

Y-12's first Open House—September 2–3, 1967, part 2

By 1967, Y-12 was already recognized as a national resource for nuclear energy. The Atomic Energy Commission stated “The capability and versatility of Y-12 are now proven assets to the United States nuclear energy effort. As the highly skilled personnel of Y-12 continue to perform difficult production and engineering jobs, frequently on lightning schedules, they add immeasurably to the nation’s defense posture while at the same time advancing the peaceful application of the atom.”

At the time of the first Open House held at the federal facilities in Oak Ridge, on September 2–3, 1967, there was highly evident and obviously unrestrained pride held by Y-12 folks in being “the only AEC complex left in this area that still clings to its old code name.” Y-12 was the designation deliberately assigned by the Manhattan Project planners as it conveyed no information about what was to be done there.

X-10 was assigned to the Graphite Reactor site, K-25 was assigned to the Gaseous Diffusion Plant, and S-50 was assigned to the Thermal Diffusion Plant. The only designation that might have some connection may be K-25.

The “K” may stand for the Kellogg Corporation, the company that manufactured and operated the gaseous diffusion equipment and “25” was used as a shortcut name for uranium 235. This was done by taking the “2” from the end of “92” which is the atomic number for uranium and the “5” from the end of the isotopic number U-235, creating the resulting number “25.” The same thing was done with plutonium. The “4” was taken from the end of the atomic number for plutonium (94) and the “9” from the end of the isotopic number (P-239) to make “49” stand for plutonium.

That pride in our “Y-12” name remains with us today. Over the years with the periodical change in contractors invariably someone will mention changing the long-held “Y-12” to something else. Without fail, those comments have met with loud, strong and immediate opposition from Y-12ers and the surrounding communities. Changing from the “Y-12 Plant” to the “Y-12 National Security Complex” took place in 2000 to recognize the broad range of missions being undertaken at Y-12 in support of our nation’s national security. That was done while intentionally retaining the “Y-12” in our name.

During the 1967 Open House, Union Carbide Corporation, the contractor who had taken over operation of Y-12 from Tennessee Eastman Company on May 4, 1947, took pride in showing off the accomplishments of Y-12 to visitors. The exhibits were primarily located in Building 9737, near the east entrance to the site.

Literature available to the public stated that “Y-12 had over 1,500 machine tools at the time ranging in size from a small jeweler’s lathe to 120-inch vertical turret lathes. Many of these tools are designed to work to very high precision, and a number of them are numerically controlled through computer-produced tapes which guide them through their motions. Furthermore, some have been equipped to machine reactive or toxic materials.”

The material went on to say that Y-12 “is basically a materials processing organization, equipped with facilities for materials preparation, fabrication, machining, and assembly. Examples include chemical processing equipment, vacuum casting furnaces...” and I would add other highly specialized equipment.

Four major responsibilities were cited as assigned to Y-12 by the AEC. They are as follows:

First, “Production responsibility in the field of nuclear weapons—this highly classified work is of vital importance to our nation’s defenses.”

Second, “Y-12 acts in the capacity of fabrication support for the weapons design laboratories; Los Alamos Scientific Laboratory; Lawrence Radiation Laboratory; Sandia Corporation in Albuquerque, New Mexico, and Livermore, California. Y-12 produces most of the components for test devices that are fired—including Plowshare devices for the peaceful use of atomic explosives. In addition, a large amount of the

experimental hardware required by these organizations is made here. We also conduct a substantial amount of development for the laboratories.”

Third, “Support of the Oak Ridge National Laboratory, one of the nation’s leading research centers. There are about 1,000 ORNL employees located in Y-12. These scientists and engineers work for the Biology Division, the Reactor Division, the Thermonuclear Division and the Isotopes Division.”

“In addition to the usual housekeeping and maintenance services, we supply the facility engineering required by these groups. A large amount of specialized fabrication work is done for the Laboratory. For instance, Y-12 fabricated major components for the Molten Salt Reactor Experiment, the High Flux Isotope Reactor, the DCX fusion experiment and the oak Ridge Isochronous Cyclotron.

Fourth, “the maintenance of a research and development program designed to improve production methods and plant processes and to perform necessary speculative research.”

In addition to these missions, the literature stated, “Because of the Plant’s vast reservoir of industrial and scientific skills, many problems have been brought to Y-12 that are not related to weapons. Problems involving chemistry, engineering, metallurgy and fabrication developments for the nuclear rocket program, tungsten components for the missile program, exotic material items, biomedical engineering assistance, and solutions to space-related problems. Much of the unclassified technology developed at Y-12 is made available to private industry through technical publications in accordance with the AEC’s technological spin-off program.”

Finally the special Y-12 Bulletin stated, “Y-12ers are proud of their accomplishments of the past. Their contribution to the development of Oak Ridge and the atomic age are significant milestones in man’s search for a better life. Coupled with the pride in past accomplishments is the sure knowledge of tomorrow’s challenge, and the knowledge that the plant’s potential will measure up.”

One photograph accompanying the written text showed the Project Sedan crater that is 320 feet deep and nearly a quarter of a mile wide. The crater was created in a demonstration of the excavation capabilities of nuclear devices. I have recently gone to see this crater as a part of a tour of the Nevada Test Site. It is beyond amazing.

A second photograph showed a flat metal framed grid device fabricated for the Naval Research Laboratory that was used in underwater sound experiments. It required over 4,000 precision welds and looked to be well over 30 feet tall and maybe 40 feet wide.

The final photograph showcased the “vacuum containers for use of Apollo Astronauts” stating the boxes “will be used to collect samples from the surface of the moon.” These moon boxes were used two years later when Apollo 11 landed astronauts on the moon and collected samples of the lunar surface.

Y-12 was well on its way in 1967 to being the premier machining and materials processing center for the nation! We have maintained that role over the years and are now designated as the nation’s “Uranium Center of Excellence,” are a national prototype manufacturing center, a partner in the reduction of nuclear materials such as the special nuclear materials just brought to Y-12 from Chile and our nation’s repository of highly enriched uranium - a potentially huge supply of energy reserve for the future.