

Y-12, early records from the National Archives at Atlanta

Last fall, while at the National Archives at Atlanta exploring the stacks of records stored there, I searched for the original contract that authorized the construction of Y-12. While that document still eludes me, I have not given up. I will again search for it when I am at the archives on September 15, 2012, for the ***Secret City in the Tennessee Hills: From Dogpatch to Nuclear Power*** symposium.

Joel Walker, education specialist at the archives, helped me locate several supplements to that contract. He continues to have that primary contract as a search interest and is helping me try to locate it.

Examples of early documents I found included two supplemental agreements. Supplement Agreement No. 1 was issued June 15, 1943, to the original contract W-7401-eng-13, issued on June 29, 1942. Supplement Agreement No. 2 was issued on July 5, 1944.

Supplement Agreement No. 1 stated that the scope of the original contract issued for “the design and construction of certain plants for the manufacture of substitute materials and for the constructions of other facilities at sites to be selected, at an estimated cost of \$66M, (exclusive of Architect-Engineer-Manager fee)” was to be increased to add several buildings and increase the amount to \$150M.”

Joel also helped me locate a Supplement No. 1, Subproject No. 47, Y-12 Plant, dated May 20, 1943. The Subproject No. 47 was approved on March 19, 1943. This supplement “covers the required expenditures for additional buildings and equipment for the Y-12 Plant and also the enlarged and revised scope of certain items previously authorized and approved by the District Engineer on March 19, 1943.”

The document, J. O. No. 7209, continues, “The principal new item is the Beta Process Building, No. 9204. The design of this building with the required equipment has progressed to that degree of completion which indicates its cost will be approximately \$12M.”

“Other additional work consists of a Pilot Plant for the training of the operating personnel and additional laboratories, shops, administration and manufacturing facilities together with allowances for spare parts.”

The details of the supplement contained in Section III, first listed Building 9731 as the Pilot Plant XA (Alpha Calutron) and XB (Beta Calutron). “This building will house the equipment required for training the operatives in the development of the end product in both the Alpha and Beta Processes and is of reinforced concrete construction, with a volume of approximately 700,000 cu. ft.” Note: Building 9731 is 37,300 sq. ft.

The details continued, “The major equipment to be housed in this building consists of the following: 1. Two experimental tracts with excitation and control, 2. Two traveling cranes and other mechanical devices for handling and servicing the various pieces of experimental equipment, 3. Two power supply transformer substations and associated equipment, 4. Two 60-ton refrigerating units, and 5. Miscellaneous electrical equipment, machine tools and process piping.”

Finally, the details state, “The building will be used to train operators for the major Y-12 Unites and also for the purpose of conducting experimental work for the improvement of the end product.”

There is an interesting side note here. Local legend has it that Building 9731 was completed in March, 1943 and that popular statement has been based on records we have here such as the *Oak Ridge Plant Cultural Resources Survey* of October, 1999, which places the completion of Building 9731 as “March, 1943.”

I also found Supplement Agreement No. 2 to Contract No. W-7401-eng-13 which states, “...in order to provide for further various changes in the scope of the work made by extension of the manufacturing and other facilities to adopt developments in process detail and stages, which extension and developments require additional buildings, equipment and facilities as well as conversion of other facilities...”

"The Architect-Engineer-Manager is now engaged in performing work in accordance with the terms of the contract from time to time changed and modified and is entitled to an adjustment of the fixed fee.

"NOW, THEREFORE, the parties do actually agree that the contract is hereby modified in the following particulars, but in no others:

"Article I – STATEMENT OF WORK. The A-E-M shall, in the shortest reasonable time, furnish the labor, materials, tools, machinery and equipment, facilities, supplies not furnished by the Government, and services, and do all things necessary for the design, procurement, inspection and expediting of materials and equipment for the construction of pilot plants, new manufacturing plants, and the modification of existing manufacturing plants for the production of substitute materials, at sites selected by the contracting Officer at locations hereinafter named, and for the initial procurement of essential raw material which will be necessary for the operation of such plants."

The paragraph went on for a full page! This Agreement 2 expanded Stone and Webster's work to include modification of an "existing auxiliary manufacturing plant in Trail, B.C.," a "pilot plant" (I think this was X-10 Graphite Reactor) at "Clinton Engineer Works, Oak Ridge, Tennessee" (note the date of this Supplement Agreement No. 2 is July 5, 1944 and "Oak Ridge" is the name), an experimental plant in Argonne Forest, Chicago, Ill., a laboratory (University of Chicago), and "a main manufacturing plant" (Y-12 and Y-12 Extension, Clinton Engineer Works, Oak Ridge, Tennessee), together with the additional miscellaneous facilities located at a central site (Clinton Engineer works, Oak Ridge, Tennessee).

The agreement went on to state, "The manufacturing facilities referred to in the Article I are intended to produce daily approximately three hundred units of the required substitute material by the designed process working twenty-four (24) hours a day."

The long paragraph concluded by stating, "No portion of the work shall consist of a permanent type of construction unless specifically authorized in advance by the Secretary of War; provided, however, that nothing herein shall prevent the use of a type of construction sufficiently substantial for the use intended in the judgment of the Contracting Officer as evidenced by his approval of the plans and specifications."

Finally, the estimated construction cost is \$346M (this was pencil changed to \$390M) and the fixed fee for Stone and Webster was set at \$2.9M. Of course, this interim agreement would continue to be modified until substantially more would be spent before the Manhattan Project was completed. The total cost would eventually be set at \$1.9B and the Oak Ridge costs were \$1.2B in "then-year" dollars according to the Brookings Institute web page "The Costs of the Manhattan Project."