

Guidelines for auditing risk management plans for cooling tower systems

Department of Human Services (Victoria)
Environmental Health Unit
Legionella Program

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This Guideline incorporates amendments of 1 March 2005 to the Building Act 1993 by the Building (Cooling Tower and Plumbing) (Amendment) Act 2004.

Note: This document replaces Guidelines dated 13 April 2004

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1.0 Introduction

1.1 Purpose

The *Guidelines for auditing risk management plans for cooling tower systems* are intended to assist approved auditors in their role of auditing of a risk management plan (RMP) for a cooling tower system (CTS). The document describes how the auditing role came to be, its statutory functions and what to do in the event of detecting a non-conformance issue in Victoria.

Most importantly, it sets out the procedure to be employed in the auditing process. Following this procedure is a condition of remaining certified as an approved auditor.

1.2 Government strategy

In November 2000, the *Building Act 1993* was amended, requiring registration of all CTSs with the Building Commission. The amendments also included the mandatory preparation of RMPs for all CTSs, review of the RMP at least once every registration period and annual independent auditing of all RMPs.

Registration is an essential part of the strategy, assisting investigations of cases of Legionnaires' disease by locating towers and allowing direct communication with owners and managers of systems about *Legionella* control.

To complement the changes to the Building Act, a suite of new regulations was introduced in March 2001:

- The **Health (Legionella) Regulations 2001** introduced more stringent testing and maintenance standards for CTS and warm water systems.
- The **Plumbing (Cooling Tower) Regulations 2001** amended the Plumbing Regulations 1998 and prescribed standards for carrying out plumbing work on CTS. The series of standards (AS/NZS 3666.1, .2 & .3) define the minimum requirements for any installation, alteration or repair of a cooling tower.
- The **Building (Cooling Tower Systems Register) Regulations 2001** prescribed fees and information to be contained in an application to register a CTS, as well as information to be contained in the public CTS register.
- The **Building (Legionella Risk Management) Regulations 2001** specified matters that must be covered in an RMP.

The **Health (Infectious Diseases) Regulations 2001** require notification to the Department of Human Services of cases of Legionnaires' disease, within 24 hours of a clinically suspected case. These regulations also prescribe standards for the water quality of public spa pools, which have also been associated with cases of Legionnaires' disease.

In November 2001, the Department of Human Services released ***A Guide to Developing Risk Management Plans for Cooling Tower Systems***. It was

designed to assist industry in the development of RMP to control *Legionella* growth in CTS, particularly where the system was relatively simple in design and construction.

An industry ***Code of Practice for Water Treatment Service Providers (Cooling Tower Systems)*** has also been developed. The Code, launched in March 2002, serves as a best practice standard for the water treatment industry, to ensure consistent and accountable service and reduce potential occupational and public health risks from *Legionella*.

The government strategy also includes targeted inspections of cooling tower systems by an Environmental Health team, which:

- provides an enhanced technical advisory service to business and industry
- undertakes routine inspections of CTSs, to monitor industry compliance with the new registration, risk management, auditing, maintenance and testing requirements
- provides an enhanced case and outbreak investigation service.

1.3 Registration, compliance, inspections and audits

The ***Building (Legionella) Act 2000*** amended the **Building Act 1993**, creating the requirement for registration of all CTSs, the preparation of RMPs and their review every registration period, and regular audit of RMP. The same amendment also introduced the role of approved auditors for this purpose.

The **Building (Legionella Risk Management) Regulations 2001** specify the risks that an RMP must address.

The **Building (Legionella Risk Management) (Amendment) Regulations 2002**:

- specify the documents required to be inspected by an auditor
- prescribe the form of, and the details to be contained in, an RMP audit certificate.

The CTS register established at the Building Commission has 4869 cooling tower systems registered¹. The systems comprise of 5811 cooling towers at 2767 sites throughout Victoria. Every registered CTS is given a number and each site, a site identification number. The registration fee depends on the number of cooling towers within a system.

The owner must ensure that an annual audit and review are conducted for each system. It is preferable that the cooling towers belonging to each system are clearly identified *prior* to the audit. System owners and industry are encouraged to use the registered CTS numbers in all associated documentation. If this is not done prior to the audit, the auditor may need to sort out the material presented before commencing the actual audit. The auditor should also be provided with the site identification number for the registered CTS being audited; this information is useful for administrative purposes, particularly where there are multiple systems on the one site.

The Department of Human Services is responsible for following up on audits of systems found to be non-compliant, or systems that have not been audited within the required time.

¹ As at 3 February 2005

1.4 Building Act 1993 amendments as of 1 March 2005

Further amendments were made to the Building Act 1993 by the Building (Cooling Towers and Plumbing) (Amendment) Act 2004. The amendments of interest to auditors mainly relate to:

- definition of when CTSs are in operation
- ability for the owner to synchronise registration periods for a number of CTSs via the Building Commission
- reviews of RMPs now required every 12 months
- defined "trigger" events which require RMPs to be reviewed
- auditors to also audit whether a review of an RMP was conducted within 12 months prior to the audit period end date
- audit periods to be lengthened to annually , and in effect become continuous
- a copy of the information in certificates of audit now to be sent to Secretary to DHS within 7 days

These amendments to the Act will come into operation on 1 March 2005 and have been incorporated into this version of the Guidelines for auditors.

Not of direct relevance to auditors, the other amendments to the Act relate to:

- technical amendments in relation to issuing of registration certificates after expiry of registration, and validation of previous registrations where application was made out of time; these came into effect on 15 December 2004
- changes concerning plumbing certificates and miscellaneous plumbing matters; these changes will come into effect when proclaimed.

1.5 Legislation links

Online access to the legislation referred to above may be conducted:

- indirectly via the Legionella website:
www.health.vic.gov.au/environment/legionella
- or, directly via the Victorian Legislation and Parliamentary Documents website: www.dms.dpc.vic.gov.au/

2.0 Risk management plans

2.1 The five specified risks

Section 75EA of the Building Act 1993 requires the owner of any land on which there is a CTS to take all reasonable steps to ensure that an RMP is prepared for that system. If a site has multiple systems, an RMP must be prepared for each system.

An RMP identifies the risks associated with the use of a CTS. It sets out the steps for managing the risks and ensuring compliance with any requirements relating to the system under the Building Act 1993 and the Health Act 1958.

The risks an RMP must address² are those associated with:

- a) **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; and
- b) **Nutrient growth**, including—
 - (i) presence of biofilm, algae and protozoa in a cooling tower system; and
 - (ii) water temperature within a range that will support rapid growth of microorganisms in a cooling tower system; and
 - (iii) exposure of the water of a cooling tower system to direct sunlight; and
- c) **Poor water quality**, including the presence of solids, *Legionella* and high levels of microorganisms in a cooling tower system; and
- d) **Deficiencies in a cooling tower system**, including deficiencies in the physical design, condition and maintenance of the system; and
- e) **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.

2.2 Structure of a risk management plan

Section 75E(2) of the Building Act does not require an RMP to follow any particular structure. However, the *Guide to Developing Risk Management Plans for Cooling Tower Systems* (the Guide) provides a framework and template for undertaking a risk assessment and addressing the specified risks. Although RMP are not *required* to follow this format, the majority of RMP authors follow the template in the Guide.

An RMP would normally 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
- 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.

It is important that timelines be specified for all actions referred to in an RMP. If an RMP does not include a timeline for a particular action or repair, auditors must assume the works should have been completed within the period being audited.

² Specified in the Building (*Legionella Risk Management*) Regulations 2001

For a large site containing a number of CTSs, there may be only one RMP for the site, containing separate risk assessments for each CTS. Operational procedures and/or system improvements for all CTSs may be consolidated into the one document. In this case, the auditor will need to sort out the documentation that relates to the RMP for each CTS, prior to conducting the audit.

As previously mentioned, it is desirable that all the documents and reports have reference to the registered CTS number, are dated and are signed off.

2.3 Review of risk management plans

Section 75EB(1) of the Building Act now requires the review of an RMP at least every 12 months. The review of an RMP is no longer related to the registration period of a CTS.

If the RMP has been reviewed in the 12 months prior to the audit period end date and changes made to the RMP, the auditor will need to sort out the documentation of service, testing and repair records in relation to each respective RMP (if there is more than one).

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

- the operation/maintenance of a system and/or
- the system itself.

Also, the new amendments to the Building Act 1993 under Section 75EB(2) now define "trigger" events requiring a review of the RMP to be made.

If the review results in changes to the operation/maintenance (for example, changes in the frequency of servicing/testing/cleaning), it would be expected that some lead-up time is specified before these changes commence. The relevant RMP for this type of change to be audited against would be:

- the RMP up to the review
- the RMP following the review and up to the audit period end date.

Under these circumstances and for this type of issue, it is not appropriate for the new RMP to be made retrospective.

Sometimes, **a review may result in a change to the RMP regarding an upgrade to a system** (for example, the replacement of a cooling tower, installation of new drift eliminators or installation of automatic equipment such as bleed control or dosing units). It may have been specified in the earlier RMP that these changes were intended within the audit period, but there may have been budgetary, supply or labour problems. Hence, this should not serve as a basis for an auditor's finding of non-compliance in the implementation of the RMP.

It is also desirable that the review be dated and signed off. Whether an RMP is dated or signed off, an auditor can only audit against the RMP and documents presented for audit.

2.4 “Trigger” events requiring reviews of risk management plans

Under Section 75EB (1) & (2), RMPs are now to be reviewed as soon as is practicable after the occurrence of any of the following triggering events:

- Legionella is detected in the system on 2 or more occasions in any period of 12 months
- the owner is given written advice by the Secretary to DHS that a case of Legionnaires’ disease is associated with the system
- the owner receives a report from the Secretary to DHS, or from any person engaged by the owner or the owner of the system, that control measures used in respect of the system are inadequate or require improvement
- there is a significant change in any of the environmental conditions under which the system operates
- the owner receives an audit certificate that states that the plan does not address the risks specified in the regulations

While the auditor is not required to establish for the purposes of the audit whether an RMP was reviewed due to any of the “triggers”, the auditor may provide written observations on failure to conduct a review of the RMP due to any of the above “triggers”.

The audit is more focussed on the issue whether a review of the RMP occurred within 12 months of the audit period end date. However it could well be that any of the events listed above resulted in a review having taken place within that interval.

It is the view of DHS that the term “owner” referred to in these “trigger” events extends to the owner’s representative or agent.

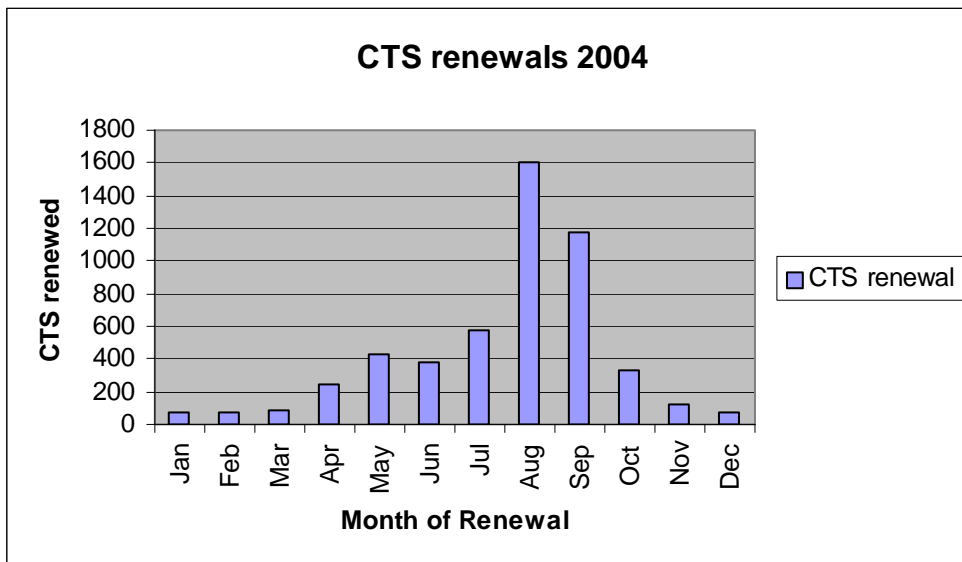
3.0 Legislative requirements for auditing risk management plans for cooling tower systems

Under Section 75FA of the Building Act, the owner of any land on which there is a CTS is responsible for taking all reasonable steps to ensure that an audit of the RMP is conducted annually. An audit is no longer linked to the interval within three months of the registration renewal date. This amendment will probably enable applications for renewals of registration to occur on time, overcoming problems associated with waiting for audits to be completed prior to applications for renewal. This change will also have the effect of making audits continuous.

The responsibility for arranging an audit may be delegated to the tenant, or other agent who may be more familiar with the CTS, its operation and the RMP.

An audit must now occur annually.

Although the timing of audits has been removed from renewal of registrations, a **guide for auditors as to when to expect demands for audits** is supplied in the following graph, showing the number of CTSs registered each month in 2004:



Note that this graph of registration renewals may be somewhat misleading to auditors as under the older legislation, audits were required within the three months prior to the registration expiry date. Hence some "smoothing out" of the peak demand as shown by the graph above has already occurred with audits. Also this data will vary when new systems are registered, older systems decommissioned and existing systems become synchronised in registrations.

DHS is responsible for following up situations where reviews and audits have not been conducted within the relevant timelines.

4.0 Becoming an approved auditor

4.1 Certification of approved auditors under the Building Act 1993

Part 5B, Division 3 — Approved Auditors (Sections 75G – 75H) of the Building Act outlines the appointment, obligations and functions of approved auditors.

Section 75GA of the Building Act requires that a person must not conduct a risk management plan audit unless he or she is an approved auditor. **A penalty of up to \$6,000 applies to offences against this section.**

In order to become an approved auditor, an individual must be certified as an approved auditor by the Secretary to the Department of Human Services.

As stated in Section 75GB of the Building Act, the Secretary to DHS may certify in writing that a natural person is competent to conduct a risk management plan audit. Once a person has been certified as an auditor, they will receive a Certificate of Approval to act as an approved auditor.

To be considered for certification, the applicant must demonstrate that an approved training program has been satisfactorily completed. **DHS in conjunction with Northern Melbourne Institute of TAFE (NMIT) has developed a training program that is a prerequisite to becoming certified as an approved auditor of RMP for CTS.**

On completion of the training program, individuals must apply to DHS for certification.

An application form is available at www.health.vic.gov.au/environment/legionella

There is currently no fee for certification, other than costs associated with the NMIT training programs. If fees are proposed in future, a regulation to prescribe the fee will be developed and distributed for comment to interested parties, before implementation.

In attendance at this course, individuals will need to demonstrate skills and knowledge in the following areas:

- quality concepts
- auditing of documents
- the link between *Legionella* in cooling tower systems and Legionnaires' disease
- the design and terminology used in cooling tower systems
- legal requirements applying to all parties
- cooling tower system risk management plans
- audit approach and methodology.

4.2 Conditions of certification

Section 75GC of the Building Act allows the Secretary to DHS to impose any conditions on the certification considered appropriate. The certification may also specify the duration for which the approval has been granted.

Certification will normally require that all information gained in the course of the audit process is treated as confidential and not disclosed to any other person, other

than in the form of audit certificates to nominated officers of DHS, or the person who commissioned the audit.

Section 75GC of the Building Act also requires an auditor to comply with any conditions imposed by the certifying body (the Secretary).

4.3 Revoking certification

Under Section 75GF of the Building Act, the Secretary may, after giving a person a chance to be heard, revoke a person's approval to act as an approved auditor if the Secretary is satisfied that one or more of the following applies:

- The certification was granted on the basis of fraud, misrepresentation or the concealment of facts.
- The person has failed to comply with any requirement imposed by the Act on approved auditors.
- The person is not sufficiently competent to carry out risk management plan audits.
- The person has been guilty of any fraudulent conduct in carrying out an audit.
- The person has not satisfactorily carried out 2 or more risk management plan audits.

4.4 Conflict of interest

Section 75GE of the Building Act does not allow an auditor to conduct audits of a RMP for a CTS if the auditor is an 'interested person', or an employee or officer of an interested person.

An interested person is defined in the Act as:

- a) A person who owns the system
- b) The owner of the land on which the system stands
- c) A person who has the management and control of the system
- d) A person who was involved in the construction or installation of the system
- e) A person who was involved in the maintenance or testing of the system during the period covered by an audit
- f) A person who has written, or has assisted in the writing of, a risk management plan for the system.

Also, a person must not conduct an audit of a RMP if they are an employee of a person who has written, or assisted in preparing, that plan.

If an auditor is unsure whether they are an interested person for a particular audit, they may contact DHS to discuss the matter.

A penalty of up to \$6,000 applies to offences against this provision.

5.0 Conducting an audit

5.1 Commissioning an audit

Responsibility for ensuring that an audit is undertaken lies with the owner of the land on which the CTS is located. However, any person can commission an audit provided they are able to provide the auditor with a copy of the RMP and all relevant records and documentation supporting its implementation. In practice, audits will generally be commissioned by owners (or their agents) of the land on which a CTS is located, or by owners or operators of the systems.

Auditors no longer need to notify DHS when they accept a commission to conduct an audit. DHS plans to introduce an electronic, fully automated notification system for use by auditors only, via a new website (to be launched later in 2005).

It is the view of DHS that the maximum time between the audit period end date and the completion of the audit (ie the signing of the certificate) should not be longer than 3 months.

5.2 Components of an audit

Under Sections 75F, FA & FB of the Building Act, an audit must determine whether the RMP:

- addresses the specified risks outlined in the Building (Legionella Risk Management) Regulations 2001, and
- is being implemented, and
- was reviewed in the 12 months prior to the audit period end date.

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

The RMP audit system is designed to be a paper audit and therefore can occur off-site. The Building Act makes specific mention that an auditor is not required to physically inspect the CTS.

However, on-site audits may be useful where:

- the RMPs are complex
- there are a large number of implementation items
- there are several CTSs
- there are a number of RMPs applicable to the audit period for a CTS.

5.3 Scope of the audit

From the documents supplied to an auditor, the Building Act requires an auditor to determine whether the RMP:

- addresses the specified risks outlined in the Building (Legionella Risk Management) Regulations 2001, and
- is being implemented, and
- was reviewed in the 12 months prior to the audit period end date.

The auditor is required to examine records and other relevant documentation, to determine whether the specified risks have been addressed, whether the plan is being implemented and whether a review of the RMP has been conducted in the 12 months prior to the audit period end date

The documents supplied for audit must contain the RMP for a CTS or RMPs applicable to the CTS over the audit period. All RMPs need to be dated. Other documents needed for the audit include:

- statement of review/s conducted. This should bear the date/s of the review/s, who conducted it/them and any changes made to the RMP. Some reviews will be conducted as a result of a "trigger" event
- service, inspection, cleaning and other maintenance reports
- test results: microbiological and, where applicable, chemical
- statements of any CTS shut down periods involved
- documentation of decommissioning of a CTS if it has occurred.

5.4 Period of audit

The period of the audit shall not be greater than 12 months. It is designated as the interval **dated back to the end date of the previous audit**. Note that the end date of the previous audit is **not** taken from the date of the last audit certificate sign-off.

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, DHS should be contacted to discuss the particular issue.

Some audit periods may cover intervals where a CTS was shut down. If a CTS is shut down for any length of time, it is still deemed to be "in operation" and the auditor would need to be provided with documentation stating the interval of shut down. This means that the audit period would include any such shut down interval/s, but 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 CTS, should be defined in the RMP.

Other audit periods may involve the decommissioning of a CTS and hence a shortening of the audit. The Act now has a definition of a CTS being operational unless it is decommissioned or removed **and** the Building Commission has been notified. The true date of decommissioning can be obtained from this definition and will be needed to determine the actual audit period end date.

Auditors need to be clear on the meaning & proper use of the following terms:

- "in operation"
- "shut down"
- "decommissioned".

5.5 Changes of ownership during period of audit

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

Nevertheless, the auditor can only work on the RMP/s and documents supplied. Where there is doubt on this matter, the auditor is advised to contact DHS.

5.6 Addressing the five specified 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 five specified risks have been addressed, auditors should read the RMP and look for references to these risks.

The RMP should list the risk, together with a brief assessment of the likelihood and impact of the risk. Templates in Attachment 1 of ***A Guide to Developing Risk Management Plans for Cooling Tower Systems*** provide an example of this listing.

5.7 Examples of addressing the five specified risks

The following list provides **examples** of various measures available to owners to improve a 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 system.

Risk	Assessment	Action
Stagnant water	<ul style="list-style-type: none"> • Presence of deadlegs • System is idle for greater than one month 	<ul style="list-style-type: none"> • Recirculating pump fitted • Deadlegs mapped • Deadlegs activated • Deadlegs removed • Increased cleaning frequency
Nutrient growth	<ul style="list-style-type: none"> • Exposure of wetted surfaces to sunlight • Temperature above 20°C • Presence of biofilm 	<ul style="list-style-type: none"> • Installation of devices to protect wetted surfaces (<i>eg</i> louvres or screens) • Use of biodispersants and corrosion control agents • Monitoring temperature • Increased cleaning frequency
Poor water quality	<ul style="list-style-type: none"> • Presence of solids/state of cleanliness • Presence of <i>Legionella</i> • High levels of micro organisms (HCC) 	<ul style="list-style-type: none"> • Increased cleaning frequency • Increased microbial monitoring for HCC and <i>Legionella</i> • 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
Deficiencies in the cooling tower system	<ul style="list-style-type: none"> • Review of system design in accordance with AS/NZ 3666 • Discussion about system age 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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? 	<ul style="list-style-type: none"> • 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.

5.8 Forming an opinion about the implementation of a risk management plan

DHS conducted a number of audits before the approved auditor program was developed. Based on these experiences, most of an auditor's time is spent determining whether the RMP has been implemented.

The audit worksheet contained in Attachment 1 provides auditors with an optional tool to record whether actions in the plan are being implemented.

In order for an auditor to form an opinion that an RMP is being implemented, they must view evidence that **all** of the actions in relation to the five specified 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 audit period.

Some RMP 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 legislation requires RMPs to be reviewed at least annually, and therefore if the review has necessitated changes to the RMP, the review becomes the new RMP. Other RMPs 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 the auditor to form the opinion that the plan is not being implemented.

To determine whether an RMP has been implemented, the following supporting documentation should be examined:

- **RMP**. The starting reference of an audit is the RMP itself. Check that it clearly identifies the cooling tower system to which it applies and that it is signed off and dated by the owners.
- the **RMP** may have been **reviewed** during the period of audit and may have had some changes made. All documents (such as for service, maintenance, cleaning, inspections, testing and improvements) pertaining to the RMP will have to be sorted out for each respective RMP.
- a **variation to maintenance** of a CTS may have been granted under **Regulation 24 of the Health (Legionella) Regulations 2001**. This should be attached to or incorporated into the RMP. The DHS official letter will state what variations have been granted, the conditions under which they were granted and the date from which this was made effective. Such variations are sometimes sought by industries associated with continuous production, where interruptions to the CTS (for attention such as cleaning) cannot be readily made.
- **bacterial test results** (HCC and where applicable, *Legionella*)
- **chemical parameters test results**
- **CTS service reports**
- **CTS 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.

Difficulties may be presented in auditing of parts of an RMP that have no bearing on any of the five specified risks. Generally, an auditor should only be auditing an RMP against the five specified risks. An example of this is where cosmetic changes to the CTS were intended to be performed during the audit period to make the CT appear more acceptable to surrounding tenants.

Difficulties are also sometimes encountered by auditors in relation to **recommendations** contained in an RMP. The question posed in these circumstances is whether the recommendation is auditable. Auditors are generally unable to audit against recommendations unless a recommendation clearly has a statement of intent with timelines for implementation. The auditor should point out as an observation (in the attachment to the audit certificate) that any recommendations found in the RMP that do not have a clear statement of intent and/or with timelines do not meet the requirements of DHS for RMPs. DHS can then follow-up of these reported observations.

DHS has distributed a **site kit** to CTS owners, designed to store and collate all relevant records and paper work for auditing.

5.9 Compliance with the Health (Legionella) Regulations 2001

Auditors are not required to audit RMP against the Health (Legionella) Regulations 2001, unless the RMP itself specifically states this.

If an auditor observes any matter that may potentially affect health or safety, the department suggests it be discussed with the client or person who has commissioned the audit. Alternatively, the auditor may choose to issue a written observation outlining the issue.

If an auditor becomes aware of any issue believed to pose a serious threat to public health, for example the detection of *Legionella* with no follow-up remedial action, the matter should be reported to the Legionella Program.

5.10 Forming an opinion about compliance in relation to implementation

The following steps **must** be adhered to by auditors, so that consistent results are achieved:

1. List all actions required by RMP.
2. Apply prescribed time tolerances to all actions listed in RMP.
3. Check all the documentation provided for the audit, to establish the number of times each action has occurred within the audit period.
4. Examine the extra requirements/actions where a variation under Regulation 24 has been granted. Time tolerances are to be exercised and any non-conformances reported as observations to the department.
5. Apply a 90 per cent compliance rate to each action.
6. Determine if the RMP has been implemented **and hence is compliant over the audit period.**

Example using the six steps:

***Step 1. List all actions required by the RMP.**

For example, an RMP 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 2 months (6 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)

The auditor must examine the audit period to determine the number of times each type of action was required in that period by the RMP.

*** Step 2. Apply prescribed time tolerances to all actions listed in the RMP.**

Difficulties have been observed in obtaining regular CTS services on time, due to the impacts of short months, long weekends, holiday periods, and significant problems such as key personnel being on leave or service vehicle/equipment breakdowns. This has resulted in a number of non-compliant audits in the past.

The use of a system of time tolerances will 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 RMP.

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

For auditing purposes only, the prescribed time tolerances for actions are:

Interval	Tolerance
6 monthly / bi-annually	+1 month
3 monthly / quarterly	+2 weeks
2 monthly	+10 days
monthly / 4 weekly	+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

It follows therefore (as an example) that a quarterly action must occur within three calendar months, plus two weeks into the following month. Likewise, a monthly action must occur at least within the following calendar month, plus 7 days.

Note that this monthly example would not result in a compliant audit (if taken to the extreme) if only 6 services were provided over a year, when there should indeed have been 12 services. Step 5 of these Guidelines provides for a minimum 90% compliance rate for any action listed in the RMP, 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 RMP.

* **Step 3.** Check all the documentation provided for the audit to establish the number of times each type of action has occurred during the audit period.

* **Step 4** Examine the extra requirements/actions where a variation under Regulation 24 of the Health (Legionella) Regulations 2001 has been granted

- Prescribed Time Tolerances are to be exercised here to include any extra actions for maintenance required, as a condition of the variation being granted.
- Where there is any non-conformance of any of these extra conditions or actions, record these as **observations** for forwarding to the owner and DHS.

* **Step 5.** Apply a 90 per cent compliance rate to each type of action³

Some industry audits are based on achieving at least a 90 per cent compliance rate, followed by a note on the non-compliant issues. This approach is now being applied in the auditing process for RMPs.

EXAMPLE:

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

³ Also applies to any extra actions imposed by the granting of a Regulation 24 variation

Using the example in Step 1:

Action	Number of times specified in RMP (per annum)	90% compliance (with time tolerances exercised)
Tower cleans	4	4
Monthly servicing	12	11
Monthly inspections	12	11
Monthly HCC testing	12	11
Bi-monthly <i>Legionella</i> testing	6	5
Removal of 2 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 6. Determine whether the RMP has been implemented and hence is compliant over the audit period.**

SUMMARY: In adopting this approach to auditing of RMP, it is required that the auditor establishes whether:

- all five specified risks are addressed by the RMP 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 RMP was conducted within 12 months prior to the audit period end date

For an audit, failure of the RMP to comply with any of these three points will result in a finding of non-compliance.

5.11 Completing a risk management plan audit certificate

Once an auditor has formed an opinion as to whether or not the RMP has addressed the specified risks and/or whether the RMP has been implemented and/or whether the RMP was reviewed within 12 months prior to the audit period end date, the auditor must provide a certificate to the person who has commissioned the audit (Section 75FB of the Building Act).

The certificate issued by the auditor must be in the form prescribed in the Building (Legionella Risk Management) Regulations 2001 and contain all the information required. To obtain a copy of a blank certificate, refer to the DHS Legionella web site: www.health.vic.gov.au/environment/legionella

A completed example is contained in Attachment 2.

Non-compliant audits

If an auditor forms an opinion that the RMP has **not** addressed the five specified risks and/or has **not** been implemented and/or a review of an RMP was not conducted within the 12 months of the audit period end date, in addition to providing a certificate to the person who commissioned the audit, **a copy must be forwarded to the Secretary within seven days**. The auditor must include in the certificate the reasons why this opinion was formed.

Copies of certificates for non-compliant audits should be emailed to: lrmp@dhs.vic.gov.au

Alternatively, these can be faxed to DHS on 03 9637 4657, or sent by mail to:

The Secretary
Department of Human Services
GPO Box 1670
Melbourne 3001
Attention: Manager Legionella Program

Compliant audits

Where an auditor is satisfied that the RMP does address the risks, has been implemented and a review of the RMP was conducted within the 12 months prior to the audit date, the auditor may still wish to include as observations a list of actions that were found to be non-compliant and pass these on to the owner and/or DHS.

Regardless, ***a summary for the data for all compliant audits completed must now be included in a Microsoft Excel spreadsheet and sent to DHS by email or fax on a weekly basis***. For a copy of the format required, refer to Attachment 3 of these Guidelines.

Significant breaches

The auditor may report as observations any significant breaches discovered during the audit to the department. This would include the lack of remedial actions to adverse events such as a high HCC count, the detection of Legionella in the CTS or the failure to conduct a review of the RMP following a defined "trigger" event.

It also includes situations where conditions or extra actions imposed on the granting of a Regulation 24 variation under the Health (Legionella) Regulations 2001 have been found to be non-compliant. After exercising the prescribed time tolerances, any non-conformance of these conditions or extra actions are to be reported as an observation to the department.

Attachment 1: Audit worksheets

APPLICANT: _____ POSITION: _____

LAND OWNER: _____

SITE ADDRESS: _____ CTS: _____

AUDIT PERIOD: _____

Does the RMP address the risks specified in the Building (Legionella Risk Management) Regulations 2001?			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 worksheets

Does the RMP address the risks specified in the Building (Legionella Risk Management) Regulations 2001? (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 Building (Legionella Risk Management) Regulations 2001? (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 <i>Legionella</i> ;				<i>Legionella</i> testing frequency			
3.3 high levels of microorganisms;				HCC testing frequency			

Attachment 1 continued: Audit worksheets

Does the RMP address the risks specified in the Building (Legionella Risk Management) Regulations 2001? (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 worksheets

Does the RMP address the risks specified in the Building (Legionella Risk Management) Regulations 2001? (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 Building (Legionella Risk Management) Regulations 2001?		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 Post-audit	Travelling	Audit

Attachment 1 continued: Information not forming part of audit

Audit period:

CTS:

Question	Source of information	Response	Comments/Details
13. Does the plan incorporate the DHS risk management plan template?			
14. Is the plan intended to address the risks of system, as distinct from the risks of the cooling tower/s?			
15. Is the plan intended to address the risks of other systems?			
16. According to the plan, what is the overall risk classification category of the system?			
17. Does the plan include an operational program?			
18. Is the operational program being implemented?			
19. Does the plan include a communication strategy?			
20. Does the plan include a positive <i>Legionella</i> test notification list?			
21. Has the plan been endorsed by the owner of the land and/or of the system?			
22. Are arrangements in place to review the plan annually (according the requirements of the Building Act)?			

Attachment 2: Example of a completed audit certificate

Building Act 1993

Building (Legionella Risk Management) Regulations 2001

RISK MANAGEMENT PLAN AUDIT CERTIFICATE

Registration number of cooling tower system (ie CTS number)	CTS 9999
Registration site identification number (ie 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	25/3/2004 – 10/3/2005
Q1. Does the risk management plan comply with section 75E(2) of the Building Act 1993? 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 period end date, applicable to this certificate?	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 2005

Attachment 2 continued (page 2):

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 2005**

The Auditor had regard both to the original risk management plan dated 1 June 2002 and to an amended version dated March 2003.

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

1. Cleaning frequency – Documentation was not provided to show that cleaning occurred between the commencement of the audit period on 25/3/04 and 10/3/05.
2. Service frequency – Documentation was not provided to show that servicing occurred during the periods: 12/4/04 to 11/09/04, and 9/12/05 to 28/2/05.
3. *Legionella* testing – Documentation was not provided to show that *Legionella* testing occurred between 11/9/04 and 28/2/05.
4. HCC testing – Documentation was not provided to show that HCC testing occurred between 12/4/04 and 11/9/04.
5. 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.
6. Inspection frequency – Documentation was not provided to show that inspections were carried out weekly.

Referral of certificate under Section 75FB (3)

To meet the requirements of Section 75FB (3) of the Building Act 1993, a copy of this certificate has been referred for action to the Program Manager, Legionella Program at DHS.

Attachment 3: Sample of DHS format of Microsoft Excel spreadsheet

This blank spreadsheet is the format to be used by each auditor for audits found to be compliant. The completed summary is emailed to DHS at the address: **lrmp@dhs.vic.gov.au** on a weekly basis. Alternatively, it can be faxed to DHS on 03 9637 4657.

Note that this spreadsheet now has Question 3 added, regarding whether a review of the RMP was conducted in the 12 months prior to the audit end date.

Copies of the blank certificate will be emailed to all auditors prior to 1 March 2005. It is intended to have the blank also available via the Legionella website in the near future.

Attachment 4: Useful documents and resources

4.1 Websites

Department of Human Services:

www.health.vic.gov.au/environment/legionella

Building Commission:

www.buildingcommission.com.au

Legislation:

www.dms.dpc.vic.gov.au

4.2 Department of Human Services contacts

Legionella Program:

email address: lrmp@dhs.vic.gov.au

hotline: 1800 248 898

4.3 Useful documents

A Guide to Developing Risk Management Plans for Cooling Tower Systems
Public Health Division, Department of Human Services November 2001

Cooling Tower System – *Legionella* Risk Management Site Kit
Public Health, Department of Human Services

4.4 Other references

Department of Human Services 2000(a), *Legionnaires' disease: Managing the health risk associated with cooling towers. Findings and recommendations of the Department of Human Services Legionella Working Party*. Environmental Health Unit, Public Health Division, Department of Human Services, Melbourne.

Department of Human Services 2000(b), *Legionnaires' disease: Managing the health risk associated with cooling towers. Government Response*. Environmental Health Unit, Public Health Division, Department of Human Services, Melbourne.

Van Buynder PG, Tallis G, Cleaves N and Leslie DE 2001. Legionnaires' disease: the Victorian picture. *Health of Victorians - The Chief Health Officer's Bulletin*, vol. 1, no 1 pp 13- 15.