Building 9213 – A long and varied history

The series on the Training and Technology program at Y-12 has been completed, and I certainly do appreciate all the input received on that historic program at Y-12. We have even compared that program to our current Apprenticeship program and noted some similarities, and again I appreciate all the input provided by the Apprenticeship Committee, the instructors and the apprentices.

I would like to return generally to the chronological history of Y-12 and bring that up to date eventually. However, before doing that, I would like to focus a bit on the significance of a building that has been hidden from sight and almost forgotten over the years until recently.

A portion of Building 9213 was built expressly for the purpose of storing the enriched uranium, and a bank-type vault with a huge door was built on the ground floor. Today, the bank vault door still swings easily on its hinges with just a slight push of a finger.

There are some unusual features of Building 9213, such as an escape hatch from the second floor that consists of an approximately three feet in diameter hole in the wall with a hand rail mounted just above the hole and two swinging batwing doors covering the hole.

The hole leads to a spiral round chute (much like a water park slide without the water) that opens up on the ground after one complete spiral. An electrician once tried that escape out and swore he would never do that again as it was a rough and bumpy ride.

To set the stage for understanding the unique history of Building 9213, we must go back to the end of World War II. It was a time of uncertainty and one where many changes were taking place. It was a time of rapid learning regarding the potential uses for uranium-235 and other nuclear materials resulting from the Manhattan Project.

In January 1946, General Groves made significant decisions regarding the permanent future of Los Alamos, Hanford and Oak Ridge, the three primary sites of the Manhattan Project. The debate was ongoing regarding how to protect the secret nuclear program.

Attempts were made to form an International Atomic Energy Agency, but those attempts failed because of political distrust between various countries at the time. Russia was already working on its own secret nuclear program and was not willing to allow anyone to control that effort. The Russian leaders also recalled as early as 1917 that the United States had attempted to help European allies overthrow the new communist regime brought to power by the Russian Revolution. Diplomatic relations were not reinstated until 1933.

So the debate on the international control of atomic energy was mad much more difficult because of the animosity between the Union of Soviet Socialist Republics and the United States. The plan that Bernard Baruch (1870–1965) presented to the United Nations on June 14, 1946, was intended to control the mining of uranium and the production of plutonium.

Of course the USSR rejected the plan. When the United States proceeded with the atomic tests, known as *Operations Crossroads,* at the Bikini Atoll in the South Pacific on July 1,,1946, this provided the USSR with the proof needed to question the sincerity of the United States regarding international control of atomic energy.

The League of Nations created by the Treaty of Versailles in 1920 was replaced with the United Nations in 1945. However, as an agreement could not be reached regarding how to control uranium-235 and plutonium after World War II ended, no further progress was made until finally the present day IAEA was formed in 1957.

The United States was left with no choice but to form an Atomic Energy Commission of its own, as the political climate would not permit the Army to continue to control atomic energy. One aspect of this agency was to assure the protection of nuclear materials and United States technology being developed in ongoing research and development as the Cold War began.

In Oak Ridge, uranium-235 was being successfully processed and new storage facilities were being constructed. The high-purity K-25 feed material increased the Y-12 Beta calutron's ability to produce highly enriched uranium, and the four Beta buildings were abuzz with activity, while the five Alpha buildings were in standby.

By the end of 1946, all the Y-12 calutron buildings but one would be shut down. Beta 3 would remain operational in an attempt to increase the productivity of the calutrons. Y-12 personnel were reluctant to admit that the calutrons were being out produced by K-25's gaseous diffusion process.

It was during this time that first Building 9213 was used to store the uranium 235, and then Building 9214, first known as Operation Dog and much later as the famous "Katy's Kitchen," was constructed. Building 9214 was camouflaged to look like a farm barn with a silo that was actually a guard tower.

Building 9213 has had a varied operational history and even today is serving a most unusual function as it is being used to train the National Guard in methods and techniques for detecting nuclear materials and the techniques for handling it when found. Several National Guard units have trained there, and all of the units have cited the training experience as having been exceptionally effective.

Y-12, being located just across Chestnut Ridge from Building 9213 and readily accessible, provides an ideal situation for training with the precise materials of concern. Tours of some of Y-12's facilities give trainees an even better appreciation for nuclear materials and how important it is to keep these materials out of the hands of terrorist.

Building 9213 has had a very significant role to play in nuclear criticality experiments that helped set the requirements for nuclear criticality safety practices in use at Y-12 today and even those precautions used in many other parts of the world through Y-12's expertise. We will explore that historic role more fully.

The efforts to prevent proliferation of nuclear materials have used the skills of Y-12 personnel cognizant in nuclear criticality safety based on these experiments at Building 9213 over the years. On numerous missions such as Project Sapphire in 1994, the first such secret mission to rescue uranium-235 that might have fallen into the wrong hands and to bring it to Y-12, to Operation Golden Llama, which brought sensitive nuclear materials from Chile in the midst of an earthquake, Y-12 has helped secure material from at least a dozen countries around the world.

It can be said that much of the understanding of nuclear criticality safety and how to safely accomplish such missions under far less than ideal conditions had its beginning at Building 9213. It is ironic to note that even today, that same Building 9213 is being used yet again to help teach some vital lessons to those charged with protecting the freedoms and security of our nation and the world.