The NCSP at Sandia in FY22

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NCSP Technical Program Review
February 21-23, 2023
## FY22 NCSP Funding at Sandia

<table>
<thead>
<tr>
<th>Element</th>
<th>Task</th>
<th>FY22 Total</th>
<th>Task Funding</th>
<th>Description</th>
<th>Spent</th>
<th>FY22 Carryover</th>
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<tbody>
<tr>
<td>Total</td>
<td></td>
<td>$2,200,282</td>
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<td>NCSP Funding at Sandia</td>
<td>$1,904,976</td>
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<td>IE</td>
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<td>IE1S1</td>
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<td>IE3</td>
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<td>T&amp;E</td>
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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.
### Integral Experiment Requests at Sandia

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