Y-12's Building 9212 and the Uranium Processing Facility, part 1

Building 9212 was constructed in 1945 at the end of World War II. It was designed as an expanded version of the same uranium processes already installed on a smaller scale in Building 9206. It has been central to the history of Y-12 and what is known as the "9212 complex" (including other adjacent buildings) and has been called the heartbeat of highly enriched uranium processing for over 71 years.

Recently, Building 9212 has been the focus of much attention regarding its suitability to continue to serve this function and how long it can be sufficiently maintained to allow the highly enriched uranium processing to be done there. Regular and extensive maintenance and repair is needed to keep the building meeting requirements.

As funding was recently increased for the design and construction of the Uranium Processing Facility at the Y-12 National Security Complex, the debate increased regarding the need for a new facility to process uranium. While there are lots of opinions on nuclear weapons and nuclear energy, the facts are usually more precise, less sensational and often very straight forward.

First and foremost in all our minds is the desire to see a world without nuclear weapons being necessary to maintain peace. However, the growth of nuclear weapons, both during the Cold War and continuing even today in some countries, make it necessary that the United States continue to maintain a superior nuclear force. The peace in the world that has prevented a third world war for over 71 years still depends on it for now.

Nuclear power is the ultimate answer to the world's ever increasing need for energy. Achieving the fusion of deuterium and tritium in the International Thermonuclear Experimental Reactor is the goal at present. More advances will be forthcoming as this clean technology moves forward. However, proven fission reactors can fill in the gap until we can achieve the ultimate energy source.

Down blending of former Soviet Union nuclear weapons material now serves as feed material for the Tennessee Valley Authority's nuclear reactors that send electricity to our homes. At least one third of the lights use electricity generated using these nuclear reactors. In some other countries nuclear power is much more extensively relied upon.

Advanced techniques in the United States are leading us to small modular reactors, one of which may well take the entire city of Oak Ridge and all the Department of Energy sites off the TVA grid in a few years. Many of the scientific research reactors around the world use highly enriched uranium and Y-12 is engaged in the creation of alternative uranium fuel for those reactors.

The Strategic Arms Reduction Treaty known as "New START" entered into force on February 5, 2011. This treaty calls for the reduction of deployed nuclear warheads to 1,550. Y-12 disassembles all the nation's nuclear weapons secondaries and stores the nuclear material. This is a huge workload that will last for years to come. Suitable facilities, such as UPF, will be required to maintain the needed pace of this important work.

All these uranium related technological advances depend on the Y-12 National Security Complex maintaining the capability to process highly enriched uranium and other nuclear related materials. To assure the nation that the capability will remain at Y-12, the UPF is being designed and constructed. It is

not something that has been rushed into, it is being well thought out and planned with engineering advances and cost saving measures included.

A report was recently undertaken to define how the accelerated spending plan could best be utilized. The increased funding came at the expense of the Los Alamos National Laboratory's plan for a new Chemistry and Metallurgy Research Replacement Nuclear Facility, commonly known as "CMMR" at their facility. The delay is being reviewed for adverse impact on the mission of LANL.

When an additional $340 million was added to the FY 2013 budget planning, the study was designed to figure how best to use the additional money and adjust the schedule for early construction. As the project moves ahead, attempts will certainly be made to reduce overall cost through finding cost savings along the way and an early start to construction will make the chances of success even better.

Next week we will examine Building 9212 and associated facilities currently used for processing highly enriched uranium. We will also look at the future requirements Y-12 will likely have to meet and how the nation's nuclear strategy includes Y-12.