



U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

**FY 2013 Consolidated Innovative Nuclear Research
Funding Opportunity Number: DE-FOA-0000799**

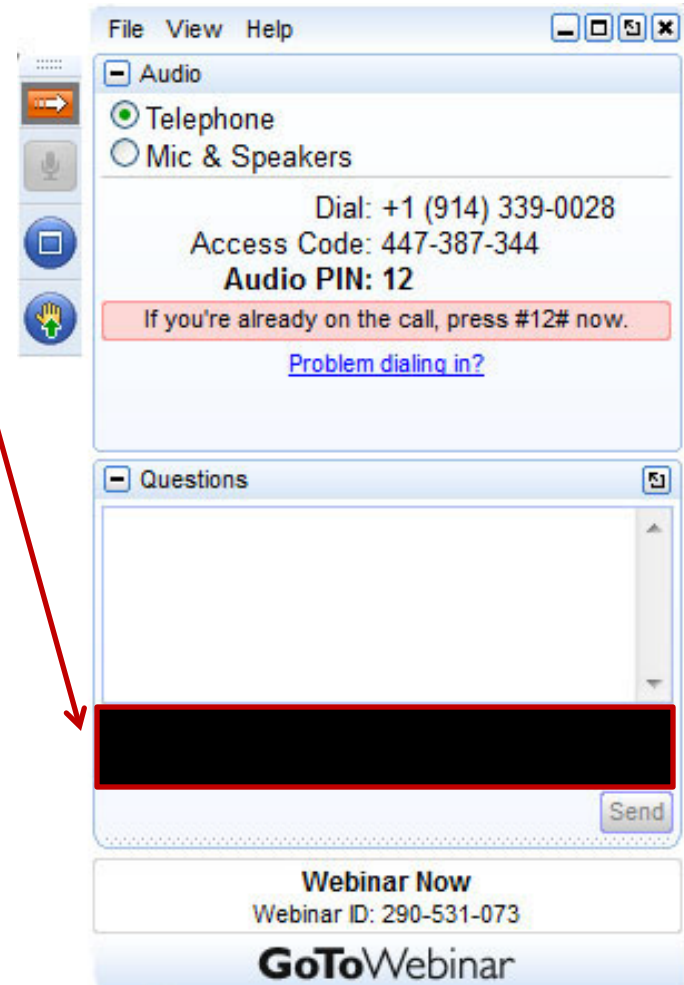
Section B Workscope Descriptions

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How to Ask Questions During This Webinar

- Submit questions using the GoToWebinar software by typing in the “Question” field.
- If your question does not get answered during the allotted time, questions will be answered later and posted on www.neup.gov.
- Specific questions on individual eligibility or workscope detail should be addressed offline.





Section A –Workscope Areas (Fuel Cycle R&D)

■ Program Supporting: Fuel Cycle

- Separations and Waste Forms (FC-1)
- Advanced Fuels (FC-2)
- Nuclear Materials Control and Instrumentation (FC-3)
- Used Nuclear Fuel Disposition (FC-4)
- Fuel Cycle Option Analysis (FC-5)
- Nanonuclear R&D (FC-6)

■ Mission Supporting: Fuel Cycle

- Fuel Resources (MS-FC1)
- Nuclear Data and Measurement Techniques (MS-FC2)





Section A – Workscope Areas (Reactor Concepts RD&D)

■ Program Supporting: Reactor Concepts

- Computational Methods (RC-1)
- Advanced Technologies, Development and Demonstration (RC-2)
- Advanced Structural Materials (RC-3)
- Materials Aging and Degradation: Accelerated Test Techniques and Validation (RC-4)
- Risk-Informed Safety Margin Characterization (RISMC): Advanced Mechanistic 3D Spatial Modeling and Analysis Methods to Accurately Represent Nuclear Facility External Event Scenarios (RC-5)
- Instrumentation, Information, and Control: Monitoring Technologies for Severe Accident Conditions (RC-6)
- Radioisotope Power Systems: Innovative Fuel Form Processing Development of General Purpose Heat Sources for NASA Applications (RC-7)

■ Mission Supporting: Reactor Concepts

- Reactor Concepts RD&D (MS-RC1)
- Radioisotope Power Systems R&D (MS-RC2)

Section A – Workscope Areas (NEET)

■ Program Supporting

- Validating NEAMS Fuel Pin Models (NEAMS – 1)

Section B – Workscope Areas (NEET)

- **Advanced Methods for Manufacturing: NEET-1**
 - Up to a two (2)-year award with \$400,000 total project cost
 - Estimated 2 awards

- **Advanced Sensors and Instrumentation: NEET-2**
 - Up to a two (2)-year award and \$400,000 total project cost
 - Estimated 2 awards

- **Reactor Materials: NEET-3**
 - Up to a three (3)-year award with \$1,000,000 total project cost
 - Estimated 5 awards

Section C – Available Workscope Areas

- **Simulation of Neutron Damage for High Dose Exposure of Advanced Reactor Materials (IRP-RC)**



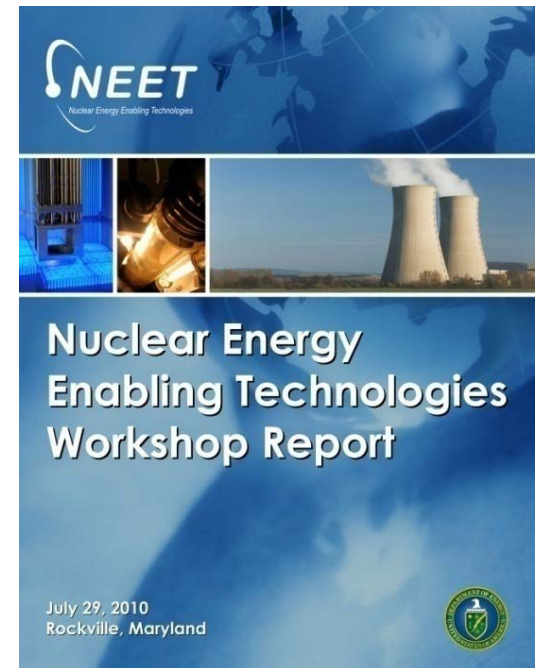
NEET Goal and Objectives

Nuclear Energy

Goal: Address critical technology gaps relevant to multiple reactor and fuel cycle concepts

■ Objectives:

- Conduct research to develop crosscutting technologies that directly support and complement the Office of Nuclear Energy's development of new and advanced reactor concepts and fuel cycle technologies
- Focus on innovative research relevant to multiple reactor and fuel cycle concepts that offer the promise of dramatically improved performance





■ Provide R&D solutions to support reactor and fuel cycle technologies:

- Advanced Methods for Manufacturing:
Research on advanced manufacturing technologies that draw upon successful practices in oil, aircraft, and shipbuilding industries, as appropriate, and employ modeling and simulation capabilities.
- Advanced Sensors and Instrumentation:
Research on unique sensor and instrumentation infrastructure technology to monitor and control new advanced reactors and small modular reactor systems.
- Reactor Materials:
New classes of alloys and materials not yet considered for reactor performance may enable transformational reactor performance.

