

A SUCCESSFUL REGULATORY INTERVENTION AT WILLIAM BLYTHE FROM DESPAIR TO DELIVERY

L Murray¹ and R. Costello²

¹Health and Safety Executive

²William Blythe

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This paper sets out the key ingredients of a successful regulatory intervention by the COMAH competent authority [CCA] at a chemical company, William Blythe, which had previously struggled to ensure good health and safety and environmental standards.

After a history of accidents, incidents and environmental releases at William Blythes, the CCA decided to take an alternative approach to routine inspection and enforcement. The approach required the company to accept there was a problem and demonstrate they were serious about bringing about positive change. For its part, the Regulator withdrew from inspection and HSE and EA staff only visited at the request of the company. Employee involvement was crucial. Finally, the HSE and EA demonstrated considerable flexibility abandoning a rigid interpretation of their internal rules and procedures.

The paper explains the steps taken by the CCA and the company.

Two years down the road, the number of environmental releases and Lost Time Accidents has reduced to virtually zero. The company has realised substantial business benefits (for example, reduced waste, reduced insurance claims, enhanced reputation and improved morale). The company's initiatives are now used as a model within their parent company Yule Catto. Finally in 2007 the company were nominated for a CIA award.

BACKGROUND

William Blythe Ltd, founded in 1845 in Accrington, Lancashire is one of the longest surviving chemical businesses in the UK. Blythes started as a manufacturer of inorganic chemicals for the locally based textile industry, producing sodium arsenate for dyeing processes, Hydrochloric acid by the salt cake process and sulphuric acid by the lead chamber process. It also produced various salts including zinc sulphate for use in the production of Rayon and zinc chloride for use in batteries and for the dissolution of cellulose. Chemicals for the war effort including lead nitrate were also produced.

In 1919 the company acquired a further business in Hapton a few miles away, manufacturing similar inorganic chemicals. A public company from 1928, William

A joint paper by Robert Costello, Operations Director, William Blythe and Linda Murray, H M Principal Inspector of Health of Safety, Hazardous Installations Directorate, HSE. September 2007.

Blythe was acquired by the Hickson group in 1969, in order to take advantage of the Arsenic chemistry with which Hickson were already involved. Holliday Chemicals acquired the business in 1991, as part of their strategy for growth, and latterly Yule Catto in 1998 took over Holliday Chemicals as part of their strategy for diversification from their traditional businesses. The two William Blythe sites rationalised to one in 2006 following growing competitive pressures from Europe for the sulphur dioxide based chemical business.

The business was founded on the manufacture of inorganic chemicals, and 160 years on still manufactures exclusively inorganic chemicals based on arsenic, copper, iodine, tin and zinc, with product applications as diverse as catalysis, electronic chemicals, glass-making, fire retardants, electroplating and printing.

The company is Top Tier COMAH and handles chlorine, arsenic, chromium, iodine and a range of oxidising materials. It employs about 110 people with a turnover of £30 million.

SETTING THE SCENE – A COMPANY PERSPECTIVE CULTURE

The company have a loyal, traditional long serving Unionised local workforce. Employees are reserved and more comfortable in expressing opinions and concerns through shop stewards and union officials. The frequency of accidents and strength of the unions produced a strong claims culture. There was little or no focus or involvement in skills development, SHE improvements or occupational safety. There were no clear Trade Union objectives to improve conditions or to engage with the management to make progress in anything other than enhancement of terms and conditions.

There was generally a long serving and mature management who felt heavily challenged by change, cost reduction and rationalisation in recent years, where business survival challenges outweighed all others. A management team that had enjoyed many years of product introduction, diversification, innovation and profitability had had to adjust to the relentless loss of customers due to offshoring. Teams were devoted to output and cost targets, and generally managed in a strict rules based regime focussed on new customers, new products and new process routes. The team was very flexible and adaptive, capable of solving problems, both operational and commercial, with vigour and enthusiasm and was accustomed to adaptation of resources to meet urgent customer demands.

Prior to 1969 William Blythe managed its own affairs driven by shareholder results and expectations. Senior management operated from the original owners houses, on both sites. It was a respected company worthy of acquisition. The periods of ownership under first Hickson and then Holliday Chemicals were both generally beneficial, with regular investments taking place in production and product development facilities. Considerable autonomy was permitted to the business, which was generally self-sufficient. Following its acquisition by Yule Catto in 1998, central corporate influence was predominantly financial, although a Group SHE team carried out infrequent audits.

CURRENT BUSINESS CLIMATE

The current business climate is such that flexibility, speed of response, innovation and specialisation are even more important than in the past. Customers and suppliers are now global, with a greater proportion of raw materials imported from developing countries, and a greater proportion of products exported. Cost pressures for William Blythe have always been present, but in a climate of many decades of excellent profitability, it was easy to manage Group expectations, compared with the current position where increasing competition and reducing margins obviously mean that cost management is critical. Managers and staff have been aware of the recent business pressures through internal communications and briefings, and know what they need to do in terms of quality cost and output.

ACCIDENT AND INCIDENT HISTORY

Over the decades there have been several serious accidents, including fatalities, at both of the William Blythe sites. The most recent fatality was over 20 years ago, but some serious injuries have occurred since. The incidence of fires is low, as would be expected in inorganic chemical sites not handling flammable solvents. Serious chemical reaction hazards have been few, although one occurred at each site about 5 years ago, in which there were no injuries.

The Lost Time Accident frequency rate until 2005 was very high, relative to the Chemical Industry peer group. Most of the accidents were related to slips, trips and manual handling, but there were two in 2005 that caught the attention of the HSE which were chemical reaction hazards in which injuries ensued. One was related to the escape of HBr and one to an uncontrolled release from a reaction vessel.

The environmental performance in previous decades led to pollution in the local river, but this now operates as a grade 2 river following work by William Blythe and the closure of other businesses previously discharging into it. Previous breaches of discharge consent under IPC are not known to have caused any immediate harm to the environment. Airborne pollution was common 30 years ago, mainly due to the fog caused by traces of Hydrochloric Acid, but processes have since been adapted and no longer are there any visible atmospheric signs of chemical operations taking place on the site.

PRIOR REGULATORY INTERVENTION

The weakening indicators of performance for the changing face of the business were obvious;

- Reducing profitability due to UK customer base failing or transferring elsewhere.
- Declining employee morale brought about by a series of rationalisations and closures.
- Predominant Senior Management focus on business issues and not SHE.
- Failure to address the Change Management of the organisation following downsizing, resulting in lack of continuity and procedural gaps.
- An accident frequency rate higher than the Chemical Industry average.
- Regular presence of the Regulator following either breaches of consent or accident.

- The failure of the company to produce an acceptable Safety Report after two attempts. (Interestingly, three attempts were needed in the 1990s to produce an acceptable CIMAH Safety Case).
- The request by the Regulator to produce a Safety Report exemplar to reflect the Safety management of one process only. (There were 25 processes operating on the site).
- Poor engagement and involvement of the shop floor by management.
- Evidence of loss of containment in many areas.

SETTING THE SCENE – A REGULATORY PERSPECTIVE

The relationship with the regulator prior to the intervention was friendly, but it is fair to say there had been a less than frank and open dialogue with the CCA about health, safety and environmental issues.

Two attempts to produce a Safety Report had failed. In the five year period leading up to the intervention there had been repeated accidents, incidents and environmental releases. HSE had inspected on a regular basis (including team inspection); the EA were frequent visitors. Improvement Notices had been served (including a COMAH Prohibition at the company's sister site at Burnley, now closed). Concerns had been expressed about process control, human factors and engineering standards. The more effort the Regulator put in via inspection, the more the company were blown off course in trying to respond to an ever increasing agenda of concerns flagged up.

The company had a poor understanding of chemical reaction hazards and there were indicators of a lack of technical, managerial and operational competence. There was a poor attitude to health and safety; some senior managers viewing health and safety as a burden. Employees were happy to operate in a compensation culture.

Finally, the company tended to adopt an insular approach and did not look outside to benchmark good practice.

Two serious accidents and one major environmental release in 2005 were the final straw for the CCA – a fresh approach was needed.

THE REGULATORY INITIATIVE – ESSENTIAL INGREDIENTS

It could be argued that the health, safety and environmental position the company found itself in at the end of 2005, was not just the responsibility of William Blythes; perhaps the CCA should have taken a more strategic approach. There was a need to move away from the company "having things done to them" eg visits, Improvement Notices, to a position where they took ownership of the problem.

It is possible that the regulator's well intentioned efforts to maintain a cordial relationship with the company (rather than head on confrontation) had led to misunderstanding about the severity of the problem. The starting point was to tell the company of our concerns.

A short letter to the company and their Head Office, stated that the CCA had lost confidence in the ability of the company to manage a COMAH site. They asked for an early meeting with senior managers to consider the way forward.

HSE made a presentation setting out the reasons for their concern (text and pictures). An initially shocked and tense group of senior managers quickly moved on and accepted there was a problem and committed itself to bring about change. The production of a substantive Action Plan by the company, and the drafting in of extra health and safety resource was a crucial step in convincing the CCA that the company meant business and was an essential step in building trust.

Almost in parallel, the employees were involved in the same process; they were shown the HSE presentation and the company explained its proposals to respond. The company could not make good progress unless the employees became part of the solution.

Good communication was essential, particularly in the early days. Regular keeping in touch meetings were arranged (monthly in the early part of 2006). Every effort was made to include employee representatives in this process.

For its part the CCA committed itself to “withdrawing” from site. No visits would be paid unless the company asked for them. During the first year of the initiative the company sought some help on Human Factors and Safety Report Predictive advice. Inspection did not commence until year 2. The EA and HSE agreed to act in unison and have one common agenda. The CCA also promised to respond promptly to any requests/contact from the company (not always easy when HSE faced huge resource demands following the Buncefield incident).

The early period of the initiative did not always run completely smoothly; there were hiccups along the way. But the CCA kept faith with the company who were clearly trying very hard to improve. The CCA continued to demonstrate flexibility and did not adhere rigidly to the HSE/EA rules books, recognising that major change placed huge burdens on the company. For example HSE did not prosecute the company for the accident and incident at the end of 2005; nor did the EA take enforcement action for the environmental releases that continued to occur in the early days. A very late submission of the Safety Report has been accepted, allowing the company to concentrate on making important changes on site.

Slowly over the two years of this initiative, trust grew between the two parties. Keeping in Touch meetings moved from tense occasions to relaxed meetings involving a lot of laughter. The company have come a very long way in improving their management of health, safety and environmental issues.

WILLIAM BLYTHE’S RESPONSE

Yule Catto and William Blythe immediately responded to the request by the HSE to commit to a time bound improvement programme based on submitting a Safety Report at an agreed period in the future and agreed to provide resources to deliver the programme in the time frame suggested.

The Regulator proposed early deadlines for some critical steps in the process, such as carrying out a Baseline Competency Assessment on site, ranking the processes on site with respect to inherent risk, development of a formal Process Safety Management procedure and making an assessment of the Safety Climate. Reasonable timescales were

agreed for completion of these elements of the programme. All other milestones were set by William Blythe and agreed with the Regulator.

Dates were agreed with HSE for review of progress, and representatives from Yule Catto were present at all these 'Keep In Touch' meetings. Relations with the regulator had become strained, mainly as a result of the repeated accident investigation visits, and the perception by the HSE that the Company were paying lip service to the improvement of SHE performance. The early meetings were therefore quite formal and somewhat strained. As soon as the Regulator realised that William Blythe was making progress, and committed to continuing the programme, the mood changed to being supportive.

SUPPORT PROVIDED BY THE REGULATOR

At all stages the approach of the Regulator was to help and support, and to give advice and direction. Examples include:

- Desk top review of Process Safety Management System by Regulator and feedback on progress.
- Inspection by Construction Inspector and follow up training of William Blythe staff on CDM by a HSE specialist.
- Inspection by the Mechanical specialist, and feedback and support on progress.
- Inspection by the Chemical reaction hazard specialist and feedback on progress.
- Inspection by the Human Factors specialist and feedback on progress.
- Inspection by the Control and Instrumentation specialist and support in developing an acceptable LOPA methodology for SIL assessment.
- The local EA inspector participated in all inspections.
- Organisation of a benchmark site visit by the Regulator to compare SHE communications and involvement.
- Attendance at employee meetings by the Regulator to give direct feedback on SHE progress from a regulatory perspective.

The period covered was in excess of 2 years, and in that period there were several incidents, where Regulatory intervention was required. One was related to asbestos disposal, one a waste disposal issue, one a release caused by a systems bypass. In all cases the Regulator investigated the incidents but decided against enforcement action, choosing not to be diverted from the overall programme of support.

HOW DID WE GET TO BE IN THIS POSITION?

Factors were:

- Complacency due to the maturity of the chemical processes, which were all inorganic. Fires were very rare, and hazards were generally from corrosive burns from corrosive materials.
- Pressure from the changing business dynamics.

- Poor change management prior to headcount reductions.
- Poor engineering standards. The effluent plant was built and developed to catch all realisable incidents. Local leaks could be caught in plant sumps or precipitated at the effluent plant.
- Poor operational standards. The operators changed jobs without being proved to be competent. They were rarely involved in process improvements.
- Most processes were carried out in reactors with limited process control and frequent escapes from open manways.
- The management style had developed in a very ‘telling’ manner, and employees were reluctant to raise issues.
- The middle management had little experience of standards in other companies.
- The trade unions were disaffected, not because of the SHE performance with which they were familiar through regular safety meetings and initiatives, but through the relentless cuts in the workforce.

WHERE ARE WE NOW?

We have:

- Reduced our serious accident and incident occurrence significantly.
- Reduced our excursions to sewer significantly.
- Reported four times the incidents and near misses than we did before.
- Engaged our employees in competency assessment, procedure development, human factors.
- Ensured everyone knows and understands that all change must be controlled and risk assessed.
- Used our Process Safety Management system to change the way that we have made chemicals for over 50 years. The yield is better, the process repeatability is better, the right first time is better. The process is safer. Everyone knows the hazards of the process.
- Fundamentally changed several processes. One process used to frequently discharge NO_x into the workplace. This is no longer possible due to process redesign. Another is now being operated at a lower, safer temperature.
- Assessed internal competency and engaged specialists for SIL, for writing test and inspection protocols, loop testing interval, design etc.
- Employed some new members of the management team, with some fresh external experience. This does not reflect on those that have left, but allows us to refresh our ideas and challenge our beliefs.
- Measured the safety climate, and believe that it is improving.
- A comprehensive training and competency assessment process in place, including literacy and numeracy assessment and coaching, for existing and new employees.
- A comprehensive internal audit programme in place, including active participation by the Company’s Directors.

WHAT NEXT?

We now recognise the advantages of working with the Regulator to help and support our business with advice and specialist support to help us operate the business safely.

We recognise that the only way to run a business is safely, and to that end we will continue with the rigour of reviewing in detail all chemical processes to find safer ways of operation which should also repay financially.

We will continue to develop proactive methods of ensuring that we minimise the risk of loss during our operations.

Some of the enhanced systems developed over the last two years e.g. engineering procedures, training and competence assessment, are under consideration by Yule Catto for adoption as corporate standards.

LESSONS LEARNT

Ensure that the full impact of downsizing on maintaining safe operations is reviewed. Take account of not only the tasks but the competencies of those remaining

Don't underestimate the value of engaging the staff in change programmes.

Where systems and procedures exist, use them.

Ask the Regulators for help if needed.

Don't be afraid of admitting that you don't have the competency for some tasks.