

Oak Ridge picking up momentum

At the beginning of 1948 things were beginning to settle down a bit in Oak Ridge. The Y-12 Plant was busy making uranium metal and machining parts for nuclear weapons. The Stable Isotope Program was growing steadily with Building 9731 running around the clock and Building 9204-3 beginning to be considered for production runs of stable isotopes.

Y-12 had given up on being able to compete with K-25 to produce uranium 235. As predicted as early as November 12, 1946, when the Atomic Energy Commission was being formed and first looked at the situation in Oak Ridge, Y-12 had been replaced as the primary source of uranium 235. Weapons grade material was being produced by K-25.

Expansion of the K-25 Gaseous Diffusion Plant was being planned. The K-27 building had been completed late in 1945 and was producing low enrichment feed material for K-25. Initially the K-27/K-25 process provided feed material for the Beta Calutrons at Y-12 through 1946.

By 1948, K-27 and K-25 were both operating at full capacity 24 hours a day. Early thinking regarding even more gaseous diffusion buildings was being considered. K-29, K-31 and K-33 would be built in the early 1950's and the Cold War heated up.

This build up is understandable when one realizes that concerns for the Cold War were beginning to build even as early as 1946. This is evidenced by Winston Churchill's most famous quote, "From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent." This warning only served to heighten the awareness already building in the United States that the Soviet Union was likely building an atomic bomb of its own and was becoming more and more a threat to stability in Europe.

There was much concern for the lack of adequate controls over uranium 235 production and plutonium production. Efforts to control nuclear energy policy through the United Nations had failed. There was much fear in the United States government that other countries would soon be able to duplicate our Manhattan Project efforts to produce nuclear weapons. Even more concern that we stay well ahead of the nuclear weapons race that many saw coming.

Churchill was speaking about Europe when he gave his most famous speech, but plainly the United States and, yes, Oak Ridge, Tennessee, played a huge role in world affairs. The atomic bomb and the continuing work being done here brought Oak Ridge to the forefront as one of the primary sources of material to manufacture this powerful new weapon.

On March 5, 1946, Winston Churchill, in his famous "Iron Curtain" speech said, "The United States stands at this time at the pinnacle of world power. It is a solemn moment for the American democracy. For with primacy in power is also joined an awe-inspiring accountability to the future."

In keeping with the fear of the Cold War, Y-12 was expanding operations in several areas. The weapons production activities were the primary emphasis of the Y-12 management team. Facilities that had been used for chemical processing to prepare uranium 235 for shipment to Los Alamos were converted to chemical processing areas to prepare uranium 235 for conversion to metal.

Other facilities that had been used to capture even small amounts of uranium 235 from waste materials were enlarged and even more concern was placed to be sure that every single little bit of uranium that could be obtained was put into the production process.

Remember that at the end of World War II, there were no more bombs ready to be used. Yet, the perceived need to have a stockpile of nuclear weapons caused Y-12 to quickly adapt facilities that had been used to separate uranium to facilities suitable for manufacturing more weapons components.

By 1948, there had already been three nuclear tests and two bombs dropped in war. The tests began with the Trinity explosion on July 16, 1945, of course. Then in 1946 there were two, Able and Baker,

which were used in Operations Crossroads. In 1948 there would be three tests, X-ray, Yoke and Zebra. The components for these tests were manufactured at Y-12.

Also expanding in the Y-12 buildings were operations that were fast becoming a part of the Oak Ridge National Laboratory (given that name on February 1, 1948). The Biology Complex was occupied by employees of the laboratory, foremost among them was William and Liane Russell who were already showing that experiments with mice could help determine the extent of damage done by radiation exposure to humans.

Other exciting advances were being made at Oak Ridge. The nuclear navy was born as a direct result of Eugene Wigner's Clinton Reactor Training program. This program was also called the "Clinch College of Nuclear Knowledge" as Alvin Weinberg says it was affectionately known in his book, *The First Nuclear Era*. The school only operated one year while Wigner was at Clinton Laboratories in 1946 to 1947. It was revived in 1950 as the Oak Ridge School of Reactor Training.