



**NOTIFICATION PROCEDURES FOR:**

- PRESCRIBED ACTION LEVELS FOR BACTERIAL/LEGIONELLA TESTING OF COOLING TOWER WATER.**
- CONFIRMED CASE/S OF LEGIONNAIRES DISEASE.**

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## 1. PURPOSE

The purpose of these procedures is to ensure that occurrences of Legionella bacteria and/or elevated bacterial levels in cooling tower water and confirmed cases of Legionnaires disease on all the campuses of Monash University are treated and notified according to the Health (Legionella) Regulations 2001.

## 2. SCOPE

These procedures apply to the management of all information associated with the notification of Legionella bacteria and/or elevated bacteria levels in cooling tower water and to confirmed cases of Legionnaires disease on the Australian campuses of Monash University.

## 3. ABBREVIATIONS

CFU/mL	Colony forming unit per millilitre of sample
DH	Department of Health
OH&S	Occupational Health and Safety Branch
TBC/HCC	Total bacteria count/heterotrophic colony count

## 4. DEFINITIONS

### 4.1 TOTAL BACTERIA COUNT/HETEROTROPHIC COLONY COUNT

Heterotrophic colony count is an estimate of the number of viable units of bacteria per millilitre of water made using the pour plate, spread plate or membrane filter test. It is used as an indicator of water quality in cooling water systems. HCC is also known as total bacteria count (TBC), total plate count or viable bacteria count test. It is reported as the number of colony forming units per millilitre of sample (CFU/mL).

For the remainder of these procedures, bacteria levels will be referred to as TBC/HCC.

## 5. SPECIFIC RESPONSIBILITIES

A comprehensive list of OHS responsibilities is provided in the document [OHS management at Monash University: Structure, functions, roles and responsibilities](#). A summary of responsibilities with respect to these procedures are provided below.

### 5.1 FACILITIES AND SERVICES

Facilities and Services staff must:

- Manage the testing of TBC/HCC in the cooling tower water in order to detect the levels of Legionella species and TBC/HCC;
- Notify OH&S if:
  - 3 consecutive detections of Legionella species ( $\geq 10$ CFU/mL); or
  - 3 consecutive elevated TBC/HCC ( $\geq 200,000$ CFU/mL) are detected in cooling tower water (from the same tower);
- Advise OH&S of the need to re-test cooling tower/s water following notification from the Department of Health (DH) of confirmed case/s of Legionnaires disease.
- Notify all staff and contractors who may have been exposed to the infected cooling tower of the potential health risk.

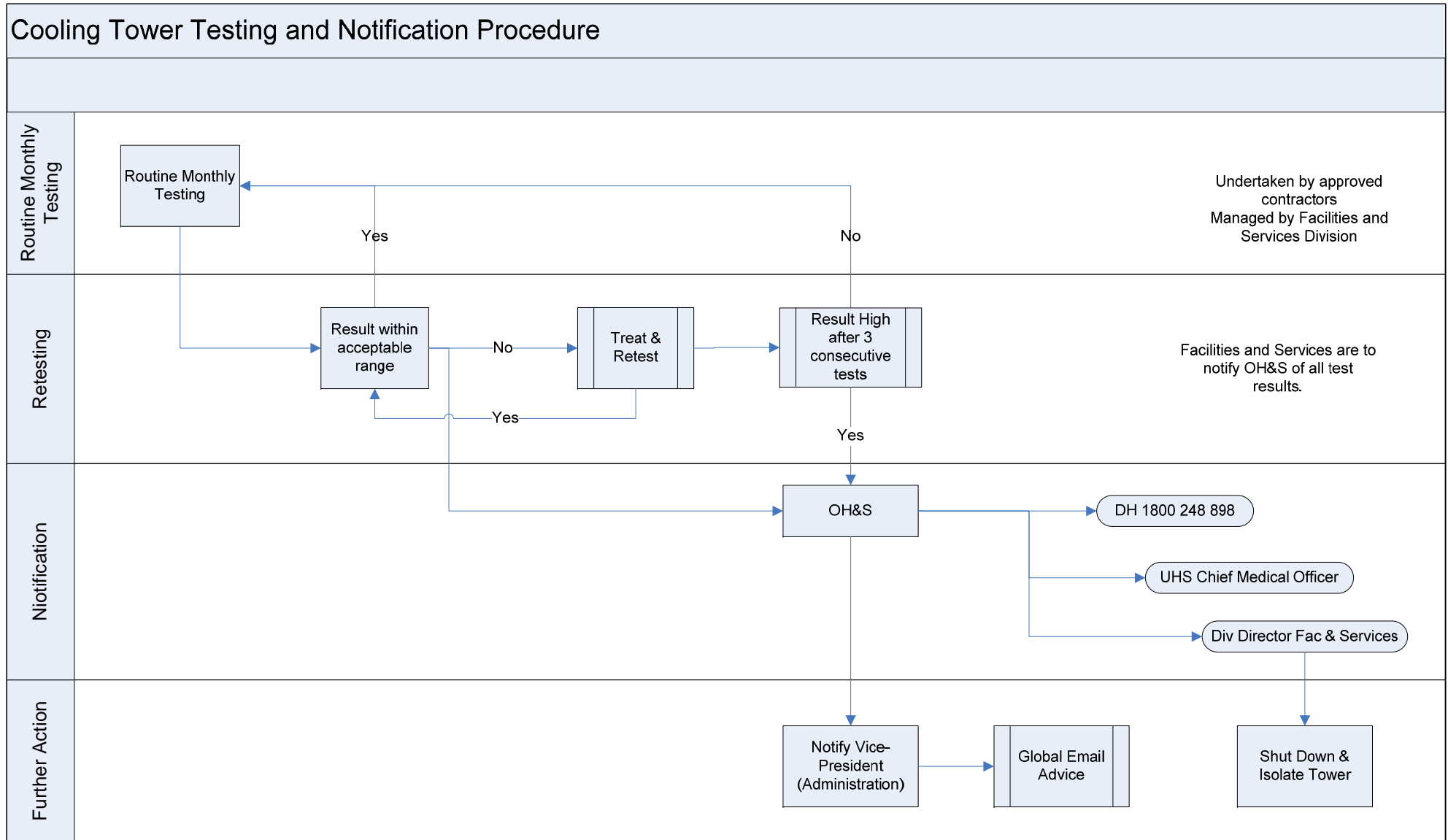
## 5.2 OCCUPATIONAL HEALTH AND SAFETY BRANCH

The Occupational Health and Safety Branch must:

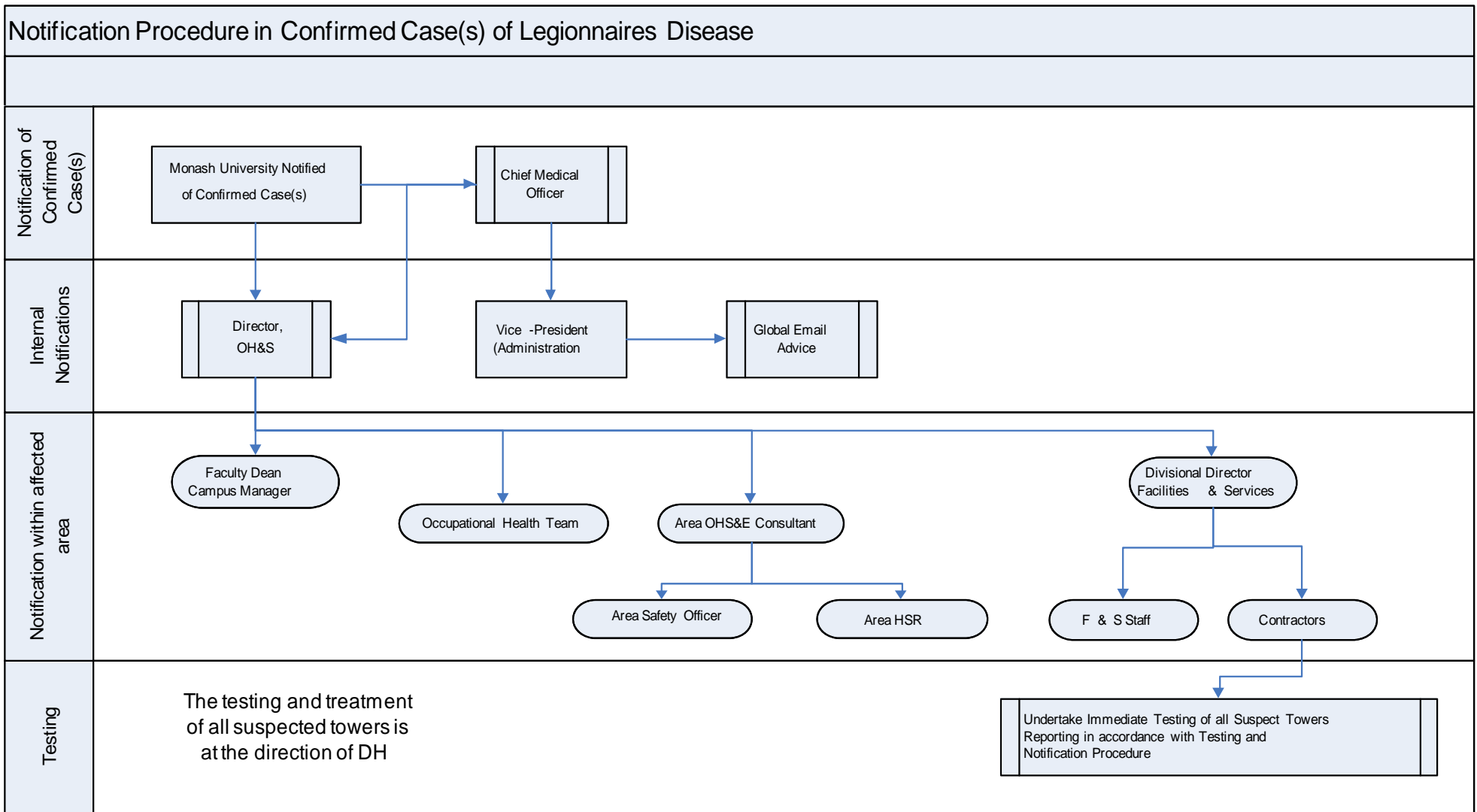
- When notified by Facilities and Services of Legionella detection and/or elevated TBC/HCC in cooling tower water, communicate with all relevant parties within the University as detailed in these procedures;
- When notified by Facilities and Services of three consecutive detections of Legionella species ( $\geq 10$ CFU/mL), communicate with DH, as detailed in these procedures;
- Send notification reports of three consecutive detections of Legionella bacteria in cooling tower water to DH;
- When notified by DH of confirmed case(s) of Legionnaires disease, communicate with the relevant department, and dean of faculty, if multiple cases are reported;
- Update these notification procedures, as required.

## 6. NOTIFICATION PROCEDURES

### 6.1 PRESCRIBED ACTION LEVELS FOR BACTERIAL/LEGIONELLA TESTING OF COOLING TOWER WATER



## 6.2 CONFIRMED CASE(S) OF LEGIONNAIRES DISEASE



## 7. RECORDS

<u>Record to be kept by</u>	<u>Records</u>	<u>To be kept for:</u>
<b>OH&amp;S</b>	<ul style="list-style-type: none"><li>• Notification reports to DH regarding detection of Legionella bacteria (<math>\geq 10</math>CFU/mL) in cooling tower water</li><li>• Hardcopy TBC/HCC results from water testing contractor</li><li>• Hardcopy Legionella results from water testing contractor</li></ul>	7 years 7 years 7 years
<b>Facilities &amp; Services</b>	<ul style="list-style-type: none"><li>• Cooling tower registration, test, inspection &amp; maintenance records</li></ul>	7 years

## 8. REFERENCES

### 8.1 LEGISLATION

Building (Legionella) Act 2000  
Building (Cooling Tower Systems Register) Regulations 2001  
Building (Legionella Risk Management) Regulations 2001  
Health Act 1958  
Health (Legionella) Regulations 2001  
Occupational Health and Safety Act 2004  
Occupational Health and Safety Regulations 2007  
Plumbing (Cooling Towers) Regulations 2001

### 8.2 AUSTRALIAN STANDARDS

AS/NZS 2243.1: 2005 Safety in Laboratories Part 1 - Planning and operational aspects  
2243.2: 2006 Safety in Laboratories Part 2 - Chemical aspects  
AS/NZS 3666 Air-handling and water systems of buildings - Microbial Growth  
3666.1: 2002 Design, installation and commissioning  
3666.2: 2002 Operation and maintenance  
3666.3: 2000 Performance-based maintenance of cooling water systems  
AS/NZS 4276.1: 2007 Water microbiology - General information and procedures  
AS/NZS 3896: 1998 Waters-Examination for legionellae including Legionella pneumophila  
AS/NZS 2031.2: 2001 Selection of containers and preservation of water samples for microbiological analysis  
AS/NZS 4360: 2004 Risk Management

### 8.3 MONASH UNIVERSITY OHS DOCUMENTS

([www.adm.monash.edu.au/ohse/documents/index.html](http://www.adm.monash.edu.au/ohse/documents/index.html))

OHS Information Sheet 16A: Legionella and cooling towers  
OHS information sheet 16B: Risk management of cooling towers

### 8.4 OH&S INTERNAL PROCEDURES

Testing of the Monash Cooling Tower Systems Procedure No. 6  
Cooling Tower Risk Assessment Procedure No. 32

## 8.5 OTHER DOCUMENTS

Australian Institute of Refrigeration, Air-Conditioning and Heating (Inc.) DA 17 Cooling Towers and DA 18 Water treatment

Guidelines for the Control of Legionnaire's Disease 1989 (Vic. Government)

Legionnaire's Disease and Cooling Towers, Information for Owners and Managers 1996 (Vic. Government)

Evaporative Coolers, An Operation and Maintenance Guide for Owners 1997 (Vic. Government)

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