Irradiated Fuels Examination Laboratory

**Description**

The Irradiated Fuels Examination Laboratory (IFEL), located in Building 3525, was initially designed and constructed in 1963 to permit the safe handling of increasing levels of radiation in the chemical, physical, and metallurgical examination of nuclear reactor fuel elements and reactor parts. The IFEL is classified as a Category 2 nuclear facility.

**Capabilities**

- Receipt and handling of irradiated materials (fuel or nonfuel in shielded casks)
- Capsule disassembly
- Nondestructive and destructive testing of irradiated materials
- Full-length Light Water Reactor (LWR) fuel post-irradiation examination
- Repackaging of spent nuclear fuel
- Packaging and shipment of irradiated materials (on-site and off-site)
- Examination and testing activities such as metrology; metallographic sample preparation by sectioning, grinding, and polishing; optical and electron microscopy; gamma spectrometry; and other physical and mechanical properties evaluations as appropriate to the experimental objectives of a particular program
- Safety testing of High Temperature Gas Reactor (HTGR) fuel
- Automated sorting and analysis of HTGR fuel particles using gamma spectrometry
- Testing grid pinching and lateral constraint effects on spent nuclear fuel during transportation

**Contact**

Dale Caquelin  
Facility Manager  
Oak Ridge National Laboratory  
865.576.1353  
caquelinda@ornl.gov

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