

Cummins, Inc. - Engine Plant, Jamestown, New York

With Castrol/BP

Company Information: *Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana, (USA) Cummins serves customers in more than 160 countries through its network of 550 Company-owned and independent distributor facilities and more than 5,000 dealer locations. Cummins reported net income of \$715 million on sales of \$11.4 billion in 2006. Press releases can be found on the Web at www.cummins.com.*

CMS Program:

Start Date: 1997 at Jamestown Engine plant

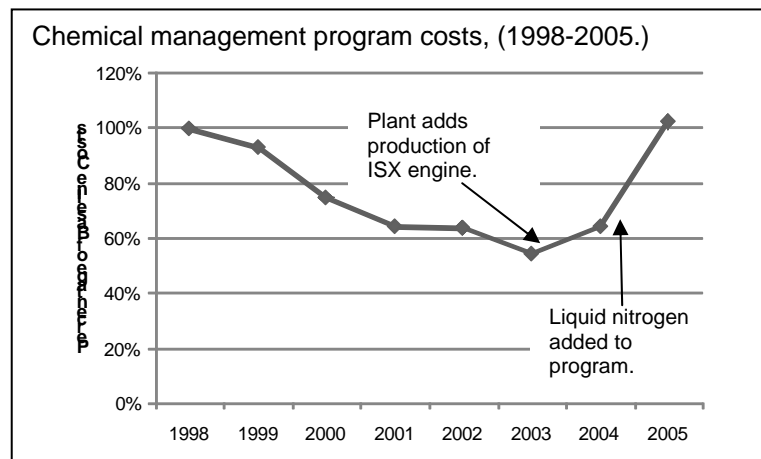
Responsibilities: Castrol/BP is responsible for ordering, delivery, and management of all indirect chemicals for the plant. The four on-site Castrol/BP staff provide engineering, logistical, administrative, and problem-solving support, as well as daily management of in-plant chemicals. All chemicals are owned by Castrol/BP until used by the plant. In addition, Castrol/BP maintains EHS information for all chemicals, including information for environmental reporting, and staff are part of response teams for chemical spills or accidents. Cummins staff retain ultimate authority for chemical management decisions and remain actively involved in continuous improvement efforts, particularly through Cummin's Six-Sigma program. A cross-functional chemical management committee, composed of Cummins and Castrol/BP personnel, oversee the program.

Metrics: Cummins uses a program "report card" composed of 20-30 key performance measures, depending on priorities at the time, including outcomes and activities such as fluid outages, system control, service quality, training, and EHS.

Financial Agreement: Initially, the JEP contract was a fixed total cost program with shared risk/reward between Castrol and Cummins that promoted cost reduction. The terms of this agreement were negotiated annually with business and market condition changes taken into consideration. Castrol now provides CMS to 10 U.S. facilities and Cummins has now chosen to utilize a variable usage cost structure with guaranteed product costs and annual savings.

Benefits

Chemical management savings have been dramatic. From 1998 to 2003, program costs decreased almost 50%. This is on top of an initial 10% savings that occurred at the start of the program in 1997. "Over that time period, production was going up," explains Randy Myers, Manufacturing Services Manager for the plant, "and more fluids and chemicals were being added to the contract." Beginning in 2003, a number of changes to the program have resulted in higher fixed fees. First, Cummins' ISX engine was added to the plant, significantly increasing production. Second, liquid nitrogen was added to the chemical management program. Third, a chemical price increase of 5% was granted to account for increasing world oil prices.



Other benefits have been equally impressive. Dermatitis has been eliminated. The use of biocide in metalworking fluids dropped from over 3,500 gallons in 1997 to almost zero in 2006.

In the first few years, there were many “low hanging fruit” opportunities to reduce waste of coolants and cleaners. Castrol/BP took over chemical inventories and eliminated product outages. Dermatitis cases were reduced by two-thirds in the first year. Staff identified relatively simple changes that reduced fluid losses and extended fluid life.

However, in subsequent years, efficiency improvement required greater research and creativity. According to Aaron Abercrombie, Castrol/BPs Program Manager at the plant, “the addition of water treatment and other chemicals to the contract put Castrol/BP personnel into the entire plant, where we can see the big picture.” One of the things they saw was an opportunity to significantly reduce plant deionized (DI) water consumption. A variety of operations in the plant consumed about 350,000 gallons per month of DI water. Heavy demand for DI water was straining the plant’s two DI water systems, resulting in poorer quality and occasional outages of DI water. About 60% of plant DI water usage was in an acid etch operation. A team of Cummins and Castrol/BP personnel implemented a number of changes, including greater process control through conductivity monitoring, increased “hang” time for parts drainage, and decreased chemical flow rates. These changes reduced DI water used by the acid operation by 75%. This not only saved about \$20,000 per year in DI water costs, but an additional \$15,000 per year in avoided wastewater treatment costs.

When the program expanded to include liquid nitrogen in 2006, another team was formed to explore potential savings opportunities. The plant switched from cylinders to an outside bulk tank for liquid nitrogen storage. As a result, nitrogen costs were cut by about two-thirds, saving about \$100,000 per year.

Keys to Success

One of the greatest challenges for Castrol/BP at the start of the program was overcoming skepticism, particularly from Cummins’ production personnel who were concerned about on-time delivery and fluid outages. Fortunately, some early successes created internal champions who helped convince others to give the new supply relationship a chance. One of these early champions was Stephanie Myers, engineer on the engine block line. Chronic problems with washer residue and microbial growth in the metalworking fluid made it a top priority for improvement. Castrol/BPs approach, using systematic research and data analysis, and actively involving plant personnel, convinced Myers that this was a program that would be good for the plant. She went on to head the plant’s chemical management team, and played a critical role in the success of the program. “Cummins really did it right,” explains Scott Thomas, Northeast Regional Sales Manager for Castrol/BP, and former on-site manager at Jamestown. “We had one customer contact who was dedicated to making this work. She headed weekly meetings of the cross-function committee that managed the program [the same committee continues to meet on a monthly basis]. As a spokesperson for the program, she had more credibility because she worked for Cummins, not Castrol.”

There was also skepticism about allowing Castrol, a chemical manufacturer, a role in decision-making about which fluids to use. “At the end of our contract,” explains Jamie Freeman, Corporate Sourcing Manager for Cummins, “we didn’t want to just end up with all Castrol products. We wanted the best product at the lowest total cost of ownership. If that is Castrol product, so be it. But when we’re considering a major chemical change-out, we expect Castrol to use the same Six-Sigma analysis methods that our employees use. We want to trust their decision-making. If a chemical manager is not willing to do that, we’re not interested.”

Metrics are also critical to the success of the program. Cummins and Castrol generate an annual report card, highlighting successes, concerns, and problems. “The components of the report card have evolved as the program matured,” explains Stephanie Myers, Cummins’ point person for the Jamestown contract until 2006, “but it has always focused on a few key elements.” Those include health, safety, and environment (dermatitis cases, spills, environmental reporting, etc.); quality (QC results, preventive maintenance, customer satisfaction surveys, etc.); people and education (training, product labeling, etc.); delivery; and technology.

The Future

Cummins recently consolidated chemical management at 10 facilities under a single contract. Castrol won that contract, and their success at the Jamestown Engine Plant played an important role in convincing Cummins that Castrol was the right chemical management company for the job. Jamie Freeman is Cummins’ point person on the contract. “Developing the new contact was a Six-Sigma project. We involved at least one functional owner (chemical user) from each facility, plus corporate environmental, purchasing, and others. Every plant had input in the decision making process and we as Cummins Inc. made the decision to move to Castrol.”

However, it won’t be easy duplicating the successes of the past. As Freeman explains, “many of these plants have had chemical management for years, and the low-hanging fruit is gone. Progress is going to take bigger projects and a lot more analysis. It’s going to take real commitment on both sides to make it happen.”