

CT-4, Advanced Reactor Safeguards

FY2022 CINR Webinar

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Mission, Vision, Goals and Strategic R&D

Physical Protection Systems

- Reduce number of on-site responders
- Reduce upfront costs
- Evaluate enhanced safety systems
- Evaluate unique sabotage targets

HALEU Regulatory Gaps

- Implications to MC&A and the PPS
- Evaluate cross-over into the fuel cycle

Pebble Bed Reactor MC&A

- Evaluate regulatory gaps and issues
- Determine driving requirements
- Evaluate new monitoring technologies

Microreactor PPS and MC&A

- Develop a licensing framework based on gaps and issues
- Develop approaches appropriate to the very small scale
- Evaluate new monitoring technologies

Liquid Fueled MC&A

- Evaluate regulatory gaps and issues
- Develop baseline accountancy approaches
- Evaluate new measurement and monitoring technologies

International Considerations

- Consider international safeguards requirements
- Interface with international safeguards and security programs
- Support the Gen-IV PR&PP working group

FY22 NEUP CT- 4 Workscope

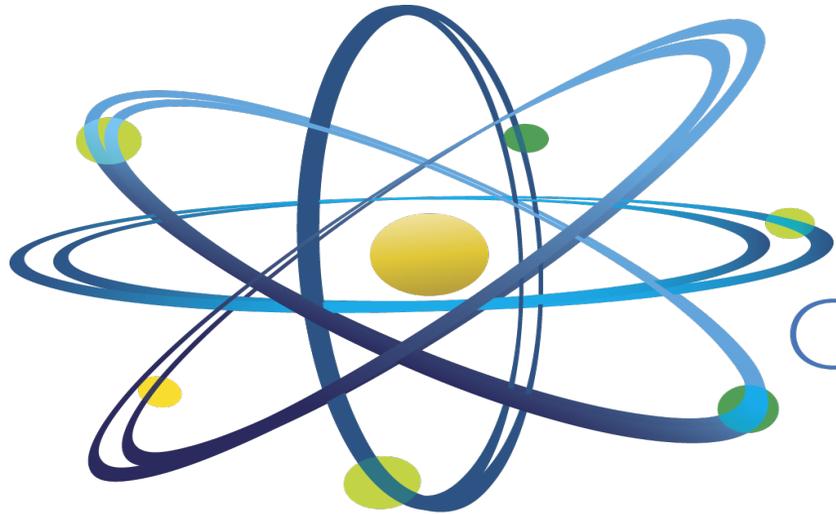
ADVANCED AND SMALL MODULAR REACTOR MATERIALS ACCOUNTANCY AND PHYSICAL PROTECTION

Up to \$400K per year and max 2 years

Advanced nuclear reactors, small modular reactors, and microreactors are pushing the boundaries on the integration of safeguards and security with safety and cybersecurity. The move toward smaller plant designs, compact and modular construction, and potentially remote operations raise new challenges in safeguards and security and also present new opportunities for Safeguards, Security, and Safety by Design (3SBD). New approaches for 3SBD are needed, focused on domestic material control and accounting (MC&A) and physical protection system (PPS) requirements for construction in the U.S. Increasingly, the tie to safety systems will be important for full PPS analysis. Proposals should focus on regulatory requirements with attention to new rulemaking activities that support advanced reactor licensing.

Proposals that focus on sodium fast reactors, pebble bed reactors, and microreactors will be given higher priority. Proposals focused on international safeguards and security requirements will not be considered for this area.

Questions?



Clean. **Reliable. Nuclear.**