

9731: Chauncey Starr – First operations manager

Building 9731, the first building completed at Y-12 and the first building with calutrons installed in it, was used for training operators, but it also was used to make experimental changes that were then implemented in the rest of the calutron buildings. Chauncey Starr was one of E. O. Lawrence's protégé's who came to Y-12 to implement the changes made in the design by Lawrence.

Asked in 1943 by E. O. Lawrence to go to Oak Ridge's Y-12 Plant as the intermediary between the Radiation Laboratory in California and, where all the big electromagnetic units were being assembled, Chauncey Starr's job was to determine which laboratory developments would be incorporated and which would not. Starr made the design decisions and also "ran the pilot plant," according to his comments in a 1994 interview with University of California Professor Russell O'Neill.

Starr's crew was assigned by the Army Corps of Engineers — all were young and drafted from college. They worked 24 hours a day seven days a week while Starr worked on experimental changes trying to increase the productivity of the calutrons — named for Lawrence's California University cyclotrons.

Building 9731, "The Pilot Building," housed two alpha calutrons and two beta calutrons. The alpha units were on the south end of the first floor high bay, the beta units on the north end. The magnets were surrounded with laminated metal bands about two feet thick. This was not the same configuration as the rest of the calutrons at Y-12, which were configured in a "racetrack" arrangement with the magnets spaced around the racetrack or, in the case of the beta units and the Alpha II units, metal shunts were installed at both ends of the rectangular racetrack.

The other calutron building superintendents met regularly with Starr to find out what to do to raise production levels. Y-12 was under tremendous pressure to get the precious Uranium-235 material separated and delivered to Los Alamos so the atomic bomb could be fabricated.

The calutrons first installed in Building 9201-1 (Alpha 1) failed because the coolant oil was dirty and the magnetic coil windings were not spaced far enough apart. The coils arced and had to be removed. The whole first racetrack of calutrons had to be returned to Allis Chalmers to be rebuilt.

Starr commented on his experience at, saying, "It was a great experience, and I loved it. It was exciting, it was worthwhile and nobody ever interfered. Just absolutely amazing. No bureaucracy. It could only happen, I think, under this kind of stress situation in which the routines of big company operations just didn't come in at all."

Although the control panels have long since been removed from Building 9731, the calutron magnets are still there — standing like silent sentinels of the Manhattan Project. They are testimonies to a time when one man, Chauncey Starr, brought his knowledge, experience and skill to bear on a nation's, and the world's, fear that Hitler would beat us to the atomic bomb. He stood amazed at what was accomplished at Y-12. His technical skills were matched by the dedicated efforts of 22,000 other workers at Y-12 who wanted desperately to stop the war the only way they could. And most of them only knew that what they were doing was important to the war effort, not precisely what they were making. Chauncey knew. He knew from the start. He was one of the few who did.

After the war ended, Chauncey chose to work at Clinton Laboratories, spending a year and a half learning about nuclear reactors and working toward the development of "nuclear reactors that you could get power from, because the only ones that had been built were built for low temperature use to get plutonium." Afterward he worked with a group at North American Aviation investigating the application of nuclear power for intercontinental ballistic missiles and rocket propulsion. After working on that project for a year he wrote a report recommending chemical propulsion over nuclear power for rockets, as it was more than adequate, quite reliable and less expensive.

In addition to his involvement with nuclear power, especially nuclear risk analysis, Starr continued to influence the way things were done. He produced the seminal paper on the emerging field of risk analysis in Science magazine. Before he died at age 95 he was still working five days a week.

His obituary read, "Mr. Starr specialized in nuclear power, nuclear risk assessment and the challenges faced by the electric utility industry. In the weeks preceding his death, he actively worked with scientists, industrialists and politicians on risk-based analysis of nuclear plant investments and development of the "SuperGrid" — an electrical system using superconductors to transport electricity with near-zero energy losses."

Despite all his accomplishments, I imagine he still would have said that Building 9731 provided some of the most intriguing, exciting and amazing accomplishments of his entire life and long career in things scientific.

Next we will look at a story about visits by General Leslie R. Groves and Ernest O. Lawrence to Building 9731.

Caption: Chauncey Starr: April 14, 1912 – April 17, 2007 – Building 9731's first operations manager