

Inspection, cleaning and disinfection procedures

1.75 Maintaining the cleanliness of the cooling system and the water in it is critical to prevent or control the risk of exposure to legionella. This section gives guidance on when and how to inspect, clean and disinfect a cooling system.

1.76 Decisions about the frequency and scope of inspection and cleaning operations and whether a cooling system is clean enough for operation are ultimately the responsibility of the responsible person. They may seek advice and help from specialist service providers for water treatment, risk assessment, cleaning and disinfection.

Why is it important to clean and disinfect the cooling system?

1.77 Legionella are more likely to proliferate in water systems that are fouled with deposits and biofilm that can protect the organisms from water treatments and provide nutrients for them to multiply. So maintaining system cleanliness is crucial.

1.78 Effective water treatment measures can reduce the rate at which a cooling system becomes fouled, however, an evaporative cooling system will inevitably accumulate airborne dust from the atmosphere and may be subject to contamination originating from the process for which the system provides cooling. It is therefore necessary to take cooling systems out of service periodically for physical, and possibly chemical, cleaning to remove this fouling.

When and how often should a cooling system be cleaned and disinfected?

1.79 If a system can be shown to be free from fouling, ie the deposition of particulate material and debris, there is no need for it to be cleaned at a set time interval, rather the system should be cleaned whenever it is known or suspected to have become fouled. However, as cleaning operations are disruptive, it is common to adopt a precautionary approach, with cleaning operations being scheduled to coincide with planned shutdowns or at a predetermined interval, eg six monthly.

1.80 A cooling system should always be inspected, disinfected and, if required, cleaned if there is a significant change in operation status such as:

- immediately before the system is first commissioned;
- after any prolonged shutdown of a month or longer (a risk assessment may indicate the need for cleaning and disinfection after a period of less than one month, especially in summer and for health care premises where shutdown is for more than five days);
- if the tower or any part of the cooling system has been physically altered, eg refurbishment or replacement of pumps, pipework or heat exchangers.

1.81 The tendency of the system to become fouled either with waterborne foulants or airborne contaminants will inform how often cleaning takes place. Systems should be cleaned whenever an inspection indicates the need or in response to circumstances resulting in contamination or increased fouling, such as process contamination, local construction work or an increase in the turbidity of the make-up water source.