National Nuclear Security Administration

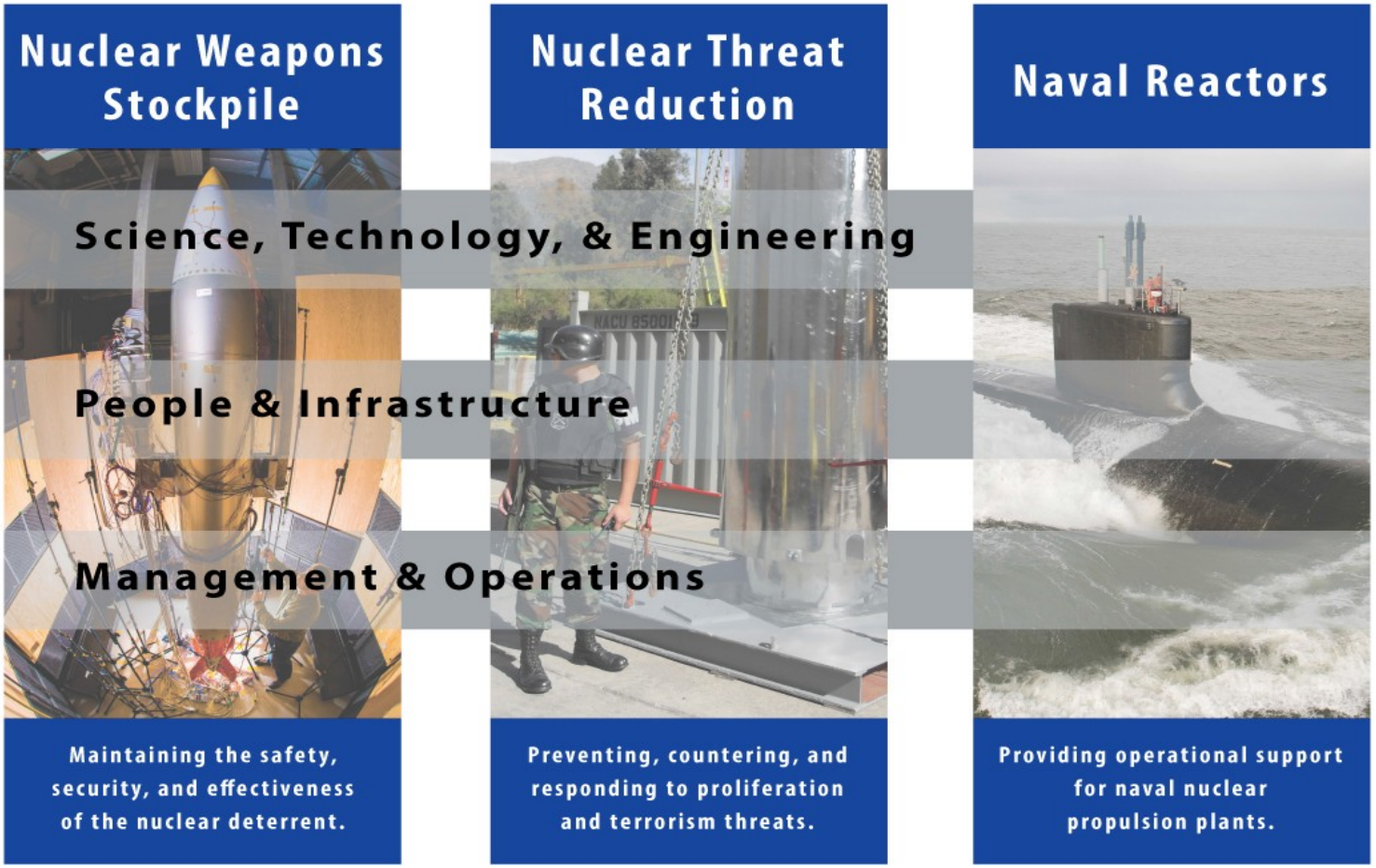
FY 2018 Congressional Budget Request

May 23, 2017

NNSA Missions and Crosscutting Capabilities

National Nuclear Security Administration

Applying Technical Capabilities to National Security Challenges

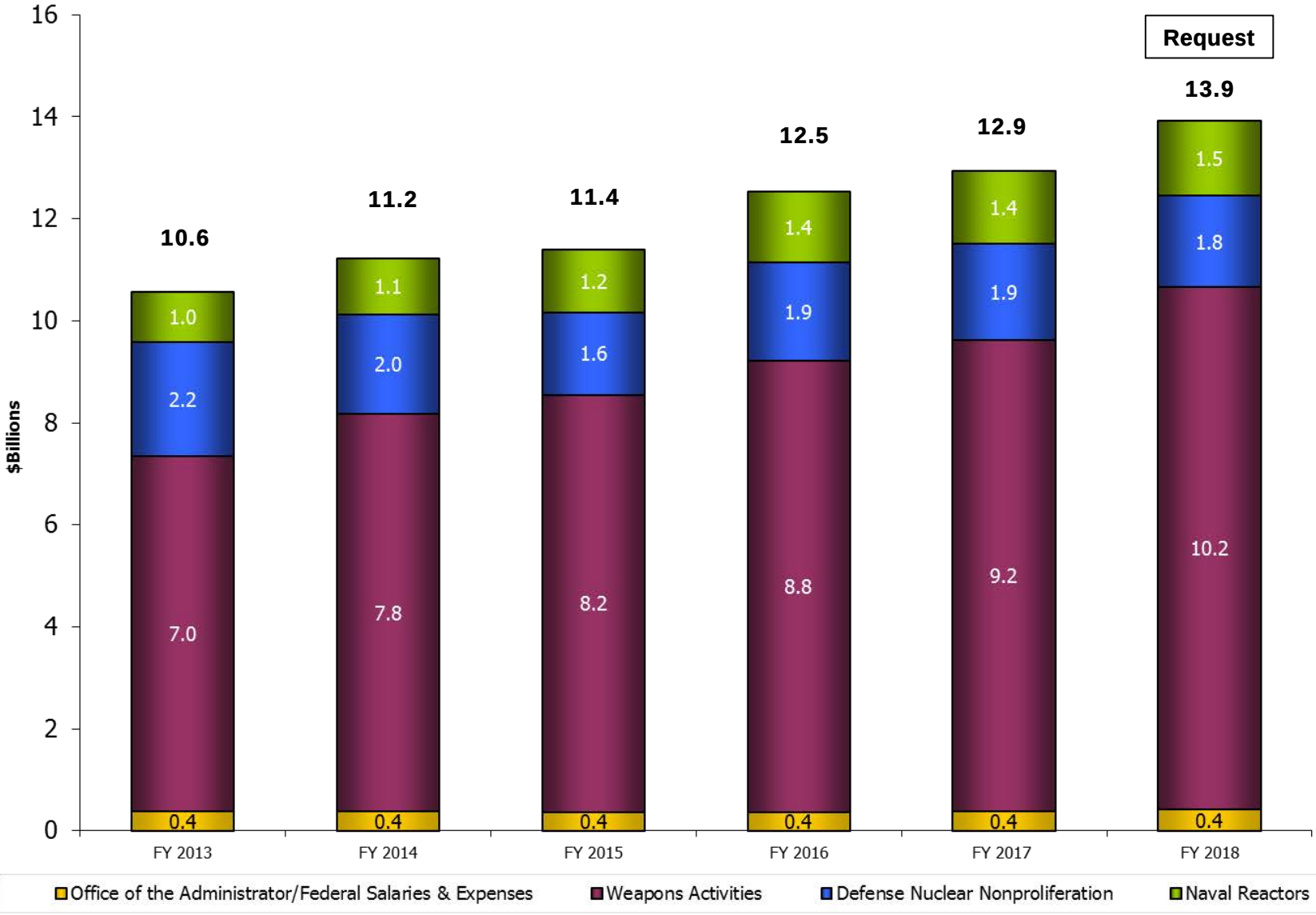


NNSA Budget Summary
($ in thousands)

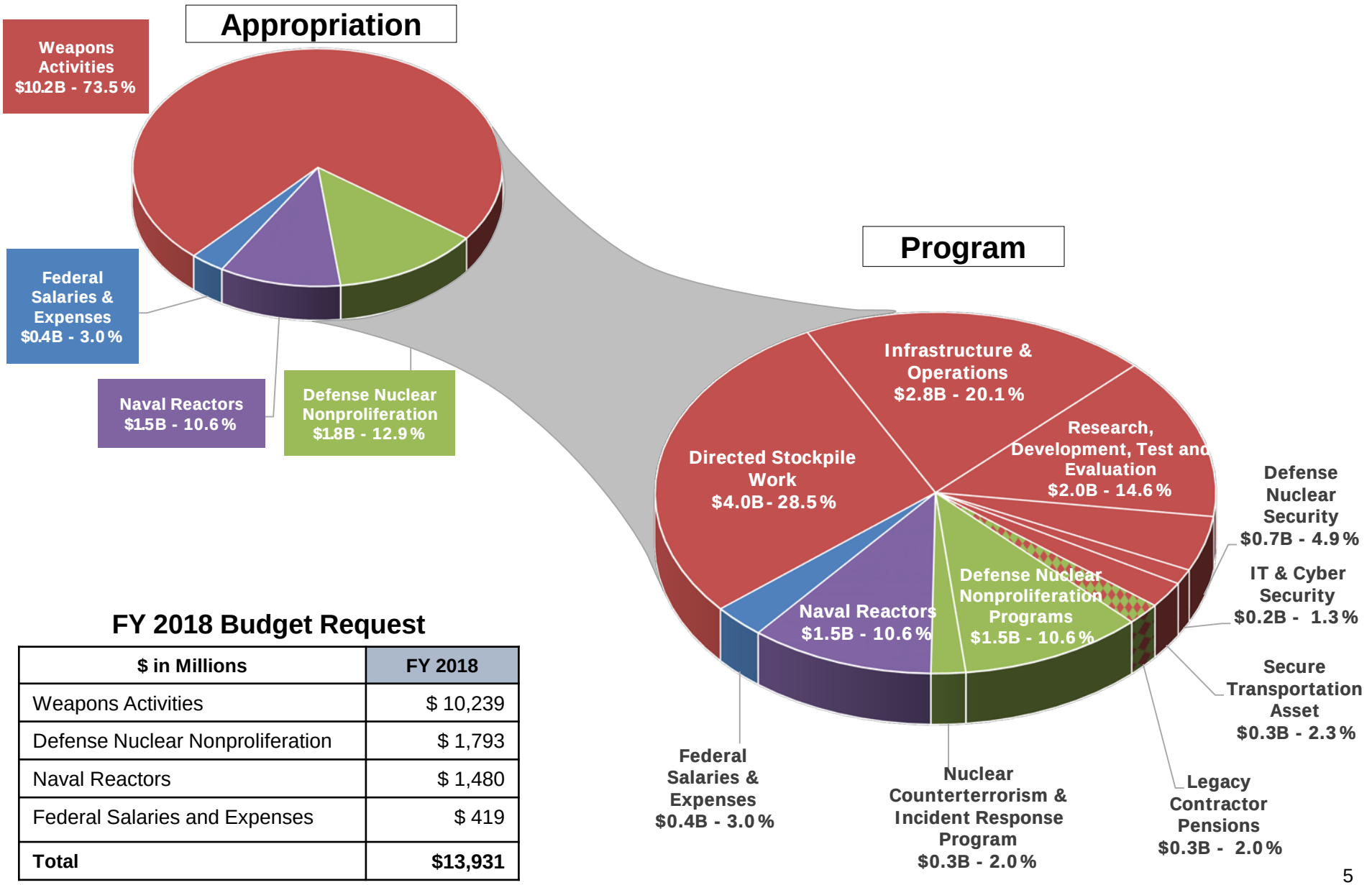
	FY 2016 Enacted	FY 2017 Enacted	FY 2018 Request	$ FY 2018 Change vs FY 2017	% FY 2018 Change vs FY 2017
Weapons Activities	8,846,948	9,240,739	10,239,344	998,605	10.8%
Defense Nuclear Nonproliferation	1,940,302	1,880,038	1,793,310	-86,728	-4.6%
Naval Reactors	1,375,496	1,419,719	1,479,751	59,960	4.2%
NNSA Federal Salaries & Expenses	363,766	387,066	418,595	31,529	8.1%
Total, NNSA Program	**12,526,512**	**12,927,635**	**13,931,000**	**1,003,365**	**7.8%**

- FY 2016 includes rescission of $19.9 million for FSE and reflects transfer of NCTIR from WA to DNN
- FY 2017 includes PY balances rescissions or offsets of $77.4 million for WA, $59.9 million for DNN, $2.9 million for FSE, and $.3 million for NR
- FY 2018 Includes a prior year offset of $49 million for DNN

NNSA Funding FY 2013 - FY 2018
($ in billions)



FY 2018 Budget Request = $13.9B



FY 2018 Budget Request

$ in Millions	FY 2018
Weapons Activities	$ 10,239
Defense Nuclear Nonproliferation	$ 1,793
Naval Reactors	$ 1,480
Federal Salaries and Expenses	$ 419
Total	**$13,931**

Nuclear Security: Effective Stewardship of the Nuclear Deterrent

National Nuclear Security Administration

Accomplishments, examples

- ✓ Maintained a safe, secure, and effective nuclear weapons stockpile without nuclear explosive testing for over 20 years
- ✓ Completed all scheduled deliveries of the W76-1 Life Extension Program (LEP) to the Navy, achieving over two-thirds of the total production and delivery quantities
- ✓ Initiated the Production Engineering phase for the B61-12 LEP and completed Baseline Design Review (BDR). The B61-12 LEP will add at least 20 years to the life of the system and will consolidate four variants of the B61 into one
- ✓ Completed Phase 6.1 concept studies for W80-4 warhead for Air Force's Long Range Standoff (LRSO) System; obtained Nuclear Weapons Council approval for Phase 6.2, Feasibility Study and Design Options
- ✓ Continued progress on the W88 ALT 370 warhead, aligning the replacement of the warheads' conventional high explosive (CHE) with the original alteration program
- ✓ Approved the Uranium Processing Facility (UPF) preliminary safety design basis, which was subsequently independently reviewed, and validated that NNSA is ready to proceed for the 90% design milestone at the end of FY 2017
- ✓ Stopped growth of deferred maintenance, and disposed two of top ten high risk excess facilities (CASA 2 and 3 at LANL)
- ✓ Exceeded the goal of 400 data-acquiring shots, an increase of more than double the number of shots executed in FY 2014
- ✓ Installed Trinity-Haswell high performance computing system at LANL to support annual assessment of stockpile
- ✓ Defined a Stockpile Responsiveness Program and established a joint working group with the Department of Defense

Nuclear Security: Effective Stewardship of the Nuclear Deterrent (continued)

FY 2018 Highlights, examples

- Complete production of W76-1 LEP warhead by FY 2019 ($224.1M)
- Deliver B61-12 LEP First Production Unit (FPU) in FY 2020 ($788.6M)
- Deliver W88 Alt 370 (W88 Alternative Program) FPU (with CHE refresh) in FY 2020 ($332.3M)
- Deliver W80-4 FPU in FY 2025 ($399.1M)
- Continue phased approach for constructing UPF for uranium strategy ($663.0M)
- Collaborate with DOE Office of Science in developing exascale class high performance computing to meet needs for future assessments, LEPs, and stockpile stewardship ($161.0M)
- Continue work on the Chemistry and Metallurgical Research Replacement Facility (CMRR) project to support the plutonium strategy ($180.9M)
- Continue work on Enhanced Capabilities for Subcritical Experiments ($50.8M)
- Procure long-lead parts and materials for two full scale Mobile Guardian Transporter prototypes ($88.6M)
- Address highest infrastructure risks and reduce deferred maintenance ($663.5M)
- Sustain physical and cyber security to protect personnel and national security assets ($873.7M)
- Complete design and begin construction of the Albuquerque Complex Project ($98.0M)

Nuclear Security: Preventing, Countering, and Responding to Proliferation and Terrorist Threats

National Nuclear Security Administration

Accomplishments

- ✓ Completed removal or disposal of a total of 728 kilograms of vulnerable nuclear material
- ✓ Helped prevent the illicit trafficking of nuclear and radiological materials by installing 31 fixed and 21 mobile radiation detection systems worldwide
- ✓ Secured 142 domestic and international civilian buildings containing high-priority nuclear and radiological material
- ✓ Provided technical reviews of 5,973 U.S. export license applications and 3,053 interdiction cases
- ✓ Conducted 104 export control trainings for U.S. enforcement agencies and foreign partners
- ✓ Advanced U.S. capabilities to monitor arms control treaties and detect foreign nuclear programs
- ✓ Maintained organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide

Nuclear Security: Preventing, Countering, and Responding to Proliferation and Terrorist Threats
(continued)

National Nuclear Security Administration

FY 2018 Highlights

- Address nuclear materials threats through conversion of research reactors and isotope production facilities and removing and disposing of excess weapon-useable nuclear materials ($332M)
- Build international capacity to secure and prevent smuggling of nuclear and radiological material through equipment installations and upgrades, and capacity-building trainings ($337M)
- Continue critical mission support to the IAEA, including strengthening the international nuclear safeguards system and supporting their expanding nuclear security activities ($129.7M)
- Advance technical capabilities to monitor foreign nuclear weapons program activities, diversion of special nuclear material (SNM), and nuclear detonation ($446M)
- Pursue the dilute and dispose strategy to fulfill the United States' commitment to dispose of 34 metric tons of plutonium and terminate MOX ($9M)
- Recapitalize priority nuclear counterterrorism emergency response equipment including neutron multiplicity detectors, specialized search equipment, and contamination monitoring systems ($161M) Build and sustain a highly secure field deployable incident response communications network for critical real-time information sharing between scientific experts, operational assets, and executive decision makers throughout the government in support of requirements ($7M)
- Maintain and strengthen the Department's capabilities to plan for, and manage, incidents and emergencies at its operating locations; contribute technical assistance capability to enhance Emergency Management; and upgrade Emergency Communications Network (ECN) Suite ($35.5M)

Nuclear Security: Advancing Navy Nuclear Propulsion

Accomplishments

- ✓ Provided technical resolution support while the nuclear fleet steamed over two million miles
- ✓ Advanced the *Columbia*-Class and S8G Prototype Refueling projects supporting the Navy's Ohio-Class Replacement ship construction schedule and the Navy's nuclear operator training mission
- ✓ Advanced the Spent Fuel Handling Recapitalization Project to ensure the continued capability to refuel and defuel aircraft carriers and submarines, which is critical to maintaining the nuclear fleet's operational availability for national security missions

FY 2018 Highlights

- Continues core objective of supporting the safe and reliable operation of the Nation's nuclear fleet (75 submarines, 11 aircraft carriers, and 4 research, development, and training platforms), constituting over 45 percent of the Navy's major combatants
- Advance *Columbia*-Class development by completing Control Drive Mechanism (CDM) lead unit qualification and begin CDM manufacturing ($156.7M)
- Complete facilities projects and commence the S8G Prototype Refueling ($190M)
- Begin construction of the Spent Fuel Handling Recapitalization Project Facility in Idaho ($116M)

Nuclear Security: Building an Effective and Efficient FSE Workforce

Accomplishments, examples

- ✓ Projected 1,680 FTEs on-board by September FY 2017
- ✓ Partnered with U.S. Office of Personnel Management (OPM) for comprehensive staffing review
- ✓ Used Pay for Performance Personnel system to recruit, train, and retain a high quality workforce
- ✓ Increased funding for training of NNSA federal staff for skills necessary to meet mission

FY 2018 Highlights, examples

- Supports 1,715 FTEs for appropriate program and project management, and oversight ($308.2M)
- Provides training for federal staff to maintain highly skilled workforce ($5.8M)
- Funds the DOE Working Capital Fund for efficient management across DOE ($44.3M)

FOR MORE INFORMATION:

https://nnsa.energy.gov/aboutus/budget

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