The Oak Ridge Centers for Manufacturing Technologies — Skills Campus

This input comes from John Whalen, air conditioning and refrigeration (A/C&R) technician. John has led the advance of technology in his field for Y-12. As refrigerants have changed over the years, he has stayed abreast of the latest technology, and through John's leadership Y-12 has avoided costs and has made changes ahead of the regulations. For years John has also taught others his acquired skills.

Of the Skills Campus that was a part of the Oak Ridge Centers for Manufacturing Technology (ORCMT), John said, "As the Apprentice program drew to a close at the end of FY 1992, Clyde Kelly came to our office (the remaining Apprentice instructors) to get our opinions on a new training program. Clyde asked us what we thought about starting a program where 'the people doing the work trained the people doing the work.'

"Although it may have seemed a unique concept to some, we explained that the unions had been using that particular training concept for 'hundreds of years' and it had worked well for us.

"At that very moment, the 'Manufacturing Skills Campus' was born. We were initially charged with developing programs that would enhance the skills of our fellow Journeymen. With the passing of the Clean Air Act of 1990, the Environmental Protection Agency (EPA) was given the monumental task of regulating the use and handling of refrigerants (especially the ozone-depleting chlorofluorocarbon-based refrigerants).

"They then promulgated regulations pertaining to all refrigerants. One of the top tasks on their agenda was to license all the refrigeration technicians in the country who handled these chemicals.

"Because the Y-12 facility has the full gamut of A/C&R equipment running from the typical commercial equipment to the most specialized custom-designed systems, the decision was made to train the Y-12 refrigeration mechanics to the highest level required by EPA. The 'Universal Technician' level garnered by the Y-12 refrigeration mechanics would allow them to service all of the equipment on the reservation ranging from the most mundane to the exotic systems required by the facility to meet our specialized needs.

"This was a totally new concept, and EPA sent out requests for training organizations that specialized in the heating ventilation and air conditioning field to help develop a test bank of questions to utilize in the licensing process. EPA also required facilities that could process the testing materials needed to facilitate the exams.

"Y-12 applied for and received the status of 'EPA Certified Test Facility.' Soon, the other two Lockheed Martin Energy Systems facilities (Oak Ridge National Laboratory and K-25 Gaseous Diffusion Plant) were invited to have their technicians certified through the Y-12 Program.

"A study guide was developed for the course, and we even did a live broadcast via satellite, replete with a one-hour video. The video script was written, and the film produced here at the plant starred several Y-12 employees.

"At the same time, I began traveling around the Department of Energy's (DOE's) pollution prevention circuit, both gathering information and discussing the program with representatives from the other DOE facilities. It wasn't long before I was taking my 'Protecting the Environment with Refrigerant Management' course around the country training at other facilities through the 'Work for Others' program.

"This included stints at Sandia, N.M.; Idaho Falls, Idaho; Hanford, Wash; Savannah River Site, S.C.; and of course the Portsmouth Gaseous Diffusion Plant in Ohio. At one point, Clyde Kelly came to me to ask if I would be interested in certifying some employees from the Martin Marietta maintenance department on Roosevelt Naval Base. I said, 'Sure, but where is Roosevelt Naval Base?' 'San Juan, Puerto Rico,' he responded. I then stated, 'Well if it's for the good of the company, I guess I can make the sacrifice.'

“Armed with a new sense of purpose from the training program, the A/C&R mechanics at Y-12 started a grass roots effort to reduce the emission of refrigerants from our equipment by replacing our inefficient purge systems on all of the centrifugal chillers and instituting the Leak Check and Repair Program.

“The results were amazing. Our department was awarded the DOE Bronze Hammer Award for a $5.5M cost avoidance as our endeavor reduced refrigerant emissions by >95%.

“As the need for Technician Certification dwindled, another need arose. With the chlorofluorocarbon-based refrigerant production ceasing, the need for training on how to utilize the newly discovered, more environmentally friendly replacement refrigerants became evident.

“With that in mind, I developed an alternate refrigerants retrofit class. Just like the previous undertaking, word soon spread and once again, I was traveling around the DOE Complex with a new venture.

“With the classes limited to six students, far fewer students were taught. However, most of the same clients responded with a positive note and had all of the refrigeration mechanics attend the training sessions.”

All in all, the little program that was initially set up for 10 Y-12 A/C&R mechanics had been taught in over 100 different sessions with over 1,000 students attending.

John Whalen can’t say enough good about his personal experience with ORCMT’s Skills Campus. He became a well-respected instructor and is still recognized as a subject matter expert in the refrigeration field. His career was forever changed by his experience in the ORCMT’s Skills Campus.

If you have an ORCMT story, sent it to me at smithdr@y12.doe.gov or call me at 865-851-6423.