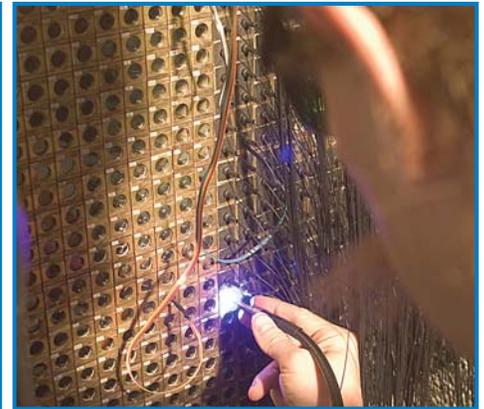
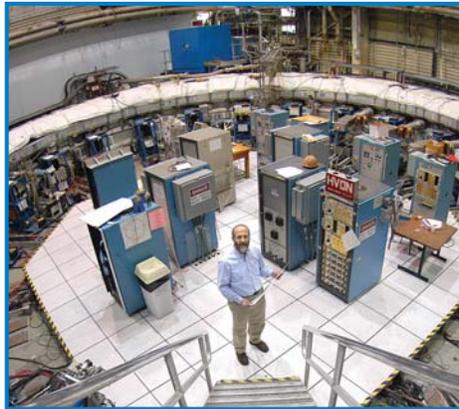


Radiological Facilities Management

The U.S. Department of Energy's Office of Nuclear Energy

The Department of Energy maintains nuclear capabilities for research and training.



- The Radiological Facilities Management (RFM) program ensures safe and cost-effective access to testing facilities for missions in support of national priorities, including projects conducted by university researchers.

- As part of this program, the Department of Energy's (DOE) Office of Nuclear Energy (NE) maintains a wide range of nuclear and radiological facilities and their associated infrastructures in an operational, safe, secure, and environmentally compliant manner. These activities maintain infrastructures for three major mission areas:

- – Medical Isotopes Infrastructure,
- – Space and Defense Infrastructure, and
- – Research Reactor Infrastructure.

- Under the RFM program, NE provides funding, guidance, and oversight in the employment of vital resources and capabilities at four National Laboratories:

- – Idaho National Laboratory (INL),
- – Oak Ridge National Laboratory (ORNL),
- – Brookhaven National Laboratory (BNL), and
- – Los Alamos National Laboratory (LANL).

- The facilities and associated real property assets managed by NE at these sites comprise a major portion of the Nation's nuclear research infrastructure. DOE extends its research work beyond the national laboratories by providing

university scientists and engineers with access to DOE nuclear and radiological facilities for research and training purposes.

Medical Isotopes Infrastructure

DOE maintains the infrastructure for the production, processing, and packaging of radioactive isotopes (radioisotopes) and stable isotopes. Radioisotopes originate from several DOE nuclear facilities, but with the exception of helium-3, produced by the Savannah River Site (SRS), all isotopes are processed, sold and distributed from ORNL. In FY 2009, the Isotope Program will be transferred to the Office of Nuclear Physics (NP) within the DOE Office of Science, and will be renamed and reformed as the Isotope Production and Applications Program. This new program will expand the scope of the present program of radioisotope production to include production of commercially unavailable radioisotopes in response to needs expressed by the research community.

Space and Defense Infrastructure

DOE maintains the infrastructure to develop, manufacture, test, and deliver radioisotope power systems (RPS) for space exploration and national security missions. DOE is currently supporting RPS production, testing, and delivery operations for a national security mission and for the National Aeronautics and Space Administration (NASA) Mars Science Laboratory mission planned for launch in 2009.

Research Reactor Infrastructure

Formerly a separate program, a research reactor infrastructure element was added to the RFM program for the first time in FY 2007. The Department is responsible for providing fresh reactor fuel to universities and disposing of spent fuel from university reactors. The program also supports the conversion of the remaining highly enriched uranium fueled reactors to low enriched uranium reactors.

In FY 2008 and 2009, DOE will continue to fund the fabrication of new fuel for university research reactors, shipments of fresh fuel to universities, and shipments of spent fuel to designated storage facilities. In FY 2008, in cooperation with the National Nuclear Security Administration, DOE will support the conversions of Oregon State and Washington State University research reactors to low enriched uranium from high enriched uranium (HEU) by funding the removal and shipment of HEU cores to designated storage facilities. The University of Wisconsin reactor is scheduled to be converted during FY 2009.



Idaho National Laboratory



Oak Ridge National Laboratory



Brookhaven National Laboratory

National Laboratories

Idaho National Laboratory

The INL Space and Security Power Systems Facility was dedicated in 2004 for the assembly, testing, and delivery of RPSs in support of space and defense programs. The facility began operations in FY 2005.

INL is also producing several isotopes and will expand its portfolio once the hydraulic transfer tubes and loading and unloading capabilities are installed at the Advanced Test Reactor. Currently, the major isotopes produced are cobalt-60 and cesium-131.

Oak Ridge National Laboratory

NE is a user of the High Flux Isotope Reactor (HFIR), the Radiochemical Engineering Development Center (REDC), and associated support facilities needed for the production of californium-252, tungsten-188, and other isotopes for medical, national security, research, and industrial applications. The hot cells at the REDC are used to extract the isotopes of transuranium elements produced in the HFIR.

NE also maintains remotely operated hot cells in Buildings 4501 and 7920, and manages their operation to process and package the radioisotopes produced in the HFIR. Isotope products processed at these facilities include: tungsten-188, actinium-225, nickel-63, and iron-55, among others used in the treatment of various types of cancer and in homeland security.

Other support facilities at ORNL associated with isotope production include:

- The materials laboratory, in which a wide variety of metallurgical, ceramic, and high vacuum processing techniques are performed, and
- The chemical laboratory used for scraping, leaching, dissolving, and oxidizing processes to remove unwanted materials and to place the isotopes into a chemically stable form.

The unique infrastructure for iridium fabrication at ORNL is also maintained under the RFM program to support space and defense missions. This infrastructure, which manufactures iridium shells and tests high-strength materials needed to safely encapsulate plutonium-238 (Pu-238), is essential to the Nation's vital space and national security RPS applications.

Brookhaven National Laboratory

At BNL, NE maintains facilities to support isotope production and other missions. The Brookhaven Linear Isotope Producer Building 931 and Hot Cell Building 801 at BNL are used for producing, processing, and packaging radioisotopes such as strontium-82, germanium-68, arsenic-73, and others that are used in medical applications.

Los Alamos National Laboratory

At LANL, NE maintains the Pu-238 Fuel Processing Facilities in the Plutonium Facility-4 at Technical Area-55. These facilities provide the capability to support RPS heat sources for upcoming space and national security applications.

A portion of the 100 MeV proton beam from the Los Alamos Neutron Science Center Linear Accelerator is directed to a target isotope station for the production of isotopes needed for nuclear medicine research and other scientific applications. The Technical Area-48 Hot Cell, Building RC-1, is maintained for the processing, packaging, and shipment of radioisotopes.

Isotopes produced in NE's Isotope Production Facility at LANL include:

- Germanium-68 used as a calibration source in Positron Emission Tomography scanners,
- Strontium-82 used as a rubidium-82 generator for cardiac imaging, and
- Other isotopes used in environmental and homeland security applications.

Program Budget

Radiological Facilities Management (\$ in Millions)

	FY 2008 Request	FY 2008 Actual	FY 2009 Request
RFM	\$53.0	\$48.1	\$38.7*

***Reflects transfer of Isotope Program to DOE's Office of Science**