

\$233 million in new and retained sales  
\$59.4 million in new investments  
622 jobs created or retained

The **University of Tennessee Center for Industrial Services** (CIS) was established in 1963 by the Tennessee General Assembly. From the outset, CIS was organized along the lines of the long-established and highly successful “extension service model.” Since that time, CIS has grown to a staff of over 50 professional employees located in 5 offices across the state of Tennessee. Tennessee business and industry are assisted daily by CIS engineering and professional staff in improving their economic competitiveness on a national and global level.

On a larger scale, CIS is one of several units of the University of Tennessee Institute for Public Service. This institute is the non-agricultural public service arm of the university providing public service work to business and industry in Tennessee. The University of Tennessee, the state land grant college, provides three main services to Tennesseans – education, research and public service. As such, CIS is a part of the UT University statewide system rather than being a part of any single campus.

For more information, contact:



Dan Mitter, Center Director  
193C Polk Avenue  
Nashville, Tennessee 37210  
(615) 587-6325  
[www.cis.tennessee.edu](http://www.cis.tennessee.edu)



\* Impacts are based on clients receiving service in FY2010

# CLIENT SUCCESS: KILGORE FLARES COMPANY

*“The University of Tennessee Center for Industrial Services has been a tremendous asset with their outstanding instructors and a vast treasure of resources. TMEP and the Center for Industrial Services is our exclusive provider for all Lean and Six Sigma training.”*

Debbie Frost, Quality Manager

## Defense Manufacturer Engages Staff and Boosts Savings

Kilgore Flares Company, LLC was founded in Ohio in 1920 and relocated to Toone, TN in 1960. The company has been associated with pyrotechnics throughout its existence, has been a key Department of Defense Ordnance Manufacturer since World War II, and uses a 264 acre main production site and an additional 242 acre test site. Kilgore was acquired in 2001 by Chemring Group PLC, a British company with operations throughout the world. Kilgore is the world's foremost supplier of airborne expendable IR decoy flares, and serves as the sole-source IR decoy flare supplier for some of the most sophisticated and advanced airborne platforms. Kilgore's automated facilities quickly produce pressed, extruded, and cast IR flares.

### *Situation:*

Kilgore Flares began implementing Lean and Six Sigma to drive their Continuous Improvement strategy. They had previously been operating under a top down, very transactional management approach to supervising and managing the company, partly because of strict safety requirements. However, this limited the company in their pursuit of becoming the leader in the Defense Industry due to the absence of employee involvement. They solicited the services of the Tennessee Manufacturing Extension Partnership (TMEP) and the University of Tennessee Center for Industrial Services to help with training.

### *Solution:*

TMEP began Lean 101 and Six Sigma training first with management, then with shop floor supervisors and finally with all shop employees. Everyone in the entire plant was introduced to Lean 101, 5S (sort, set in order, shine, standardize, and sustain) and participated in Kaizen events focused on updating processes and improving safety. The next phase of training was Six Sigma Yellow Belt, Green Belt and Black Belt training for select associates to further embed an improvement culture throughout the company.

### *Results:*

- \* \$1,000,000 in savings
- \* Reduced safety violations
- \* Improved quality

# \$1 million in savings