Y-12 continues to make changes in the 1970's

By 1972, the growing concern for the long-term viability of nuclear weapons deployed at various locations and in a variety of conditions caused Y-12 to be tasked to create what came to be known as "Stockpile Surveillance." The disassembly of nuclear weapons secondaries was a new wrinkle. Y-12 had manufactured all of them, but the manufacturing operations did not include plans for taking them apart.

The change in process steps and methods from assembly to disassembly required new procedures and new techniques. Sample weapons secondaries were selected, carefully dismantled and inspected to identify any deterioration resulting from the age of the weapon and the amount of time it had been deployed.

The Energy Reorganization Act of 1974 changed the Atomic Energy Commission to the Energy Research and Development Administration and the Nuclear Regulatory Commission. This marked a change in oversight for nuclear facilities, but Y-12 remained within the ERDA as a part of the nuclear energy defense activities.

The Department of Energy website speaks of this change as follows: "Following the 'Energy Crisis' of the early 1970s, the Nation recognized the need to expand research and development activities involving alternative forms of energy, and to reorganize nuclear energy regulation. In 1975, the AEC was replaced by the Energy Research and Development Administration, which was created to focus the federal government's energy research development activities into one unified agency, which was also to include AEC's nuclear energy defense activities. The Nuclear Regulatory Commission was also created out of remaining parts of the AEC's mission…"

The impact on Y-12 was to further increase the demand for nuclear weapon secondaries as the Cold War continued to escalate and the need for increased numbers of nuclear weapons to uphold the "mutually assured destruction" philosophy that both the Soviet Union and the United States were attempting to maintain. While this may be a bit hard to understand in today's environment regarding nuclear weapons, in the 1970's and into the 1980's it was the accepted strategy for keeping peace.

In 1974 there was a tremendous program at Y-12 to improve the aging support systems. The Utilities Systems Restoration and Production Capabilities Restoration Programs initiated a full-fledged effort to replace work equipment, machines and other aspects of Y-12's badly worn infrastructure.

While many of Y-12's structures today remain those constructed during the 1940's Manhattan Project era, this replacement of utilities systems and production equipment in the 1970's gave Y-12 a new lease on life.

For the first time, in 1975, a facility was designated at Y-12 specifically to store highly enriched uranium that is not in a nuclear weapon. Remember, the K-25 Building had stopped producing highly enriched uranium in 1964 when it was shut down. Y-12 was making highly enriched uranium metal for use in manufacturing secondaries and the supply of this much needed material was being staged for the push in the 1980's to build even more nuclear weapons during the "Reagan Years."

As early as 1977, Ronald Reagan is quoted, regarding the winning of the Cold War,as saying, "My idea of American policy toward the Soviet Union is simple…we win they lose." When he later became President, he proceeded to do just that. Y-12 played a huge role in the winning of the Cold War when 8,000 people worked around the clock at Y-12 making as many nuclear weapons secondaries as we could and succeeded in helping break the Soviet Union's economic back when they attempted to match Y-12 one for one.

Amidst all the increased production, the management of wastes at Y-12 in accordance with significant new regulatory requirements also saw tremendous efforts being expended to make substantial improvements. Acid wastes resulting from the enriched uranium processing operations in 9212 were selected as an early target. A combination of processes utilizing biological decomposition of the raffinate

from solvent extraction and the distillation of nitric acid condensate coupled with the removal of flourides and chlorides was highly successful, according to Bill Wilcox's *An Overview of the History of Y-12 1942-1992.*

It was during 1976 that Y-12 developed a leadership role in recycling purified chemicals and succeeded in reducing the necessary purchases of nitric acid and aluminum by over 50%. The operation, known affectionately as "The Bug Farm" resulted in Y-12 receiving an *Industrial Research* magazine IR-100 award for this innovative development.

Another new development in the late 1970's that resulted in significant waste reduction was the recovery and reuse of the machine coolants that Y-12 machine shops use in large quantities. By cleaning the coolant to restore it to its original strength the purchase of new coolant was reduced by as much as 67%.

On March 28, 1979, a radical change hit the nuclear world. The accident at the Three Mile Island nuclear plant near Harrisburg, Pennsylvania resulted in a major setback in the American public's confidence in nuclear power. While Y-12 was not directly affected, the fear generated by the media reports affected all things nuclear related.

The containment vessel included in the reactor design did its job and no radiation escaped the plant boundaries nor were there any injuries to the public. Nevertheless, this worst nuclear accident in US history had an adverse impact on the public's image of all things nuclear.