Lean Management Thinking Programme

Fujifilm, Grangemouth

A global manufacturer of Ink for Inkjet printers and Toners for laser printers & copiers, Fujifilm Grangemouth has 6 main production units with a number of support units

This is a multi product plant with all units computer controlled employing 75 manufacturing and maintenance staff operating 24hours 7 days a week.

FUJIFILM Imaging Colorants

Lean Team

Brian Bernard
Work Station Manager

Murray Shearer
Manufacturing Technician

Doug Spencer
Development Chemist

Vhari Shanks
Process Engineer

Joanne MacKenzie
Development Manager

The Lean Project

To reduce the time taken to carry out plant "clean downs". This will increase plant capacity and profitability and reduce Co2 emissions.

Secondly to reduce the quantity of solvent used in the "clean down" process.

The Case for "Lean Implementation"

A significant amount of plant availability is lost due to "clean down". Analysis over 56 days of manufacturing highlighted 12 days lost to "clean down" equating to 20%.

Further analysis highlighted a significant deficit against budget cost for the purchase & disposal of solvent and effluent for "clean down"

Improvement is therefore essential as the complexity of the plant can lead to over engineering of work

Data Analysis

The team identified problem statements and brainstormed the possible causes. With complex plant, high volumes of changeovers, subjective views as to "what is clean" and the risk of failure, this proved to be a difficult activity.

The "Value Stream Mapping" process involved people across the site and led to in depth analysis and "pareto charting" of data.

Identifying Improvements

Automation:

- Currently labour intensive
- Convert to automated recipes
- Washes, additions and holds to be computer controlled

Modification of spray ball and jetter arrangement

- Enable vessel cleaning and wash tank use reducing cycle times
- Initial capital cost would be recouped instantaneously

Process standardization

- Formal cleaning regime
- Consistent cleaning standard
- Set amount for reagents
- Reduced water and solvent usage
- Cost reduced / planning improved
- Better use of labour

Highlighting Improvements

Other potential improvements were suggested however analysis highlighted that they would be inappropriate.

The value stream mapping exercise led to more detailed mapping within the 'clean down' process. Low-level flowcharts were then produced to demonstrate the actual improvements to the process.

Actual Improvements

- Developed individual vessel flow sheets
- Generic "clean down" for each vessel
- Ability to keep the vessel water wet
- Standardized clean down procedure
- Reduction in cycle time
- Reduction in solvent & water usage
- Automation of recipes

The Future

The project objectives have been met and the team will collate the impact of the improvements. Activities now being planned include:

- Use flow sheets to automate sequence control
- Standardize all cleaning reagent quantities
- Roll out improvements to other products
- Finalise and implement capital investment
- Develop a think "lean " culture to solvent and water usage

"We have achieved enormous impact on our working environment, reducing costs whilst improving the work loads. The team has also gained an ILM Development Award in "Lean Management". We will continue to improve through Lean"

The Fujifilm Lean Team