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| Guidelines for auditing risk management plans for cooling tower systems |
| Department of Health |
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| Guidelines for auditing risk management plans for cooling tower systems  Department of Health |
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# Purpose

These Guidelines for auditing risk management plans for cooling tower systems are intended to assist approved auditors to audit a risk management plan for a cooling tower system. This guide includes templates that can be used in the auditing process and a spreadsheet that must be used to provide audit results to the Department of Health (the department).

These guidelines explain how to put the auditing requirements of the Public Health and Wellbeing Act 2008 and Public Health and Wellbeing Regulations 2019 into practice.

Following the directions in this guide is a condition of certification as an approved auditor.

This guide replaces the previous Guidelines for auditing risk management plans for cooling towers systems dated 2011.

# Legislation

## The Public Health and Wellbeing Act 2008

### Registration

The *Public Health and Wellbeing Act 2008* (the Act) requires that all cooling tower systems in Victoria be registered with the department. Information about [cooling tower system registration](https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/cooling-tower-systems) is available at on the department’s website at: https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/cooling-tower-systems

The Act is available from the Victorian Legislation and Parliamentary Documents website:

[www.legislation.vic.gov.au](http://www.legislation.vic.gov.au)

### Public register

The Act requires that the Secretary to the Department of Health (the Secretary) keeps a register of all cooling tower systems and that this register is available for inspection by the public.

A web-based [register of cooling tower systems](https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/public-register) is available on the departments website at:

<https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/public-register>

The register contains information such as the site address, site and cooling tower system identification numbers and registration dates of all cooling tower systems registered in Victoria.

### Risk management plans

The Act requires the owner of the land on which there is a cooling tower to ensure that a risk management plan exists at all times the cooling tower system is in operation.

Under section 91(2) of the Act, this risk management plan must—

1. address the risks prescribed in respect of cooling tower systems and set out the steps to be taken to manage the risks;
2. set out the steps to be taken to ensure compliance with any risk management requirements relating to the cooling tower system;
3. include any other matters prescribed for the purposes of this section;
4. be in the approved form.

Section A of this guide describes how an auditor determines if a risk management plan complies with the requirements of the Act.

### Annual audit

Section 93(1) of the Act requires that the risk management plan for a cooling tower system is audited annually.

As per section 93(3) of the Act, the objective of an audit is for the auditor to determine if the risk management plan:

1. meets all the requirements of the Act;
2. has been implemented throughout the audit period; and
3. has been reviewed in the 12 months prior to the audit.

These are later referred to as Q1, Q2 and Q3.

Further assistance in determining whether a risk management plan complies with the requirements of the Act and has been implemented and reviewed is provided in sections A, B and C of this guide.

### Approved auditors

Section 95 of the Act states that only an approved auditor can conduct the annual risk management plan audit. Approved Auditors are certified by the Secretary.

Information about becoming a [certified auditor](https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/approved-auditors) and grounds for revoking certification is outlined on the department’s website at:

<https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/approved-auditors>

### Auditor to inspect documents

In conducting an audit, section 93(4) of the Act requires an auditor to inspect all prescribed documents relating to the cooling tower system.

The documents to be inspected are prescribed in the Public Health and Wellbeing Regulations 2019 and include:

* the risk management plan.
* the documents that contain the details of all repair, maintenance and testing work carried during the audit period.

Section B of this guide describes the types of documents that an auditor must inspect to determine if the risk management plan has been implemented.

### Reviewing risk management plans

Section 92(1) of the Act requires that the risk management plan is reviewed at least once in each 12 month period. Additionally, section 92(2) requires that the risk management plan is reviewed in the event of the occurrence of certain trigger events.

Section C of this guide describes how an auditor determines when a review of a risk management plan is required, and the factors included in the review.

## The Public Health and Wellbeing Regulation 2019

The Public Health and Wellbeing Regulations 2019 (the Regulations) outline the maintenance requirements for cooling tower systems.

It is important that auditors have a thorough understanding of the requirements of the Regulations to successfully complete a cooling tower system risk management plan audit.

The Regulations are available from the Victorian Legislation and Parliamentary Documents website:

[www.legislation.vic.gov.au](http://www.legislation.vic.gov.au)

## The department’s role

The department’s Legionella Team plays an important role in investigating cases of Legionnaires’ disease and enforcing the provisions of the Act and Regulations regarding cooling tower systems.

The department responds when notified of all non-compliant audits. The primary concern of the Legionella Team in investigating non-compliant audits is to ensure that any problems are rectified.

The Act also empowers the Secretary to issue improvement or prohibition notices where there is, or is likely to be, a contravention of the Act or regulations.

# Audit overview

## Commissioning and audit

Responsibility for ensuring that an audit is undertaken lies with the owner of the land on which the cooling tower system is located. However, any person can commission an audit provided they are able to provide an auditor with a copy of the risk management plan and all relevant records and documentation supporting its implementation. In practice, audits will generally be commissioned by system operators or the land owner’s agent or property manager.

The maximum time between the audit period end date and the completion of the audit (i.e. the signing of the certificate) must not be longer than 3 months.

## Scope of the audit

An auditor is not required to determine if the plan has adequately controlled the risks.

The audit process is designed to be a paper audit and therefore can occur off-site. Section 93(5)(b) of the Act makes clear that an auditor is not required to physically inspect the cooling tower system (CTS).

However, on-site audits may be useful where:

* The risk management plans are complex;
* There are a large number of implementation items;
* There are several cooling tower systems;

There are several risk management plans applicable to the audit period.

## Period of audit

The audit period must not be greater than 12 months and should cover the period immediately following the previous audit period. There may be circumstances where an audit period covering less than 12 months may be necessary.

There may be issues concerning the audit period when there is change of ownership, or when a company is put under administration. Under these circumstances, the Legionella Team should be contacted to discuss the particular issue.

Some audit periods may cover intervals where a cooling tower system was shut down. If a cooling tower system is shut down for any length of time, it is still deemed to be “in operation” unless it has been decommissioned and that action notified to the department.

However, there may be no service requirements or service documents during these intervals. Shut down procedures, particularly if they are routine to the process served by the cooling tower system should be defined in the risk management plan.

Decommissioning of a tower requires that the following to have occurred:

* The system is completely drained of water; and
* The power supply to the system is disconnected; and
* The water supply to the system is disconnected.

The term “shut down” means that the cooling tower system is temporarily not in use. They are still required to be registered and an audit must be conducted.

## Changes of ownership during an audit period

Where there is a change of ownership during the audit period, it is expected that the new owner may take on the risk management plan developed for the former owners. Some new owners may have the risk management plan reviewed and incorporate changes into the old risk management plan.

Nevertheless, an auditor can only work on the risk management plans and documents supplied. Where there is doubt on this matter, an auditor is advised to contact the Legionella Team.

## Addressing the risks

An audit worksheet has been developed to assist in the audit. The worksheet contained in **Attachment 1** uses the full wording of the risks, as specified in the Regulations. Auditors may use this tool or amend it to suit their needs.

To determine whether the risks have been addressed, auditors should read the risk management plan and look for references to these risks.

The risk management plan should list the risk, together with a brief assessment of the likelihood and impact of the risk. [Templates](https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/cooling-tower-systems/risk-management-plan/risk-management-plans-appendixes/template-cooling-tower-plans-appendix-1) available on the website provide an example of this listing.

## Forming an opinion

The audit worksheet contained in **Attachment 2** provides auditors with an optional tool to record whether actions in the plan are being implemented.

For an auditor to form an opinion that a risk management plan is being implemented, they must view evidence that all the actions in relation to the risks are being implemented, within the timelines specified in the plan.

Where timelines are not indicated, auditors must assume that the action was to be undertaken during the period covered by the audit period.

## Audit notification

It is a requirement of the Act that a risk management plan is audited annually by an approved auditor. The Act also requires that the approved auditor must give the Secretary a copy of the information in the audit certificate within 7 days after completing the certificate.

## Completing an audit certificate

An auditor must produce a certificate once an opinion has been formed as to whether or not the risk management plan has addressed the specified risks and whether the risk management plan has been implemented and whether the risk management plan was reviewed within 12 months prior to the audit.

Section 93(6) requires an auditor to give the certificate to the person who commissioned the audit and a copy of the information on the certificate to the department.

A blank [audit certificate](https://www2.health.vic.gov.au/about/publications/formsandtemplates/Audit-certificate-template) can be downloaded from the department’s website at: <https://www2.health.vic.gov.au/about/publications/formsandtemplates/Audit-certificate-template>

A completed example of an audit certificate is provided in **Attachment 3.**

The information contained in the audit must be sent by email to the department within 7 days of the audit certificate date and must be in the spreadsheet provided.

# Section A: Q1 Does the risk management plan address the risks?

This section describes how an auditor determines if a risk management plan complies with the requirements of the Act.

Section 91 of the Act requires that a risk management plan must be prepared and:

*(2) The risk management plan must—*

1. *address the risks prescribed in respect of cooling tower systems and set out the steps to be taken to manage the risks;*
2. *set out the steps to be taken to ensure compliance with any risk management requirements relating to the cooling tower system;*
3. *include any other matters prescribed for the purposes of this section;*[[1]](#footnote-1)
4. *be in the approved form.[[2]](#footnote-2)*

## Prescribed risks

The Regulations prescribes the risks that must be addressed in the risk management plan. Table 1 provides a summary of the prescribed risks.

**Table 1: Prescribed risks**

|  |  |
| --- | --- |
| 1. | Stagnant water, including the lack of water recirculation in a cooling tower system and the presence of dead-end pipework and other fittings in a cooling tower system. |
| 2. | Nutrient growth, including—  Presence of biofilm, algae and protozoa in a cooling tower system; and  Water temperature within a range that will support rapid growth of microorganisms in a cooling tower system; and  Exposure of the water of a cooling tower system to direct sunlight. |
| 3. | Poor water quality, including the presence of solids, Legionella and high levels of microorganisms in a cooling tower system. |
| 4. | Deficiencies in a cooling tower system, including deficiencies in the physical design, condition and maintenance of the system. |
| 5 | The location of, and access to, a cooling tower or cooling tower system, including the potential for environmental contamination of the system and the potential for exposure of people to the aerosols of the system. |
| 6 | Any matters included in a report delivered to the owner of the land for the purposes of section 92(2)(c) of the Act. |

## Risk management requirements

Section 91(2)(b) of the Act requires that the risk management plan sets out the steps to be taken to ensure compliance with any risk management requirements relating to the cooling tower system. Table 2 provides a summary of the risk management requirements.

**Table 2: Risk management requirements**

|  |  |
| --- | --- |
| 1. | **The preparation, content, review and audit of a risk management plan,** including the conduction of a risk management plan audit. |
| 2. | **The construction, installation, operation, maintenance, repair, service and testing of a cooling tower system.** |
| 3. | **Control measures used in respect of a cooling tower system,** including the response to unsatisfactory microbiological results. |

**Attachment 1** contains an audit worksheet that has been developed by the department to assist auditors undertaking an audit in respect of a risk management plan. The audit worksheet uses the full wording of the risks, as specified in the Regulations. Auditors may use this tool or amend it to suit their needs.

**Attachment 2** provides examples of various measures available to owners to improve a cooling tower system and address the specified risks. This list may help auditors understand what improvements or actions relate to particular risks; it does not mean that all these actions are necessarily needed for each cooling tower system.

To determine whether the risks have been addressed, auditors should read the risk management plan and look for references to these risks.

The risk management plan should list the risk, together with a brief assessment of the likelihood and impact of the risk. [Template for cooling tower risk management](https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/cooling-tower-systems/risk-management-plan/risk-management-plans-appendixes/template-cooling-tower-plans-appendix-1)  provides an example of this. A copy of this template is available from the department’s website at: <https://www2.health.vic.gov.au/public-health/water/legionella-risk-management/cooling-tower-systems/risk-management-plan/risk-management-plans-appendixes/template-cooling-tower-plans-appendix-1>

**Any matters that are contained in a risk management plan that are not required to be in the risk management plan do not have to be considered during the audit.**

## Risk management plan structure

The *Guide to Developing Risk Management Plans for Cooling Tower Systems* provides a framework and template for undertaking a risk assessment and addressing the specified risks. Although risk management plans are not required to follow this format, most authors follow the template in that Guide.

A risk management plan would normally also include the following components:

* site and contact details;
* assessment of each specified risk;
* summary of the overall risk classification;
* details of the system collected during the risk assessment process;
* strategies, operational programs or works to address the specified risks;
* details of the process to follow in response to unsatisfactory sample results;[[3]](#footnote-3)
* timelines within which works are intended to occur. Some may have a separate action plan for system improvement;
* attachments or references to other documents such as operational plans, shut-down procedures and communication plans;
* the date the risk management plan was endorsed

**It is important that timelines be specified for all actions referred to in a risk management plan. If a risk management plan does not include a timeline for a particular action or repair, auditors must assume the works should have been completed within the period covered by the risk management plan**.

As discussed earlier, each cooling tower system must have an individual risk management plan prepared for that system. However, where there are multiple systems on the same site, it is acceptable to have individual plans contained in a single document.

# Section B: Q2 Was the risk management plan implemented?

This section describes the types of documents that an auditor must inspect to determine whether the risk management plan has been implemented during an audit period.

The first step is to clearly identify the actions the risk management plan says will be completed or undertaken during the period.

The second step is to sight the evidence (in the form of documents) that will allow you to determine whether the actions have been undertaken or completed during the period.

For the purposes of an audit, the Regulations requires that an auditor must inspect the following documents:

1. **Risk management plan.** The primary reference document for an audit is the risk management plan itself. Auditors should check that it clearly identifies the cooling tower system to which it applies and that it is signed off and dated by the system owner or operator.

When reviewing the risk management plan the auditor should also consider:

* **Risk management plan review/s**. The risk management plan should have been reviewed at least once prior to the audit as a result of which changes may have been made to the requirements of the plan. Auditors will need to identify how many risk management plans apply during the audit period and whether the risk management requirements for those plans differ. Documents for service, maintenance, cleaning, inspections, testing and improvements will need to be sorted to match the risk management plans and audited against the relevant requirements.
* For example, where a risk management plan review is conducted midway through the audit period and as a result the Legionella sampling frequency is changed from quarterly to monthly, an auditor will need to check that Legionella samples were taken quarterly for the portion of the audit period covered by the original risk management plan and that Legionella samples were taken monthly during the remaining part of the audit period as required by the reviewed risk management plan.
* **Optional variation**. The system owner or operator may have elected to implement an Optional Variation declared under section 98 of the *Public Health and Wellbeing Act* *2008*. Such variations are usually sought by industries associated with continuous production, where interruptions to the cooling tower system (such as for cleaning) cannot be easily made and the details of the variations must be incorporated into the risk management plan.

1. Documents that contain the details of all repair, maintenance and testing work carried out on the cooling tower system within the period to be audited, including:

* **Bacterial test results** (HCC and Legionella).
* **Chemical parameters test results**.
* **Cooling tower system service reports.**
* **Cooling tower system inspection records.**
* **Records of maintenance, repairs and testing**. Where company staff perform regular checks/inspections on equipment, signed-off check sheets with dates and times may be relevant. In some cases, the files will contain written reports, invoices or photographs of work completed.
* **Supplementary plans** that support implementation.
* **Records of any remedial actions conducted in response to an unsatisfactory microbiological sample test**.

The audit worksheet contained in **Attachment 2** provides auditors with an optional tool to record whether actions in the plan are being implemented.

For an auditor to form an opinion that a risk management plan is being implemented, they must view evidence that all of the actions in relation to the risks are being implemented within the timelines specified in the plan.

Where timelines are not indicated, auditors must assume that the action was to be undertaken during the period covered by the risk management plan.

Some risk management plans may cover multiple years and auditors must ensure that they only audit those actions that were completed during the audit period. However, note that the Act requires risk management plans to be reviewed at least annually, and therefore if the review has necessitated changes to the risk management plan, the review becomes the new risk management plan. Other risk management plans may have supplementary implementation plans, setting out actions and timelines.

If an action has not been completed within the timeline specified but does not have a bearing upon addressing a specified risk, this should not lead an auditor to form the opinion that the plan is not being implemented.

Difficulties may be presented in auditing parts of a risk management plan that have no bearing on any of the specified risks. Generally, an auditor should only be auditing a risk management plan against the specified risks. An example of this is where cosmetic changes to the cooling tower system were intended to be undertaken during the audit period to make the cooling tower appear more acceptable to surrounding tenants.

**Recommendations contained in a risk management plan that have not been accepted are outside the scope of the audit.**

## The 6 steps to assess risk management plan implementation

The following 6 steps must be undertaken by auditors so that consistent results are achieved when assessing risk management plan implementation:

|  |  |
| --- | --- |
| 1. | List all actions required by risk management plan. |
| 2. | Examine any extra requirements/actions where an optional variation under section 98 has been implemented. |
| 3. | Check all the documentation provided for the audit to determine the number of times each action has occurred within the audit period. |
| 4. | Apply a 90 per cent compliance rate to each action. |
| 5. | Apply prescribed time tolerances to all actions listed in risk management plan. |
| 6. | Determine if the risk management plan has been implemented and is compliant over the audit period. |

## Step 1 – List all actions

For example, a risk management plan may stipulate:

* four tower cleans per annum (4 actions)
* monthly servicing (12 actions)
* monthly inspections (in between services) (12 actions)
* monthly HCC testing (12 actions)
* Legionella testing every three months (4 actions)
* removal of two deadlegs (2 actions)
* installation of auto dosing equipment (1 action)
* installation of a new drift eliminator on one tower (1 action)
* use of alternate biocides each month (12 actions)

An auditor must examine the audit period to determine the number of times each type of action was required in that period by the risk management plan.

## Step 2 – Optional Variations

An auditor is then required to examine the additional requirements/actions that may be required because an Optional Variation has been implemented.

* It is a requirement that the details of the optional variation must be incorporated in the risk management plan. Failure to include all the details will result in a non-compliant audit (i.e. the answer to question 1 is “no”).
* Non-conformance to any of these extra conditions or actions will result in a non-compliant audit (i.e. the answer to question 2 is “no”).
* Prescribed time tolerances (refer to step 5 in this section) are to be exercised here to include any extra actions for maintenance required, as a condition of the variation being granted.

## Step - 3 Documentation

An auditor is required to view the documentation that is evidence that the action has been conducted. The *Guide to Developing Risk Management Plans for Cooling Tower Systems* provides examples of the information that would be expected in some of the common reports relating to maintenance and testing of cooling tower systems.

## Step 4 – 90% compliance rate

A minimum 90% compliance rate for each type of action must be demonstrated. The auditor should make a note of the non-compliant issues on the audit certificate (see attachment 3).

**Table 3: 90% Compliance rate**

|  |  |
| --- | --- |
| Number of times specified for an action in RMP (during audit period) | Number of times needed for 90% compliance of an action |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 5 |
| 7 | 6 |
| 8 | 7 |
| 9 | 8 |
| 10 | 9 |
| 11 | 10 |
| 12 | 11 |
| N | n x 90% and rounded off to nearest number |

**Table 4: 90% Compliance rate calculated for the example used in Step 1**

|  |  |  |
| --- | --- | --- |
| Action | Number of times specified in RMP (per annum) | Number of actions needed to demonstrate 90% compliance for an action |
| Tower cleans | 4 | 4 |
| Monthly servicing | 12 | 11 |
| Monthly inspections | 12 | 11 |
| Monthly HCC testing | 12 | 11 |
| Bi-monthly Legionella testing | 6 | 5 |
| Removal of two deadlegs | 2 | 2 |
| Installation of auto dosing equipment | 1 | 1 |
| Installation of new drift eliminator on one tower | 1 | 1 |
| Use of alternate biocides each month | 12 | 11 |

**Note that the example provided above would have to be adjusted to correspond with the length/period of the audit, which may not be for the full 12 months.**

## Step 5 – Time tolerances

An owner or operator may have difficulty undertaking regular cooling tower system services on time for several different reasons, including short months, long weekends, holiday periods, key personnel being on leave or service vehicle/equipment breakdowns. This has resulted in a number of non-compliant audits in the past.

A system of time tolerances has been put into place to overcome such difficulties. The delay of services within the provided tolerances is seen to have minimal effect on outcomes of actions committed to by the risk management plan.

**Auditors must take into account these time tolerances when assessing compliance.**

For auditing purposes only, the prescribed time tolerances for actions are provided in Table 5.

**Table 5: Prescribed time tolerances**

|  |  |
| --- | --- |
| Interval | Tolerance |
| 6 monthly / bi-annually | ≤ 1 month |
| 3 monthly / quarterly | ≤ 2 weeks |
| 2 monthly | ≤ 10 days |
| Monthly | ≤ 7 days |
| fortnightly/ 2 weekly | ≤ 3 days (or the first working day following a long weekend) |
| weekly / 7 days | ≤ 3 days (or the first working day following a long weekend) |
| 24 hours | ≤ 1 day |

For example, a quarterly action must occur within three calendar months, plus two weeks into the following month.

Likewise, a monthly[[4]](#footnote-4) action must occur at least within the following calendar month, plus 7 days. However, this would not result in a compliant audit (if taken to the extreme) where only 6 services were provided over a year, when there should have been 12 services. Step 5 of these Guidelines provides for a minimum 90% compliance rate for any action listed in the risk management plan, and therefore 12 services would need at least 11 services for compliance of this action.

**If an action occurs outside of the prescribed time tolerances, it should be considered that the action is unacceptable and non-compliant with regard to the risk management plan.**

## Step 6 – Implementation

It is required that an auditor establishes whether:

* all specified risks are addressed by the risk management plan; and
* all risk management requirements are addressed by the risk management plan; and
* each of the different type of actions has been implemented at least to a level of 90 per cent (with specified time tolerances exercised) over the audit period; and
* a review of the risk management plan was conducted within 12 months prior to the audit

For an audit, failure of the risk management plan to comply with any of these four points must result in a finding of non-compliance.

# Section C: Q3 Was the risk management plan implemented?

This section describes how an auditor determines when a review of a risk management plan is required and describes what a review should include.

Section 92(1) of the Act requires the owner of any land on which there is a cooling tower to ensure the risk management plan has been reviewed at least once within each 12 month period.

Section 92(2) of the Act also requires that a risk management plan be reviewed if:

1. Legionella is detected in the cooling tower system on 2 or more occasions in any period of 12 months; or
2. the owner of the land is given written advice by the Secretary that a case of legionnaires' disease is associated with the cooling tower system; or
3. the owner of the land receives a report from the Secretary or from any person engaged by the owner of the land or the owner of the cooling tower system that control measures used in respect of the cooling tower system are inadequate or require improvement; or
4. there is a significant change in—
5. any of the environmental conditions under which the cooling tower system operates; or
6. the operation of the cooling tower system; or
7. the owner of the land receives an audit certificate that states that the risk management plan does not address the prescribed risks.

The Regulations requires any matters included in a report delivered to the owner of the land for the purposes of section 92(2)(c) of the Act to be addressed by the risk management plan.

A risk management plan review should be in writing and set out the scope of the review. It should include the date and name of the person / company that conducted the review. A review needs to:

* Consider each aspect of the plan;
* Consider any changes to the environment operational program and any physical changes to the system;
* Determine if there have been any changes that would require further investigation;
* Recommend any changes required to ensure the risks are managed.

It is important to understand that the review may result in changes to:

* the operation/maintenance of a system;
* the system itself; and/or
* the risk management plan.

It is acceptable to have multiple risk management plans in place during the audit period. An auditor needs to determine the period to which each risk management plan applies and determine if the plan has been implemented for that period.

It is also acceptable for a risk management plan review to amend timelines set in previous plans.

Attachment 1: Audit worksheet

|  |  |  |
| --- | --- | --- |
| **Applicant** | **Position** | |
| **Land owner** | **CTS** | **SID** |
| **Site address** |  | |
| **Audit period** |  | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Does the RMP address the risks specified in the Public Health and Wellbeing Regulations 2009? | | | Does the RMP identify action associated with the specified risks? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Specified risks | Response | Reference | Response | Details | Response | Source of information | Comment |
| 1. **Stagnant water**, including |  |  |  |  |  |  |  |
| 1.1 the lack of water circulation in a system; |  |  |  |  |  |  |  |
| 1.2 the presence of dead-end pipework and other fittings in a system; |  |  |  |  |  |  |  |

Attachment 1 continued: Audit worksheet

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Does the RMP address the risks specified in the Public Health and Wellbeing Regulations 2009?(continued) | | | Does the RMP identify action associated with the specified risks? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Specified risks | Response | Reference | Response | Details | Response | Source of information | Comment |
| 2. **Nutrient growth**, including- |  |  |  |  |  |  |  |
| 2.1 the presence of biofilm, algae and protozoa in a system; |  |  |  | Biodispersant used  Cleaning frequency |  |  |  |
| 2.2 water temperature within a range that will support rapid growth of microorganisms in a system; |  |  |  |  |  |  |  |
| 2.3 the exposure of the water in a system to direct sunlight; |  |  |  |  |  |  |  |

Attachment 1 continued: Audit worksheets

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Does the RMP address the risks specified in the Public Health and Wellbeing Regulations 2009?(continued) | | | Does the RMP identify action associated with the specified risks? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Specified risks | Response | Reference | Response | Details | Response | Source of information | Comment |
| 3. Poor water quality, including the presence in a system of - |  |  |  | Service frequency |  |  |  |
| 3.1 solids; |  |  |  |  |  |  |  |
| 3.2 *Legionella*; |  |  |  | *Legionella* testing frequency |  |  |  |
| 3.3 high levels of microorganisms; |  |  |  | HCC testing frequency |  |  |  |

Attachment 1 continued: Audit worksheet

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Does the RMP address the risks specified in the Public Health and Wellbeing Regulations 2009? (continued) | | | Does the RMP identify action associated with the specified risks? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Specified risks | Response | Reference | Response | Details | Response | Source of information | Comment |
| 4. Deficiencies in a system, including deficiencies in the - |  |  |  |  |  |  |  |
| 4.1 physical design; |  |  |  |  |  |  |  |
| 4.2 condition; |  |  |  | Inspection frequency |  |  |  |
| 4.3 maintenance (of the system); |  |  |  |  |  |  |  |

Attachment 1 continued: Audit worksheet

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Does the RMP address the risks specified in the Public Health and Wellbeing Regulations 2009? (continued) | | | Does the RMP identify action associated with the specified risks? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Specified risks | Response | Reference | Response | Details | Response | Source of information | Comment |
| 5. Location of and access to the tower or system, including the potential for: |  |  |  |  |  |  |  |
| 5.1 environmental contamination of the system; |  |  |  | Side stream filter |  |  |  |
| 5.2 exposure of people to the aerosols of the system |  |  |  | Warning signs  Review of working environment |  |  |  |

Attachment 1 continued: Other issues

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Does the plan address issues other than the risks specified in the Public Health and Wellbeing Regulations 2009? | | Does the plan identify action associated with these issues? | | Is the identified action (and therefore, the RMP) being implemented? | | |
| Details | Reference | Response | Details | Response | Source of information | Comment |
| 6. |  |  |  |  |  |  |
| 7. |  |  |  |  |  |  |
| 8. |  |  |  |  |  |  |
| 9. |  |  |  |  |  |  |

Attachment 1 continued: Result of audit

|  |  |  |
| --- | --- | --- |
| Determination of auditor | Response | If no, the reasons why the auditor holds that opinion |
| 10. Does the plan address the specified risks? |  |  |
| 11. Is the plan being implemented? |  |  |
| 12. Has the RMP been reviewed within the last 12 months prior to the audit period end date?  (record date/s of review/s within the last 12 months) |  |  |

|  |  |
| --- | --- |
| Name of auditor | Contact person and details |
| Date certificate issued | To whom issued |
| Whether premises visited | Time taken: Pre-audit Travelling Audit Post-audit |

Attachment 1 continued: Summary of test, service and cleaning reports

**Audit period: CTS:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Test reports | | | | Service reports | | Cleaning reports | |
| Date | HCC results | Legionella results | Remedial action | Date | Comments | Date | Comments |
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Attachment 1 continued: Audit Observations

**Audit period: CTS:**

|  |  |  |  |
| --- | --- | --- | --- |
| Question | Source of information | Response | Comments/Details |
| 1. Does the plan incorporate the DH risk management plan template? |  |  |  |
| 1. Is the plan intended to address the risks of system, as distinct from the risks of the cooling tower/s? |  |  |  |
| 1. Is the plan intended to address the risks of other systems? |  |  |  |
| 1. According to the plan, what is the overall risk classification category of the system? |  |  |  |
| 1. Does the plan include an operational program? |  |  |  |
| 1. Is the operational program being implemented? |  |  |  |
| 1. Does the plan include a communication strategy? |  |  |  |
| 1. Does the plan include a positive Legionella test notification list? |  |  |  |
| 1. Has the plan been endorsed by the owner of the land and/or of the system? |  |  |  |
| 1. Are arrangements in place to review the plan annually (according the requirements of the Public Health and Wellbeing Act)? |  |  |  |

Attachment 2: Example of measures to improve a system and address the specified risks.

|  |  |  |
| --- | --- | --- |
| Risk | Assessment | Action |
| Stagnant water | * Presence of deadlegs * System is idle for greater than one month | * Recirculating pump fitted * Deadlegs mapped * Deadlegs activated * Deadlegs removed * Increased cleaning frequency |
| Nutrient growth | * Exposure of wetted surfaces to sunlight * Temperature above 20°C * Presence of biofilm | * Installation of devices to protect wetted surfaces (e.g. louvres or screens) * Use of biodispersants and corrosion control agents * Monitoring temperature * Increased cleaning frequency |
| Poor water quality | * Presence of solids/state of cleanliness * Presence of Legionella * High levels of micro organisms (HCC) | * Increased cleaning frequency * Increased microbial monitoring for HCC and Legionella * Changes to biocide, biodispersant, corrosion inhibitor dosing regime * Installation of auto dosing devices * Installation of auto bleed devices * Installation of side stream filters * Identification of set sampling points |

|  |  |  |
| --- | --- | --- |
| Risk | Assessment | Action |
| Deficiencies in the cooling tower system | * Review of system design in accordance with AS/NZ 3666 * Discussion about system age | * Installation or replacement of drift eliminators * Upgrade or replacement programs * Preparation of operating and maintenance programs |
| Location of, and access to, a cooling tower or cooling tower system | * Is the system located near an acute health or aged care facility? * How many people have access to the cooling tower system and its surrounds? | * Increased maintenance program * Installation of warning signs * Limit access to cooling tower system * Development of OH&S protocol for workers who may access the cooling tower system * Relocation of cooling tower system. |
| Any matters included in a report delivered to the owner of the land for the purposes of section 92(2)(c) of the Act. | * The owner of the land receives a report from the Secretary or from any person engaged by the owner of the land or the owner of the cooling tower system that control measures used in respect of the cooling tower system are inadequate or require improvement | * Remedy the inadequacies * Make the improvements required. |
| The preparation, content, review and audit of a risk management plan | * Complete section 6 of attachment 1 of the guide to developing risk management plans for cooling tower systems “Monitoring and Review” | * Evidence that section 6 of attachment 1 of the guide to developing risk management plans for cooling tower systems “Monitoring and Review” is completed. |
| The construction, installation, operation, maintenance, repair, service and testing of a cooling tower system | * \*Where is the cooling tower system labelled with the CTS registration number? | * Evidence that the cooling tower system is labelled with the registration identification number |
| Control measures used in respect of a cooling tower system | * How do you respond to a HCC result >200,000 cfu/ml? * How do you respond to Legionella being detected in a sample? | * Evidence that the DH High HCC Remedial Flow Chart or the High HCC Alternative Remedial Flowchart was followed after a HCC result >200,000 cfu/ml. * Evidence that the DH Legionella Detection Flowchart was followed after a detection of Legionella. |

# Attachment 3: Example of completed audit certificate

**Public Health and Wellbeing Act 2008**

Public Health and Wellbeing Regulations 2019

###### RISK MANAGEMENT PLAN AUDIT CERTIFICATE

|  |  |
| --- | --- |
| Registration number of cooling tower system (i.e. CTS number) | CTS 9999 |
| Registration site identification number (i.e. Site ID number) | SID 7023 |
| Address of cooling tower system | 123 System Rd., COOLTOWN 3999 |
| Name of owner of the land | Users CTS Pty Ltd |
| Name of person who commissioned this audit | Fred Simpson, Maintenance Supervisor, ACME P/L |
| Audit period applicable to this certificate | 25/3/2009 – 24/3/2010 |
| Q1. Does the risk management plan comply with section 91(2) of the Public Health and Wellbeing Act 2008?  If no, state the reasons why you hold that opinion | Yes |
| Q2. Is the risk management plan being implemented?  If no, state the reasons why you hold that opinion | No  The reason that the Auditor is of that opinion is set out on page 2. |
| Q3. Was the risk management plan reviewed within the 12 months prior to the audit date? | No  No documents were sighted showing a review of RMP had taken place. |
| Name of auditor | Given name Surname  Albert Ross |
| Approved auditor number | 007 |
| Signature of auditor |  |
| Date of audit | 24 March 2010 |

**Attachment 3 (continued)**

**Example of an attachment to a risk management plan audit certificate**

Risk management plan for CTS 9999 at 123 System Rd, Cooltown 3999

Date of audit: 24 March 2010

The Auditor had regard both to the original risk management plan dated 1 June 2002 and to an amended version dated March 2008.

The Auditor is of the opinion that the risk management plan is not being implemented because:

* Cleaning frequency – Documentation was not provided to show that cleaning occurred between the commencement of the audit period on 25/3/2009 and 10/3/2010.
* Service frequency – Documentation was not provided to show that servicing occurred during the periods: 12/4/2009 to 11/09/2009, and 9/12/2009 to 28/2/2010.
* *Legionella* testing – Documentation was not provided to show that *Legionella* testing occurred between 11/9/2009 and 28/2/2010.
* HCC testing – Documentation was not provided to show that HCC testing occurred between 12/4/2009 and 11/9/2009.
* Drift eliminators – Documentation was not provided to show that the drift eliminators are high efficiency, and that they were inspected and maintained every 6 months.
* Inspection frequency – Documentation was not provided to show that inspections were carried out weekly.

*Referral of certificate under Section 93(6)*

To meet the requirements of Section 93(6) of the *Public Health and Wellbeing Act* 2008, the information contained in this certificate has been sent to the Legionella Team, Department of Health.

Attachment 4: RMP audit summary template

Notification of all audits (compliant and non-compliant audits) must be notified to the department using the specified excel spreadsheet which is available from the department’s website at:

<https://www2.health.vic.gov.au/about/publications/formsandtemplates/completed-compliant-rmp-audit-summary-template>

**Note: Do not send duplicate audits (create a new spreadsheet for new notification(s) to be sent in).**

Name the file with your auditor number and the date you are sending it (using this date format- yyyymmdd eg **auditor 199 sent 20100129**) then email it to [legionella@health.vic.gov.au](mailto:legionella@health.vic.gov.au)on a weekly basis.

1. At the time of printing, the department had not prescribed any other matters under sub section (c). [↑](#footnote-ref-1)
2. At the time of printing, there is no approved form for a risk management plan. A risk management plan is required to contain the information specified in the Act. [↑](#footnote-ref-2)
3. The department has developed flow charts (Attachments A, B & C) that can be followed in the event of an unsatisfactory result. A risk management plan can nominate to follow the flowcharts or describe a different response. A risk management plan may nominate to follow Flow Chart A and Flow Chart B in response to a high HCC result. In the event of a high HCC following either flow chart will result in a compliant audit. [↑](#footnote-ref-3)
4. There has been a request for clarification on the interpretation of ‘monthly’. The department’s position is that ‘monthly’ means that an action, such as a cooling tower system service, must be undertaken **at least** **once each calendar month**, with a total of 12 actions required per year. For example, 1st service performed on 10th January so next service is due on any day in February (or by 7th March to have occurred within prescribed time tolerance).

   Frequencies prescribed by risk management plans do vary from site to site and there will be some cases where ‘monthly’ is defined by a risk management plan as a 30/31 day period. In this case, it is appropriate for an auditor to check that the action occurred within each 30/31 day period, for example, 1st service performed on 10th January so next service is due by 10th February (and by 17th February to have occurred within prescribed time tolerance.) [↑](#footnote-ref-4)