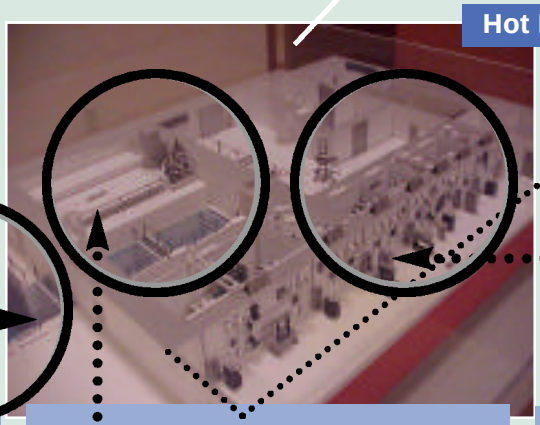
# HOT LABORATORY

**Adjacent to the Reactor Building, the Hot Laboratory is a series of rooms where reactor experiment materials were handled, analyzed and stored, and as a result, contained the next highest levels of radioactivity (second to the reactor vessel).**

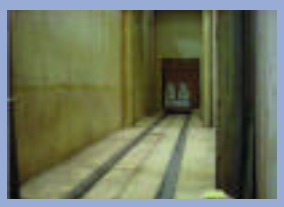
**Hot Laboratory Model**



## CANALS

Located 25 feet below ground, canals connect the Hot Lab to the containment vessel. Historically, they were filled with water (for protective shielding) and used to transfer items from the reactor to the Hot Lab for examination; some were used for fuel storage. Water was drained and fuel was removed when the facility closed in 1973.

Canals are being used during decommissioning much like they were used in the past - as shielded avenues for transferring materials.



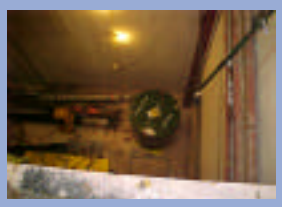
A revamped cart and trolley system (shown left) moved heavy steel liners filled with low-level radioactive waste (LLRW) from the Hot Lab through dry, underground canals to casks back in the containment vessel, later to be transferred into shipping casks outside.

## HOT DRY STORAGE

While the facility was operational, irradiated items were usually stored underwater or in shielded casks. Sometimes, items were stored for easier access in Hot Dry Storage (HDS).

Some items removed from HDS included:

- activated components stored in galvanized steel "hoppers"
- a rod rack that held a beryllium reflector plate and sections of control rods
- 15-foot experiment tubes that had been inserted into the reactor



To keep workers at a safe distance, steel liners were placed into the 31-foot deep HDS pit and loaded using long-handled tools. (view looking down into pit)

An existing crane (shown left), was restored to power for decommissioning. It was used to remove part of an underwater vehicle stored in Hot Dry Storage for packaging and shipping.

## HOT CELLS

Four- and five-foot thick high-density concrete, steel and lead walls shielded each of the seven interconnected Hot Cell rooms where irradiated materials were examined through thick windows, using remote manipulator arms and viewing periscopes.

Seven Hot Cell doors were removed- each weighing over 20,000 pounds.

Manipulator arms, tools that had been used in the past to handle irradiated items, were removed from the walls of the Hot Cells.

A varnish was applied to the surface of this air vent and other fixed equipment to prevent dust-like loose contamination from becoming airborne during removal.

More than 600,000 pounds of loose and fixed equipment were removed from the Hot Laboratory.