



## UGL Unicco TQS Powers Cummins Engine

*Delivers \$6 million in savings and 81 percent reduction in emergency maintenance calls...*

Cummins Inc. is a Fortune 500 corporation that designs, manufactures, distributes and services engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana, its 40,000 employees serve customers in approximately 190 countries and territories through a network of company-owned locations, independent distributors and dealers.

Cummins started as a diesel engine manufacturer in 1919. It is now organized around four business segments – Engine, Power Generation, Components and Distribution, with the Engine segment continuing to be a key product category for the company. One of the company’s primary North American engine manufacturing facilities is located in Whitakers, North Carolina. Called the Cummins Rocky Mount Engine Plant (RMEP), its 1,800 employees build custom-designed diesel, propane and natural gas engines used for transport, agriculture, construction and marine applications. The production process is comprehensive. It includes milling blocks, manufacturing rods and heads, assembling engine components, washing and painting finished engines, live-running them and shipping them as completed units.

### Helps Ensure Smooth Operations

Keeping the 1.2 million sq. ft. integrated manufacturing facility up and running is a major undertaking. Since 1990, RMEP has relied on UGL Unicco to provide facility maintenance and housekeeping to help ensure smooth operations. The program, overseen by RMEP Plant Engineering Manager Scott Williams, is responsible for delivering electrical, water, HVAC and air services, as well as ensuring that all building systems are in good repair and able to support every administrative and manufacturing function.

Facility maintenance is a 365-day job for UGL Unicco’s 130 RMEP employees. Explained UGL Unicco Account Manager Tom Reid, CPMM, “We’re responsible for delivering services to what we call the first cutoff valve – the first disconnect at the equipment. After that, it belongs to the production people.”

UGL Unicco also provides housekeeping and janitorial support for the manufacturing and office areas, as well as facilities support (cabling, networking, electric, HVAC and installations) to the Information Technology (IT) operations.

Another major contributor to RMEP operations is UGL Unicco’s 30-person rapid deployment project crew that performs special projects based on work orders. The projects can range from electrical installations to furniture moves, painting and renovations.

Explained Williams, “I was doing a Six Sigma project and needed some custom-built pans and non-skid grating to contain the runoff underneath a rust preservative application station. The UGL Unicco project crew ordered the materials, fabbed them up in-house and installed them. We also recently had them do a little light fabrication. Having them do these small jobs that we need quickly really saves us a lot of money.”

### PROJECT SUMMARY

**Customer:** *Cummins Rocky Mount Engine Plant, Whitakers, NC*

**Industry:** *Diesel engines for transport, agriculture, construction and marine*

**Situation:** *RMEP and UGL Unicco sought continuous improvement and a reduction in cost of maintenance operations.*

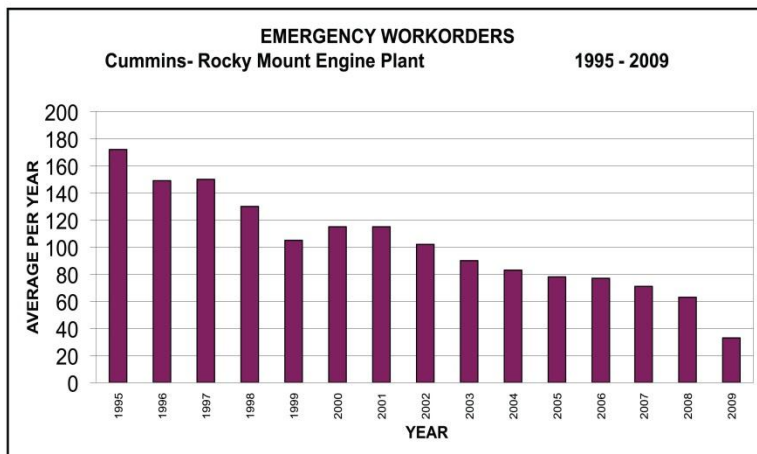
**UGL Unicco Services:** *Facility maintenance, janitorial & housekeeping*

**Results:** *TQS (Total Quality Services) results in \$6 million savings and a reduction of 81 percent in emergency maintenance calls.*

### Total Quality Systems Defines the Relationship

Shortly after the UGL Unicco team was in place in 1992, Reid launched a UGL Unicco Total Quality Services (TQS) initiative that remains at the center of the successful relationship. It includes comprehensive reporting through “Six Up” reports that measure Building Operations, Project Management, PM Compliance, Housekeeping, Mobile Equipment and Training.

To this day, TQS has delivered \$6 million in savings since it was first measured in 1995 and it has significantly reduced the average number of monthly emergency work orders from 172 in 1995 to 33 in 2010 – a reduction of 81 percent.



Commented Reid, “TQS continuous improvement has generated a safer working environment and it’s helped save man-hours that were being spent on repetitive calls. Now we’re able to fix things, put them to bed and move on. The biggest driving force is that it’s helped us reduce our emergency calls over the years.”

The TQS program is built on ideas brought forward by UGL Unicco employees who identify repetitive problems and maintenance trends. Originally, it was often something that they noticed while making repeated visits to a problematic piece of equipment; now, it is more often an idea for a better way to do things while on a predictive maintenance project.

Said Williams, “I don’t think a month goes by without some new idea coming out of the TQS program. There’s always participation. It really kind of generates itself and nobody ever loses total sight of it.”

The employees perform most of the research into the proposed corrective action. Upon reaching the final conclusion, a cost is calculated based on the past history of the equipment and the downtime cost RMEP has assigned to the area in question, or by calculating direct labor and parts savings. Then, a corrective action plan is set into motion to correct the problem.

When an employee recommends a change, the idea is brought before the UGL Unicco Quality Steering Committee for review. The committee evaluates how the suggestion affects safety and working conditions, as well as the dollar amount saved. The idea is ranked on a scale of one to three by the committee, which includes Reid, a maintenance analyst, a safety supervisor, a representative of the project crew and three or four hourly employees – all UGL Unicco employees.

“The workforce is the foundation of the program and without their commitment none of this would be possible,” said Reid. “Since implementation, we’ve seen reduced waste, improved equipment reliability and a safer operating environment with a direct savings in man-hours.”

Each month a winning suggestion is chosen and that employee receives preferred parking. Certificates or other prizes are available to other participants. There are also quarterly recognition programs and an annual banquet to honor program participants. Every UGL Unicco service area participates in the TQS program.

Projects that delivered significant savings over the years include:

- Clerestory window replacement - \$160,000
- Installing washable filters on a chiller - \$54,800
- Putting a pallet guide plate on a conveyor - \$104,000
- T-5 fluorescent light wiring connector upgrade - \$58,300

However, the program's success rests on the number of recommendations for incremental safety and process improvements. For instance:

The solenoid valves on down chute air lock valves had to be replaced every 2-3 months due to dirt, water and debris in air lines. The UGL Unicco solution was to install filter-regulator-lubricators for each of the 17 air lock valves. The retrofit saved \$20,000 in parts and labor and will continue to pay dividends in coming years.

A UGL Unicco staffer noticed that security was using a diesel pickup for patrolling parking lots. This was costly in terms of fuel and maintenance, and tied up a piece of equipment that could be used for other purposes. The recommendation was to purchase an electric vehicle. The net result was a savings of \$8,800 per year in fuel to patrol parking lots.

In summing up the nearly 20-year relationship Williams said, "UGL Unicco is a true partner. They're very flexible. We have issues on a daily basis – jobs that are not always within the job scope. They're not constantly waving the contract at me. They don't raise issues; they just get the job done. I admire UGL Unicco's programs and processes. They really have some good tools to measure their current status and their improvement because they have those baselines."

