

Legionella

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Legionella Risk Management Project

December 2000

Minister's Message

Building (*Legionella*) Act Passed



I am very pleased to announce that the Building (*Legionella*) Act has been passed by Parliament to reduce the incidence of Legionnaires' disease in Victoria. The Building (*Legionella*) Act strengthens the controls and maintenance standards for the use of cooling tower systems. It also provides a basis for information and education programs for property owners and business sectors with responsibilities for cooling tower systems.

The Government has recognised the significant level of community concern about the public health risks arising from *Legionella* infection. The new legislation is part of a well-balanced package of reforms, which aims to ensure that cooling tower systems are managed in a way that minimises risks to both the public and to workers.

The Building (*Legionella*) Act has been developed with considerable input from industry and business sectors, initially through the Legionella Working Party Report to Government, which formed the basis of the overall reform strategy, and subsequently through various consultative initiatives.

The new provisions will assist owners of cooling towers to ensure that risks to public health are minimised – with the Department of Human Services providing assistance through a range of education material as well as providing a technical and advisory service.

Presently we have no database of cooling tower systems in Victoria, making it very difficult to investigate the source of cases or outbreaks of Legionnaires' disease.

The registration system established by the new legislation will ensure that all cooling tower systems in Victoria are identified, providing data to help track potential sources of Legionnaires' disease. The cooling tower register will also enable technical and advisory information and education programs to be targeted to people with responsibility for cooling tower systems.

New regulations are also being introduced under the Health Act to create tighter maintenance and testing standards for cooling tower systems. These measures will be reflected in the core elements of risk management plans. New building and plumbing regulations will also be introduced under the Building Act.

I am confident that the impact of Legionnaires' disease will be greatly reduced through changes to controls of cooling tower systems. This overall reform package places Victoria at the forefront in public health initiatives to reduce the incidence and impact of Legionnaires' disease.

John Thwaites
Minister for Health and Minister for Planning

New *Legionella* Controls —An Important Public Health Initiative

The Department of Human Services is pleased to be a partner in an important Government strategy designed to reduce the incidence of Legionnaires' disease in Victoria. The Government's new reforms will reduce the impact of Legionnaires' disease and address community concern about the public health risks of *Legionella* infection.

In recent years, notifications of Legionnaires' disease have risen from 13 in 1990 to 64 in 1999, and 224 so far this year. Increases in other states of Australia have also been observed.

Legionnaires' disease is a rare form of pneumonia that people can get by inhaling aerosols that contain *Legionella* bacteria. It usually takes five to six days for symptoms of the disease to appear. People who are at greatest risk from Legionnaires' disease include men over 50 years of age, heavy smokers, heavy drinkers, diabetics, and people with conditions that affect their immune systems.

Cases of Legionnaires' disease in Victoria have been associated with cooling towers, reticulated warm water systems and spas. *Legionella* bacteria are found naturally in soil, lakes, rivers, creeks, hot springs and other bodies of water.

If cooling tower systems are not properly maintained or become contaminated from dust or other pollutants in the environment, *Legionella* bacteria can grow and multiply very quickly in the tower. *Legionella* bacteria multiply at temperatures above 20° Celsius, which is the temperature at which cooling towers operate. Therefore, a cooling tower that is not properly maintained provides the perfect environment for *Legionella* bacteria to grow. The proposed Health (*Legionella*) Regulations will specify the legal requirements for the maintenance and testing of cooling towers for owners and operators. The Department of Human Services is also preparing guidelines to assist industry and business to better understand and therefore comply with these requirements.

The overall changes to the control of cooling towers is an important public health initiative for Victoria. It will reduce the incidence of Legionnaires' disease and improve public health outcomes for the Victorian community.



Professor John Catford,
Victoria's Chief Health Officer

Human Services



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Tony Arnel, Building Control Commissioner

Building Control Commission to Establish Cooling Tower Register

The Building Control Commission is making an important contribution to the Legionella public health initiative by establishing a register of cooling tower systems under the Building (Legionella) Act 2000.

The register of cooling tower systems will assist in enforcing the new maintenance requirements established by the proposed Health (Legionella) Regulations. According to Mr Tony Arnel, Building

Control Commissioner, 'It will also improve the investigation and management of any future outbreaks of Legionnaires' disease and enable the delivery of targeted technical information to assist property owners to adopt the new reforms'. The Commission is working with the Department of Human Services and the Plumbing Industry Commission to implement the Government strategy.

The Building (Legionella) Act requires all cooling tower systems to be registered with the Commission. The Act defines a cooling tower system as consisting of one or more inter-connected cooling towers and the interconnecting pipes and pumps. Owners of land on which there is an existing cooling tower system that is in working condition before the Act comes

into force, will have six months to apply for registration. New cooling tower systems will not be able to be brought into operation unless the property owner has applied to the Commission to have the system registered. This application must also state whether a risk management plan has been prepared.

As the registration body, the Commission will carry out the initial follow up of incomplete applications or failure to renew registrations. The Register will trigger default reports to the Department of Human Services where a risk management plan has not been prepared or audited as required. The Department will be responsible for enforcing these matters as well as the failure to register or renew a registration.

Plumbing Industry Commission Supports New Initiatives



Michael Kefford, Plumbing Industry Commissioner

The Plumbing Industry Commission supports the new regulations relating to plumbing work on cooling towers and will have a role in ensuring that the work is done properly, to current standards, and is certified.

The Plumbing Industry Commission contributes to the protection of public health and safety in Victoria by administering licensing and registration of plumbers and developing, monitoring and enforcing plumbing standards. The Commission ensures that:

- Plumbers with appropriate competencies are registered or licensed.
- Licence holders are responsible for certifying the work they do.

- Licence holders carry compulsory insurance.
- Compliance Certificates are lodged with the Commission to provide a database for random performance audits and inspections.

Plumbing standards are set by the plumbing regulations. At the moment, the plumbing regulations are being amended to include the AS/NZ 3666 to establish a standard of plumbing work in relation to new installations of cooling towers. The standards will apply to all cooling towers regardless of whether they serve a building or plant.

A Compliance Certificate is now required for all plumbing work on cooling towers. This means that a licensed plumber is required to certify that the work complies with relevant plumbing standards and is safely installed. The Compliance Certificate is a means of providing information to the Plumbing Industry Commission about plumbing work done so a percentage of jobs can be selected for performance audit or inspection. The

Certificate is security for the consumer as it is proof that a ten-year warranty applies to that work. Certifying cooling tower work will contribute to the quality and safety of the installation of cooling towers.

The Report of the Legionella Working Party recommended upgrading existing cooling towers by fitting drift eliminators and automated dosing and bleeding systems. The Government has determined that further consultation should occur on this recommendation before consideration is given to imposing upgrade requirements. This will be assessed when more information on existing cooling towers is obtained through the registration process.

A Regulatory Impact Statement relating to amendments to the regulations is being prepared and will be published and distributed soon for public comment.

For more information, contact the Plumbing Industry Commission on (03) 9889 2211 or visit the PIC website www.pic.vic.gov.au

Developing Risk Management Plans

Under the new Building (*Legionella*) Act a risk management plan must be developed for every cooling tower system. These plans must set out a maintenance program to address the potential risks associated with the *Legionella* bacteria.

For new cooling tower installations, risk management plans will be required before the cooling system can commence operation. For existing cooling tower systems, owners will be required to develop risk management plans for first annual renewal of registration of the cooling tower system in 2002.

A focus group of industry representatives was formed to assist the Department of Human Services develop a framework to help business owners prepare risk management plans. The focus group included:

- Australian Institute of Building Surveyors
- Australian Institute of Environmental Health
- Australian Institute of Refrigeration Air-conditioning and Heating
- Building Control Commission
- Municipal Association of Victoria
- National Water Treatment Group
- Plastics and Chemicals Industries Association
- Plumbing Industry Commission
- Property Council of Australia
- Victorian Employers Chamber of Commerce and Industry
- Victorian WorkCover Authority.

The focus group also identified key determinants

that affect the assessment of risks and the related level of maintenance required for cooling tower systems, that is:

- Whether the cooling tower system is located in or near a health, aged or residential care facility.
- The number of people who are potentially exposed to the tower.
- Whether an automated biocide dosing device has been fitted.
- Whether a drift eliminator has been fitted to Australian Standards to minimise aerosol drift leaving the tower.
- Whether the cooling tower system or part of the system is idle for more than a month.

The resources developed by the focus group for cooling tower system owners will include a template that will take users through the critical risks and ask a range of questions that will help evaluate the overall risk of a particular cooling tower system and suggest an appropriate maintenance program.

Many owners will be able to use this framework to develop a risk management plan without engaging specialist consultants. For larger or more complex cooling tower systems and sites, or where there is insufficient information about the cooling tower system, owners may have to seek expert advice to develop their plan.

The work of the focus group is expected to be published on the Department of Human Services website in February 2001 as an interim risk management plan guideline for pilot use and comment.

Partnerships Critical to the *Legionella* Strategy



Jan Bowman (DHS), John Kotsopoulos (BCC), Professor John Catford (DHS), Louise Johnson (DOI), Michael Kefford (PIC), Jan Norton (DHS)

The Government's strategy to reduce the incidence of Legionnaires' disease is an innovative and comprehensive approach that comprises a number of legislative and regulatory elements administered by different regulatory bodies.

The Department of Human Services, the Building Control Commission, the Plumbing Industry Commission and the Victorian WorkCover Authority will coordinate their responsibilities associated with the Government's strategy. This coordination is essential to the delivery of both the services to support industry and also the compliance monitoring arrangements to ensure that the public health risks associated with cooling tower systems are addressed. These agencies will also have access to the Cooling Tower System register, which will provide a valuable means for coordinating information and education services to industry.

Professor John Catford, Victoria's Chief Health Officer, believes that the partnership between the regulatory bodies is an essential ingredient to the success of the Government's strategy. 'Property and business owners will now have to comply with a number of requirements. It is very important that we take a coordinated approach to help property and business owners understand and adopt the requirements for the improved controls and maintenance of cooling tower systems,' he said.

The Department of Human Services and the Victorian WorkCover Authority also have a strong working relationship where workplace sites are found to have water sources containing *Legionella* bacteria, or in cases of outbreaks of Legionnaires' disease. This ensures that, where appropriate, measures can also be taken under the Occupational Health and Safety Act 1985.

Through this strategy, and existing regulatory provisions and systems, work practice arrangements are in place to ensure that the initiatives to assist industry and the control measures to monitor industry are effective.

DO YOU HAVE A COOLING TOWER SYSTEM ON YOUR PROPERTY?

Do your commercial tenants use a cooling tower system associated with their air-conditioning system or industrial process?

From March 2001, obligations under the Building (*Legionella*) Act 2000 and new building, health and plumbing regulations will commence to ensure that potential risks associated with cooling tower systems to the public and employees on site are addressed.

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What Is A Cooling Tower?

Cooling towers are heat rejection or heat exchange devices that use outdoor air to cool water. The cooled water is then piped through the system to cool an industrial process or a large air conditioning system usually located elsewhere on the site.

Air is forced into or drawn through the tower by a fan. The air cools the water in the tower, which is then recirculated through the system. The air becomes warm and humid, as it has removed heat from

the water. The warm and humid air is then discharged from the cooling tower. On cold mornings, steam may be seen coming from cooling towers systems, which are often located on the roofs of buildings.

The tower basin usually contains water at temperatures above 20° Celsius. If a cooling tower system is not properly maintained it will allow bacteria, including *Legionella*, to grow and multiply. The warm humid air discharged from the tower may then be contaminated by *Legionella* bacteria, potentially infecting susceptible people who come in contact with air from the tower with Legionnaires' disease.



An example of a cooling tower

Cooling Tower Management Responsibility – Landowner Obligations

Today's landowners and property investors balance the success of their investment with community and social expectations. This is the case for all properties including those with cooling towers.

Industry is well aware that cooling tower operations have been identified as a health risk to occupants of property as well as to neighbouring communities. However, if correctly and diligently managed, the risk of contamination beyond tolerable limits can be minimised.

The Building (*Legionella*) Act 2000 and regulatory support will create a new range of requirements and also penalties for landowners who do not comply. Under the new legislation, the need exists for the landowner to ensure all cooling tower installations on their land comply with the new requirements. Thus the actual occupants and users of the land will need to satisfy the landowner that the cooling tower installations are registered and have an appropriate risk management

plan developed and implemented.

Property owners (landowners) are being presented with an opportunity to improve the quality of their investment while also minimising their risk in this aspect of occupational health and safety.

The property owner will now need to review all aspects of use of their land/property and develop extended management plans. The responsibility for the Risk Management Plan, which accompanies cooling tower registration, must be made transparent through the occupancy/leasing/rental agreement entered into by the landowner with the occupier/leasee.

The administration of the new Register of Cooling Towers in Victoria must be seen as a new aid to property investors. It helps close the loop of risk management and forms a level of risk minimisation.

A key consideration for many property owners is the selection of an appropriately

skilled person to undertake cooling tower system maintenance. Initially the determination of who is a 'competent person' and checking their experience, qualification, training, etc will be an essential activity. The performance monitoring of the 'competent person' must be included within the Risk Management Plan.

While the initial activity of registration and risk assessment of cooling tower systems could be somewhat time consuming, the long-term outcome and short-term gains are extremely beneficial to improving the quality of the landowners investment.

For the property industry this is an opportunity to co-operate and assist with the implementation and support the on-going management and administration.

Ken Stickland, Chairman, Regulatory Reform Committee, Property Council of Australia (Vic)

Public Comment Open on New Health (*Legionella*) Regulations

The draft Health (*Legionella*) Regulations and Regulatory Impact Statement are now available for public comment.

The Regulations prescribe procedures for maintaining and testing cooling tower and warm water systems and for appropriate record keeping. The regulations also include requirements to test cooling towers at least once a month for Heterotrophic Colony Counts (total bacteria counts). Penalties of up to \$10,000 exist for people who fail to comply with the provisions of the new regulations. The Regulations will become law on 1 March 2000.

The Regulatory Impact Statement accompanying the Regulations outlines the

costs and benefits of the new regulations.

Copies of the draft regulations and statement are available by telephoning 1800 248 898 or from the Website: www.dhs.vic.gov.au/phd, under the *Legionella* Risk Management Project topic.

Submissions close 21 January 2001 and should be addressed to:
Manager
Environmental Health Unit
Department of Human Services,
17th Floor, 120 Spencer St
Melbourne 3000

or emailed to: Lrmp@dhs.vic.gov.au

Where Can I Get More Information???

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Department of Human Services
www.dhs.vic.gov.au/phd/lrmp/index.htm

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www.buildcc.com.au

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