



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
**NUCLEAR ENERGY**

**EPRI**

**CNWRA**



2024 Workshop on

## **STORAGE AND TRANSPORTATION OF TRISO AND METAL SPENT NUCLEAR FUELS**

**December 3-5, 2024 | Live Virtual Event**

**[Website Link](#) | [Registration Link](#) (closes 11/15/24)**

**[Abstract Submission Link](#) (closes 11/07/24)**

The Nuclear Regulatory Commission (NRC) is organizing a public Workshop on Storage and Transportation of TRISO and Metal Spent Nuclear Fuels. The workshop is being held in coordination with the DOE Office of Nuclear Energy and the Electric Power Research Institute, with assistance from the Center for Nuclear Regulatory Waste Analyses.

Subject matter experts will give presentations and discuss current technical and regulatory considerations on storage and transportation of advanced reactor TRISO and metal spent fuels. The expert panels may include vendors, NRC staff, and researchers. The workshop attendance is open to the public. See workshop website for further details. An expanded list of workshop topics is available on the following pages.

**[Website Link](#) | [Registration Link](#) | [Abstract Submission Link](#)**

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2024 Workshop on

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# **STORAGE AND TRANSPORTATION OF TRISO AND METAL SPENT NUCLEAR FUELS**

## **Expanded Topics for TRISO Spent Nuclear Fuels Storage and Transportation**

### **Physical Behavior of Fuel and Containers**

- Structural Integrity
  - Matrix Fracture
  - Non-fuel Block Fracture
  - TRISO Particle Layer Fracture
- Materials Performance
  - PyC Creep and SiC Fracture
  - Abrasive Wear and Dust Generation
  - SiC Corrosion
  - Particle, Block, and Matrix Oxidation
  - Gas Pressurization (Including from Alpha Decay)
  - Fission Products Leaching
  - Fission Products Diffusion
  - Corrosion of Containers (Including from Residual Coolant Salt)

### **Nuclear Physics**

- Considerations for Spent Fuel Safety
  - Decay Heat
  - Neutron Multiplication and Criticality
  - Shielding and Radiation Protection

### **Breakout Sessions: Current Regulations, Guidance Needs, and Crosscuts**

- Provide Information on Current Regulations and Guides
- Assess Needs for New Guidance Development
- Discuss Crosscutting and Related Topics

[\[Expanded Topics for Metal Spent Nuclear Fuels Storage and Transportation on next page\]](#)

## **Expanded Topics for Metal Spent Nuclear Fuels Storage and Transportation**

### **Physical Behavior of Fuel and Containers**

- Structural Integrity
  - Cladding Rupture Due to Pressurization
  - Fuel Swelling
  - Deformation
- Materials Performance
  - Corrosion
  - Reactions with Water and Chemical Treatments
  - Fission Products Leaching
  - Fission Products Diffusion
  - Fission Gas Generation and Release

### **Nuclear Physics**

- Considerations for Spent Fuel Safety
  - Decay Heat
  - Neutron Multiplication and Criticality
  - Shielding and Radiation Protection

### **Breakout Sessions: Current Regulations, Guidance Needs, and Crosscuts**

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