

**WORKING GROUP 5**

**HIGH EFFICIENCY NUCLEAR FUEL**

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## **New Topic: Advanced Fuels Research**

- **Advanced fuels fundamental to development of all forms of future reactor systems**
- **Cutting edge projects attracting best researchers and students to nuclear energy**

## **New Topic: Advanced Fuels Research**

- **Research achievements will enable improved**
  - **Fuel cycle economics**
  - **Environmental spent fuel characteristics**
  - **Fuel and reactor safety margins**
  - **Proliferation resistant fuel characteristics**
  
- **Collateral benefits**
  - **Attract key disciplines to operate interactively**
  - **Spinoffs to other engineering/scientific areas of importance**
  - **Facilitate maintenance of unique facilities**

## Potential Research Directions

- **Should any be listed**
- **Goals and barriers for fuel system development**
- **Student appeal --- Vision/Science/Technology substance**
- **Encourage broad range/unique ideas**
  - **SWU Costs**
- **Fuel volume reduction desirable**

# Process

- **Research Topics**

- **Allow for crosscutting/enabling technologies vs only science areas/disciplines, e.g., simulation**
- **Relevance of projects - strong concern on what criteria will be**
- **Timescale**
  - **2030 too long**
  - **2015 good for reasonable fraction of projects**

## **PI's/Teaming**

- **Program Logic - seed, innovation, competition**
  - **Conflicting views re: Organization Collaborations**
  
- **Proposal Dollar Limits**
  - **None vs. Guidance**
  - **Tiered structure of program**
  - **DOE decide early**

# Peer Review Process

- **Do it right - credibility of program at stake with researchers and congressional sponsors**
- **NE find assistance**
  - **Within DOE**
  - **Other government organizations, e.g., NSF**
  - **Contract organizations with experience, e.g., ORISE**
- **Allow some high-risk, high-return projects**
- **No extra (check off) credits for U.S. collaborations, students, international collaborations**

## **New Researchers/Students**

- **Sufficient time for proposal preparation (new researchers)**
- **Leverage on industry/laboratory existing opportunities for students**
- **DOE must frame credible vision for role of nuclear industry**