

General Groves and Ernest O. Lawrence visit 9731

Building 9731 was the first building completed at Y-12, the first building with calutrons installed in it and was known as the "pilot facility or pilot plant." Training was done there for the calutron operators, but the calutrons there were also used to prove the operational changes suggested by Ernest O. Lawrence from the Radiation Laboratory at Berkeley, CA.

Often, during the early days of Y-12's history, Lawrence, himself, would travel to Y-12 and personally make adjustments to the calutrons. General Leslie R. Groves was also a frequent visitor during the start up and early operations. Remember, this is the first tangible product producing equipment. They did not really know what to expect. So, personal inspection of the operation was a must to fully understand what was going on.

One such occasion was recalled by Chris Keim, one of the individuals who championed the separation of elements other than uranium after the war. Groves stopped by the pilot plant late one night to check on progress. They were experimenting with the receivers for the Beta units to try and stop the uranium 235 from bouncing back out of the receiver. The early design of the beta units was still being developed, however, the Alpha design was frozen and the calutrons were installed in the first building (Alpha 1 or Building 9201-1) as soon as it was complete enough for installation to begin.

The team working in the pilot plant of Building 9731 had made some improvement on the Beta unit, so when Groves asked them how the experiment was going they told him that it was making some progress. Groves wanted to know if the next beta production units should be designed with the improvements they had made. He further told them he had to make that decision by 8:00 AM the next day. The workers told him, "No, it is not ready." So the next day, Groves made the decision to keep the design used in previous Beta production buildings.

Another story, also told by Keim, is about a visit from E. O. Lawrence late one night. The operation was running smoothly collecting uranium 235 without any interruptions or sparking. Lawrence came in and said, "Is this the best that will do?"

Keim said, "He sat down at the controls and started adjusting the voltage and the temperature to get more uranium out of the sending unit. He increased the production tremendously, but at the same time, a lot of fireworks were going on inside the vacuum chamber.

Keim continued, "Things settled down and he got up from his seat and said, 'See? We want to get all we can out of this production, and this is the way you do it.' And he walked out of the building.

Then Keim said, "In about five minutes, everything literally blew up inside the tank. The insulators were destroyed. Everything went bad, but he had proved a point. We were taking it easy on ourselves, because we knew if we increased that too much, the experiment would break down and we'd have to pull out the unit and put in new, and that was rather monotonous and tedious. So we kept them running as long as we could. But his idea, and he was right, is to continue to try and get the maximum production. So we changed our whole attitude after that!

The following recent note from Martin Skinner adds to the intrigue of Building 9731. Martin says, "The last few months as a GI in Oak Ridge I went to work for Wes Savage (and Chris Keim) in that building. As I remember it, they were just beginning to study stable isotopes in XBX. I was gone for a couple years while getting my degrees at Michigan State University. I then returned July 1, 1948, to work in XBX on the isotope separations.

"Also, George Kerr and I designed and built that Calutron simulation display that was on the wall between the two portions of the building. I last worked in that building in mid-1950. Thus, I have fond memories of the building. Will this building ever be on the visitor's tour as part of the Secret City Festival?

To answer Martin's question regarding public access to Building 9731, it is not feasible right now. We are including Building 9731 in our application for Landmark status on the National Register of Historic Places.

The building is intended to be maintained as one of the historic structures that helps tell Y-12's unique story.

And what is the fate of that Calutron simulator? Well, it is now in Beta 3 and once again operational. We used it to demonstrate how a calutron works when Beta 3 was opened for public tours during the 2005 Secret City Festival. It was a huge hit! We continue to use it when tours are taken to see the Beta Calutrons that remain as silent reminders of the equipment and people who helped win World War II and also the same equipment that were used to separate stable isotopes - the genesis of the medical isotope program. So, Martin's work to create that simulator continues to pay dividends even today.

Caption: The XBX magnets of the Beta Calutrons