

Turnaround optimisation programmes initiate long-term cooperation

Braskem SA is a leading company in the Latin American petrochemical sector and has its head office in Sao Paulo, Brazil. The company was formed in 2002 during major restructuring of the Brazilian petrochemical industry. It now operates 14 chemical plants with a total production capacity of more than 6 million tonnes a year of chemical and petrochemical products.



Situation

A naphtha cracker, the largest in Brazil, forms the heart of the industrial complex in Camaçari, Bahia State, north-eastern

Brazil. It supplies feedstocks and utilities to Braskem's downstream polyethylene, polypropylene and polyvinyl chloride plants as well as to other large international companies on the same industrial complex.

Continuous improvement

A strong culture of continuous improvement exists at Braskem. To compete in the international market with its products and to set an example for the region, the company strives to operate its plants, including the naphtha cracker, very cost-effectively and efficiently.

An external auditor supported Braskem in identifying opportunities for performance improvement of its plants, including the cracker. As a result of this work, Braskem developed the Braskem+ project to enhance the reliability, productivity and operational effectiveness of the unit.

Initially, sub-projects were devised as standalone solutions under the Braskem+ umbrella, but it gradually became obvious that many of them were interrelated and that implementing an integrated solution with each task in the right sequence was crucial. A huge integration effort was necessary on the manufacturing side and also on a cultural level.

Solution

Shell Global Solutions' involvement with Braskem began in 2005 with more than 60 Braskem engineers participating at a three-day workshop. During intense interactive sessions, Shell Global Solutions' consultants worked with the Braskem engineers to identify options for improvement in the areas of asset management; chemicals technology; competence and learning; and health, safety and environment.

Following the workshop, Shell Global Solutions suggested the concept of a technical support and coaching framework (TS&CF) to Braskem. Such a framework would provide continuous technical and coaching support as well as facilitating integrated solutions for further performance improvements.



The turnaround optimisation programmes

While the development of the TS&CF was under way, Braskem asked Shell Global Solutions for assistance in optimising several turnaround programmes. The organisation wanted to achieve shorter, more efficient and cost-effective turnarounds in line with its increased productivity. Shell Global Solutions' scope challenge workshops demonstrated how work-scope decisions could be made in a structured and balanced way using rationalised risk management. Shell Global Solutions also offered on-site training in decontamination and other practical techniques. Schedule optimisation workshops were used to help plan the efficient execution of the work.

The turnaround optimisation workshops were very well received within Braskem and were successful in terms of cost savings.

Now, plans are being developed for a health, safety and environment project, an energy-efficiency programme, a benchmarking project and an upgrade for Braskem's water facilities.

Client verdict

Manoel Carnaúba, Industrial Director, Braskem, says, "Our main target is to be a pacesetter in reliability by 2008. We are very pleased with the high-quality service we have received. The support of the consultants during the workshops reassured us that we were dealing with very capable people who had a lot of hands-on experience and practical skills and who came from an established, reliable and professional international organisation."

Bernardo Gradin, Vice President of Basic Petrochemicals, Braskem, adds, "The work we have done with Shell Global Solutions has been a very positive experience so far, to our people and to the business. There is a lot of energy around exchanging best practices, new technologies and working experiences, which has a direct impact on individuals growth and competences enhancement. Working together with Shell Global Solutions' experienced consultants, our technical team has implemented innovative solutions to our business."

Luis Mario Chavez, Maintenance and Reliability Manager, Braskem, comments, "We were very pleased and enthusiastic about the success of the turnaround optimisation programme. Shell Global Solutions' consultants facilitated the process: they shared their experience and helped us to achieve a change in mindset. They stimulated us to question our procedures and to improve our work-scope decision process. Two of the biggest benefits of the workshops are the improved teamwork and integration."

Value Delivered

During the turnaround optimisation workshops, Braskem benefited from an external perspective and from Shell Global Solutions leading the effort. The workshops delivered measurable reductions in turnaround scope, duration and costs (in some cases more than 20% of the turnaround activities were cancelled or moved to routine maintenance) and served as excellent training for the large optimisation programme to be undertaken during the cracker turnaround in 2008.

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