	Chemical Feed Facility
1148	607-4B	Sanitary Waste Water Facility
1149	703-10B	Kennel Facilities
1150	703-1B	WSI Training Building
1151	703-5B	Helicopter Supply Facility, Hanger
1152	703-6B	Helicopter Supply Facility OPR ANN
1153	703-B	WSI Administration Building
1154	706-B	WSI Training Building
1155	708-1B	B-Area Engineer Support Building
2242	710-4B	Mixed Waste Satellite Facility
1159	716-B	WSI Automotive Shop
1160	728-1B	Record Storage Building No. 2
1161	730-1B	Engineering Support Facility
1162	730-2B	Administration Building No. 2
1163	730-4B	Administration Building No. 3
1164	730-B	Engineering Center
1165	735-1B	Regulatory Monitoring & Bioassay Laboratory Auxiliary
1166	735-2B	Health Protection Calibration Facility
1167	735-4B	Whole Body Count Facility
1169	751-B	5000 KVA Substation
1170	772-25B	Research Laboratory (EPA Streams)
1171	772-7B	Storage and Laboratory Facility
1172	785-1B	Chiller Building Cooling Tower
1173	789-2B	Chiller Building
1174	789-B	Refrigeration Building
1175	790-B	Ammunition Bunker
1176	902-5B	Fire Water Pump House
C Area		
2234	105-1C	No. 3 and 6 Basin Deionizers Pad
1177	105-C	Reactor Building
1179	108-1C	Engine House
1180	108-2C	Engine House
1181	151-1C	Primary Substation (High Volt 115/13.8)
1182	151-2C	Primary Substation (High Volt 115/13.8)
2235	152-C	Secondary Substation (High Voltage 13.8)
1184	184-6C	Storage Building

1185	186-C	Cooling Water Reservoir
1186	190-C	Cooling Water Pump House
2239	191-C	Standby Pump House
2236	607-C	Septic Tanks
1190	701-1C	Area Gatehouse & Patrol Headquarters
2238	701-6C	Guardhouse
1192	702-1C	Telephone Exchange Building
1193	702-C	Telephone Exchange Building
1194	704-C	Area Administrative & Services Building
1195	705-1C	Reactor Engineering Office Building
1196	705-3C	Reactor Support Services Building
1197	705-C	Reactor Training Facility
1198	706-C	Office Building
1199	707-C	Reactor Simulator Training Facility
1200	711-C	Maintenance Material Storage Building

D Area

1219	451-D	Primary Substation (High Volt 115/13.8)
2258	454-1D	Diesel Fuel Unloading Facility
1220	454-D	Diesel Fuel Underground Storage Tank
1222	480-3D	Maintenance Field Office and Shop
1223	482-2D	Motor Control Center
1224	483-1D	Water Filtration and Treatment Plant
1225	483-2D	Softener and Silica Absorber Building
1226	483-3D	Electrical Control Building
2259	483-6D	Backwash Surge Basin
1227	483-7D	Chemical Feed Systems for Domestic Water
1228	483-D	Softener Building
1229	484-10D	Oil Shed Building
1230	484-12D	Storage Building
1231	484-13D	Storage Building
1232	484-15D	Storage Shed
2264	484-17D	Coal Storage Area
2260	484-1D	Modular Office Trailer
2261	484-2D	Coal Handlers Change House
1233	484-4D	Power Maintenance Facility Building
2262	484-5D	Power House Storage Building
2263	484-7D	Storage Building
1234	484-9D	Valve House
1235	484-D	Powerhouse
1236	485-D	Cooling Tower
2267	607-12D	Sanitary Wastewater Pumping Station
2268	607-14D	Chemical Feed Building
1237	607-15D	Chemical Feed Facility
2265	607-2D	Sewage Lift Station #2
2266	607-7D	Sewage Treatment Plant/Blower Cabinet
2269	683-D	Chlorine Unloading and Storage Facility

1241	702-D	Telephone Exchange Building
2270	704-7D	Maintenance Building
1244	710-16D	Storage Building
1248	717-3D	Welding Shop

E Area

1251	641-E	High Point Valve Box
1252	642-E	Administrative Building
1253	643-29E	Mixed Waste Storage
1254	643-43E	Mixed Waste Storage Expansion
1255	643-44E	Storage/Work Space, Maintenance, Rigging, Heavy Equipment
1256	643-46E	Storage/Work Space, Maintenance, Rigging, Heavy Equipment
1257	660-14E	TRU Waste Storage Pad No. 14
1258	660-15E	TRU Waste Storage Pad No. 15
1259	660-16E	TRU Waste Storage Pad No. 16
1260	660-17E	TRU Waste Storage Pad No. 17
1261	660-18E	TRU Waste Storage Pad No. 18
1262	660-19E	TRU Waste Storage Pad No. 19
1263	660-3E	TRU Waste Storage Pad No. 3
1264	660-4E	TRU Waste Storage Pad No. 4
1265	660-5E	TRU Waste Storage Pad No. 5
1266	660-6E	TRU Waste Storage Pad No. 6
1270	664-E	Associated Waste Shredder Building

F Area

1278	211-9F	Stores Drop Point
1280	221-12F	Uranium Oxide Storage
1283	221-1F	A - Line[2]
1285	221-21F	Uranium Oxide Storage Building
1286	221-22F	Storage Building
1290	221-33F	Material Access Center Warehouse[1]
1292	221-F	Canyon Building
1294	235-1F	Refrigeration Building No. 1
1295	235-2F	Refrigeration Building No. 2
1296	235-F	F-Area Material Storage Area (aka Metallurgical Building)
1297	241-104F	Storage and Supply Building
1298	241-11F	Gang Valve House
1299	241-13F	West Pump House
1300	241-17F	East Pump House
1301	241-18F	Control Room/MCC
1303	241-20F	Cooling Towers/Pumphouse Ser 25-28, 44-47
1304	241-21F	FDB-4 and FPPs 2 and 3
1305	241-28F	Office/Change Rooms
1306	241-2F	FDB-1
1307	241-32F	FDB-6 Diversion Box
1308	241-33F	FDB-5 Diversion Box
1309	241-53F	Air Compressor Building

1310	241-58F	Maintenance Shop Building
1311	241-62F	MCC Building
1313	241-64F	Air Compressor Building
1314	241-65F	Breathing Air Compressor Building
1315	241-74F	Control Room/MCC
1316	241-75F	Cesium Removal Control Pump House
1317	241-84F	Interim Record Storage
1322	241-901F	Waste Storage Tank
1323	241-902F	Waste Storage Tank
1324	241-903F	Waste Storage Tank
1325	241-904F	Waste Storage Tank
1326	241-905F	Waste Storage Tank
1327	241-906F	Waste Storage Tank
1328	241-907F	Waste Storage Tank
1329	241-908F	Waste Storage Tank
1330	241-917F	Waste Storage Tank
1331	241-918F	Waste Storage Tank
1332	241-919F	Waste Storage Tank
1318	241-91F	Waste Certification Building
1312	241-920F	Waste Storage Tank
1333	241-925F	Waste Storage Tank
1334	241-926F	Waste Storage Tank
1335	241-927F	Waste Storage Tank
1336	241-928F	Waste Storage Tank
1337	241-933F	Waste Storage Tank
1338	241-934F	Waste Storage Tank
1319	241-93F	ALARA Storage Building
1339	241-944F	Waste Storage Tank
1340	241-945F	Waste Storage Tank
1341	241-946F	Waste Storage Tank
1342	241-947F	Waste Storage Tank
1320	241-97F	Cooling Water Basin
1321	241-99F	MCC Building
1343	242-10F	Radcon Trailer Near Tank 4
1344	242-11F	Radcon Trailer Near 1F Evaporator
1345	242-12F	Radcon Trailer and 2F Evaporator
1346	242-16F	2F Evaporator
1302	242-1F	Waste Evaporator #1 Control House
1347	242-3F	CTS Pit
1348	242-8F	Radcon Trailer Near FDB-2
1349	242-9F	Radcon Trailer Near Tanks 33/34
1350	242-F	1F Evaporator
1351	246-3F	Blend Cabinet Storage Building
1359	251-F	Primary Substation (High Voltage 115 KV)
1360	252-24F	Secondary Transformer Station for 241F
1361	252-46F	Substation

1362	252-68F	Transformer -1
1363	252-69F	Transformer - 2
1364	254-13F	Diesel Generator Building
1368	254-9F	Diesel Generator
1370	280-1F	Chemical Feed Building
1372	281-10F	Filter and Deionizer Facility
1373	281-1F	Return Water Delaying Basin
1375	281-2F	Return Water Pumping Basin
1376	281-4F	Monitoring House
1377	281-5F	Segregated Water Delaying Basin
1378	281-6F	Monitoring House
1379	281-8F	Storage Basin, 4 Million Gallon, Lined
1380	282-F	Reservoir and Pump House
1381	284-10F	E&I Safeguard and Security Shop[1]
1382	284-8F	Power Service Building
1384	285-3F	Chiller Building
1385	285-4F	Cooling Tower No. 1
1386	285-5F	Cooling Tower
1387	285-F	Cooling Tower
1388	291-F	Canyon Stack
1389	292-1F	Vessel Vent Fan House
1390	292-2F	Sand Filter Fan House
1391	292-F	Canyon Exhaust Fan House
1392	293-F	Metallurgical Building Stack
1393	294-1F	Additional Canyon Sand Filter
1394	294-2F	Sand Filter
1395	294-F	Canyon Exhaust Filters
1396	607-19F	Chemical Feed Facility
1397	607-20F	Lift Station
1398	607-29F	Naval Fuel Pump Station for Wastewater Treatment Facility
1399	607-30F	F-Area Pump Station Wastewater Treatment Facility
1400	641-F	Inter Transfer Lines Diversion Box/Pump Pit (FDB-2)
1404	701-4F	Gatehouse Entrance
1405	701-9F	Gatehouse
1406	702-F	Telephone Exchange Building
1408	704-26F	Temporary Administration Building
1411	707-1F	A-Line Change House
1413	707-7F	General Administrative Facility
1414	707-F	Separations Support Services
1417	711-1F	Pipe Shop
1418	711-F	Steel and Pipe Storage Building
1419	717-11F	Office Building
1420	717-12F	Craft Building/Storage
1422	717-F	Area Shops
1423	720-F	Central Alarm Station (CAS)

1424	723-3F	Construction Laundry Room
2230	772-1F	Production Control Facility
1430	772-4F	Lab HEPA Filtration Building
1431	772-F	F Area and H Area Laboratory (aka Control Laboratory)
1432	902-3F	Fire Water Pump House
1433	905-100F	Waste Tank Process Water Well SW 284-F

G Area

1435	504-1G	Switching Station
1436	504-2G	Switching Station
1437	504-3G	Switching Station
1438	607-59G	Chemical Feed Building Wastewater Treatment Equipment
1439	607-62G	Influent Headworks for Wastewater Treatment Equipment
1440	607-63G	Equalization Basin Wastewater Treatment Equipment
1441	607-64G	Equalization Basin Wastewater Treatment Equipment
1442	607-65G	Pump Station 4000B Wastewater Treatment Facility
1443	607-66G	Pump Station 4000C Wastewater Treatment Facility
1444	607-67G	Pump Station 5000A Wastewater Treatment Facility
1445	607-68G	Pump Station 6000A Wastewater Treatment Facility
1446	607-70G	Oxidatn Ditch and Clarifier #1 Wastewater Treatment Equipment
1447	607-71G	Oxidatn Ditch and Clarifier #2 Wastewater Treatment Equipment
1448	607-72G	Oxidatn Ditch and Clarifier #3 Wastewater Treatment Equipment
1449	607-74G	UV Disinfection Basin Cascade Unit Wastewater Treatment
1450	607-75G	Sludge Thickener Wastewater Treatment Equipment
1451	607-85G	Pump Station 2000B Wastewater Treatment Facility
1452	607-86G	Pump Station 3000A Wastewater Treatment Facility
1453	607-87G	Pump Station 4000A Wastewater Treatment Facility
1454	607-88G	CSWTF Maintenance Building
1455	607-91G	Sanitary Sewage Pump Station
1456	608-G	Track Scale House
1457	609-G	Track Maintenance Building
1458	614-48G	Wind Data Building - N of A-Area
1459	614-50G	Wind Data Building - N-NW of H-Area
1460	614-51G	Wind Data Building - E - SE of F-Area
1461	614-52G	Wind Data Building - S-SE of C-Area
1462	614-53G	Wind Data Building - E - SE of K-Area
1463	614-54G	Wind Data Building - SE of P-Area
1464	614-55G	Wind Data Building - E of L-Area
1465	614-56G	Equipment Shed
1466	614-57G	Equipment Shed
1467	614-58G	Equipment Shed
1468	614-59G	Equipment Shed
1469	614-60G	Equipment Shed
1470	614-61G	Equipment Shed
1471	614-62G	Equipment Shed
1472	614-63G	Equipment Shed
1473	614-65G	Equipment Shed

1474	614-66G	Equipment Shed
1475	614-67G	Equipment Shed
1476	617-G	Security Class Room
1477	618-G	Locomotive Shop
1478	623-30G	Communications Facility
1479	623-40G	Radio Trunking Tower
1481	651-1G	Primary Transformer Substation/681-1G
1482	651-3G	Primary Transformer Substation/681-3G
1483	651-6G	Primary Transformer Substation/681-6G
1484	652-53G	Emergency Trns Wastewater Treatment Equipment (Was 654001G)
1487	681-1G	Up-Stream Water Pump House for 100 Areas
1489	681-3G	Downstream Water Pump House for 100 AREA
1490	681-5G	Water Pump House for 400 Area
1491	681-6G	PAR Pond Pump House
1492	681-7G	PAR Pond Pump House Equipment Building - Adjacent to 681-6G
1493	681-G	Wellhouse and Hydropneumatic Tank Wastewater Treatment
1494	682-1G	Elevated Water Storage Tank
1495	682-G	Elevated Water Storage Tank
1496	686-1G	Dam Service Building
1497	701-12G	Guardhouse HW 125 - RD. 3
1498	701-13G	Guardhouse HW 125 - RD. 6
1501	701-4G	Gatehouse, Williston Entrance
1502	701-8G	Guardhouse HW 125 - RD. 2
1503	704-16G	Administration Building for Wastewater Treatment Equipment
1504	709-1G	100 Area Fire Station
1505	709-7G	Fire Station
1506	735-7G	Environmental Support Facility, PAR Pond
1507	735-8G	Greenhouse
1512	760-12G	Deer Hunt Building
1527	782-12G	Treated Extracted Groundwater
1528	782-1G	FRP Surge Containment of Injection Water Tank
1529	782-2G	FRP Surge Containment of Extracted Water Tank
1530	782-4G	Treated Extracted Groundwater
1531	782-7G	FRP Surge Tank
1532	782-8G	FRP Injection Tank
1533	904-108G	Trembler Station on C Road
1534	904-109G	Trebler Sampler Pit No. 4
1535	904-47G	Trebler Sampler, #1 for 904-41G (Abandon)
1536	904-48G	Trebler Sampler #2 for 904-44G (Abandon)

H Area

1550		H-Canyon
1537	211-10H	MCC NO. 2
1538	211-17H	15K Gallon UNH Storage TK Electric Control Room
1539	211-27H	LEU Loading Station
1540	211-7H	Chemical Storage Building

1541	211-8H	Control Room
1542	211-9H	MCC NO. 1
1543	211-H	Canyon Auxiliaries
1544	221-17H	Storage Building
1545	221-18H	Storage Building
1546	221-19H	Storage Building
1547	221-1H	A - Line
1548	221-21H	B-Line Storage Building
1549	221-4H	Decontamination Cell Maintenance Facility
1551	222-H	Cold Feed Preparation Facility
1552	224-H	Mercury Storage Building
1553	225-6H	Warehouse
1554	228-H	Safeguards and HP Shop
1556	241-100H	HDB8 Facility
1557	241-101H	HDB8 HVAC Building, Filter Building
1558	241-102H	Office/Warehouse
1559	241-103H	Cooling Water Basin
1560	241-104H	Influent Pump Station
1561	241-105H	MCC Building
1562	241-125H	Fire Water Pump House
1563	241-13H	West Pump House
1564	241-146H	Fire Suppression Foam House
1565	241-149H	ETF Storage Building
1566	241-14H	East Pump House
1567	241-17H	Breathing Air Compressor Building
1568	241-18H	Treated Water Storage Tank
1569	241-19H	Treated Water Storage Tank
1570	241-20H	Treated Water Storage Tank
1571	241-214H	DCS I/O Station
1572	241-224H	RBA Entrance Shack to Tanks 9-12
1573	241-227H	RBA Entrance Shack to Tanks 29-32 and 35-37
1574	241-228H	RBA Entrance Shack to Tanks 13-16
1575	241-229H	RBA Entrance Shack to Pump Pit 5 & 6
1576	241-242H	EPVE Storage Building
1577	241-243H	Chemical Addition Tank
1578	241-25H	Portable Gang Valve House
1579	241-270H	Storm Water Diversion Box
1580	241-271H	Storm Water Diversion Box
1581	241-27H	Diversion Box
1582	241-28H	2H Control Room & Office Building
1583	241-29H	Cooling Tower for Evaporator #2
1584	241-2H	3H Control Room & Office Building
1585	241-31H	DB#7 and Gang Valve House
1586	241-32H	Cold Feeds Area
1587	241-34H	IX/RO/Evaporator OH Tank Containment
1588	241-35H	HDB-2

1589	241-36H	Evaporator Condenser Tank Containment
1590	241-37H	Evaporator Feed Tank
1591	241-3H	HDB-3
1592	241-49H	Far East Pump House
1593	241-52H	Diversion Box DB#5
1594	241-53H	HVAC HEPA Containment
1595	241-56H	HDB-6
1596	241-57H	Laundry Building
1597	241-58H	Maintenance and E & I Shop
1598	241-62H	Motor Control Center
1599	241-64H	Process Air Compressor Building
1600	241-65H	Maintenance Office Building
1601	241-70H	Process Pump Pit for New Waste Header
1602	241-74H	Control Room & MCC Building
1603	241-75H	Wastewater Collection Tank Containment
1604	241-76H	Mercury Removal and Carbon Tank Area
1605	241-81H	Treatment Building
1606	241-82H	ITP Control Room
1607	241-84H	Control Building
1608	241-85H	Personnel Monitor Building North Gate
1609	241-86H	Personnel Monitor Building A
1610	241-87H	Personnel Monitor Building NW of 241-58H
1611	241-88H	Equipment Storage
1612	241-89H	Storage and Supply Building
1613	241-8H	Diversion Box 4 and Gang Valve House
1619	241-909H	Waste Storage Tank
1614	241-90H	Storage and Supply Building
1620	241-910H	Waste Storage Tank
1621	241-911H	Waste Storage Tank
1622	241-912H	Waste Storage Tank
1623	241-913H	Waste Storage Tank
1624	241-914H	Waste Storage Tank
1625	241-915H	Waste Storage Tank
1626	241-916H	Waste Storage Tank
1627	241-921H	Waste Storage Tank
1628	241-922H	Waste Storage Tank
1629	241-923H	Waste Storage Tank
1630	241-924H	Waste Storage Tank
1631	241-929H	Waste Storage Tank
1615	241-92H	Storage and Supply Building
1632	241-930H	Waste Storage Tank
1633	241-931H	Waste Storage Tank
1634	241-932H	Waste Storage Tank
1635	241-935H	Waste Storage Tank
1636	241-936H	Waste Storage Tank
1637	241-937H	Waste Storage Tank

1638	241-938H	Waste Storage Tank
1639	241-939H	Waste Storage Tank
1640	241-940H	Waste Storage Tank
1641	241-941H	Waste Storage Tank
1642	241-942H	Waste Storage Tank
1643	241-943H	Waste Storage Tank
1644	241-948H	Waste Storage Tank
1645	241-949H	Waste Storage Tank
1646	241-950H	Waste Storage Tank
1647	241-951H	Waste Storage Tank
1616	241-96H	Filter/Stripper Building
1617	241-98H	Chemical Addition Portable Building
1618	241-99H	Chemical Addition Portable Building
2229	241-H	Waste Storage Tanks 9-16 (HDB-1)
1648	242-11H	Service Building for 3H Evaporator
1649	242-16H	2H Evaporator
1650	242-18H	CTS - H-Area
1651	242-1H	1H Control Room Building
1652	242-24H	Office/Lunch Room Building
1653	242-25H	3H Evaporator Connected with 242-11H Service Building
1654	242-9H	Electrical Control Room/PVS HEPA Building
1655	242-H	1H Evaporator
1656	244-1H	RBOF Storage Building
1657	244-H	Receiving Basin for Off-Site Fuel
1658	245-1H	Parking Area/Regeneration Activities
1659	245-H	Resin Regeneration Building
1660	251-H	Primary Substation (High Voltage 115 KV)
1661	252-22H	Transformer
1662	253-H	Radiological Monitoring Equipment Shop
1663	254-16H	Diesel Generator for 241-2H
1664	254-19H	Diesel Generator Building for Canyon Exhaust
1665	254-5H	Diesel House
1667	262-H	CIF Tank Farm
1668	280-1H	Basin
1669	281-10H	Filter and Deionizer Facility
1670	281-13H	Cooling Water Monitor House
1671	281-14H	Cooling Water Monitor House
1672	281-15H	Cooling Water Monitor House
1673	281-16H	Cooling Water Monitor House
1674	281-17H	Cooling Water Monitor House
1675	281-18H	Cooling Water Monitor House
1676	281-1H	Return Water Delaying Basin
1677	281-2H	Return Water Delaying Basin
1678	281-4H	Monitoring House
1679	281-5H	Segregated Water Delaying Basin
1680	281-6H	Monitoring House

1681	281-8H	Storage Basin, 4 Million Gallon, Lined
1682	282-H	Reservoir and Pump House
1683	284-10H	Coal Handler Observation Building
1684	284-7H	Maintenance Laydown Building
1685	284-H	Powerhouse
1686	285-10H	Cooling Towers and Chemical Addition Building
1687	285-H	Cooling Tower
1688	291-H	Canyon Stack
1689	292-1H	Vessel Vent Fan House
1690	292-2H	Fan House Building
1691	292-3H	Stack Monitoring Equipment Building
1692	292-H	Canyon Exhaust Fan House
1693	294-1H	Additional Canyon Sand Filter
1694	294-H	Canyon Exhaust Filters
1695	299-2H	Air Compressor Building
1696	299-4H	Storage and Supply Building
1697	299-5H	Crane Shelter
1698	299-H	Maintenance Facility
1699	607-20H	Chemical Feed Facility
1700	607-24H	Lift Station
1701	607-33H	Solvent Tank
1702	607-34H	Solvent Tank
1703	607-35H	Solvent Tank
1704	607-36H	Solvent Tank
1705	607-40H	H-Area Pump Station for Wastewater Treatment Facility
1706	701-15H	Guardhouse
1707	701-19H	South Gate Guard Shack
1708	701-1H	Patrol Headquarters
1709	701-20H	West Badge House
1710	701-23H	GATE "Q" ECF
1711	701-34H	Entry Control Facility (For HTF Area)
1713	702-H	Telephone Exchange Building
1714	703-H	Office Building
1715	704-2H	Administration Building
1716	704-55H	Construction Administration Office
1717	704-56H	Office Building
1718	704-H	Area Administration and Services Building
1719	705-H	Training Building
1720	706-H	Office Building
1721	707-H	Office Building
1722	719-H	Medical Facility
1724	724-H	Office, Shop, and Storage Building
1725	766-H	SRS Central Training Facility
1726	772-H	Pre-Fabricated Building
1728	902-3H	Fire Water Pump House

1729	905-87H	Deepwell
K Area		
1733		K-Area Complex
1730	105-13K	Heavy Water Storage Facility
1731	105-1K	No. 1 & 4 Basin Deionizers (POR) Pad Facility
1732	105-3K	Disassembly Basin Filtration Facility
1734	107-K	Cooling Water Effluent Sump
1735	108-1K	Engine House
1736	108-2K	Engine House
1737	151-1K	Primary Substation (High Volt 115/13.8)
1738	151-2K	Primary Substation (High Volt 115/13.8)
1739	183-2K	Filter and Softener Plant
1740	183-3K	Diesel Generator Control Building
1742	184-2K	Shelter for Diesel Fuel Oil Storage Tank No. 1
1743	184-K	Powerhouse
1747	186-K	Cooling Water Reservoir
1748	190-K	Cooling Water Pump House
1749	192-2K	Pumphouse - Reactor Fire Water System
1750	192-K	Pumphouse - Domestic and Fire Water System
1751	607-18K	Chemical Feed Building
1754	701-1K	Area Gatehouse & Patrol Headquarters
1755	701-2K	Gatehouse Entrance at Building 105
1756	702-K	Telephone Exchange Building
1757	704-K	Area Administrative and Services Building
1758	705-K	Administrative Office Facility
1759	711-K	Maintenance Material Storage Building
1760	717-16K	Lumber Storage Shed
1761	717-K	Video - Safeguards Maintenance Facility
2241	904-88G	K-Area Containment Basin and Associated Purge Field
1763	915-K	Domestic Water Elevated Storage Tank
L Area		
1766		L-Area Complex
1764	105-10L	L Reactor Disassembly Basin Deionizer System
1765	105-9L	Settler Tank and Filters Area
1767	107-L	Cooling Water Effluent Sump
1768	108-1L	Engine House
1769	108-2L	Engine House
1772	151-1L	Primary Substation (High Volt 115/13.8)
1773	151-2L	Primary Substation (High Volt 115/13.8)
1774	152-7L	Generator Room
1775	183-2L	Filter and Softener Plant
1778	184-6L	Storage Building
1782	607-19L	Chemical Storage Building
1784	701-1L	Area Gatehouse & Patrol Headquarters
1785	701-2L	Gatehouse Entrance at Building 105
1786	702-L	Telephone Exchange Building

1787	704-L	Area Administrative and Services Building
1788	711-L	Maintenance Material Storage Building
1792	723-4L	SWP Clothing Building
1793	723-L	Contaminated Laundry Storage Building
M Area		
1796	315-M	Essential Materials Warehouse [1]
1802	323-M	MCC for Groundwater Treatment
1817	782-1M	Pump House
N Area		
1820	607-84N	Treatment Facility
1821	623-27N	SRS Central Climatology Data Station
1822	645-1N	Administration Building
1823	645-2N	Interim Storage Facility
1824	645-4N	Solid and Hazardous Waste Storage Building
1825	645-N	Storage Facility for Non-Radioactive Hazardous Waste
1826	652-12N	SEC Trans Substation
1827	681-17N	Pump House
1828	690-N	Process Heat Exchanger Repair Facility
1829	704-1N	SRQA Building, C/S
1831	704-3N	C/S CAB Building
1832	704-4N	Miller Dunn Electric Building
1833	704-N	Construction Administration Building
1834	705-N	Administration Building
1835	706-3N	Heavy Equipment Storage Shed
1836	706-N	Administration Building
1837	710-10N	Cable Shed
1838	710-12N	Tire Storage Canopy
1839	710-14N	Equipment Shed
1840	710-15N	Storage Shed
1841	710-17N	Flammable Storage
1842	710-2N	Storage Building
1843	710-4N	Hazardous Waste Storage
1844	710-6N	HE Oil Storage Building
1845	710-7N	Storage Shed
1846	710-9N	Machine and M.W. Oil Storage
1848	711-1N	Pipe, NPC Office - Electrical Shop
1849	711-2N	Special Projects - Addition
2228	711-4N	Lead Melter
1851	711-5N	Plumbing Maintenance Area
1852	711-6N	X-Ray
1853	711-9N	Mechanical Shop
1854	711-N	Pipe and Mechanical Shop
1855	713-1N	A Warehouse, CMR, ISC Control #31
1856	713-2N	Double Bay Warehouse for S Area
1857	713-3N	Warehouse for S-Area
1858	713-N B	Warehouse, C/S

1859	714-2N	Spare Equipment Storage
1860	714-5N	Reactor Component Storage
1862	714-7N	Separations Process Storage
1863	714-N	Storage Building
1864	715-2N	Bulk Frit Facility
1865	716-1N	New Steam Cleaning
1866	716-4N	Heavy Equipment Wash Area
1867	716-N	Garage, SVC Station, Compressor House
1868	717-10N	Warehouse and Insulation Shop
1871	717-13N	Construction Env Staging Building
1872	717-15N	Reclaiming Building
1873	717-1N	Boilermaker Shop
1874	717-21N	Small Tool Repair Shop
1875	717-3N	Sheet Metal Shop
1876	717-5N	PTL, INST, QA and Warehouse
1877	717-8N	Carpenter Shop and Office
1878	717-9N	Layout, T&I Offices, Weld Test
1879	717-N	SIW Shop
1880	719-5N	Construction Employment Building
1881	719-N	Property Management
1882	722-N	E&I Shop
1883	725-1N	A Sandblast Shed
1884	725-2N	Paint Shed
1885	725-N	Paint
1886	726-1N	Coal Sampling Facility
1887	728-N	Cask Repair Facility
1888	730-N	Furniture Storage Warehouse
1889	731-1N	Receiving Facility - Material Receiving and Storage Facility
1890	731-2N	Bulk Storage Warehouse - Material Management Receiving and Storage Facility
1891	731-3N	Spare Parts Warehouse - Material Management, Receiving, and Storage Facility
1892	731-4N	General Stores Warehouse
1893	731-5N	Flammable Material Storage
1894	731-6N	Compressed Gas Storage
1895	731-N	Asset Support Group Building
1896	741-1N	PCB Storage Facility
1897	741-2N	Used Drum and Battery Storage
1898	741-N	Salvage and Reclamation Building
1900	763-52N	Storage Building
P Area		
1919	702-P	Telephone Exchange Building
S Area		
1932	210-S	Service Building
1933	221-S	Vitrification Building

1934	250-1S	Spare Equipment Storage Building
1935	250-2S	Portable Storage Building
1936	250-S	Glass Waste Storage Building
2231	251-S	Glass Waste Storage Building #2 (GWSB #2)
1937	260-S	Crane Control Building
1938	291-S	Vent Exhaust Stack
1939	292-S	Fan House
1940	294-S	Sand Filter
1941	422-2S	Bulk Frit Facility
1942	422-S	Cold Feed Storage
1943	430-1S	REF Organic Recovery Unit
1944	430-S	Organic Waste Storage Facility
1945	511-1S	Low Point Pump Pit HVAC
1946	511-2S	Instrument Shelter Building
1947	511-S	Low Point Pump Pit
1948	512-1S	Latewash Facility HVAC Building
1949	512-6S	Latewash Laboratory
1950	512-7S	Latewash Cold Chemical Feed Shelter
1951	512-S	Latewash Facility
1952	607-S	S-Area Pump Station for Wastewater Treatment Facility
1953	701-S	Entry Control Facility
1954	702-S	Telephone Building
1955	704-106S	Cylinder Storage Shelter
1956	704-71S	TC-S1 Administration Building
1957	704-72S	TC-S2 Receiving Stores
1958	704-S	Operations Building
1959	706-S	Distributive Control Staging Building
1960	707-S	Maintenance Shop
1961	714-S	Spare Parts Building
1963	717-11S	TC-S3 Pipe Shop
1964	717-12S	TC-S5 Electrical Shop
1966	717-S	Office Building and Maintenance Shop
1967	831-10S	Chemical Storage Building
1968	831-3S	Swirl Cell Facility
1969	831-S	Swirl Cell Facility
1970	951-S	Primary Substation
1971	952-7S	Transformer 952-7S
1972	956-S	Fuel Oil Storage
1973	980-1S	Neutralized Fire Water Tank
1974	980-S	Water and Chemical Waste Treatment Facility
1975	981-1S	Chemical Treatment Facility
1976	981-S	Cooling Tower

T Area

1979	678-5T	Semiworks Waste Tank Mock-Up
2155	678-6T	Waste Tank Mock-Up Retention Basin
2156	678-7T	Storage Building

2161	679-4T	Drum Shelter
2002	702-T	Telecommunication Building
Z Area		
2004	201-Z	SSHT/FWRT Pits and Pad
2005	205-1Z	Flyash Silo #1
2006	205-2Z	Flyash Silo #2
2007	205-3Z	Flyash Silo #3
2008	205-4Z	Cement Silo
2009	205-7Z	Unloading Shed
2010	205-8Z	Unloading Office
2011	210-Z	Process
2012	451-1Z	Vault No. 1
2013	451-4Z	Vault No. 4
2014	704-Z	Saltstone Operations Building
2015	901-Z	Fire Water Pump House
2016	951-Z	Electrical Substation
2017	980-Z	Domestic Water Tank

Notes: SRS Index Number is a unique identifier assigned to each individual Unit.
This number is used by SRS for tracking and is not meant to imply a ranking or priority.
[1] FDEs with regulatory concurrence on the use of the Simple Model; however demolition has been delayed.
[2] FDEs with regulatory concurrence on the use of the EE/CA Model; however decommissioning has been delayed.
[3] Building 735-A includes the footprint of Building 735-6A, Sample Storage Building, equipment and pad.

Table A-3. SRS D&D Facilities / Remnants that Require No Further Evaluation (Source: SRS FFA, Rev 0, Appendix K.2 for FY2014)

SRS Index Number	Number	D&D Facilities/Remnants that Require No Further Evaluation
A Area		
1001	607-16A	Chemical Feed Facility
1003	607-1A	Sewage Treatment Plant
1004	701-12A	Security South Entry Control
1005	701-13A	Guardhouse at Employment Road
2208	701-2A	Gatehouse, Receiving Area
2207	701-3A	Gatehouse, Road D
1021	706-A	Field Office for DOE
1022	707-A	Janitorial Subcontract Office
1023	708-A	Cafeteria
1024	709-A	Fire Station No. 1
1025	710-A	Warehouse Building (East of 714-A)
1028	713-1A	Central Stores Warehouse
1029	713-2A	Central Stores Storage Building
1030	713-A	Central Stores Building
1031	714-A	Spare Machinery Storage
1036	717-10A	FPEG
1043	719-4A	CFOD & General Counsel Building
1044	719-A	Medical and Employment Building
1046	720-A	Patrol Headquarters
1047	721-A	Training School and Laboratories Building (Including 721-2A)
1056	724-16A	Storage Building
1057	724-2A	T&T Storage Shed
1058	724-5A	E&I Vehicle Storage Shed
1059	724-A	E&I-CS- Central Shop Office Complex
1062	733-1A	Oil Storage Building
1063	733-A	Flammable Storage House
1064	734-A	Compressed Gases Storage
1093	740-8A	Storage Building
1096	743-1A	Vehicle Shed
1098	745-A	Excess Sales Building
1107	763-A	Tire Storage Building
C Area		
1188	607-9C	Air Compressor Building
1189	614-2C	Effluent Monitoring Building
1191	701-2C	Gatehouse Entrance at Building 105
D Area		
2025	403-D	Soil Bioremediation Facility
1202	411-3D	Fire Fighting Simulator Building (Forextraction Office)
2227	411-D	Heavy Water Extraction Facility

1203	412-10D	Tube Bundle Cleaning Shelter
1204	412-17D	West Substation A
1205	412-2D	East Substation B
1206	412-3D	Storage Building
1207	412-4D	Mask Maintenance Building
2022	412-6D	Heat Exchanger Maintenance Structure (Elevated Training Tower)
1208	412-8D	Tube Bundle Inspection
1209	412-9D	Bolt Storage
1210	414-D	Storage Building East
2023	415-1D	Storage Building
1211	415-D	Storage Building West
1213	420-3D	Tritium Effluent Monitoring Building
1216	421-4D	Drum Storage
2026	421-5D	Loading Dock
1217	421-6D	Heavy Water Equipment Storage
1221	480-2D	Maintenance Material Storage
1238	701-1D	Maintenance Support Administration Building
1239	701-2D	Gatehouse Railroad Entrance
1240	701-3D	Storage Building
1242	704-D	Area Administrative Building and First Aid
1243	707-D	Janitorial Subcontract Office
1245	711-1D	Storage Building
1246	711-D	T&T Office and Storage Building
2029	715-D	Gasoline Station
1247	717-1D	Storage Area
2030	717-4D	Storage Area
1249	717-D	Shops, Stores, and Change House
E Area		
1271	724-10E	Office/Storage Building
1272	724-7E	Burial Ground Administration Building
1273	724-8E	Experimental TRU Waste Assay Building
F Area		
2035	080-10G	Storage Shelter
2034	080-9G	Storage Shelter
1274	211-1F	Control House
2033	211-5F	Turnover Room and Storage Building
2032	211-8F	Laundry Storage Building
1281	221-13F	Control and Alarm Center
1282	221-14F	Construction Laydown & B25 Storage Building
1284	221-20F	Compressor Building
1287	221-25F	Equipment Storage Facility
1288	221-26F	Storage Building
1289	221-27F	Separations Planning and Scheduling Building
1291	221-37F	Construction Change Facility
2205	247-10F	Deluge Valve House
2206	247-18F	Cylinder Storage Shed

1353	247-41F	Warehouse
1354	247-42F	Warehouse
1358	249-F	Fabrication Shop
1365	254-2F	Diesel Generator Facility, 246-F
1366	254-5F	Diesel House
1367	254-7F	Diesel Generator
1369	263-95F	Storage Shed
1371	280-2F	Chemical Feed Building
1374	281-25F	Cooling Water Activities Monitoring Building
1383	284-9F	Storage Building
2218	285-2F	Fire Protection Deluge Building
1401	701-1F	Patrol Headquarters
1402	701-22F	Guardhouse
1403	701-23F	Guardhouse
1407	703-F	Separations Support Building
1409	704-F	Area Administrative and Services Building
1410	706-F	Project Office Building
1415	709-1F	Fire Protection Equipment Building
1416	709-F	Fire Station No. 2
1421	717-14F	Construction Craft Material Storage Building
2219	719-F	Regulated Change House for Cooling Tower
1427 7	29-F	Respirator Fit Test Trailer
1434	905-37F	Well, North of 252-7F (Abandoned)

G Area

2253	607-10G	Septic Tank and Adjacent Tile Field
2245	661-1G	Control Building
1485	661-2G	Firing Shed
2246	661-3G	Firing Range Training Facilities (Bear and Roger Ranges)
2249	661-6G	Ammunition Storage Building
2250	661-7G	Ammunition Storage Building
1486	661-G	Patrol Training Building - Rifle and Pistol Range
1488	681-23G	PAR Pond Chlorine Container Building
1499	701-18G	Guardhouse at RD 1 and D-1 (Pecan Gate)
1500	701-2G	Gatehouse, Allendale Entrance
2204	701-5G	New Ellenton Barricade Guardhouse
2203	701-6G	Jackson Barricade Guardhouse
1522	772-10G	Core Storage
1525	772-8G	Core Storage
1526	772-9G	Core Storage
2252	905-118G	Well Pump House
2251	905-11G	Well Pumping Station

H Area

2036	285-1H	Cooling Tower Sprinkler System Valve House
2037	285-2H	Regulated Change House

K Area		
1741	183-4K	Clarification Plant (Misc. Services)
1744	185-3K	Cooling Tower
1745	185-K	Cooling Tower
1746	186-1K	Sodium Hypochlorite Tank Storage
2202	607-19K	De-Cholorination Skid
2201	607-21K	De-Cholorination Building
1753	614-2K	Effluent Monitoring Building
1762	901-1K	Polyphosphate Unloading and Storage Facility
L Area		
1771	110-L	Helium Storage Tank
1776	183-3L	Diesel Generator Control Building
1777	183-4L	Clarification Plant (Misc. Services)
1779	186-L	Cooling Water Reservoir
1780	190-L	Cooling Water Pump House
1781	191-L	Standby Pump House
1783	614-2L	Effluent Monitoring Building
2244	709-1L	Storage Facility
1789	723-1L	Clothing Change Facility
1790	723-2L	Clothing Change Facility
1791	723-3L	Clothing Change Facility
M Area		
1797	316-1M	Chemical Storage Pad
1810	363-1M	Electrical Storage Building (Formerly MS4)
1811	363-2M	Electrical Storage Building (Formerly MS5)
1812	701-1M	Main Gatehouse
2031	701-3M	M-Area Gatehouse
1813	701-4M	Harden Entry Control Facility to 321-M
1814	704-M	Area Administration and Services Building
1815	710-M	Storage Building
1816	730-M	Engineering & Training Building
2024		NBN Guardhouse M-4
N Area		
1818	278-2N	Ice House
1819	607-38N	Chemical Feed Facility
2254	681-11N	No. 14 Pump House
1830	704-2N	Concrete Office
1847	710-N	Excess Storage
1899	763-106N	Storage Building
P Area		
1901	105-13P	Heavy Water Storage Facility
2223	105-6P	Change Facility Deionizer Section
2221	110-P	Helium Storage Facility
1906	151-1P	Primary Substation (High Volt 115/13.8)
1907	151-2P	Primary Substation (High Volt 115/13.8)

1909	183-2P	Filter and Softener Plant
1910	183-4P	Clarification Plant (Misc. Services)
1911	186-1P	Sodium Hypochlorite Tank Storage
1912	186-P	Cooling Water Reservoir
1913	190-P	Cooling Water Pump House
2215	607-1P	Sanitary Lift Station
1914	607-22P	Chemical Feed Facility
2216	607-23P	Sewage Treatment Plant
1915	607-24P	Equalization Basin
2217	607-7P	Sanitary Treatment Facility
2224	608-P	RZ Change Facility
1916	614-2P	Effluent Monitoring Building
1917	701-1P	Area Gatehouse & Patrol Headquarters
1918	701-2P	Gatehouse Entrance at Building 105
1920	704-P	Area Administrative and Services Building
2214	711-1P	Storage Building
2213	711-P	Maintenance Material Storage Shed
R Area		
1926	151-1R	Primary Substation (High Volt 115/13.8)
1927	151-2R	Primary Substation (High Volt 115/13.8)
1928	183-1R	Clarification Plant (Cooling Water)
1929	183-2R	Filter and Softener Plant
1930	186-R	Cooling Water Reservoir
1931	190-R	Cooling Water Pump House (Standby)
S Area		
1962	717-10S	TC-S7 Lab Support Facility (Formerly 717012 N)
1965	717-3S	Lubrication Storage Building
T Area		
2042	505-T	Fire Alarm System
2043	509-T	Environmental Staging Building
2038	53-T	Security Sign
2044	603-79T	Roads - CMX - TNX Area
2045	604-1T	Walks - CMX - TNX Area
2046	605-1T	Fences - CMX - TNX Area (Fences, Power Poles, and Steam Line)
2048	607-11T	Septic Tank, Adjacent to 677-G
2047	607-1T	Septic Tank, Adjacent to 679-T
2049	607-33T	Sanitary Lift Station
2050	607-36T	TNX Northern Area Septic Tank
2051	607-37T	TNX Southern Area Septic Tank
2052	607-39T	TNX N Area Sanitary Waste Lift Station
1982	607-40T	TNX Packaged Sanitary Waste Treatment Plant
1983	607-41T	TNX Sanitary Waste Chemical Feed Building
2053	607-42T	Sanitary Lift Station
2054	607-44T	Sanitary Lift Station
2055	607-45T	Lift Station for 672-T

2056	613-2T	Parking Lot - CMX Area
2079	622-10T	Boat Dock Facilities - TNX
2057	641-1T	Building
2058	643-5T	Burial Ground/CMX-TNX & Contamin Stor
1985	652-13T	Secondary Transformer Substation #3, TNX
2064	652-14T	Secondary Transformer, Substation No. 4, TNX
2065	652-15T	Secondary Transformer, Substation No. 5, TNX
2066	652-18T	Secondary Transformer, Substation No. 6, 675-T - TNX
2067	652-19T	Secondary Transformer, Substation No. 7, 677-T - TNX
2059	652-1T	Substation for 679-T
2068	652-22T	Electrical Substation
2069	652-24T	Secondary Transformer Substation
2070	652-25T	Electrical Substation
2071	652-26T	Substation
2060	652-2T	Substation for 679-T
2072	652-32T	Substation
2073	652-33T	Secondary Transformer for 904-T
2074	652-34T	75KVA Transformer
2075	652-35T	75KVA Pad Mounted Transformer for 702-T
2061	652-3T	Substation for 679-T
2076	652-45T	75KVA Substation for 702-T
2062	652-4T	Secondary Transformer, Substation No. 2 TNX
2063	652-5T	Secondary Transformer, Substation No. 2A
2078	654-1T	1000KVA Diesel Generator
2077	654-T	Generator
2090	663-10T	Building Aluminum #602
2091	663-11T	CSM 10-2 Pipe (#4543)
2092	663-12T	Gray's Handi-House (#9173)
2093	663-13T	Handi-House (#53349)
2094	663-14T	Robin Building #915 (#10184)
2095	663-15T	Handi-House #962
2096	663-16T	Handi-House
2097	663-17T	Handi-House
2098	663-18T	Handi-House
2099	663-19T	Handi-House
2081	663-1T	Building Aluminum #201
2100	663-20T	Handi-House #178 LS2
2101	663-21T	Handi-House #168 CS2
2102	663-22T	Handi-House #301 CS2
2103	663-23T	Handi-House #309 CS1
2104	663-24T	Handi-House IS1
2105	663-25T	Handi-House IS2 068
2106	663-26T	Handi-House #882 CS2
2107	663-27T	Handi-House #325 LS3
2108	663-28T	Handi-House #345
2109	663-29T	Handi-House #391 MWS1

2082	663-2T	Building Aluminum #364
2110	663-30T	Handi-House #512 SMS1
2111	663-31T	Handi-House #313
2112	663-32T	Handi-House #615 LO11
2113	663-33T	Handi-House #431
2114	663-34T	Handi-House PS1
2115	663-35T	Handi-House PS2
2116	663-36T	Handi-House PS3
2117	663-37T	Handi-House ES1
2118	663-38T	Handi-House
2119	663-39T	Handi-House
2083	663-3T	Building Aluminum #442
2120	663-40T	Handi-House
2121	663-41T	Handi-House
2122	663-42T	Handi-House
2084	663-4T	Building Aluminum #528 (#4073)
2085	663-5T	Building Aluminum #433
2086	663-6T	Building Aluminum #323
2087	663-7T	Building Aluminum #598
2088	663-8T	Building Aluminum #727 (#4079)
2089	663-9T	Building Aluminum #375
2080	663-T	Building Aluminum #816 (#4088)
2123	668-T	TNX Construction Administration Building
2124	669-T	Construction Storage & Work Station
2125	670-T	Pilot Plan/Robotics Bldg
2126	671-1T	Storage Shed
2019	672-1T	Cooling Tower
2127	673-1T	Gas Cylinder Shed
2128	674-1T	Storage Building
2129	674-2T	DWPF Canister Storage Facility
1988	674-T	Chemical Storage Building,TNX
2130	675-1T	Backup Gener Power Station/Glass Melter
2140	676-10T	Mobile Office
2141	676-11T	Mobile Office
2142	676-12T	Mobile Office
2143	676-13T	Storage Building
2144	676-14T	Modular Office
2145	676-15T	Modular Office
2146	676-16T	Portable Computer Room
2132	676-1T	Temporary Office Annex #1, TNX (Leased)
2133	676-2T	Temporary Office Annex #2, TNX (Leased)
2134	676-3T	Temporary Office Annex #3, TNX
2135	676-4T	Mobile Office
2136	676-6T	Mobile Office
2137	676-7T	Mobile Office
2138	676-8T	Mobile Office

2139	676-9T	Mobile Office
2131	676-T	Office Facilities
2147	677-1T	Material Storage Bldg #1
2148	677-2T	Material Storage Bldg #2
2149	677-3T	TNX Personnel & Visitor Shelter
2150	677-4T	Storage Building
2151	678-1T	Modular Office
2152	678-2T	No Building Name Provided
2153	678-3T	Drum Storage Area
2157	678-8T	Office Trailer
2165	679-10T	Modular Office
2166	679-11T	Project Storage Shed
2158	679-1T	Emergency Equipment Station
2159	679-2T	Solvent Storage Shed
2160	679-3T	Chlorine Storage Shed
2162	679-5T	Fire Foam Engine House
2163	679-6T	West Fire Pump House
2020	679-7T	Water Services Chemical Addition Building
2164	679-9T	Backwash Surge Basin for 679-T
2167	680-T	pH Control Facilities for TNX
2021	681-4T	River Pump House
2168	681-T	Sep. Support Building
2169	682-1T	Storage Pad
2170	683-T	E4 Evaporator
1992	684-T	Solvent Storage Building
2171	692-1T	Analyzer House
1993	692-T	ECR/ICR Building
2172	694-1T	Pipe Laydown Area
1994	694-2T	Carpenter Shop
1995	694-T	Construction Building
2173	697-T	Site Work and General Grading
2174	698-T	Landscaping
2175	699-T	Extra Machinery (For Accounting Purposes Only)
2176	701-1T	Old Guard Gatehouse Buried Under Present Sidewalks
1996	704-1T	TNX Administration Building Annex
2177	704-2T	CSM7-28 Office
2178	704-3T	Office Trailer
2179	704-4T	Modular Office (#4085)
2180	704-5T	Modular Office (#4087)
2181	704-6T	Toilet Trailer
1997	704-8T	Bechtel Office Building
2182	704-9T	Rest Room
1998	704-T	TNX Area Administration Building.
1999	711-T	Mechanical Services Building TNX
2184	717-1T	Welding Rod Storage Building
2185	717-2T	Maintenance Shop

2039	740-1T	Storage Building
2186	772-1T	Satellite Waste Storage Pad
2000	772-T	Consolidated Laboratory
2187	782-T	Recirculation Well
2189	787-2T	Lawn Sprinkler System - TNX
2188	787-T	Hydropneumatic Tank
2040	80-10T	Waste Tank Simulation (TNX)
2041	80-14T	CMX-TNX Equipment Storage Pad
2190	803-T	Air Lines
2191	805-T	Process Water Lines
2192	901-T	Water Lines
2193	902-T	Fire Water Lines
2194	903-T	Sanitary Sewers
2196	904-10T	Well
2195	904-1T	Tank Pad
2200	905-102T	Domestic Water Well for Navy Test Area
2197	905-13T	Domestic Water Well @ CMX (Abandoned)
2198	905-96T	Domestic Water Well CMX-TNX
2199	905-97T	Domestic Water Well CMX-TNX

Notes: SRS Index Number is a unique identifier assigned to each individual Unit.
This number is used by SRS for tracking and is not meant to imply a ranking or priority.