

Decommissioning Program

The Decommissioning Program staff has gained invaluable experience in the decommissioning of various facilities and sites – NRC and DOE regulated - as well as other international (non-US based) sites and facilities. In addition, this expertise has been used to support the development of a multi-day training program on the decommissioning process. Both the acquired technical expertise and training expertise of the staff have been used widely on various projects and programs worldwide.

Problem

Many legacy nuclear sites and facilities are scattered across various Government and privately licensed sites worldwide. As time progresses, additional facilities are declared surplus to the needs of their respective responsible organizations. The timely closure and/or reuse of these sites is necessary to allow for their de-licensing and return to other beneficial use.

Approach/Expertise

The Argonne Decommissioning Projects group is recognized internationally and domestically as having a wealth of collective experience in the decommissioning area. The organizations has been actively performing and supporting others in performing decommissioning of former nuclear sites. Staff members are recognized as subject matter experts in various areas through their experiences over the last 25 years in the course of the decommissioning of various research reactors and other supporting nuclear facilities at Argonne National Laboratory and supporting this same type of work at other various facilities and sites both domestically and abroad.

These areas of expertise include:

- Project Management and Execution including Cost, Schedule, Quality and Technical Baseline Management
- “Path Forward” Planning, Development, Preparation and Review (Decommissioning Plan, Radiation Protection, Characterization Plan, Health & Safety, Quality Assurance Plan)
- Project Readiness Reviews and Facility Walk-downs
- Project Health Physics and Industrial Safety Oversight
- NRC Licensing Activities

- License Termination Process
- Quality Assurance Audits and Assessments
- Decommissioning Training

The Argonne Nuclear Engineering Division, through its Decommissioning Program, has been leading and supporting the decommissioning of nuclear facilities at Argonne and at various other locations within the United States and abroad for over 25 years. The knowledge gained and the lessons learned from this work were applied to subsequent projects and shared with others. Some hands-on decommissioning work was performed using Argonne’s in-house labor forces while other projects were performed with contractor work forces. Several projects required a coordinated work effort of both forces. Other efforts focused on analysis of strategies and general decommissioning planning support.

Operations

Operations is charged with cleaning up contaminated facilities at the Laboratory that are surplus to operational needs. This work involves disassembling the components of the facility and then recycling or packaging them as waste to be sent offsite for disposal. The facilities are then decontaminated and either released for reuse or demolished.



Argonne Decommissioning Projects

Argonne research facilities decommissioned include:

- Juggernaut Reactor
- ZPR-6 and 9
- Experimental Boiling Water Reactor
- Chicago Pile 5 Research Reactor
- JANUS Biological Reactor Facility
- Argonne Thermal Source Reactor
- Building 212 Plutonium Gloveboxes
- Argonne 60-Inch Cyclotron Facility
- Building 200 M-Wing Hot Cells (decontaminated for safe storage)
- Building 301 Hot Cells (characterized awaiting funding)
- Experimental Breeder Reactor-II (placed in safe storage)
- Small-scale D&D projects

D&D Support to Outside Customers

The Argonne D&D Projects Group has been providing technical support to various DOE organizations, including:

- Tokamak Fusion Test Reactor at the Princeton Plasma Physics Laboratory,
- Los Alamos National Laboratory,
- Brookhaven National Laboratory,
- Savannah River Site,
- Mound Site,
- Battelle Columbus Laboratories,
- Hanford N Reactor, and
- the West Valley Demonstration Project.

The Argonne D&D Projects Group also provides technical support to various non-DOE organizations, including:

- the International Atomic Energy Agency,
- the OECD/NEA Technical Advisory Group on Decommissioning,
- the U.S. Department of Transportation / MARAD Nuclear Ship Savannah,
- the U.S. Army Aberdeen Fast Pulsed Reactor Facility, and
- other foreign reactor facility sites.

Additionally, a team of Argonne decommissioning subject matter experts have been assigned to the NASA Plum Brook Research Reactor Facility for over the last 5 years. These staff members are providing direct technical support to NASA in this decommissioning activity for this research reactor at the NASA-Plum Brook Station in the areas of construction management, radiation safety, licensing and quality assurance oversight, and industrial safety.



The Plum Brook Research Reactor Site in the late 1960's and scenes of decommissioning work in progress

Training

The role of the training element is to provide general D&D training courses or niche training to those with special needs. The courses are organized and planned by NE Division Decommissioning Program personnel. Training is given by Argonne instructors, as well as instructors drawn from other DOE sites, DOE, NRC, and commercial firms.

We have presented over 40 courses since September 1997 with over 1000 graduates from over 40 countries. Special courses have been presented for: the IAEA, JAERI of Japan, CNEA of Argentina, NASA, West Valley Demonstration Project staff, the Princeton Plasma Physics Laboratory and a DOE site Citizen's Site Specific Advisory Board.



An Argonne Decommissioning Training Course

For additional information, please visit our website at <http://www.dd.anl.gov> or contact Chris Grandy at cgrandy@anl.gov.

