

# Hot Cell Facility

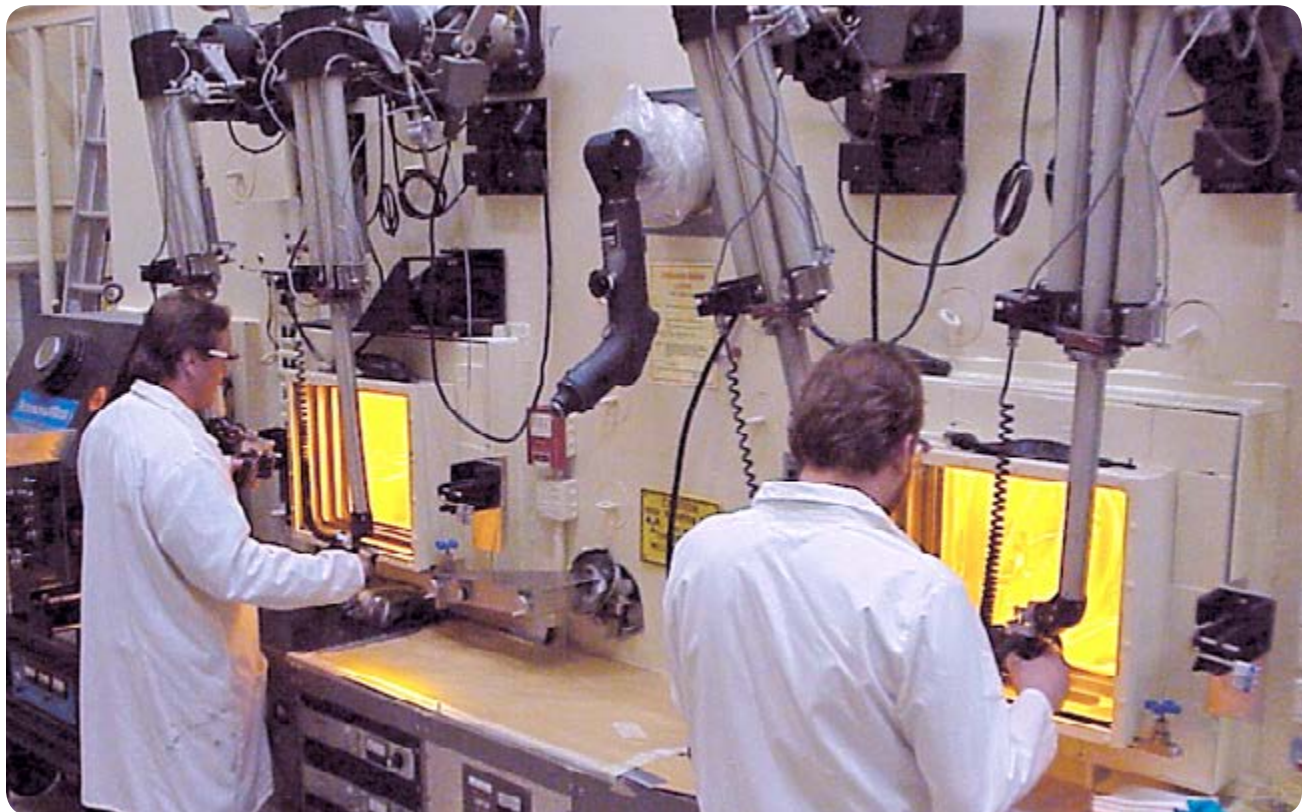
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BWXT Nuclear Energy, Inc. (BWXT) hot cell facility consists of four independent beta-gamma type hot cells. The hot cells are connected to each other by transfer ports and a common isolation room. The hot cells are designed to be flexible and allow the interiors to be modified, when necessary, so work can be performed quickly and at the lowest possible cost. The largest of the cells is connected to a water-filled transfer canal by an access hatch. The transfer canal leads to a 25-foot deep storage pool, which is located in a high-bay area equipped with a 25-ton bridge crane for cask handling.

Since 1985, work in the hot cells has consisted of examinations to investigate extended burn-up of commercial light water reactor (LWR) fuel rods, examination of advanced spacer grid designs (both capsule and full sized assemblies), failed in-core instrument detectors, and failed fuel rods. Testing programs have included high flux irradiation exposure of electrical components to be used in nuclear reactors.

## **Hot cell descriptions**

- Cell 1 is 16 ft. x 8 ft. x 15 ft. high and has the capability for accepting full length commercial LWR fuel assemblies and fuel rods, and is rated for 300,000 Ci of Co-60.
- Cell 2 is 14 ft. x 5.75 ft. x 15 ft. high, and is used primarily for metallography and is rated for up to 6,000 Ci of Co-60.
- Cell 3 is 6 ft. x 4.5 ft. x 15 ft. high and is rated for up to 600 Ci of Co-60.
- Cell 4 is 6.25 ft. x 4.75 ft. x 15 ft. high and is rated for up to 10,000 Ci of Co-60.



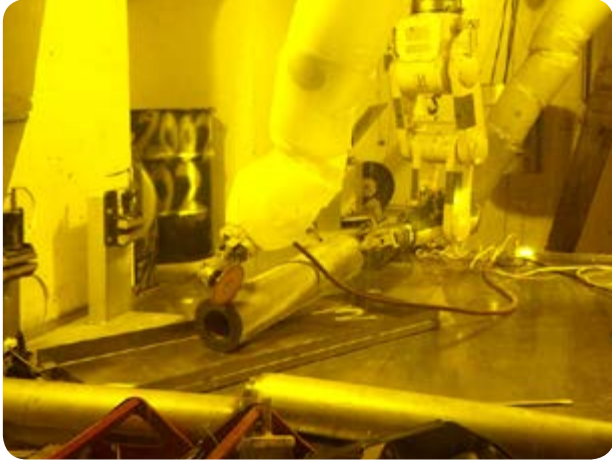
*Hot cell facility*

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## Equipment

The following equipment is available in the hot cell facility:

- ITI periscope with photographic capability
- Macrophotography
- Various in-cell sectioning equipment
- Metallographic sample preparation equipment



Interior view of Hot Cell #1

## Isotope re-encapsulation facility

A shielded clean facility is located in the cask handling area to process uncontaminated radioactive sources that must be returned to the field. It is currently used for re-encapsulating gamma (Cs-137) and neutron (AmBe) oil well logging sources. Over the past 15 years, BWXT has successfully re-encapsulated hundreds of sources. The facility could be used to re-encapsulate other types of sources as well.

The stainless steel work area measures 4' x 12' and is divided into three bays. Remote operations in these bays include milling, welding, and QA inspections. The QA inspection bay has also been reconfigured for high resolution macro photography and replication of highly radioactive specimens.

## Services

The following remote operations can be performed in the isotope re-encapsulation facility:

- Milling
- TIG welding
- Liquid penetrant inspection
- Video inspection/recording
- High resolution macro photography
- High resolution surface replication
- Decontamination
- Hydrostatic pressure testing
- Dimensional verification



Isotope re-encapsulation facility

### NUCLEAR ENERGY

### GOVERNMENT SERVICES

### ADVANCED TECHNOLOGIES

Headquartered in Lynchburg, Va., BWX Technologies, Inc. (BWXT) is a leading supplier of nuclear components and fuel to the U.S. government; provides technical, management and site services to support governments in the operation of complex facilities and environmental remediation activities; and supplies precision manufactured components and services for the commercial nuclear power industry. BWXT has more than 5100 employees and significant operations in Lynchburg, Va.; Erwin, Tenn.; Mount Vernon, Ind.; Euclid, Ohio; Barberton, Ohio; and Cambridge, Ontario, as well as more than a dozen U.S. Department of Energy sites around the country. Follow us on Twitter @BWXTech and learn more at [www.bwxt.com](http://www.bwxt.com).

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