

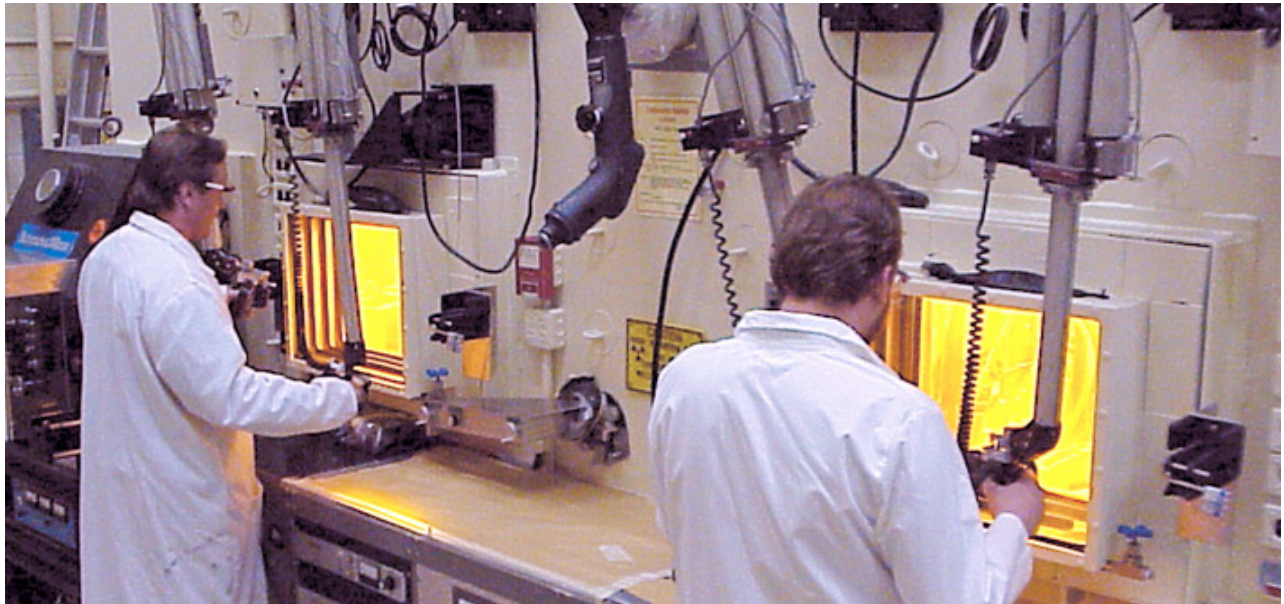
# Hot Cell Facility

The BWX Technologies, 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 revamped, 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 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. Spent fuel repackaging is also performed inside the hot cells.

## Hot cell descriptions

- Cell 1 is 16' x 8' x 15' 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, 14' x 5.75' x 15' high, is used primarily for metallography and is rated for up to 6,000 Ci of Co-60.
- Cell 3 is 6' x 4.5' x 15' high and is rated for up to 600 Ci of Co-60.
- Cell 4 is 6.25' x 4.75' x 15' 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:

- Visual Inspections
- Macrophotography
- Metallographic Sample Preparation Equipment
- Various In-Cell Sectioning Equipment



Interior view of Hot Cell #1



Isotope re-encapsulation facility

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## Services

The following remote operations can be performed in the source encapsulation facility:

- Milling
- TIG Welding
- Liquid Penetrant Inspection
- Video Inspection/Recording
- High Resolution Macro Photography
- High Resolution Surface Replication
- Optical Metallography (to 1,000X)
- Decontamination
- Hydrostatic Pressure Testing (to 40,000 psi)
- Dimensional Verification

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## Source Encapsulation Facility

A shielded 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 encapsulating gamma (Cs-137) and neutron (AmBe) oil well logging sources. Over the past 25 years, BWXT has successfully encapsulated hundreds of sources.

The work area is lined with stainless steel, measures 4' wide by 4' high by 12' long, and is divided into three bays. Remote operations in these bays include milling, welding, and QA inspections. The QA bay can be reconfigured to perform other remote functions, such as high resolution macro photography, optical metallography, and surface replication.

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