

### **Harold Cofer and the COLEX process, part 3 — Y-12's "Can Do" attitude**

One of the managers to contribute significantly to Y-12 during the early years was John Strohecker. Many of the most helpful of the original historical documents of Y-12's early years I have found in official records are hand written notes that John kept. He was evidently a "hands-on" manager as he seemed to engage directly in the work, yet understood well the importance of planning and organizing.

John went along with Jack Case and Wimpy Hilton to Los Alamos in 1947 to learn what would be needed at Y-12 to machine uranium and manufacture additional atomic weapons. You will recall that the scientists at Los Alamos were not interested in repetitive production work on more bombs after the end of World War II and the start of the Cold War, rather they were interested in doing pure scientific research.

This led to the birth of the second major mission at Y-12 after the calutrons were used to electromagnetically separate uranium 235. This second mission of weapons manufacturing through machining uranium first and then many other materials and maintaining the nation's stockpile of nuclear weapons has been the mainstay of Y-12's work over the years.

What started out as a logical thought process by the Atomic Energy Commission's General Manager, Walt Williams, when he decided to make use of excess AEC facilities in Oak Ridge, soon turned into what may well be the world's most precise machine shop. At Y-12, "one-tenth" is a reference to 1/10,000<sup>th</sup> of an inch! Today, the Y-12 National Security Complex is the nation's "Uranium Center of Excellence," which means the recognized authority on all things uranium for the Department of Energy and others.

John Strohecker was also one of the people who contributed significantly when Y-12 was asked to separate hafnium from zirconium to produce pure zirconium. John designed the equipment and calculated the needed flow rates on a brown paper bag. He did this over the Christmas holiday at home and the next work day he hung the homemade equipment design on the wall. That was the "blueprint" that was used to design the Building 9211 pure zirconium separation process. The columns for this process were four stories tall!

By the time the Alloy Development Program processes were being designed for use at Y-12 to separate lithium 6, John Strohecker was located in Building 9766 and was also heavily engaged in the design of this next major mission for Y-12. Harold Cofer was privileged to work with John Strohecker. John was leading the effort to create the needed spare parts to support the new program for Y-12. He held daily meetings with the various electrical, mechanical and piping supervisors. Again, John was down in the details at the same time he was helping to lead the overall plant effort.

Harold remembers the stress placed on being very sure that the process would never experience an outage because of a lack of spare parts. The AEC was pressing Y-12 managers for more and more output of lithium 6 and Harold was among those individuals making it happen on the working floor.

Harold said, "As far as I know we never had an outage from not having spare parts." He did note that several years later, after ADP was completed, there was an effort to reduce no longer needed spare parts in the warehouse and comments were made regarding the huge number of "critical spare part items" that were stocked and never used. Harold admits, "In some cases, we may have overstocked many of the critical items, but the people selected to reduce the spare parts in later years who questioned the numbers of spares were never in the Alloy operation."

This is a good example of the situation Y-12 has found itself in a number of times over the years. The well-deserved reputation as a "Can-Do" place has resulted from the times when our nation required some specific job done that had never been done before and required it to be done quickly and precisely. Y-12 has come through each time we have been asked. Even today, the American Recovery and Reinvestment Act funding is being put to good use at Y-12, quickly, efficiently and with well thought out plans. By being ready with a "Can-Do" attitude, Y-12 is once again meeting the challenge.

An interesting side note Harold provides is the training required to implement such major changes in missions as Y-12 experienced with the Alloy Development Program (lithium 6 separation). Harold said that pneumatic instrumentation controllers were used in all three Alloy processes (ELEX or Electrical Exchange, OREX or Organic Exchange and COLEX or Column Exchange).

He went on to indicate that Foxboro Stabilog controllers and differential pressure cells were used almost exclusively in the ELEX process in Building 9204-4 (Beta 4). In Buildings 9201-4 (Alpha 4) and 9201-5 (Alpha 5), Taylor instrument controls were used. These Taylor instruments were more complex, physically larger and more difficult to calibrate.

Training classes were conducted for prospective pneumatic instrument mechanics on site. Harold and several others were sent to the Taylor factory in Rochester, New York for intensive instrument training. Harold said, "Prior to the start of ADP, we did not have over one or two already qualified pneumatic craftsmen in the plant. By the time we started the processes, we had well qualified personnel in all categories." Another well established trait of Y-12 over the years has been that of providing excellent training for the crafts.

Just this past year at Y-12 a new apprenticeship program has been started and well over 2,000 people applied for the first 50 positions. Several times over the years, such apprentice programs have been well planned and executed at Y-12. Highly trained and well qualified technical skills are a part of maintaining the Y-12 Can-Do attitude!

Next Harold will describe some of the major organizational changes that happened as the ADP took on a larger and larger role in Y-12.