

Legionnaires' disease at chemical sites

Do you know what's growing in your wet cooling system?

Outbreaks linked to poor management of wet cooling systems still occur; often leading to prosecutions by HSE, eg in the West Midlands and Cumbria. Indeed August 2006 saw 127 reported cases of Legionnaires' disease, a twofold increase on the figure for August 2005. Although such a seasonal increase is normal, not so many of these were associated with foreign travel as would be expected. In addition up to the end of August 2006, there were 273 reported cases as opposed to 205 for the corresponding period in 2005.

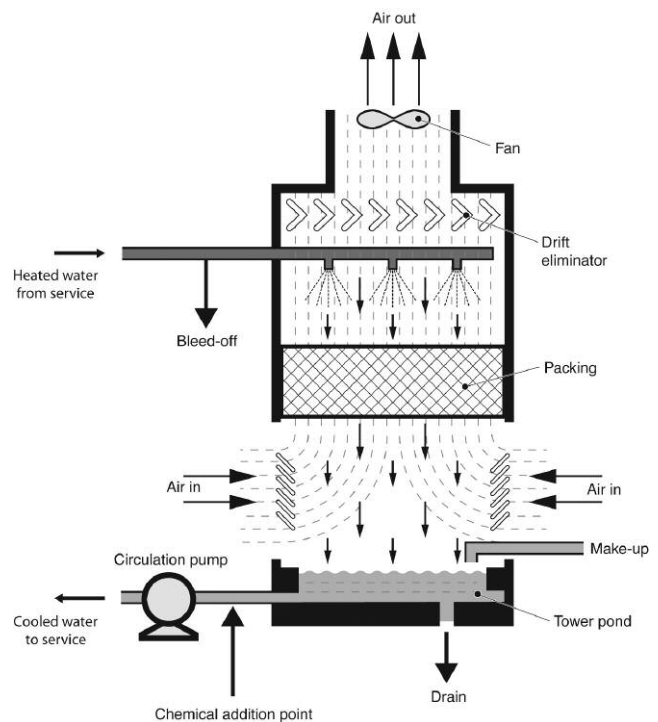
During 2003-2005, HSE inspected wet cooling systems at 22 Midlands chemical manufacturing sites. At up to a *quarter* of those sites, the following conditions were found:

- build-up of slime, algae, scale, and corrosion;
- poorly-covered ponds exposed to light and fouling;
- broken and damaged equipment.

The legionella bacterium can thrive on the warmth and nutrients provided by poor conditions in wet cooling towers and evaporative condensers. At chemical sites, such equipment is often used intensively and round the clock. The bacterium can survive in wind-borne water droplets which can be carried up to 2 km away from its source. Outbreaks linked to poor management of wet cooling systems still occur; often leading to prosecutions by HSE, eg in the West Midlands and Cumbria.

Have you got the main elements of control covered?

- **Risk assessments. Are they:**
 - suitable and sufficient?
 - reviewed regularly?
 - developed with employee consultation?
- **Roles and responsibilities. Are:**
 - duties clearly defined for employees and contractors?
- **Routine checks and maintenance. Do you:**
 - carry out full inspections?
 - regularly calibrate dosing pumps?
 - maintain items such as drift eliminators?



- **Water treatment. Do you:**
 - use up-to-date, appropriate disinfection techniques?
 - check water quality regularly?
 - incubate dipslides properly?
 - record your remedial actions?
- **Cleaning and disinfection. Do you:**
 - clean and disinfect every 6-12 months?
 - remove the pack for cleaning?
 - fully drain during long shutdowns?
 - protect everyone in the area during cleaning?
 - ensure that cleaning procedures are site-specific and cover all risks?

HSE's Hazardous Installations Directorate will continue this intervention programme in all regions in 2007/2008. Guidance on managing wet cooling systems can be found in the HSE publication *Legionnaires' disease: The control of legionella bacteria in water systems. Approved Code of Practice and guidance*. Where dutyholders are found to be in breach of the legislation, HSE will explore all options, including enforcement, to ensure that the duty holder does prevent or control risks.

Conditions often found by HSE in wet cooling systems: Examples of scale deposits, rust, biofilm and algal growth on packing and cooling tower interiors



Further information

Legionnaires' disease. The control of legionella bacteria in water systems. Approved Code of Practice and guidance L8 (Third edition) HSE Books 2000 ISBN 0 7176 1772 6

An introduction to the control of legionella bacteria in water systems Video package, including audit checklist HSE Books 2003 ISBN 0 7176 2580 X

Control of Legionellae: Part 1 Cooling tower systems Video HSE Books 2001 ISBN 0 7176 2150 2

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This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

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