

## **Oak Ridge Centers for Manufacturing Technology, part 1**

Much like the Training and Technology program of the 1960's through the early 1980's, the Oak Ridge Centers for Manufacturing Technology (ORMCT) in the 1990's was also a most unique and unusual effort. It was a pioneering approach to solving tough manufacturing problems.

The ORCMT was another of the historic initiatives to come from Oak Ridge that had widespread implications for industry, literally nationwide. The innovative approach to addressing difficult problems in companies was a joint effort between the Oak Ridge National Laboratory (ORNL) and Y-12, along with several other intermediary partners.

Those intermediary partners were Center for Industrial Services at the University of Tennessee; National Technology Transfer Center housed at Jesuit College in Wheeling, West Virginia; Tennessee Department of Economic and Community Development, Tennessee Department of Education; the Tennessee Valley Authority's Office of Planning & Development Services; and the National Institute of Standards and Technology Manufacturing Extension Partnership. What a broad list! ORCMT was engaged in a very widespread initiative to assist the many small businesses across the nation.

To appreciate the climate under which ORCMT started and evolved in the 1990's, it will help to look back and appreciate what Oak Ridge had gone through in the years preceding the end of the Cold War and the major changes brought on by that welcome, yet radically world-changing event. Change was not really that new to Oak Ridge, and that may well be part of the reason ORCMT came to exist here. People saw opportunity to share the expertise in Oak Ridge with others and set about doing just that.

At the time ORCMT came into being, the contractor for ORNL and Y-12, as well as K-25, Paducah and Portsmouth Gaseous Diffusion Plants, was Martin Marietta Energy Systems, having taken over from Union Carbide Corporation's Union Carbide Nuclear Division in 1984. Union Carbide had held the contract since right after the Manhattan Project's end.

Tennessee Eastman Company left Y-12 in May 1947, when Carbide & Carbon Chemical Company took over operations. C&CCC was already operating K-25 and had done so from its beginning.

The Atomic Energy Commission was signed into existence by President Truman August 1, 1946. The transfer of the control of the newly emerging atomic energy, including nuclear weapons and all other related atomic energy developments, from military to civilian control was effective January 1, 1947. So, Oak Ridge saw the start of many changes that have continued over the years.

One type of change that has been seen over the years is the cycle of missions for the various plants here. First Y-12 had 22,000 workers in August 1945 and went down to 1,700 by October 1949. The large number of workers resulted from the build up to electromagnetically separate the uranium-235 for Little Boy using Calutrons.

Then the K-25 gaseous diffusion process came on line and by December 1946 could more efficiently separate the uranium-235 and operated at a cost of one-tenth of what was required to run Y-12. Thus Y-12's calutrons were shut down, except for those in Beta 3 (Building 9204-3) and Building 9731. The Beta 3 calutrons went on to separate stable isotopes until 1998. Change had begun in earnest before the 1940's ended.

Over the years, changes in the missions for the three sites have continued. Often these changes were absorbed by transferring people from one site to another. This rotation of assignments became routine. Many people have worked at all three sites during their careers.

For many years there was only the one contractor for all sites. This was the case from 1948, when Carbide & Carbon Chemicals Company took over operation of the Oak Ridge National Laboratory. On

March 4, 1948 the name changed from Clinton National Laboratory (it had been Clinton Laboratories earlier) to Oak Ridge National Laboratory as C&CCC took over.

During the Cold War, C&CCC changed names a number of times, from being a “company” to a “division” and ultimately becoming Union Carbide Corporation Nuclear Division in 1964. The contractor company remained stable in that arrangement with Union Carbide until April 1, 1984, when the contract was awarded to Martin Marietta Energy Systems, a company formed just to operate the Department of Energy facilities in Oak Ridge, Paducah and Portsmouth.

The rest of the 1980’s saw continued build-up at Y-12, but K-25 stopped operating in 1987 and had spent the last two years transitioning to that condition. This meant the movement of a large number of people. Many of them came to Y-12 and ORNL at that time. Some even went to Paducah and Portsmouth.

The next major shift in employment levels happened in the early 1990’s when Y-12’s workforce restructuring initiative took place as a result of the end of the Cold War. It was within this climate that the Oak Ridge Centers for Manufacturing Technology came into existence.

One aim of the ORCMT program was to help small businesses and with the “creation of jobs within the inner-cities of America,” stated as one of the nation’s “most compelling problems” in the *Industrial Advisory Committee Review* of October 5–6, 1995, for the Oak Ridge Centers for Manufacturing Technology. This is but one of the primary objectives the centers worked toward.

With this introduction, we begin to address the history of ORCMT. Some of you remember that time and the great experience of helping others solve tough manufacturing problems. I would appreciate it if you would send me an e-mail with information to add to the rich history of ORCMT as together we draw out the successes, much as we drew out the successes of the Training and Technology School.

One reason for my choosing this topic now is the recent resurgence of interest in expanding work for others that is developing at Y-12. It seems to be one of those cyclic things. Periodically, there is more interest in one aspect of our missions, and then interest in another takes the lead for awhile.

That cycling is understandable, knowing our past. As we seek to increase the amount of work we do for others, I believe it would be good to look back at a most successful effort in our recent past—ORCMT.

So, send me your information. It will be a big help. You may send it to [smithdr@y12.doe.gov](mailto:smithdr@y12.doe.gov). I can also be reached by phone at 865-851-6423.