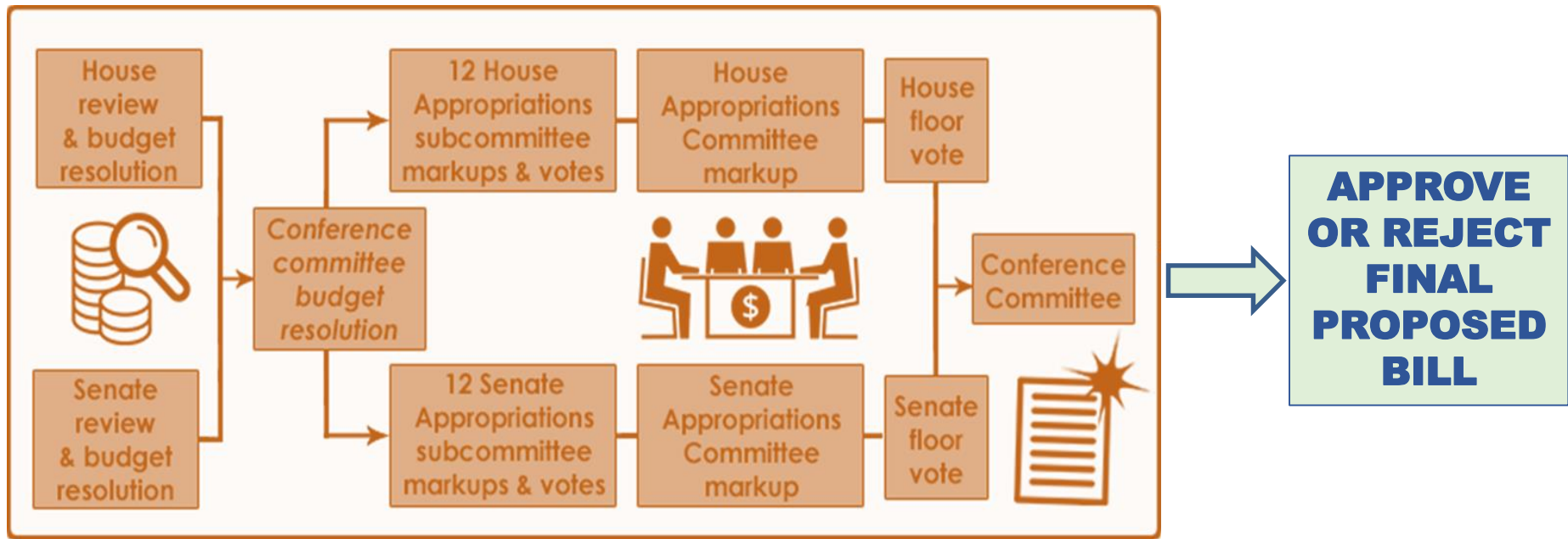


EM Site-Specific Advisory Board Chairs Meeting

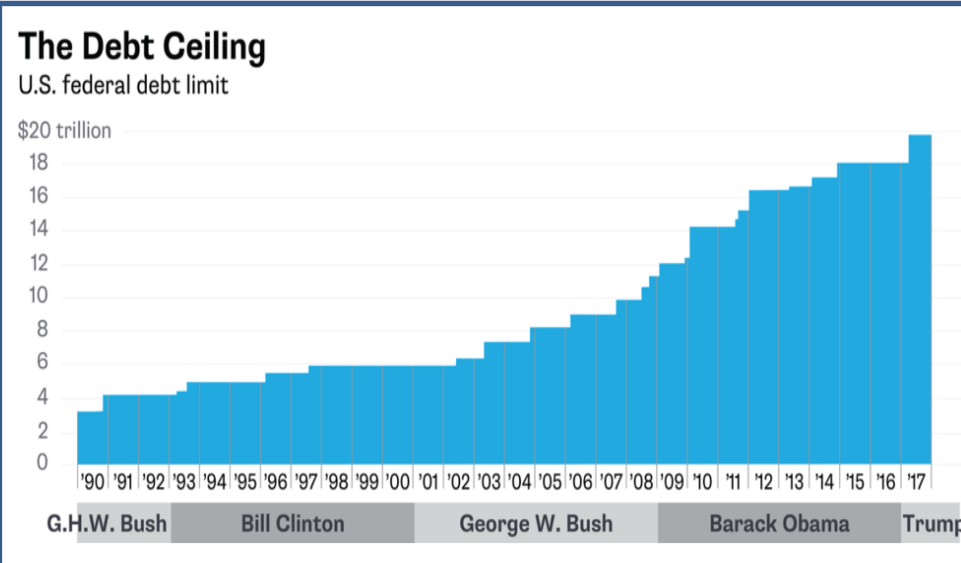
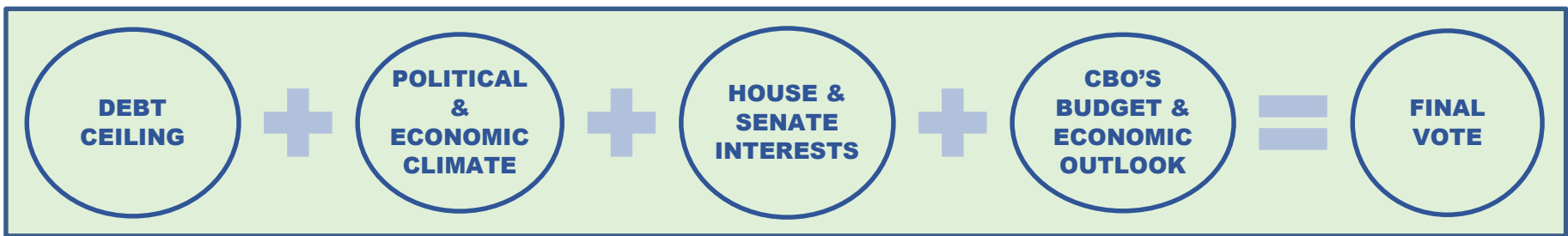
Robin Osik
Office of Budget and Planning
Environmental Management

October 2019

CONGRESS RECEIVES THE PRESIDENT'S FINAL PROPOSAL & IT IS THEN PASSED ALONG TO BOTH THE HOUSE & SENATE'S BUDGET COMMITTEES. ONCE RECEIVED.....



THERE ARE SEVERAL FACTORS THAT ARE TAKEN INTO ACCOUNT BEFORE A BUDGET RESOLUTION IS PASSED & A BILL CAN BE APPROVED BY CONGRESS.



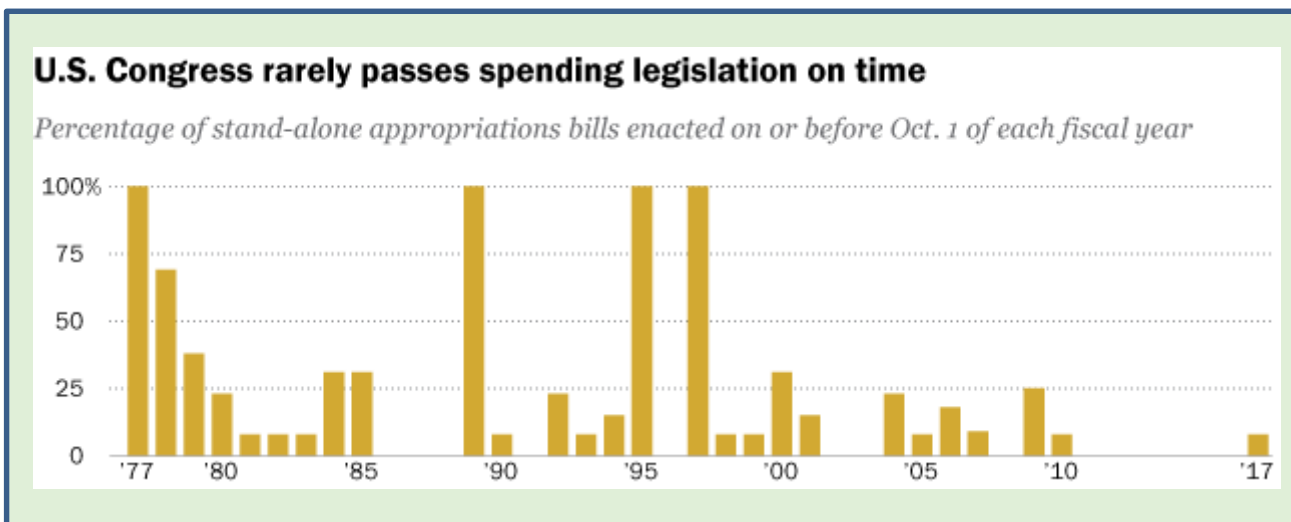
Congressional Budget Office

April 9, 2018

**An Overview of
The Budget and Economic Outlook:
2018 to 2028**

A Briefing for the Press at CBO

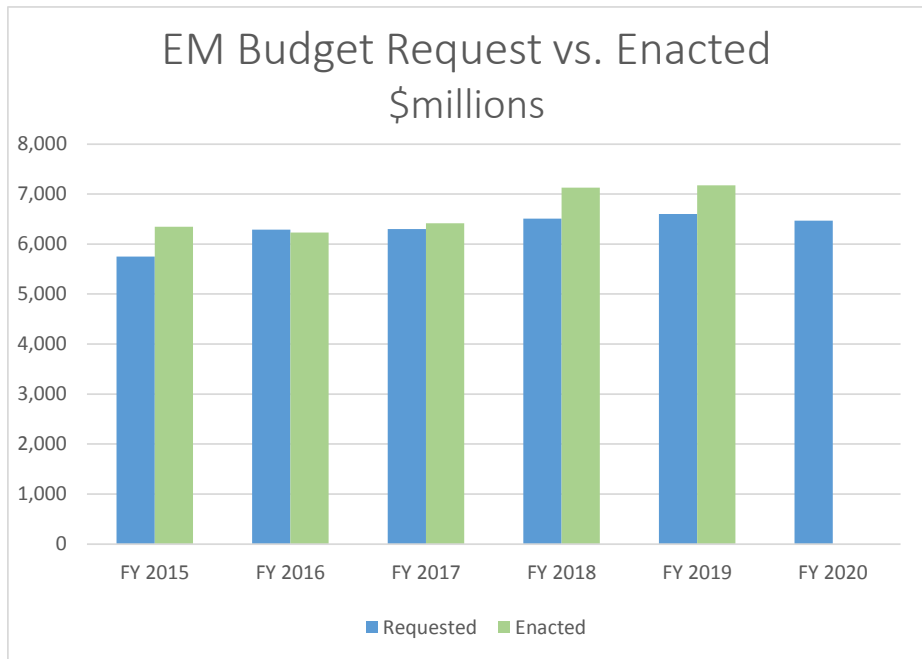
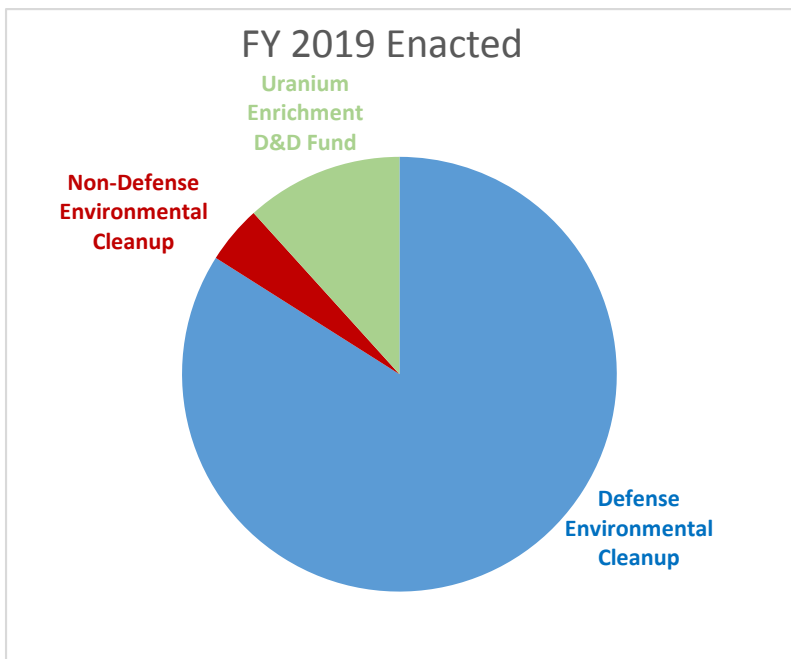
SHOULD CONGRESS NOT APPROVE A BILL OR IF THE PRESIDENT DOES NOT SIGN IT, A SHORT-TERM LEGISLATION IS PASSED (CR) WHICH KEEPS THE GOVERNMENT OPEN, FUNDING AGENCIES AT THE EXACT SAME LEVELS AS LAST YEAR.



THIS CR LASTS UNTIL A SPENDING BILL IS APPROVED & CAN LEAD TO A GOVERNMENT SHUT DOWN SHOULD NO AGREEMENT BE REACHED BEFORE THE SET DEADLINE.

Budget Trends

Appropriation Summary	FY 2018 Enacted	FY 2019 Request	FY 2019 Enacted	FY 2020 Request	FY 2020 HEWD	FY 2020 SEWD
Defense Environmental Cleanup	\$5,988	\$5,630	\$6,036	\$5,522	\$6,009	\$6,248
Non-Defense Environmental Cleanup	\$298	\$218	\$310	\$247	\$308	\$318
Uranium Enrichment D&D Fund	\$840	\$753	\$841	\$715	\$874	\$907
Subtotal	\$7,126	\$6,601	\$7,187	\$6,484	\$7,191	\$7,473
Offsets	\$0	\$0	-\$12	-\$16	-\$16	-\$22
Grand Total EM	\$7,126	\$6,601	\$7,175	\$6,468	\$7,175	\$7,451



FY18-20 Budget Requests

Site	FY 2018 Enacted	FY 2019 Cong Req.	FY 2019 Enacted	FY 2020 Request	FY 2020 HEWD	FY 2020 SEWD
Brookhaven	2	2	20	0	0	0
Carlsbad	383	403	403	398	404	404
ETEC	9	8	11	18	18	18
Idaho	446	359	443	348	436	396
Los Alamos	220	192	220	195	220	220
Lawrence Livermore	101	2	27	130	22	67
Lawrence Berkeley	41	0	35	0	31	31
Moab	38	35	45	36	45	45
Nevada	60	60	60	61	61	61
Oak Ridge	640	409	646	429	600	682
Richland	947	747	954	718	935	1,001
River Protection	1,560	1,439	1,573	1,392	1,555	1,616
Paducah	273	270	274	277	277	314
Portsmouth	448	415	476	426	489	494
Savannah River	1,471	1,656	1,551	1,643	1,620	1,649
SPRU	5	15	15	15	15	15
Sandia	3	3	3	3	3	3
West Valley	78	64	78	78	78	78
Defense Closure Site Activities	5	5	5	5	5	5
Non-Defense Closure Site Activities	10	0	0	0	0	0
Program Direction	300	300	299	279	299	294
Mission Support Activities	15	13	13	13	13	13
Technology Development	35	25	25	0	25	25
Excess Facilities	0	150	0	0	0	10
Uranium Thorium Reimbursements	36	30	11	21	30	30
Non Defense Small Sites Undistributed			0	0	9	-1
Offsets	0	0	-12	-16	-16	-16
Total, EM	7,126	6,601	7,175	6,468	7,175	7,451

FY 2020 Execution

- Continuing Resolution through November 21, 2019
- Cautious optimism among Hill staff to move FY 2020 bill
- Cloture motion filed (10/17) on Energy and Water Development that would enable a Senate vote to move to Conference with the House failed
- Continuing Resolution could potentially be extended through the end of CY 2019
- Some indication that we could be facing a full-year Continuing Resolution

FY 2021 Outlook

- Submitted the Department's request to the Office of Management and Budget (OMB) on September 9, 2019
- Anticipate OMB recommendations will be provided to the Department by way of "Passback" the first week of December
- FY 2021 Congressional Justification currently scheduled for release Monday, February 3, 2020

EM continues making measurable and meaningful progress towards cleanup completion

- Complete closure of the 90-acre D-Area Ash Project
- First transfer of land back to the local Portsmouth community
- Safe demolition of the vitrification facility at West Valley
- Demolition of Toxic Substances Control Act incinerator and 100 foot stack at Oak Ridge's East Tennessee Technology Park
- Continue processing of Canadian material, Foreign Research Reactor fuel, and High Flux Isotope Reactor fuel at H-Canyon
- Work underway on the second Salt Waste Disposal Unit at Savannah River – key to accelerating the tank waste mission
- Broke ground on the new ventilation system at Waste Isolation Pilot Plant, a facility that is the lynchpin to transuranic waste final disposition
- Commenced movement of radioactive sludge out of K-West Basin at Hanford on schedule
- On schedule to complete turnover from construction of vast majority (>90%) of the Waste Treatment and Immobilization Plant's Low Activity Waste facility at Hanford this year

EM will not only build on these recent successes in FY 2020 but is bringing a renewed sense of urgency to tackling cleanup challenges and driving down the third largest liability to the U.S. taxpayer.

EM is working collaboratively with cleanup partners toward a future that propels the mission forward and drives cleanup toward completion safer, sooner and at a responsible cost.



Hanford



Idaho



Waste Isolation Pilot Plant



Savannah River



West Valley

Adopting Modern Completion-Centric Approach to Cleanup:

- Reflecting latest scientific knowledge about waste
- Incorporating lessons learned over three decades of cleanup and historic site completions
- Evaluating new cleanup technologies, treatment and disposal options
- Incorporating accurate and up-to-date schedule and cost data into decision making
- Analyzing opportunities, in collaboration with regulators and stakeholders, to complete cleanup safer and sooner

Reinvigorating the Cleanup Mission

- Recognizing time equals money
- Addressing challenges early on and head on
- Driving projects to completion through shift to end-state contracting

Maximizing Every Cleanup Dollar

- Lowering hotel costs and funneling those resources into actual cleanup
- Strengthening project management, oversight and accountability
- Prioritizing work based on real risks

Richland, WA: Workers began filling PUREX No.2 waste storage tunnel with engineered grout

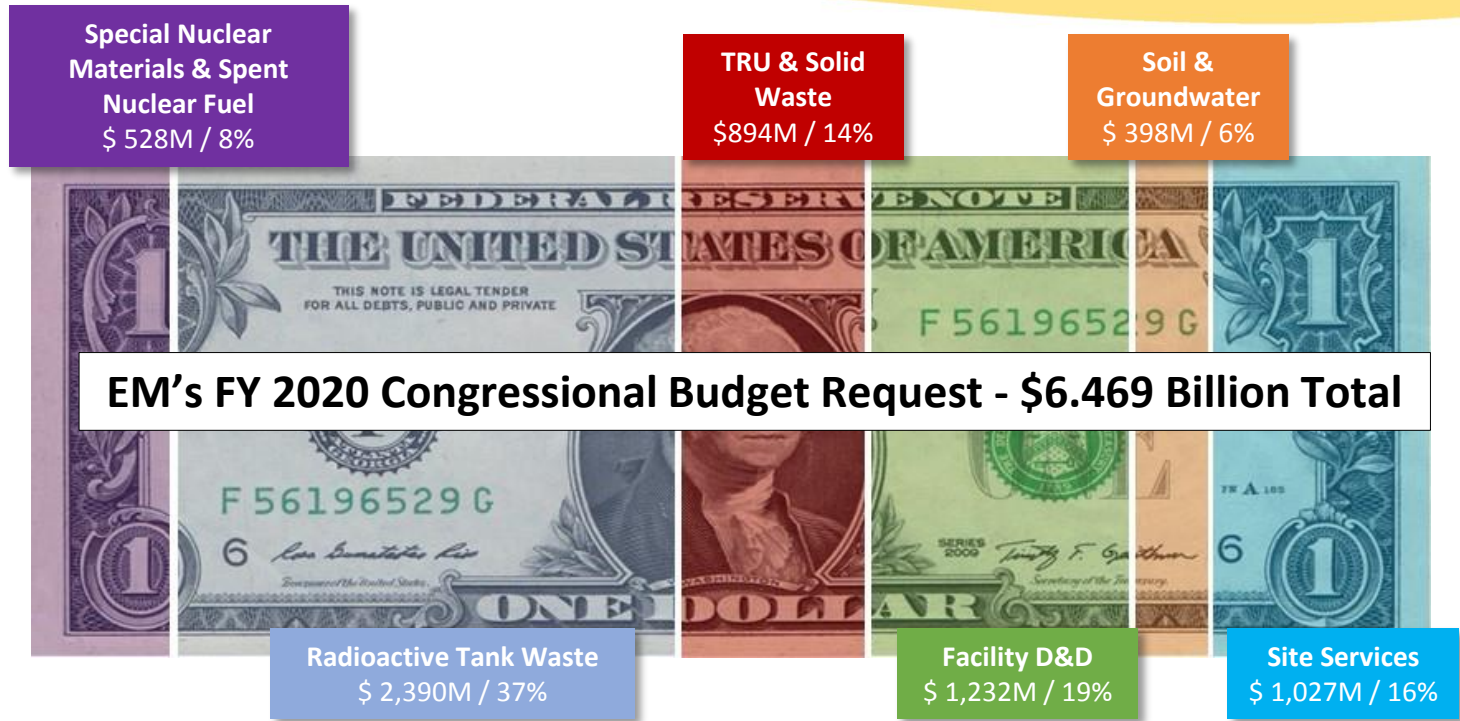


Oak Ridge, TN: Removal of two high-risk excess contaminated facilities in Y-12's Biology Complex.



Background

EM has Six Primary Mission Areas



EM's FY 2020 Congressional Budget Request - \$6.469 Billion Total

EM Sites	✓	✓	✓	✓	✓	✓	FY 20 (\$M)
Savannah River	✓	✓	✓	✓	✓	✓	1,643
River Protection		✓				✓	1,392
Richland			✓	✓	✓	✓	718
Idaho	✓	✓	✓			✓	348
Oak Ridge	✓		✓	✓		✓	429
Portsmouth	✓			✓		✓	426
Paducah	✓			✓		✓	277
Carlsbad			✓			✓	398
Los Alamos			✓		✓	✓	195
West Valley			✓	✓		✓	78
All Others			✓	✓	✓	✓	565



South Carolina (\$1,643M)

Savannah River Site

- Complete removal of material-at-risk from 235-F which addresses remaining activities per Defense Nuclear Safety Board Implementation Plan to reduce residual Plutonium 238
- Liquid Waste/Salt Waste Processing
 - Supports Salt Waste Processing Facility (SWPF) start of radioactive operations, necessary to meet State commitments and advance completion of Cleanup Mission
 - Enables waste removal preparation activities required to support SWPF planned operations rate greater than current rate for salt waste processing, allowing tank closure to proceed at a rapid pace
 - Continue construction of Saltstone Disposal Units 7 and initiate construction of Saltstone Disposal Units 8/9 and design of Saltstone Disposal Units 10-12 Project to support SWPF planned rates
- Funding to initiate the Savannah River National Laboratory's Advanced Manufacturing Collaborative facility (AMC)



Salt Waste Processing Facility



Saltstone Disposal Unit 6/7 at the Savannah River Site



Washington (\$2,111)

Office of River Protection (\$1,392M)

- Initiate cold commissioning of the Waste Treatment and Immobilization Plant to support Low Activity Waste Facility hot commissioning and production operations by December 31, 2023
- Design and construct tank farm facility upgrades (i.e. 222-S Laboratory, 242-A Evaporator and the Effluent Treatment Facility) for staging waste in 2021 for Waste Treatment Plant operations
- Incorporate lessons learned from Savannah River cesium processing to facilitate fabrication, testing and delivery of the Tank-Side Cesium Removal System to pretreat waste for the LAW facility
- Perform tank integrity activities to ensure adequate double shell tank space is available for DFLAW and AX retrievals
- Complete retrieval of single shell tank AX-102 in support of Consent Decree milestone in 2021
- Advance a production scale offsite disposition path for tank waste utilizing the regulatory pathways created by Test Bed Initiative
- Hanford Tank Closure End State Contract scheduled for award in Q4 2019 incentivizes risk based cleanup that reduces financial liability



Tank Farms

Richland (\$718M)

- Reduce risk and facility costs by supporting construction activities for future relocation of Cesium & Strontium capsules to dry storage by the TPA due date of August 2025
- Shrink the extent of radiological and chemical contamination in groundwater at Hanford through treatment of 2.2 billion gallons
- Complete 324 Building structural mods, removal of the hot cell floor, and readiness review activities for start of soil removal for remediation of the 300-296 waste site below the building
- Hanford Central Plateau Cleanup End State Contract scheduled for award in Q4 2019 incentivizes risk based cleanup that reduces financial liability



K West Reactor Basin



Idaho (\$348M)

Idaho

- Complete exhumations at Accelerated Retrieval Project area in support of meeting regulatory milestone to retrieve, process and dispose of targeted buried waste by 2023
- Initiate hot operations of Integrated Waste Treatment Unit, pending successful demonstrations of the phase 2 simulant run 3 and phase 3 performance run, to begin processing liquid sodium-bearing waste leading to closure of the final 3 liquid waste tanks
- Complete processing of legacy transuranic waste such that waste is packaged and ready for certification and shipment
- Idaho Cleanup Project End State Contract scheduled for award in Q2 2020 incentivizes risk based cleanup that reduces financial liability



Integrated Waste Treatment Unit



Accelerated Retrieval Project Enclosure 9

Tennessee (\$429M)

Oak Ridge

- Complete demolition of 90% of East Tennessee Technology Park facilities and continue environmental remediation work
- Complete processing contact-handled and remote-handled legacy transuranic debris waste inventory
- Complete construction of transuranic sludge processing test area
- Complete preparation of Building 2026 for processing remaining U-233 material at Oak Ridge National Laboratory
- Complete second of four years of construction of the Mercury Treatment Facility
- Complete preliminary design and early site preparation of On-Site Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility
- Oak Ridge Reservation Cleanup Contract End State Contract scheduled for award in Q3 2020 incentivizes risk based cleanup that reduces financial liability



Demolition of East Tennessee Technology Park facilities



Outfall 200 Mercury Treatment Facility Rendering



Ohio (\$426M)

Portsmouth

- Continue pre-demolition activities of first process building (X-326)
- Continue deactivation of second process building (X-333)
- Complete construction of On-Site Waste Disposal Facility (OSWDF) Cell Liner 1 (15-U-408), providing initial capacity for X-326 Process Building demolition debris
- Complete design and initiate construction of OSWDF Cell Liners 2, 3, and 6 and remaining infrastructure (20-U-401), providing capacity for the X-333 demolition debris
- Operate Depleted Uranium Hexafluoride (DUF6) conversion facility with expected cumulative converted total of 35,000 metric tons (~14% of inventory)
- Portsmouth D&D End State Contract scheduled for award in Q1 2021 incentivizes risk based cleanup that reduces financial liability



Process Building X-326 at Portsmouth



Future vision of central plant after D&D is complete



Kentucky (\$277M)

Paducah

- Initiate characterization activities in C-333 Process Building (2nd of four gaseous diffusion plant buildings) to determine amounts and locations of uranium deposits for removal
- Complete characterization in C-331 Process Building to facilitate uranium deposit removal and subsequent declaration of Criticality Incredible
- Complete demolition of C-400 Cleaning Building, 116,140 ft² building used to clean uranium enrichment process equipment and located over source of offsite groundwater plume
- Conduct uranium deposit removal in C-331 Process Building to achieve Criticality Incredible and reduce surveillance and maintenance costs
- Reduce Limited Area footprint from ~750 to ~615 acres to reduce project costs associated with Safeguards and Security requirements
- Operate Depleted Uranium Hexafluoride (DUF6) conversion facility with expected cumulative converted total of 59,000 metric tons (~11% of initial inventory)



C-400 Complex at Paducah

New Mexico (\$596M)

Carlsbad (\$398M)

- Support up to 10 shipments per shippable week
- Construction progress on Safety Significant Confinement Ventilation System (15-D-411) and on Utility Shaft (formerly Exhaust Shaft) (15-D-412)
- Complete two infrastructure recapitalizations (public address system and electrical substations)

Los Alamos (\$195M)

- Commence operations in two (of three planned) TRU processing lines to treat waste for shipment to WIPP
- Reduce risk by completing ~50 shipments of TRU waste to WIPP
- Complete characterization of RDX (high explosives) plume beneath Cañon de Valle and continue activities to determine final remedy
- Prevent migration of Chromium plume offsite by implementing a hydraulic barrier
- Continue investigation and cleanup activities required to meet Consent Order milestones
- Continue groundwater and surface water sampling to remain compliant with the Consent Order and Individual Permit

Sandia (\$3M)

- Install up to 8 groundwater characterization wells at Burn Site and install 2 additional injection wells for groundwater treatability study at Technical Area-5



Transuranic waste shipments arrive at the Waste Isolation Pilot Plant in Carlsbad, New Mexico



Chromium project extraction wells at Los Alamos, New Mexico



New York (\$93M)

West Valley (\$78M)

- Conduct enhanced deactivation work to simplify future Main Plant Processing Building demolition, reducing the risk associated with open air demolition.
- Demolish 5 excess industrial facilities
- Manage and maintain site infrastructure
- West Valley End State Contract scheduled for award in Q1 2020 incentivizes risk based cleanup that reduces financial liability



Main Plant Process Building at West Valley

Separations Process Research Unit (SPRU) (\$15M)

- Initiate procurement actions to transport and treat 24 containers of Separations Process Research Unit transuranic waste

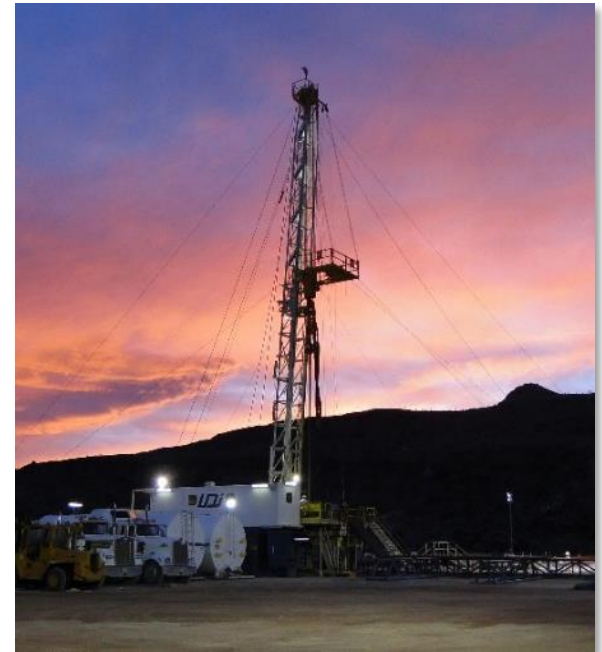


Storage of SPRU Waste

Nevada (\$61M)

Nevada National Security Site

- Complete closure of Corrective Action Unit (CAU) 97 Yucca Flat/Climax Mine
- Complete 3% for a total of 66% towards the closure of CAUs 101/102 Central and Western Pahute Mesa
- Initiate and complete 18% towards the installation of 4 post-closure monitoring network wells for CAUs 97 Yucca Flat/Climax Mine and 99 Rainier Mesa/Shoshone Mountain
- Conduct annual post-closure monitoring and maintenance of 197 closed-in-place contaminated soil and industrial-type sites
- Conduct annual post-closure sampling, monitoring and maintenance at 16 well locations associated with 76 closed-in-place contaminated groundwater sites
- Operate DOE owned waste disposal facility with the capability to receive between 1.2 to 1.5 million cubic feet of low-level and mixed low-level waste in support of cleanup activities across the DOE complex
- Maintain Nevada's Agreements in Principal and grants and provide funds for the Low-Level waste fee agreement
- Nevada Environmental Program Multiple Award Small Business End State Contract scheduled for award in Q2 2020 incentivizes risk based cleanup that reduces financial liability



Groundwater Well Drilling



Utah (\$36M)

Moab

- Excavation, transportation and disposal operations supporting 2 trains/week resulting in removal of 450,000 tons of tailings, 7.5% of the 6 million tons of tailings remaining
- Operate interim remedial action for contaminated groundwater including extracting 4 million gallons and diverting/injecting 6.5 million gallons of freshwater to protect the Colorado River from contamination
- Maintain/replace aging equipment to provide a safe working environment



Locomotive transports sealed containers of tailings from Moab to a disposal site



California (\$148M)

Energy Technology Engineering Center (\$18M)

- Complete the required groundwater corrective measures implementation
- Complete the groundwater Interim Measures for areas that exceed 1000 ppb for trichloroethylene (TCE)
- Complete demolition of the last 2 (of 18) remaining radiological buildings

Lawrence Livermore National Laboratory (\$130M)

- Complete decommissioning and demolition of B280
- Commence characterization of subsequent High Risk excess facilities based on Livermore Field Office priorities
- Supports the development of remedial solutions for contamination at Building 812, Building 850, and Building 865



Energy Technology Engineering Center



Lawrence Livermore National Laboratory

➤ **Defense Environmental Cleanup**

- Often referred to as 050 funds
- Funds legacy cleanup activities associated with Defense funded legacy waste
- Subject to Defense fund caps

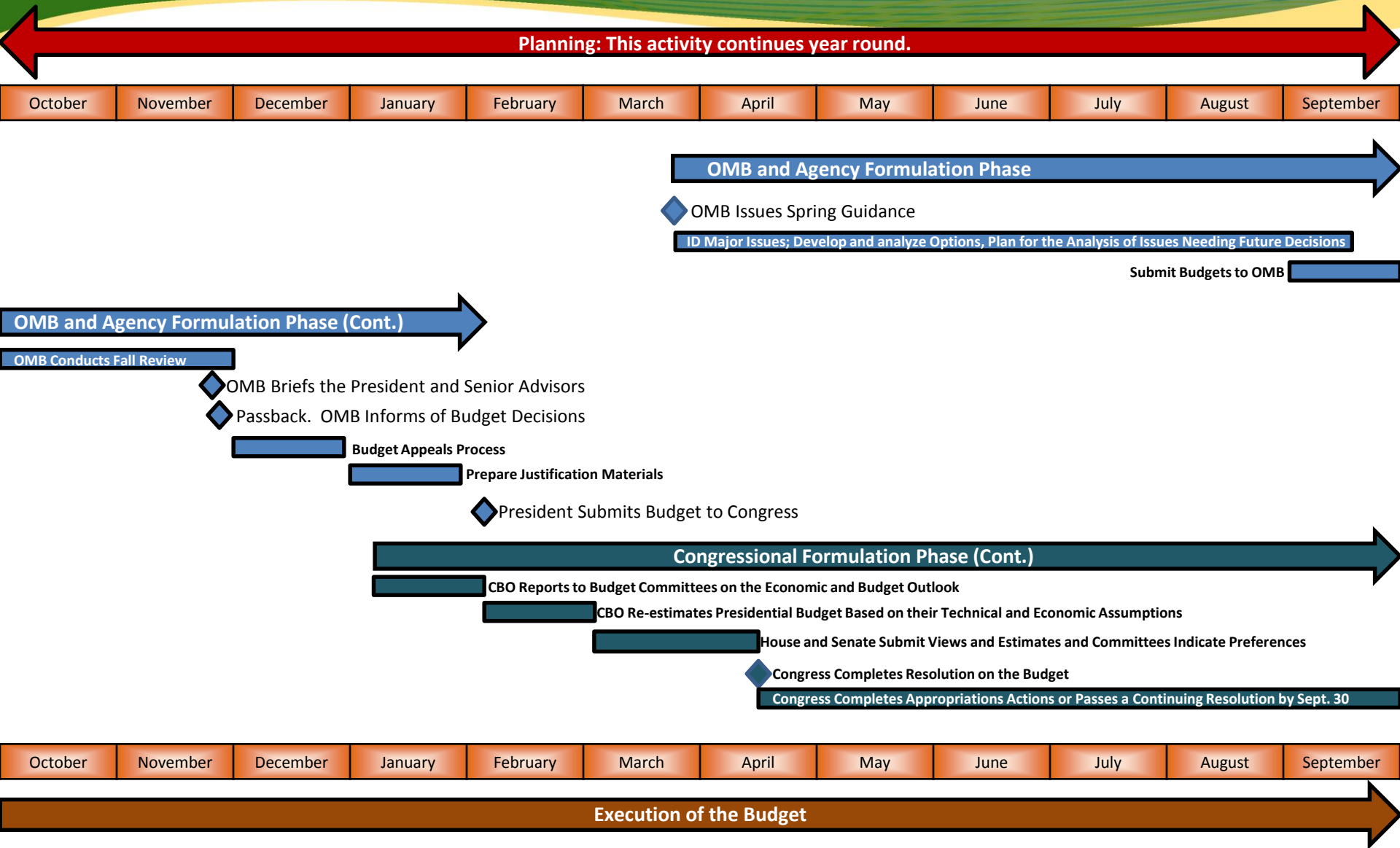
➤ **Non-Defense Environmental Cleanup**

- Often referred to as non-050 funds
- Funds legacy cleanup activities associated with non-defense funded legacy waste
- Subject to non-defense fund caps

➤ **Uranium Enrichment Decontamination and Decommissioning (UE D&D)**

- Often referred to as non-050 funds
- Funds legacy cleanup activities under statutory requirements from the Energy Policy Act of 1992 for the sole purpose of uranium enrichment facility decontamination
- Subject to non-defense fund caps

Budget and Planning Timeline



*OMB's Agency Formulation, Budget Allocations are Embargoed and **NOT** Releasable Outside of the Administration

FY 2019 Enacted Structure - \$7,175,129 net

(dollars in thousands)

	\$6,024,000 Defense Environmental Cleanup (050)	\$310,000 Non-Defense Environmental Cleanup (non-050)	\$841,129 Uranium Enrichment Decontamination and Decommissioning (UE D&D) (non-050)
1	Closure Sites Administration	1. Fast Flux Test Reactor Facility	1. Oak Ridge
2	Richland: Central Plateau Remediation	2. Gaseous Diffusion Plants	2. Paducah Nuclear Facility D&D
3	Richland: River Corridor and Other Cleanup Operations	3. Small Sites	3. Portsmouth Nuclear Facility D&D
4	Richland: Richland Community and Regulatory Support	4. West Valley Demonstration Project	4. Portsmouth: 15-U-408 On-Site Waste Disposal Facility
5	Richland: 18-D-404 WESF Modifications and Capsule Storage		5. Pension and Community and Regulatory Support
6	Office of River Protection: Waste Treatment and Immobilization Plant Commissioning		6. Title X Uranium/Thorium Reimbursement Program
7	Office of River Protection: Rad Liquid Tank Waste Stabilization and Disposition		
8	Office of River Protection: 15-D-409 Low Activity Waste Pretreatment System		
9	Office of River Protection: 18-D-16 Waste Treatment and Immobilization Plant -LBL/Direct Feed LAW		
10	Office of River Protection: 01-D-16 D High-Level Waste Facility		
11	Office of River Protection: 01-D-16E Pretreatment Facility		
12	Idaho National Laboratory: Idaho Cleanup and Waste Disposition		
13	Idaho National Laboratory: Idaho Community and Regulatory Support		
14	Idaho National Laboratory: ID Excess Facilities D&D		
15	NNSA Sites: Lawrence Livermore National Laboratory		
16	NNSA Sites: LLNL Excess Facilities D&D		
17	NNSA Sites: Separations Process Research Unit		
18	NNSA Sites: Nevada		
19	NNSA Sites: Sandia National Laboratories		
20	NNSA Sites: Los Alamos National Laboratory		
21	Oak Ridge: OR Nuclear Facility D&D		
22	Oak Ridge: U233 Disposition Program		
23	Oak Ridge: OR Cleanup and Disposition		
24	Oak Ridge: 17-D-401 On-site Waste Disposal Facility		
25	Oak Ridge: 14-D-403 Outfall 200 Mercury Treatment Facility		
26	Oak Ridge: OR Reservation Community and Regulatory Support		
27	Oak Ridge: OR Technology Development and Deployment		
28	Savannah River Site: Savannah River Site Risk Management Operations		
29	Savannah River Site: SR Community and Regulatory Support		
30	Savannah River Site: Radioactive Liquid Tank Waste Stabilization and Disposition		
31	Savannah River Site: 19-D-701 SR Security System Replacement		
32	Savannah River Site: 18-D-402 Saltstone Disposal Unit #8/9		
33	Savannah River Site: 18-D-402 Emergency Operations Center Replacement		
34	Savannah River Site: 17-D-402 Saltstone Disposal Unit #7		
35	Savannah River Site: 05-D-405 Salt Waste Processing Facility		
36	Waste Isolation Pilot Plant: Waste Isolation Pilot Plant		
37	Waste Isolation Pilot Plant: 15-D-411 Safety Significant Confinement Ventilation System		
38	Waste Isolation Pilot Plant: 15-D-412 Exhaust Shaft		
39	Program Direction		
40	Program Support		
41	Safeguards and Security		
42	Technology Development		