



Post-Irradiation Examination Services

AECL offers comprehensive remote handling services and facilities for the post-irradiation examination, analysis, testing, processing and repair of irradiated reactor fuel, reactor components, radioactive materials and equipment.

Our shielded facilities can serve the needs of LWR or CANDU® nuclear utilities, research laboratories, universities, hospitals and non-destructive testing laboratories.

More Than 30 Years Experience

AECL has more than 30 years experience in providing a comprehensive post-irradiation examination and testing service to organizations in Canada, the United States, Europe, South America, and Asia. Facilities and services are continuously upgraded to meet customer needs and regulatory requirements.

Specialists in inspection, testing and detailed examination of irradiated fuels and materials form the core of the shielded facility groups. They are supported by experts in fracture analysis, metallurgical and chemical engineering, analytical chemistry, materials science, and corrosion and wear.

Specialized Facilities - Operational Flexibility

The shielded facilities at Chalk River Laboratories provide a considerable degree of operational flexibility. Facilities include:

- a reactor bay for the receipt and initial processing of materials
- hot cells with remote handling equipment
- shielded casks for transfer of highly radioactive materials
- a shielded Scanning Electron Microscope, with direct sample transfer from hot cells

Individual hot cells are designed to handle up to 100 kCi of Co-60 or an equivalent (in terms of Bq-MeV) mixture of radioisotopes. Specialized hot cells are dedicated to mechanical testing and



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examination of irradiated non-fissile materials. Cells are equipped with computer controlled servo-hydraulic test frames for tensile, fatigue and other types of fracture testing at elevated temperatures and pressures. Others are equipped with cantilever beam fracture mechanics test rigs for delayed hydride crack initiation and velocity tests.

Our highly specialized and experienced staff offer a wide variety of services supported by in-house quality assurance procedures. They can:

- conduct non-destructive visual and dimensional examinations
- machine active samples into test specimens by remote means
- remotely dismantle, maintain and assemble radioactive equipment



AECL
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