

HSE commenced a programme of Cooling Tower inspections in 2006/7 starting with COMAH Sites. The presentation covered Croda's experiences of their visit. HSE found some issues of concern which led Croda to assess what they needed to do to bring their cooling system up to the standards HSE required.

Their Options were:-

#### **Refurbishment of existing Tower**

- Down time of 2 weeks
- At least £ 50K with about another 5 years life
- No improvement performance
- Access would still be an issue
- And the main issue with Packing removal remains problematic.

#### **Install a modern tower**

- Agreed to install a new Tower in 2008
  - New Tower away from vulnerable population
  - Improved access for maintenance
  - Packing in modules which can be easily removed
  - More energy efficient, which was also being considered
  - Improved cooling performance and more redundancy for future growth

Following this assessment it was determined that a new cooling tower would be the most cost effective way forward.

The installation of a new tower produced the following benefits:-

- Tower more centrally located installed
  - Closer to main users
- Modular Construction
  - 1 or 2 Module(s) can be removed while the others are running
- Access issues eliminated
- Approx 10% electricity savings (£ 31kyear) owing to
  - Variable speed pump & fans drives
  - Temperature control fans
  - Pressure controlled circulation pump
  - Better location, only one pump is enough to keep up the required pressure.
- Consistent flow of Cooling Water at the right temperature around the site
  - Same thermal capacity as the old tower (provision is in place for future capacity increase)
  - More up to date technology
- More expensive than originally planned (Cost £ 366K installed)
  - Gained another 30 years life out of the tower
  - Extra costs due to relocation
- Better Automation
  - Automated Chemical dosing system
  - Automated temp & press