

Y-12 and the 2000 decade – Modernization to Transformation, part 2

As we continue with Tom Smith's account of the transition from "Modernization" to "Transformation" he notes, "The original plan was to put three new special nuclear materials facilities into a reduced protected area, but the new contractor, B&W Y-12 came up with and offered a new approach."

The new approach would combine facilities to reduce the total number of new structures. This refined design resulted ultimately in the Uranium Processing Facility, soon to begin construction and reportedly the largest single construction effort in the state's history.

This revised design, according to Tom, "had the benefits of reducing security costs, an accelerated reduction of operations and maintenance costs in aging special nuclear materials facilities, getting many non-SNM operations outside the PIDAS (Perimeter Intrusion Detection and Assessment System), and simplifying construction--all with big savings."

This new and exciting concept, Tom recalled, was "...fondly known to us as 'the two turtles.'" I have heard the two buildings referred to as the "ninja turtles" of Y-12. The reason for this jovial comment was the unusual security features that put tall robust structures on each of the four corners of the building that were elevated well above the roof line with gun ports and sloped walls near the bottom to prevent an adversary from being able to hide against the wall at the bottom. An aerial view and the popular ninja turtles movie theme at the time obviously came together in some minds.

The final result of the frenzy of planning in the early years of the new contractor arrangement and the new National Nuclear Security Administration was that in May 2004 the concept was presented at NNSA headquarters and accepted. The name was officially changed from Enriched Uranium Manufacturing Facility to Uranium Processing Facility.

While that name change may seem a small thing, it was actually a huge deal regarding the perception of Y-12's primary mission. It was at the heart of the future directions intended for the site. Those of us who were engaged in the discussions remembered the earlier efforts to pull the uranium mission away from Y-12 and relocate it out west.

Regardless of the future requirements for nuclear weapons, uranium processing will be required at Y-12 for the foreseeable future, thus the reason for the name UPF. The need for uranium processing is not going away.

Tom continues, "Early modernization plans called for a new technical/administrative facility on the site of the old Y-12 administration building. It became more obvious over time that capital funding was scarce and that priorities would always lie with production facility replacement."

It was at this time that a new concept was being explored at the Oak Ridge National Laboratory by UT-Battelle. Tom notes, "B&W Y-12 took a page from ORNL and decided to go after third-party financing for this facility—which, as concepts progressed, turned out to be divided into two facilities— the Jack Case Center and the New Hope Center."

These two facilities were constructed in 16 months. A side note: When the bidders on the construction contracts were touring the site, I took each of them up on Chestnut Ridge and waving my arm over the site below in Bear Creek Valley, I said, "in 1943, Stone and Webster built most of the buildings you see in 18 months, surely you can build us two little ole buildings in 18 months." Every single contract bid came in with an 18-month construction duration.

These two brand new facilities were occupied in July 2007 by B&W Y-12 and the NNSA Y-12 Site Office. For the first time ever, many of the administrative, engineering and several other support functions were located in the same building. This brought improvements in communication and changed the manner in which interactions took place. Face-to-face dialog began to replace email and phone calls. It brought

about a change in interaction style and a realization of the value of casual discussions and ease of interactions when people are located near one another in the same building. The Jack Case Center has 1,200 offices and 420,000 square feet of space.

Tom continues, “Another big event along the way for Y-12 modernization began in January 2006. Aptly named the “January Process,” NNSA gathered all Nuclear Weapon Complex sites together for an intense month-long effort to lay the roadmap for ‘transformation.’ This effort culminated with the ‘Complex 2030’ plan that laid the foundation for today’s program of record.”

“The Supplemental Programmatic Environmental Impact Statement was kicked off (leading to many more lively public meetings!) and culminated with a Record of Decision in December 2008. This formed the basis for Y-12 securing its role and being named the Uranium Center of Excellence.

“During the last year of that process, there was a very strong movement suggesting the Y-12 uranium functions might be performed elsewhere more economically—we expended great effort in analysis and defense against that idea.

“In 2002, B&W Y-12 did a thorough utility system analysis and developed a major line item—Utility Modernization Project. Because of the size of the project, Y-12 was asked to break the project down into five line items to be funded through the Facilities and Infrastructure Recapitalization Program. Three of those projects were approved and ultimately completed (Compressed Air Upgrades, Potable Water Upgrades, and Steam Plant Upgrades). The Electrical Upgrades and the Utility Distribution Upgrades were never approved.

“Two moderate level line item projects were proposed, Quality Evaluation Relocation and Depleted Uranium Upgrades, but could never get funding traction. Realizing the benefits of these projects, B&W Y-12 took on the challenge of relocating the existing QE function; through the efforts of many, this was completed.

“Similarly, the depleted uranium metal cycle operations/equipment in Buildings 9204-4 and 9201-5 had reached the end of its useful life. Again, B&W Y-12 undertook the challenge to shut down those operations and consolidate all DU metal cycle operations along with existing DU operations.

“These two efforts greatly simplified operations and allowed Y-12 to get out of the aging 9204-4 and 9201-5 buildings.” Note: These two buildings were cleaned out just recently using the American Recovery and Reinvestment Act funding in preparation for eventual demolition.

Tom continues, “In 2004, Y-12 developed its initial integrated Decommission and Demolition plan to address process-contaminated facilities at Y-12. In 2005, Y-12 began work with DOE-OR-Environmental Management and ORNL in the development of the Integrated Facility Disposition Project to address legacy facilities at Y-12 and ORNL.

“With approval of initial phases in place for this project, the outlook for major funding was a little bleak. At that time the American Recovery and Reinvestment Act was initiated and, as a result of having shovel-ready projects because of the work on IFDP, Y-12 was in a position to receive close to \$250M to address the early IFDP scope.” Note: Four buildings in the Biology Complex were demolished using ARRA funding and major cleanup was done focusing on old discarded equipment and materials in an outside storage area on the west end of Y-12.

Tom concludes, “In 2008, Y-12 mounted a more intense effort to address a combination of changing site logistics, continuing security challenges, and site access. As a result, a new Bear Creek Bypass was put into place, the east end of the site was opened to vehicle access by all employees, and additional parking spaces were constructed to map changing site dynamics.”

More recent transformations will be discussed as we continue to look at the last decade at Y-12.