

## History of Mound Laboratory

At the conclusion of World War II, the United States made the decision to expand its nuclear weapons program into a production capability. Mound Laboratory (Mound) was built as a spin-off of the Manhattan Project to consolidate the WWII Dayton Project facilities that were purifying the polonium-210 for the nuclear weapon initiator (1948).

Mound was one of many sites around the country that made up the nuclear weapons complex. These sites were built to provide key components that would come together and be assembled for the nation's nuclear weapons program.

Initially, the primary mission of Mound was the separation and purification of Polonium - 210 and the fabrication of the nuclear weapon initiator. As a result of new technology, the demand for polonium initiators was significantly reduced and new missions were assigned to Mound by the Atomic Energy Commission (AEC). These new missions included recovery and purification of tritium, actinide isotopes research program, and in 1954, Mound was assigned the explosives detonator fabrication program which led to significant diversification in Mound's technical capabilities.

The mission for the production of primary warhead detonators more than doubled the site work force and led to additional explosive technology and process development. In addition to detonator production, explosive timers, explosive firing systems as well as numerous other explosive components were produced. Additional energetic material components utilized glass-ceramic technology. These components included igniters, actuators, and initiators which were used in weapon systems. These components are still in the nation's nuclear stockpile today.

Also during the 50's, the concept of radioisotope power sources was invented and developed at Mound. This technology eventually evolved into the Radioisotope Thermoelectric Generator program that powered many deep space missions. These space projects included electrical power for the instruments placed on the Moon by Apollo astronauts (SNAP or Systems for Nuclear Auxiliary Power), Pioneer (planetary exploration), Voyager (study of the planetary systems of Jupiter and Saturn), Viking (Mars surface), Ulysses (exploration of the Sun), Galileo (exploration of Jupiter and its moons) and Cassini (exploration of Saturn and its moons).

Medical and other stable isotope gasses were produced and separated at the Stable Isotope Production facility at Mound. These isotopes were used for medical treatments and tracers through out the world.

Mound built and supplied calorimeters for the entire nuclear complex. The calorimeters could reliably and safely determine quantities of nuclear material in containers and vessels.

As the Cold War drew to an end and a demand for a reduced nuclear weapons inventory resulted, the nuclear weapons complex underwent consolidation. The result of the consolidation was to close many of the production sites and consolidate much of the work at the nation's national laboratories. Mound was on the list of sites to be closed.

In 1994, all weapons production work at Mound ceased. The mission was changed to shutdown of operations, site cleanup, and the transition of reusable buildings and processes to the Mound Development Corporation (MDC). The Heat Source/RTG work continued until the Cassini mission was completed in 1998 and then was officially transferred from the site in 2003. Site cleanup and environmental restoration was completed in 2007.

The Mound Science and Energy Museum (MSEM) is located at the site in former site building 102. For more information, you can visit the MSEM web site at; <http://moundmuseum.com/>