Our Services:

Manufacturing Systems
- Quality
- Specifications
- Datasheets
- Formulations
- Cost
- Utilisation
- Laboratory
- Stock
- Production Management
- SPC
- COMAH

Production Scheduling
- Benefit Analysis
- System Specification
- System Selection
- Implementation

Business Process Modelling
- Re-Engineering
- Technology Impact
- Information Systems

Our Clients:

- ABB
- AEA Technology
- Arthur D Little
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- Manro
- Norsk Hydro
- Roche
- Scott Bader
- Severn Trent Water
- SIRA
- Stepan

(Partial List)

COMAH Assessment in the Paper Industry

INTRODUCTION

"…**the investigation will identify whether the mill holds sufficient hazardous materials to require registration under the COMAH (Control of Major Accident Hazard) regulations. This will involve creating a computer model of material storage, assessing material hazards and calculating the aggregated COMAH rating, enabling the mill to justify its stated COMAH rating to the relevant authorities.**"

This was the mission statement agreed with management at the start of a project to identify the site's hazard rating. COMAH (Control Of Major Accident Hazards) imposes stringent management regulations on companies that use, store and produce chemical materials. All sites are classified as not relevant, low tier or high tier. The procedures that must be implemented for low tier sites are costly and arduous. For high tier sites they are more so. Which category a site is classified as depends on the quantities and identities of the materials held on site.

THE ANALYSIS PROJECT

The project had four principal phases;

- Identify all materials on the site
- Build a computer model of the material storage
- Assess the relevant COMAH category for each material
- Calculate and report the COMAH rating

1. Identify All Materials

This phase identifies the materials which are used, produced and stored on site, and quantifies the anticipated highest stock level of each. It is important, particularly on a large site with numerous individual plants or departments, to ensure that this list of materials is fully comprehensive.

2. Build a Computer Model

The MS2 Manufacturing Support System developed by AJM Consulting provides COMAH analysis as part of its stock control module. Each material is entered into the relevant material register (raw, intermediate or product) and stock locations created for each as appropriate.

3. Assess the relevant COMAH category

Every material used on site must be identified and assigned to a specific COMAH category (toxic, dangerous to the environment and so on). This involves assessing each material's safety data sheet, in many cases requiring further discussion with suppliers. Where the material is a formulation as opposed to a single chemical, the relevant rating of the formulation must be assessed, taking into account its constituent components.

continued overleaf...

4. **Calculate and report the COMAH rating**

Having identified all the relevant data and created the computer model the results may now be calculated. The COMAH rating is a function of the quantity of each material, the hazard category it is assigned to and the threshold value for each category. Categories are allocated to one of three aggregation totals and the highest individual aggregation total becomes the site rating.

The MS2 system enables detailed analysis of the results, highlighting which materials have significant contributions to the overall rating and thereby providing the facility for "What if" analysis, enabling current stock holding policies to be examined to identify opportunities for a reduced COMAH rating.

Material Safety Data Sheets for each material may be stored electronically within the system together with comments on the assessment process, enabling easy access to the information which led to the assignment of a material to its COMAH category.

BENEFITS

The Mill's management needed to know what the COMAH rating of the site was and, therefore, what actions they needed to take to comply with the legislation. The analysis using the MS2 system provided this, and facilitated a series of workshop sessions which challenged existing stock holding policies. This process identified opportunities to reduce stocks of hazardous materials, thereby reducing their contribution to the COMAH rating. The MS2 system provides not only the overall rating but also details of the contributions made by individual materials and COMAH categories. It also provides the facility for the overall rating and all its component contributors to be challenged and explained.

COMAH Management using MS2

In this case study the products made on site and the materials used were predictable and the COMAH rating is not expected to vary extensively over short time periods. Periodic analysis of stocks, particularly after a change of raw material or modified COMAH classification, is adequate to ensure compliance. In other industries such as speciality chemicals this is not always the case. The materials held on site, and the quantities of them, can vary immensely with time and a "worst case" cannot be identified. In these cases MS2 provides the facility to analyse stocks daily, integrating with stock management or process control systems such as Emerson Process Management's DeltaV. All data is archived, enabling trends to be analysed. Each day's result can be audited.

THE MS2 MANUFACTURING SUPPORT SYSTEM

COMAH management is just one of MS2's many functions. Material management includes datasheets, specification and formulation management and cost analysis. Technical customer relationship management handles datasheets, samples, complaints and technical enquiries. Stocks of bulk or packed materials can be analysed not only for COMAH but also for value, location and available space. Production management provides structured operator instructions, batch histories and analysis of time and quality performance.

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