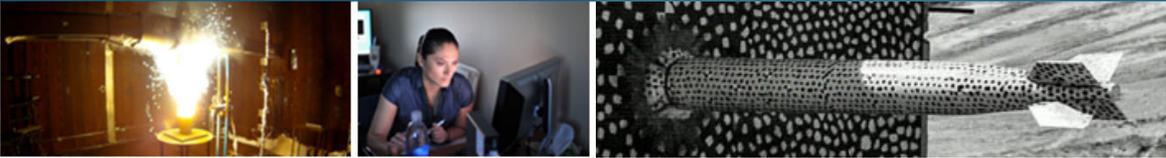


This work was supported by the DOE Nuclear Criticality Safety Program, funded and managed by the National Nuclear Security Administration for the Department of Energy.



The NCSP at Sandia in FY22



Gary A. Harms

NCSP Technical Program Review February 21-23, 2023



Sandia National Laboratories is a multission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

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FY22 NCSP Funding at Sandia



Element	Task	FY22 Total	Task Funding	Description	Spent	FY22 Carryover
Total		\$2,200,282		NCSP Funding at Sandia	\$1,904,976	\$295,306
IE		\$1,552,530		Integral Experiments	\$1,364,227	\$188,303
	C/O		\$284,585	FY21 Carryover		
	IE1S1		\$352,000	Fixed Cost Items		
	IE1S2		\$878,945	Programmatic Work		
	IE2		\$37,000	Support for NCERC Safety		
	IE3		\$0	CX Control System Upgrade		
	IE4		\$0	Support for AFRRRI Characterization		
T&E		\$354,150		Training & Education	\$259,032	\$95,118
	C/O		\$131,150	FY21 Carryover		
	TE1		\$223,000	Deliver Hands-On Training		
TS		\$293,602		Technical Support	\$281,717	\$11,885
	C/O		\$45,602	FY21 Carryover		
	TS-3		\$75,000	Succession Planning for Key Staff		
	TS-12		\$173,000	CEdT Manager Support		

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3 Integral Experiment Requests at Sandia



IER	Description	Started FY22	Ended FY22	FY22 Spending
304	Temperature Dependent Critical Benchmarks	CED-3a	CED-3a	\$3k
305	Critical Experiments with UO2 Rods and Molybdenum Foils	CED-3a	CED-3b	\$568k
306	Critical Experiments with UO2 Rods and Rhodium Foils	CED-2	CED-2	\$3k
441	Epithermal HEX Lattices with SNL 7uPCX Fuel for Testing Nuclear Data	CED-3a	CED-3a	\$174k
452	Inversion Point of the Isothermal Reactivity Coefficient	CED-1	CED-1	\$32k
523	Critical Experiments with ACRR UO ₂ -BeO Fuel	Feasibility	CED-1	\$67k
518	Joint LLNL and SNL High Multiplication Subcritical (Multiplicity) BM Experiment	CED-3a	CED-3b	\$67k
554	Neutron absorber plate experiments using the 7uPCX fuel	CED-1	CED-1	<\$1k
574	Godiva Characterization	CED-1	CED-1	\$70k
			IER Total	\$983k

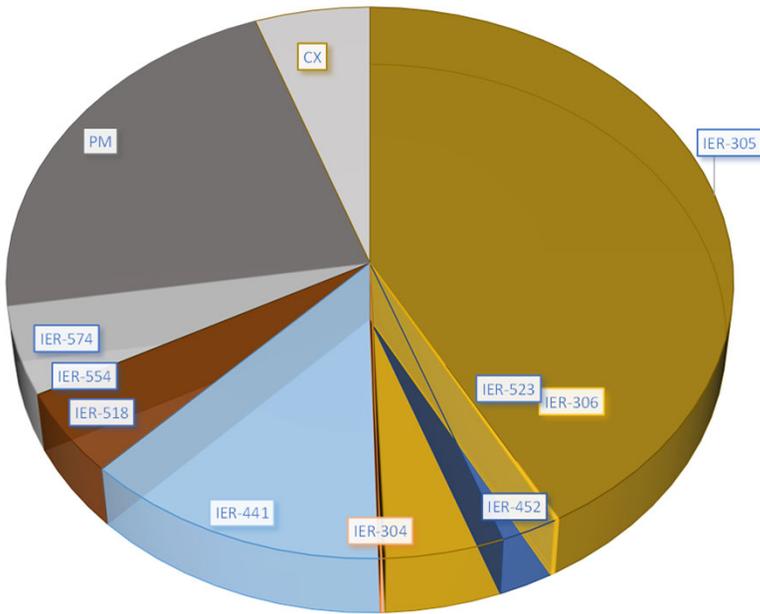
Gary Harms Talk Tomorrow

David Ames Talk Tomorrow

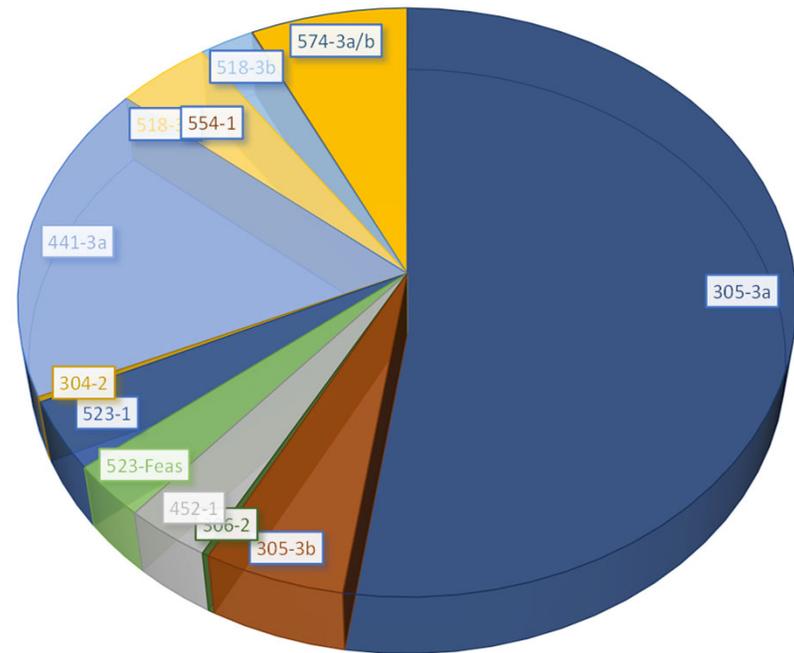
Mac Cook Talk Tomorrow

Jesse Norris (LLNL) Talk Tomorrow

Our Integral Experiment Spending



Overall



By CED Phase Gate

Sandia Highlights



Completed the IER-305 CED-3a

- Completed detailed design of IER-305 experiment hardware
- Ordered IER-305 core hardware
- Received and installed IER-305 core hardware

Began IER-305 CED-3b

- Completed first approach-to-critical on 9/2/22
- Hosted IRSN visit during the experiments
- Three of five benchmark configurations addressed in September
- The final two configurations were completed on 12/22/22

Continued IER-441 CED-3a in earnest

- IER-305 design team (with lessons learned) rolled into IER-441 detailed design

Presented the experimental portion of four NCSP training courses

- Three for NCSEs
- One for managers
- We have caught up with classes postponed during COVID

Critical Experiments at Sandia



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