



U.S. DEPARTMENT OF
ENERGY

Savannah River Operations Office



Hosted by the SRS Community Reuse Organization

COMMUNITY FORUM on SRS BUDGET

Service • Safety • Security • Stewardship • SRNL • Sustainability

March 3, 2016 ~ Aiken Technical College



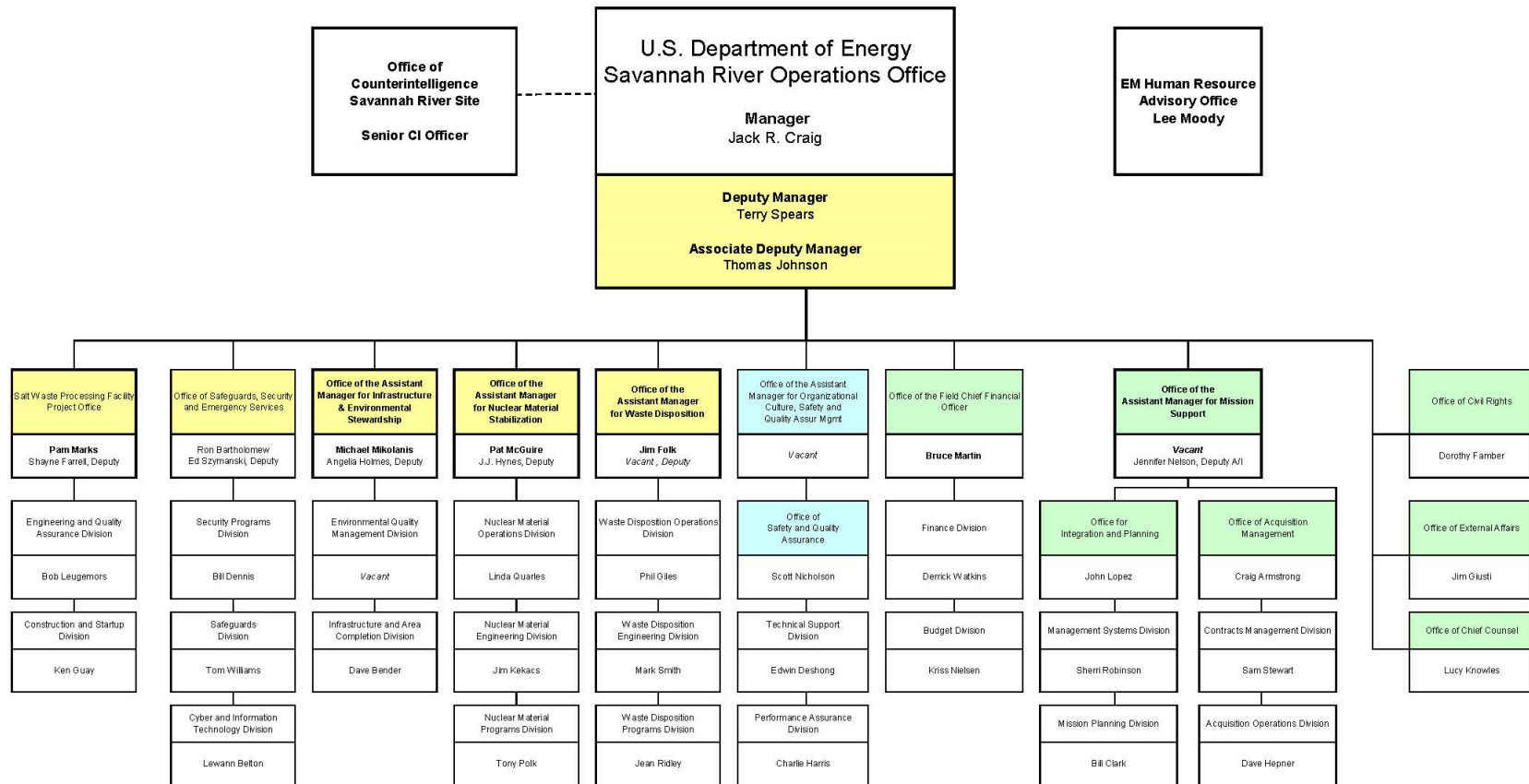
Jack Craig

Site Manager
DOE – Savannah River

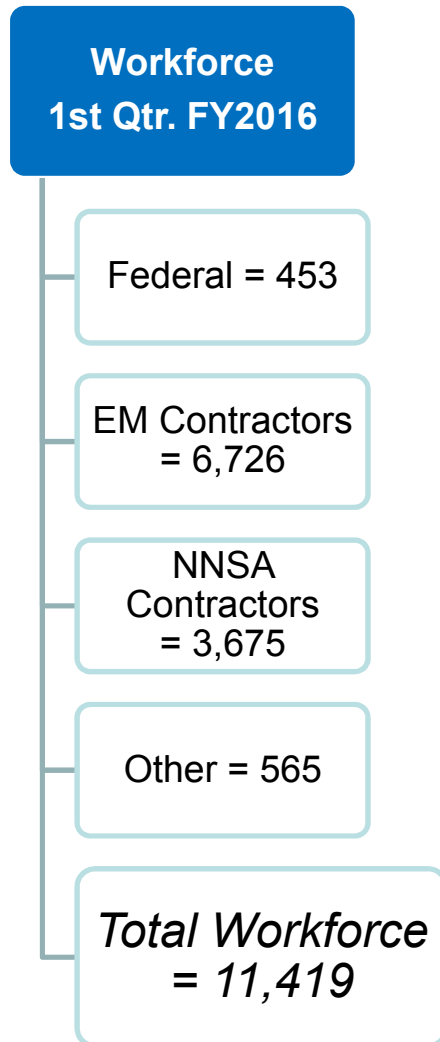
Doug Dearolph

Field Office Manager
DOE – NNSA

DOE-Savannah River Federal Organization



SRS Team: Partners in Progress



Federal Agencies

- DOE Savannah River Operations Office (DOE-SR)
- National Nuclear Security Administration (NNSA)
 - Savannah River Field Office
 - Office of Material Management & Minimization
 - Office of Acquisition and Project Management
- U.S. Forest Service (USFS)
- Office of Inspector General (OIG)

Contractors

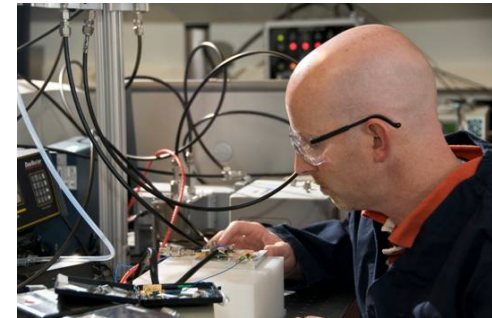
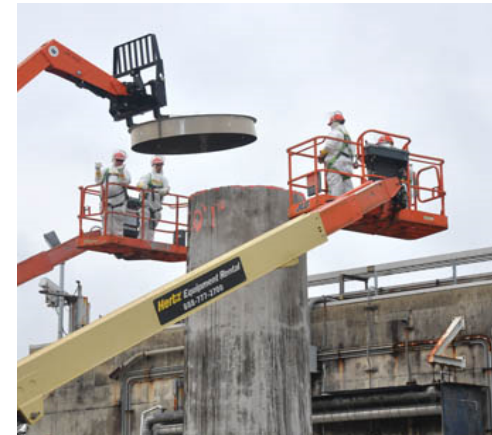
- Savannah River Nuclear Solutions (SRNS)
 - Management & Operations
 - Savannah River National Laboratory (SRNL)
- Savannah River Remediation (SRR)
 - Liquid Waste Operations
- Parsons (Salt Waste Processing Facility)
- Ameresco (Biomass Cogeneration Plant)
- Centerra-SRS (Security)
- Chicago Bridge & Iron (CB&I) AREVA
 - Mixed Oxide Fuel Fabrication Facility (MOX)
- University of Georgia
 - Savannah River Ecology Laboratory (SREL)
- Other: Support Service, Limited Service, Agency Partners, Grad Students, etc.



Sustaining Missions Vital to Our Nation

Continue leverage strategic investments to fulfill missions of national importance:

- Lead **Environmental Management** priorities to safely and efficiently clean up the environmental legacy, reduce risk and protect our people, neighbors and environment
- Team with **National Nuclear Security Administration (NNSA)** to enable national defense capabilities
- Apply **Savannah River National Laboratory (SRNL)** science and technology expertise



SRS Accomplishments: Nuclear Materials and Spent Nuclear Fuel

FY 2015 Actual Accomplishments:

- **PBS 11 – Nuclear Materials**
 - Processed spent nuclear fuel and prepared for receipt of Canadian liquid Highly Enriched Uranium (HEU)
 - Produced plutonium oxide suitable for use in the Mixed Oxide Fuel Fabrication Facility (MOX) (*funded by NNSA*)
 - Continued 235-F Risk Reduction scope to support activities within the Implementation Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2012-1, to include managing combustibles and restoring cell infrastructure
- **PBS 12 – Spent Nuclear Fuel**
 - Received Foreign Research Reactor/Domestic Research Reactor Spent Nuclear Fuel
 - Completed modifications to Shielded Transfer System in L Basin for receipt of NRU/NRX fuel from Canada

FY 2016 Planned Accomplishments:

- **PBS 11 – Nuclear Materials**
 - Continue processing spent nuclear fuel and prepare for receipt of Canadian liquid HEU
 - Continue production of plutonium oxide suitable for disposition (*funded by NNSA*)
 - Continue 235-F Risk Reduction scope to support activities within the Implementation Plan for DNFSB Recommendation 2012-1, to include managing combustibles and restoring cell infrastructure
 - Initiate plutonium packaging operations for disposition at Waste Isolation Pilot Project (WIPP)
- **PBS 12 – Spent Nuclear Fuel**
 - Continue receipt of Foreign Research Reactor/Domestic Research Reactor Spent Nuclear Fuel



SRS Accomplishments: Solid Waste

FY 2015 Actual Accomplishments:

- **PBS 13 – Solid Waste**
 - Disposed over 5,000 m³ – low-level waste
 - Disposed 100 legacy transuranic (TRU) contaminated storage culverts
 - Completed closure of TRU Pad 16 (*Interim Measure Plan under RCRA*)
 - Continued safe storage of legacy TRU waste – 756 m³
 - Stored non-Moxable plutonium for shipment to WIPP
 - Continued work on projects from the Site's Critical Infrastructure Priority List
 - A-Area Fire Water System Upgrade (DNFSB concern-compliance)
 - SRNL A-Cell Block Window Replacement



FY 2016 Planned Accomplishments:

- **PBS 13 – Solid Waste**
 - Continue storing non-Moxable plutonium for shipment to WIPP
 - Continue disposition of low-level waste (~ 5,000 m³) in E-Area and processing of mix-low level waste for offsite shipment
 - Dispose of 100 legacy TRU contaminated culverts
 - Submit Resource Conservation and Recovery Act (RCRA) Closure Plan for legacy TRU Waste Pad 2
 - Relocate remote-handled TRU waste to a permitted TRU pad
 - Support Advanced Manufacturing Collaborative Alternatives Analysis



SRS Accomplishments: Radioactive Liquid Tank Waste

FY 2015 Actual Accomplishments:

- **PBS 14C – Radioactive Liquid Tank Waste**
 - Processed 753 Kgal of salt solution through the Actinide Removal Process/Modular Caustic Side Solvent Extraction Unit (ARP/MCU)
 - Produced 93 Canisters of vitrified high-level waste through the Defense Waste Processing Facility (DWPF) (*15M pounds of glass since 1996*)
 - Processed 828 Kgal of low-level waste in Saltstone Facility (*5M gallons salt waste since 2008*)
 - Operationally closed Tank 16
 - Completed cell construction of Saltstone Disposal Unit 6 (32 Mgal mega-vault) and initiated leak testing
 - Began evaluation of commercial salt treatment proposals
 - Continued transfer line tie-in work and liquid waste facility mods in support of Salt Waste Processing Facility (SWFP) startup
 - Initiated efforts to make canister support modifications in Glass Waste Storage Building (GWSB) 1 to allow for double-stacking of canisters with the planned movement of approximately 150 canisters from GWSB 1 to GWSB 2



SRS Accomplishments: Radioactive Liquid Tank Waste, cont'd

FY 2016 Planned Accomplishments:

- **PBS 14C – Radioactive Liquid Tank Waste**

- Operationally close Tank 12 by 5/31/2016 to meet FFA commitment
- Complete Bulk Waste Removal efforts in Tank 15 by 9/30/16 to meet FFA commitment
- Process 1.0 – 1.5 Mgal salt through ARP/MCU
- Produce 150 canisters vitrified high-level waste through DWPF
- Process 1.5 Mgal of low-level waste in Saltstone Facility
- Award Commercial Salt Processing Demo Technology by early Summer 2016
- Achieve SDU 6 Balance of Plant Work to achieve readiness to receive waste by early FY17
- Continue transfer line tie-in work and liquid waste facility modifications in support of SWPF startup
- Complete preparation of Tank 26 for waste removal and continue preparation of Tank 35 to support sludge feed to DWPF
- Continue canister double-stacking effort with completion of modifications of 150 positions in GWSB 1



Accomplishments: Salt Waste Processing Facility

FY 2015 Actual Accomplishments:

- **PBS 14C – Salt Waste Processing Facility**
 - Construction achieved 91.3% completion
 - Completed Plant Process Control System
 - Completed Chiller Facility
 - Completed all South Labyrinth Piping installation
 - Completed Instrument Control Panel installation
 - Completed Operating Deck Piping

FY 2016 Planned Accomplishments:

- **PBS 14C – Salt Waste Processing Facility**
 - Construction 100% Complete (April 2016)
 - Complete System Operability Test Procedures
 - Train Operations Personnel using Process Simulator
 - Complete 30% of System Operability Tests
 - Procure and Install Laboratory Equipment
 - Transfer of East and West Transfer Lines to Savannah River Remediation to accommodate future tie-in efforts

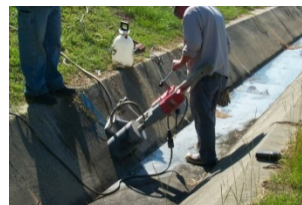


Accomplishments: Soil and Groundwater Remediation

FY 2015 Actual Accomplishments:

• PBS 30 – Soil and Water Remediation

- Achieved compliance with over 62 enforceable Federal Facility Agreement (RCRA/CERCLA) milestones and RCRA permit commitments
- Successfully operated and maintained 39 regulatory required soil and groundwater remedial systems (29 of which can be classified as sustainable low/energy natural systems or passive systems requiring no energy to implement)
- Monitored, performed analysis and reported on over 2,000 groundwater wells and 5 major streams, Savannah River Floodplain Swamp, and Savannah River
- Conducted post-closure surveillance and maintenance at 68 closed waste units (~ 900 acres)
- Continued to meet RCRA/CERCLA requirements using innovative remediation technologies
- Continued field work on Phase 1, D Area Ash Project
 - Began excavation of over 100,000 cubic yards of ash
 - Began placement of fill soil in Basin 2D



Innovative Remedial Technologies at Work

FY 2016 Planned Accomplishments:

• PBS 30 – Soil and Water Remediation

- Achieve compliance with all Regulatory RCRA/CERCLA milestones and commitments
- Continue to operate 39 required remediation systems
- Conduct post-closure surveillance and maintenance at 68 closed waste units to prevent deterioration and environmental releases
- Monitor, perform analysis and report on groundwater sampling activities
- Continue field work on D Area Ash Project
 - Achieve mechanical completion of the 488-4D Ash Landfill
 - Achieve mechanical completion of the 488-2D Ash Basin
 - Award subcontract for 489-D Coal Pile Runoff Basin



D-Area Ash Project



FY17 Budget Request Breakdown by DOE-EM Sites



Environmental Management Site Amounts in (K)	FY 2015 Enacted	FY 2015 Current	FY 2016 Current	FY 2017 Request	FY 2016 vs. FY 2017
Carlsbad/Waste isolation Pilot Plant (WIPP)	324,455	324,455	304,838	271,000	-33,838
Idaho	405,103	404,929	401,919	370,088	-31,831
Oak Ridge	431,142	431,142	468,407	391,407	-77,000
Mandatory	0	0	0	178,188	+178,188
Paducah	269,773	269,773	268,402	272,310	+3,908
Mandatory	0	0	0	207,916	207,916
Portsmouth	275,828	273,828	288,970	322,653	+33,683
Mandatory	0	0	0	257,645	+257,645
Richland/Hanford	1,007,230	1,007,230	990,653	800,000	-190,653
River Protection	1,212,000	1,212,000	1,414,000	1,499,965	+85,965
Savannah River	1,259,542	1,259,542	1,336,566	1,448,000	+111,434
Lawrence Berkeley National Laboratory	0	0	17,000	0	-17,000
Lawrence Livermore national Laboratory	1,366	1,366	1,366	1,396	+30
Nevada	64,851	64,851	62,385	62,176	-209
Sandia National Laboratory	2,801	2,801	2,500	4,130	+1,630
Separations Process Research Unit (SPRU)	0	0	0	3,685	+3,685
West Valley Demonstration Project	60,457	60,457	61,804	63,628	+1,824
Energy Technology Engineering Center	8,959	8,959	10,459	10,459	0
Los Alamos	189,600	189,600	185,000	189,000	+4,000
Moab	35,663	37,867	38,644	34,784	-3,860
Other Sites	13,297	13,297	14,389	9,389	-5,000
Headquarters Operations	38,979	38,517	69,238	74,979	+5,741
Mandatory	0	0	0	30,000	+30,000
Program Direction	280,784	280,784	281,951	290,050	+8,099
Uranium Enrichment Decontamination and Decommissioning Fund Contribution	463,000	463,000	0	155,100	+155,100
Subtotal, Environmental Management by Site	6,344,830	6,344,398	6,218,491	6,274,199	+55,708
Uranium Enrichment Decontamination and Decommissioning Fund Contribution Payment	-463,000	-463,000	0	-155,100	-155,100
Rescission of Prior year Balances	-20,813	-20,813	0	0	0
Total, Environmental Management	5,861,017	5,860,585	6,218,491	6,119,099	-99,392
Total Mandatory	0	0	0	673,749	+673,749



SRS EM FY17 Budget Request Overview

Savannah River Site EM Budget (\$Millions) <i>By Program Baseline Summary (PBS)</i>	FY 2015 Enacted	FY 2016 Current	FY 2017 President Request	DELTA FY16 vs FY17
PBS 11C Nuclear Materials	260	255		
PBS 12 Used Nuclear Fuel	24	41		
PBS 13 Solid Waste	48	52		
PBS 30 Soil & Groundwater Remediation	66	66		
SRS Risk Management Operations	398	414		
PBS 11C NM Stabilization & Disposition ¹ (NEW)	284	296	311	15
Nuclear Material Management (NEW)			311	15
PBS 41 S&M, Risk Reduction & Deactivation ² (NEW)	0	0	28	28
PBS 13 Solid Waste	48	52	51	(1)
PBS 30 Soil & Groundwater Remediation	66	66	74	8
Environmental Cleanup (NEW)			153	35
PBS 14C Radioactive Liquid Tank Waste	547	555	645	90
PBS 14C Saltstone Disposal Unit #6	30	35	7	(28)
PBS 14C Saltstone Disposal Unit #7	0	0	10	10
PBS 14C Salt Waste Processing Facility	135	194	160	(34)
Radioactive Liquid Tank Waste Stabilization and Disposition	712	784	822	38
PBS 202 General Plant Projects ³ (NEW)			17	17
PBS 100 Community & Regulatory Support	11	11	11	0
PBS 20 Safeguards & Security	138	128	134	6
SRS EM Programs Budget Authority	1,259	1,337	1,448	111

¹ PBS 11C and PBS 12 have been combined into one PBS (11C)

² New PBS 41 to include scope for 235-F deactivation and F-Canyon S&M

³ New PBS 202 to include scope for infrastructure improvements and General Plant Projects



FY17 EM Budget Request Supports Key SRS Missions and Collaborations

- ✓ Production of 100 —110 canisters of vitrified high-level waste at Defense Waste Processing Facility
- ✓ Processing up to 1.7 million gallons of salt waste through two interim treatment systems (ARP/MCU)
- ✓ Completion of construction and ramping up startup testing and commissioning of SWPF to significantly increase DOE's ability to process salt waste (90% of the volume)
- ✓ Supports tank farm piping and equipment upgrades to support the startup of SWPF (Dec. 2018)
- ✓ Achievement of SDU 6 facility readiness to receive waste and initiation of design activities for SDU 7
- ✓ Down-blending of EM-owned plutonium at K-Area for future disposal at Waste Isolation Pilot Plant
- ✓ Continue processing of spent (used) nuclear fuel in H-Canyon, including completing preparations to process High Flux Isotope Reactor spent nuclear fuel
- ✓ Receipt of Foreign and Domestic Research Reactor spent nuclear fuel in L-Area
- ✓ Continue activities to support implementation plan activities for the Defense Nuclear Facilities Safety Board Recommendation 2012-1 to mitigate and remedy safety issues at Building 235-F
- ✓ Maintain protective force personnel, along with both physical and computer security protection systems
- ✓ Continue community and regulatory support (e.g. SRS Citizens Advisory Board, SC Department of Health and Environmental Control)
- ✓ Investments to address needs for site-wide general purpose infrastructure improvements



FY17 Request Supports SRS Infrastructure Improvements

New PBS 202, General Plant Projects	\$K
1. SRNL – cell block window replacement (windows #7, 9 and 13)	\$8,181
2. Repair Site railroad infrastructure Phase 1 — supports H-, K-, L- and E- Areas	\$2,557
3. 7 th Level H-Canyon roof/over HB Line (H-Area)	\$800
4. H Canyon air tunnel repair/replacement — tunnel repair preparation project	\$2,009
5. 294-H sand filter roof upgrades for original facility	\$1,000
6. 294-H sand filter roof upgrades of supplemental filter facility	\$1,000
7. Tie-in connection and installation for HB-Line alternate diesel generator	\$1,000
TOTAL	\$16,547



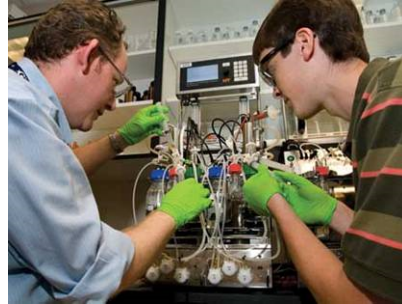
SRNL Shielded Cell Windows



H Canyon/HB-Line



National Nuclear Security Administration Savannah River Site



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National Nuclear Security Administration
Savannah River Field Office

March 3, 2016



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ENERGY



National Nuclear Security Administration Savannah River Site



NNSA Budget (\$ Millions) By Program Office	FY 2015 Enacted	FY 2016 Enacted	FY 2017 President Request	Delta FY Request
Weapon Activities	241	242	252	10
Mixed Oxide Fuel Fabrication Facility (MOX)	340	332	270	(62)
Defense Nuclear Nonproliferation (DNN)	77	58	91	33
Federal Expenses	4.7	5.2	5.4	.2
Total Budget for NNSA at SRS	662.7	637.2	618.4	(18.8)

National Nuclear Security Administration Savannah River Site



NNSA FY15 Accomplishments

- Savannah River Tritium Enterprise (SRTE) completed on schedule all of its FY2015 mission deliverables supporting the nation's nuclear deterrence.
- SRTE fulfilled its vital missions while achieving significant cost & productivity savings, continuously increasing product quality, and maintaining an exemplary safety record.
- Achieved Critical Decision 0 approval for Tritium Production Capability (TPC) program, for a possible line item project in FY18.
- Initiated ARGUS installation for the Central Alarm System within the Tritium compound.
- Initiated the Strategic Investment Process to improve risk program and system health reporting process, this ensures that facility needs are identified, evaluated, managed, and communicated to decision makers.
- NNSA completed two independent reviews (Aerospace and Red Team) of options to dispose of surplus plutonium, which validates the conclusions of the 2014 Plutonium Working Group Report and provides the foundation for the path forward for the plutonium disposition program. *(SRNS supported both initiatives.)*
- NNSA continued to support HB-Line operations for conversion of plutonium to oxide for eventual disposition. Demonstrated that initial plutonium oxide product meets specification.
- Achieved CD-4 (project completion) for the Waste Solidification Building (WSB). Facility was turned over to operations and placed in a layup configuration.
- Construction continued on the MOX facility and project personnel surpassed 24 million safe hours.

National Nuclear Security Administration Savannah River Site



NNSA FY16 Planned Accomplishments

- Deliver Limited Life Component Exchange (LLCE) parts and complete Stockpile Maintenance & Evaluation, and Tritium R&D activities, supporting the nation's nuclear deterrence.
- Support Critical Decision 1 (CD-1) by completing an Analysis of Alternatives (AoA) selection for the Tritium Production Capability (TPC) project.
- Complete phase 1 installation of ARGUS in the Tritium Central Alarm Station security improvements.
- Execute a significant increase in on-going GPP/CE/Operating projects in order to sustain production infrastructure and reduce mission risk.
- Accelerate the hiring, training and qualifying of new employees to sustain work force levels to meet mission deliverables.
- Continue construction activities on the MOX Project.
- The 2016 Consolidated Appropriations Act authorizes NNSA to initiate planning and complete conceptual design activities to develop the dilute and dispose alternative to the MOX program. SRNS will initiate the design and lead the effort to develop the alternative program lifecycle baseline.
- Continue plutonium oxide activities in HB-Line.

National Nuclear Security Administration Savannah River Site



NNSA FY17 Planned Accomplishments

- Support the Secretary of Energy's goal to address the highest infrastructure risks and halt the growth of deferred maintenance through an increased number of infrastructure and process improvement projects.
- Execute Limited Life Component Exchange (LLCE) parts and complete Stockpile Maintenance & Evaluation, and Tritium R&D activities, supporting the nation's nuclear deterrence.
- Complete ARGUS security improvements in the Tritium Facilities.
- Execute scope in support of Critical Decision 1 (CD-1) for the Tritium Production Capability (TPC) project.
- Transition from the MOX fuel approach to the Down-blend and Dispose (D&D) option for surplus plutonium disposition. Planned scope includes continue design, lifecycle baseline development, NEPA analysis and plutonium oxide activities.

Discussion / Questions

