Vale Europe Ltd, Clydach Refinery – Company profile

Overview

Clydach Refinery located near Swansea in South Wales, UK is one of Europe's largest nickel refineries, producing high purity nickel pellet and powder products for specialist applications such as high nickel alloys, batteries, nickel plating and automotive components.

The plant, which has been operating since 1902, employs just over 200 people and produces around 40,000 tonnes of nickel products per year. We supply over 280 customers in over 30 countries worldwide (Europe, Asia and USA).

The Refinery has been undertaking improvement work since we achieved our first ISO accreditation in 1995. We started our strategic Lean programme in 2009.

Our Continuous Improvement (CI) approach has been based around specific tools - Standard Work, 5S, Total Productive Maintenance (TPM), Overall Equipment Effectiveness (OEE), Quick Change Over (QCO) and Six Sigma – known internally as "Analyse and Improve".

Achievements

Health and Safety

The Refinery has delivered a reduction of 62% in reported injuries since 1995, and achieved zero lost time injuries to our employees in 2010, 2011 and 2013. However our goal is always to strive for zero harm. Injuries that are being reported have reduced in severity compared to prior years. As a top tier COMAH (Control of Major Accident Hazards) site, we also have a strong focus on process safety, and are mindful that our operations have the potential to cause significant harm to both our employees and the local community. We always seek to minimise risk to levels as low as reasonably practicable (ALARP).

Environment

In 2013 we recycled or re-used just over 95% of the waste generated on our site and have reduced hazardous waste to landfill by over 93% between 2008 and 2013.

The Refinery has also reduced its carbon footprint from 73,285 tonnes of CO_2 equivalent (tCO_2e) in 2008 to 66,031 tCO_2e in 2013 by implementing a site wide energy monitoring and targeting system, and launching various energy efficiency projects throughout the site.

Production

By implementing Overall Equipment Effectiveness (OEE) measures at the Refinery bottleneck, we have markedly improved our ability to deliver reliable and predictable production. In April 2013 the site achieved an all-time record monthly production of 4,158 tonnes of nickel. In 2013 we recorded an annual production record of 42,365 tonnes, 6% higher than the previous best (set in 2008). This is a great step in meeting the Refinery's aspiration of achieving annual production of 45,000 tonnes of nickel – representing a capacity increase of over 10%.

Quality

Implementation of appropriate lean tools in key locations throughout the plant, together with improved understanding of customer applications of our products has improved quality awareness throughout the site. In 2013 we received only five customer complaints which were the responsibility of the Refinery – a reduction of nearly 70% from 2008. We visit our key customers regularly, in order to improve our understanding of what they value in our product offering, and to tackle any issues before they are raised as complaints.

We are accredited with an integrated management standard covering ISO 9,001, ISO 14,001 and OHSAS 18,001.

Cost

The production cost in £ per tonne has reduced by more than 20% between 2009 and 2013 as a result of site wide cost reduction initiatives and production increases.

We are currently evaluating the feasibility of generating energy on site using advanced pyrolysis technology. This will reduce operating costs as well as the carbon footprint of the Refinery. The process will take non-recyclable waste and convert it to gas which can be used to generate electricity. We are looking for partners to help us start to execute this project during 2014.

Delivery

Late shipments of product to customers have reduced from 120 in 2008 to zero in 2013, by improving the understanding of customer requirements by our Warehouse staff.

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People

The success of any CI programme is based on the organisation's ability to engage its workforce. We have emphasized this in our Lean implementation programme.

Key to our activities was the development of "Yellow Boards" which are CI boards located in each work area on site, both in operations areas and support departments. The aim of these boards is to devolve Refinery strategy to each area of the site and to use the board as a vehicle for CI activities.

Training is important to equip staff with the skills they need to implement improvement activities, and to foster a learning culture at the site. We have provided:-

- CI overview training for all staff
- Specific tool training for staff involved in CI programmes such as 5S, Standard work, FMEA etc
- Tailored Business Improvement Techniques (BIT) training for key Lean leaders (60 staff trained in 2011-12)
- Lean coach training for coaches and facilitators within the business (7 people trained)
- Analyse and Improve (DMAIC / Six Sigma) training)
- Cross-functional problem solving training

In order to check our success in engaging our workforce, we devised an employee engagement questionnaire to solicit feedback on what we are doing well and how we can improve. Each survey resulted in an action plan from the senior team to address the key themes raised. We saw a considerable improvement between our first survey in February 2010 and our second in February 2011. In 2012 we developed a new employee engagement measure called "Pulse" to give us real-time feedback from our employees. Continuous improvement is seen as part of everyone's everyday work now.

Since the introduction of our "Problem Follow Up" or PFU process, which enables employees and contractors to submit continuous improvement ideas, we have actioned nearly 1,400 ideas Refinery wide in both process plants and service departments.

Supplier development

We recognise that to truly optimise our value stream, we need to work with our key suppliers to improve performance. We have developed supplier scorecards for our main Chemical and Packaging suppliers and Maintenance service providers. Quarterly meetings are held with each supplier group with the aim of sharing best practice, and improving knowledge of lean principles. In 2014 we will enhance our supplier development programme by setting up a supplier association to facilitate knowledge transfer and encourage best practice sharing.

Clydach Refinery Rewards and Recognition

- Investors in People award, 1994; Silver award 2011
- Welsh Development Agency Award, 1996
- Arena Network Wales Environment award, 2000
- Swansea and West Wales Occupational Safety Group Award for Outstanding Safety Performance, 2010
- Engineering Employer's Federation Future Manufacturing (Environmental) Award South West regional winner 2011, runner up 2010
- Welsh Government Corporate Health Standard, Silver award 2013
- Shingo Silver Medallion 2014

About Vale

Vale is a global mining company headquartered in Brazil, with more than 195,000 employees and contractors in 37 countries worldwide. We are the global leader in iron ore and pellet production, and the second largest nickel producer. We also produce copper, metallurgical coal, fertilizers, manganese, ferroalloys, cobalt and platinum group metals. We also invest in logistics and energy projects. Vale Europe Ltd consists of two UK Refineries – Clydach in South Wales and a precious metals refinery at Acton, near London as well as a sales and marketing office near Geneva, Switzerland.

Contact Details

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