MEL Chemicals Increases Yield and Throughput with PICME and BIT NVQs

**PICME techniques drive Skills Development**

Between 2005 and 2007, the company worked with PICME (Process Industries Centre for Manufacturing Excellence) on a front-end plant improvement project linked to Business Improvement Techniques (BIT) NVQs. Three project objectives were set out:

- To bring about changes needed to remain competitive in a global economy
- To develop continuous improvement skills
- To restore historical yields to front-end processes

A cross-functional team consisting of 13 experienced staff carried out the project. Dave Phelan, Operations Manager for MEL Chemicals, explained: “The Team members were carefully chosen for their blend of skills and experience, and – importantly – their readiness to speak out, challenge assumptions and make a positive impact on business performance.”

The team’s first task was to gather and analyse data about the front-end processes. Through structured workshops, facilitated by PICME, they calculated actual yield losses, identified the key reasons and developed action plans to fix the problems.

The first PICME masterclass enabled the team to improve process yield in the first-stage synthesis process which provides commodity feedstock for downstream speciality products.

Faced with increasing cost and competitive pressures on many fronts, MEL Chemicals used PICME - a key partner in the Sustainable Manufacturing project - to help it focus on plant productivity improvements. Jointly managed by Chemistry Innovation and the Centre for Process Innovation, SusMan targets improved, long term competitiveness for chemical companies in the North of England (see Case Study 002/2008).

Manchester based, MEL Chemicals is the world’s leading manufacturer of zirconium chemicals and oxides, used in catalysts, sorbents, paper coatings, ceramics and fuel cells. Part of the international Luxfer Group, MEL Chemicals pioneered development of zirconium chemistry over 60 years ago and employs around 150 people at its site in Swinton.

The second masterclass focused on increasing product output from the downstream speciality plant.

Russell Page, PICME’s Process Improvement Engineer, comments, “Crucial to the ongoing success of the project is the high level of take-up amongst MEL Chemicals’ staff, who are now running their own masterclasses.”

Benefits and Outcomes:

MEL Chemicals started a third ‘internal’ masterclass project in 2007, applying the skills transferred from PICME. So far, the total value of yield improvement is > £400k (33% higher than the initial target) and the throughput of key product lines has doubled. Standards have now been reset to lock in improvements and 11 employees have so far completed the BIT NVQ level 2/3.

Dave Phelan concludes: “The combination of PICME’s masterclasses and BIT has significantly improved our productivity while increasing our employees’ skills and motivation to continue our improvement drive.”

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![MEL Chemicals production site at Swinton, Manchester](image)