

Ivory (soap) Flakes and historic artifacts

During research into the history of Building 9731, first building completed at Y-12, I found some interesting facts regarding the magnets for the calutrons. There are two sets of calutron magnets, one set of three magnets for two Alpha calutrons and one set of three magnets for two Beta calutrons. The following information was found reviewing the transcript of a Smithsonian interview with George Banic.

In discussing the story of the 14,700 tons of silver loaned to Y-12 from the US Treasury Department, George Banic stated that copper was a very strategic war material and in short supply. He also indicated that about half of the Alpha buildings and two of the Beta buildings used silver windings.

When Y-12's calutrons were shut down, all but about 2,000 tons of the borrowed silver was sent back to Philadelphia for re-smelting and putting back in the Treasury Department's ingots. The rest of the silver was retained at Y-12 as spare material. This was in addition to the silver in the calutrons in Building 9731, they had silver windings. These calutrons were heavily used separating stable isotopes for the medical isotope program.

For years the treasury department would ask annually for the silver to be returned and each year someone in the Atomic Energy Commission would have to send a letter drafted by someone at Y-12 stating the silver was vital to work being done at Y-12 and could not be returned. Eventually all but the 67 tons in the calutrons located in Building 9731 was returned.

Then in 1970 those calutron magnets were removed and the silver returned. To accomplish this task, a very large hole was created in the end of Building 9731 and a huge crane used to lift the magnets in and out of the building. But there was the problem of getting the magnets from their locations to the edge of the building where the crane could lift them.

A most unusual method was employed for moving the magnets. The large magnets weighed between 20 and 40 tons, depending on whether it was an Alpha or Beta coil. Each magnet coil would be placed on plywood and Ivory (soap) Flakes would have been sprinkled all over the plywood. Then using a high lift the workers would push the huge magnets along the plywood using the Ivory soap for lubricant.

The calutron magnets in Building 9731 were replaced with ones that were wound with copper. The copper coils required a lot more electrical current than did the silver. The existing generators were not capable of providing that additional required power.

The motor generator set that had been purchased from the Ford Motor Company was connected to the magnets. George Banic had found this used motor generator in a "car parts" catalog. It had belonged to Henry Ford and was used in his personal shop in the upper peninsula of Michigan. After his death the family was disposing of the shop equipment. George recognized the value of the motor generator and after convincing the procurement folks that it was okay to purchase "used equipment" he was allowed to go and get it.

It was located in Building 9736, adjacent to Building 9731. This was an innovative fix for the problem and allowed the Stable Isotope Program to continue to operate until the calutrons in Building 9731 were shut down in 1974.

I am pleased to say that George Banic had enough forethought to remove that motor generator from Building 9736 and place it in storage. He knew it would have to be hidden away or it might get disposed of at some later time.

There was a periodic chart of the elements that was kept for years in Building 9731 that was hand written and used to keep track of all the elements that were being separated. It was Chris Keim's pride and joy. It did not get preserved.

Several years after Keim left Y-12 to take on more responsible roles at the Oak Ridge National Laboratory, that periodic chart was disposed of during a clean up of the building. The story is told of a crew

being assigned to "clean up 9731" in preparation for a tour of officials. The clean up crew went through the building and disposed of old materials remaining from earlier operations. That historic periodic chart was buried along with several other items from the building.

Some time later, Chris Keim came to the Y-12 plant manager and was very upset that the periodic chart had been removed. Several efforts were made to try and locate it. The landfill was dug up looking for that small wooden plaque with its handwritten list of elements. It could not be found.

Historic treasures such as that, once lost, are gone forever. That's a shame, but it happens all too often. It seems we don't always realize what is historically significant until it is gone and then it is too late.

I am pleased to see the interest at Y-12 in preserving artifacts now that the Y-12 History Exhibit Hall located in the New Hope Center helps us to see the value of preserving and displaying historic artifacts. Several individuals have brought items to the exhibit hall ranging from a wooden calutron cubicle stool to lapel pins and all kinds of items in between. It is good to see the interest in our unique heritage.