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Nuclear Operations Group (BWXT NOG)

NOG-L Uranium Processing and Research Reactor Capabilities

- **Supplier of Aluminum Clad, Plate-Type Fuel for the US High Performance Research and Test Reactors**

- **Manufactured Fuels for a Wide-Variety of Advanced Fuel Programs**
  - Uranium Oxide
  - Uranium Alloy
  - Uranium Carbide
  - Uranium Oxi-Carbide
  - Uranium Nitride

- **Manufactured Coated-Particle Fuel Applications**
  - Nuclear Rocket (SNTP)
  - Gas-Cooled Reactor
  - Space Electric Power

- **Supplier of HEU/LEU Medical Isotope Targets**

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NOG-L Current Advanced Fuel Work

- **Manufacturer of LEU Fuel Blocks for the TREAT Reactor**

- **Manufacturer of LEU U-Mo Monolithic Fuel for US High Performance Research and Test Reactors**

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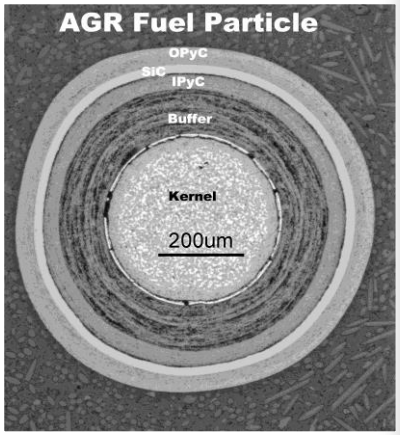
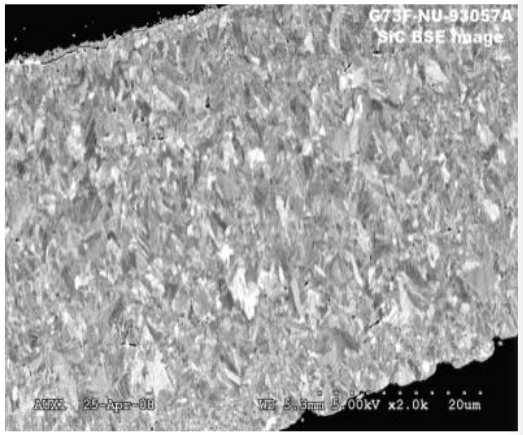
NOG-L Current Advanced Fuel Work

- **Manufacturer of UCO TRISO Particles and Compacts for the AGR program**





- **Currently Manufacturing UCO TRISO Particles and Compacts for AGR 5/6/7 Experiments**

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Challenges with Current Regulatory Framework

- Fuel performance demonstration and qualification comprise long duration research and development (R&D) task required for design and licensing
- Fuel form needs to be demonstrated and qualified for service conditions enveloping normal operation and potential accident scenarios
- No definitive Roadmap for transition from experimental to commercial fuel
- Current Approach is based on LWR experience

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Challenges for Advanced Reactor Fuels

- **LEU Source Material-Greater than 5%**
  - **No US commercial Source**
  - **Various fuel forms are needed**
- **Shipping Container Licenses**
- **Nuclear Criticality Safety Modifications**

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Thank you