

# THE VALUE OF OPERATOR CERTIFICATION / REGISTRATION SCHEMES FOR WATER BUSINESSES

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## ABSTRACT

In September 2010 the Victorian Department of Health issued the “Victorian Framework for Water Treatment Operator Competencies – Best Practice Guidelines” (the Guidelines). This has been followed by the National Certification Framework (NCF) for drinking water operators in 2014, currently undergoing pilot programs in Queensland and New South Wales.

An important aspect of the Guidelines and NCF is the development of an Operator Certification Scheme, which formally recognises the professionalism of drinking water operators. The objective of certification is to address the inconsistencies in training and competency of drinking water operators across the country, which has been highlighted by regulators and industry as a potential public health risk.

New Zealand has its own operator registration scheme, the Water Operations Professionals. This scheme has been available to water treatment, wastewater treatment and water reticulation operators since 2010 and is designed to verify a registered person has a specific set of qualifications, skills and abilities to perform a particular job.

This paper presents an example of the implementation of operator certification and training schemes into Veolia’s operations and the resulting benefits to our organization at the local, regional and national level.

## KEYWORDS

**Public Health, Drinking Water Management, Training, Certification, Registration**

## 1 INTRODUCTION

As waterborne chemical and pathogen public health risks are better understood, and water treatment technology continues to evolve, the role of the water treatment operator becomes ever more challenging. On a day-to-day basis it is the operator who is responsible for ensuring water is treated to the required standard and that risks are adequately managed.

A major challenge for water business both in Australia and New Zealand has been to address the inconsistencies in training and competency of drinking water operators across the country, and the resulting variation in standards of practices, which has been highlighted by regulators and industry as a potential public health risk.

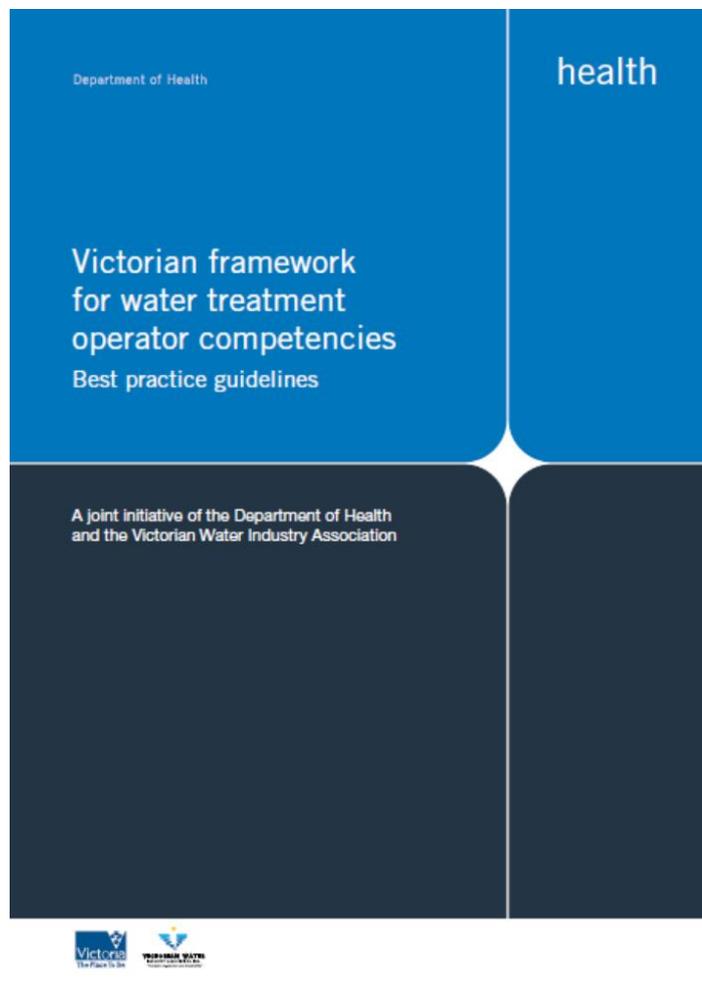
The following sections outline the current status of certification and registration in Australia and New Zealand respectively.

### 1.1 OPERATOR CERTIFICATION – THE AUSTRALIAN CONTEXT

Australia’s State-based legislation which includes Safe Drinking Water Acts and Regulations describe the regulatory framework that takes a ‘catchment to tap’ risk based approach to the management of drinking water quality. A key component of this risk based approach is the use of multiple water treatment processes (the multi-barrier approach). Operation of these advanced multi-barrier treatment plants requires a certain skill set,

knowledge and competency standard. On a day-to-day basis it is the water treatment operator who is responsible for ensuring water is treated to the required standard and that risks are adequately managed.

In September 2010 the Victorian Department of Health issued a set of Best Practice Guidelines for operator competency (See Figure 1). The aim of the guidelines is to define the minimum training, qualification and competency standards that operators must attain and maintain in order to operate drinking water treatment facilities.



*Figure 1: Victorian Framework for Water Treatment Operator Competencies – Best Practice Guidelines. Issued by the Victorian Department of Health in September 2010.*

The Victorian Guidelines have been an important first step to the establishment of the NCF. A steering committee, managed through Government Skills Australia (GSA), was tasked with delivery of a proposal for the NCF to the National Water Commission in March 2012. A pilot of the Framework has since been rolled out in New South Wales and Queensland in 2014, with operators expected to be certified in these states in the latter part of this year.

Currently, the Water Industry Operators Association of Australia (WIOA) is the only body endorsed by the Department of Health to certify operators to the requirements of the Victorian Guidelines. WIOA has also developed a Certification Scheme which complies with the requirements of the NCF opening the door for WIOA to certify operators in all Australian States. The aim of the WIOA Certification Scheme is to verify that an operator meets the minimum competency requirements of the Guidelines and NCF, and is, therefore, by extension, qualified and competent to perform their role in the water industry.

To be certified each operator must provide evidence to show relevant industry experience, a process-specific skills set, and an ability to keep skills and knowledge current. The process of certification is structured as follows:

### **STEP 1. DOCUMENTATION OF INDUSTRY EXPERIENCE**

An applicant provides documentation to show relevant experience suitable for certification. The experience requirement is determined by the system complexity rating of the process they operate.

### **STEP 2. DOCUMENTATION OF SKILLS FROM A TRAINING PROVIDER**

An applicant must show evidence of completion of accredited training from an approved Registered Training Organisation (RTO). This includes Certificates and Statements of Attainment.

### **STEP 3. APPLICATION FOR CERTIFICATION**

The applicant completes and submits an application form to WIOA. Applicants must also sign a professional Code of Conduct

### **STEP 4. PERIODIC CERTIFICATION RENEWAL**

To ensure that certified operations practitioners keep their skills up-to-date there is a process requiring certification to be periodically renewed (every 3 years for Victoria). Certified operators need to show that they have remained active in the industry and that they have taken steps to keep up-to-date with new technology. They do this by accruing the prescribed number of certification points in each recertification cycle under WIOA's Scheme.

## **1.2 OPERATOR REGISTRATION IN NEW ZEALAND**

New Zealand has its own operator registration scheme, the Water Operations Professionals. This scheme has been available to water treatment, wastewater treatment and water reticulation operators since 2010 and is designed to verify that a registered person has a specific set of qualifications, skills and abilities to perform a particular job.

The goal of the Registration Scheme is to verify that people registered have a specific set of qualifications, skills or abilities suitable to perform a particular job. There are various registration classifications, each with a set of minimum requirements for qualifications, experience and skills.

The minimum requirements for registration include:

- An NZQA qualification recognized by the Registration Scheme
- A portfolio of evidence demonstrating and verifying required experience
- Be a signatory of the Water Industry Operations (WIOG) Code of Ethics.

To maintain registration status, each successful registrant must remain active in industry and maintain currency of their knowledge and skills through continuing professional development. Registration renewal is currently set at two year intervals.

The organization and administration of the existing scheme is currently undergoing a major review to determine future scheme administration and management arrangements. It is likely that Water NZ will play a more central role in the future of the registration scheme, where key areas that the Water Operations Professionals need assistance with having been identified. They are;

1. Registration and documentation management of Professionals applying to the scheme
2. Managing continuing professional development and training providers
3. Managing the financials

The involvement of peak water associations such as Water NZ ushers in a new era for the New Zealand Water Operations Professionals scheme, including expanded resources and opportunities.

## 2 VEOLIA'S APPROACH TO CERTIFICATION IN AUSTRALIA

Since the publication of the Guidelines in September 2010, Veolia has considered operator competency and certification to be an important measure of the value we can provide to our clients, as well as improving the capability and professionalism of our operational teams.

WIOA's Certification Scheme was officially launched at a reception held at the Victorian Department of Health on Friday 14th December 2012 (See Figure 2). At this reception two of the first four operators to be certified under the new scheme were Broc Mulcair and Luke McCormick, from Veolia in Victoria. WIOA is now rolling out its NCF compliant certification scheme across Australia, making it available to all water businesses and operators employed in the treatment of drinking water.

Since the launch of the certification scheme in December 2012, Veolia have had a further six operators certified in Victoria. There are five operators in New South Wales expected to be certified by WIOA in the latter part of 2014, along with one Queensland operator from the Gold Coast Desalination plant.

Our approach to certification has been to completely re-think the way that we approach training within our organisation. We have made a cultural shift from simply sending operators away to be qualified, to incorporating training and professional development as an integral part of our day-to-day operations. We have taken greater control over training management and delivery and included a new and innovative range of methods of delivering training and professional development activities. Key components of the Veolia approach to operator training under a national certification scheme have been:

- To make training qualifications specific to treatment processes, no unnecessary units of competency to fill out qualifications.
- Work towards all operators achieving a minimum of Certificate III in Water Operations, as well as any further units of competency required to achieve operator certification.
- Manage each operator's ongoing training, knowledge and experience requirements through their twice yearly performance plan meetings.

Further work for Veolia was the development a number of in-house training packages in specialised process areas. These include ozone, activated carbon and membrane operations, amongst others. We use the technical expertise and knowledge of our own people as well as draw upon our network of industry experts and Registered Training Organisations (RTOs). We deliver this training based upon operational and training requirements, utilising our own qualified staff, combined with Recognition of Prior Learning (RPL) assessment in collaboration with our preferred RTO.



Figure 2: Operator certification ceremony held at the Department of Health on December 14th 2012.

## 2.1 CHALLENGES OF CERTIFICATION

A criticism often leveled at certification and registration schemes is the perceived cost and resource commitment born by businesses who are asked to participate. In order for businesses to be involved it is important that the overall value of these schemes outweigh the cost imposed. Further challenges for a water business in implementing an operator certification scheme include:

*Challenge 1* - Delivering appropriate training for a variety of treatment plants and processes. We had a lot of trouble finding an RTO that can deliver quality training in reverse osmosis, membranes, ion exchange, ozone, activated carbon. Hence we began a program of developing our training programs with assistance from our preferred RTOs.

*Challenge 2* - Getting the most effective outcome from available training budgets for the competency requirements necessary to achieve certification. The first implementation cycle of the Guidelines in Victoria (2011-2014) resulted in an increased cost and time impost on Veolia's Victorian operations. The Victorian region saw a three-fold increase in the annual training budget in the first year of the operator certification cycle (2011) and a five-fold increase in the second year (2012), compared to the 2010 budget.

It should be noted that this initial cost impost has been a major driver for innovation within Veolia. The following section describes the overall benefits of innovation in training delivery arising from adoption of operator certification. This has resulted in ongoing and significant savings to the business in training and professional development.

*Challenge 3* - Managing rosters to cover operators who are away on training. The Guidelines in Victoria require new operators to be fully qualified within 24 months of commencement of employment, with extra units of competency to be completed within 36 months. In the case of the Veolia's Victorian plants, this equates to almost 400 hours of National Water Package training. This places major constraints on rosters, staffing and leave allocation, and is an additional cost to the business.

## 2.2 BENEFITS OF CERTIFICATION

Certification has driven innovation in training management and delivery, resulting in major cost savings. In the first six months of 2013 the expenditure on operator qualification and competency training had returned to pre-Guideline levels, despite an overall increase in training delivery. The benefit being more training funds are available for ongoing professional development.

We have found enormous benefit through using our own qualified trainer/assessors to conduct RPL assessments (through arrangement with our preferred RTO). For experienced and knowledge-able operators it is not always the best method to send them away on training courses. Sometimes an RPL assessment is a better tool for determining the capability and competency of an operator. Appropriate use of the RPL method also has the potential to provide significant savings to the business.

The Veolia team have made more effective use of alternative training delivery methods (online, distance mode, on-the-job, RPL) and have overall reduced the number of hours operators are away for training.

From a team culture perspective, Veolia have found participation in implementation of the Guidelines and operator certification to be a beneficial exercise. Anecdotal evidence has shown that operators appreciate the recognition of their skills and knowledge and have been receptive to the increased focus on their role as custodians of public health (see “Perspectives on operator certification” in AWA Water Journal, December 2013). They have risen to the challenge of the increased training and up-skilling requirements, and are more likely to actively participate in their own training and professional development planning (WIOA WaterWorks Journal, 2013).

We have been able to provide interesting and rewarding professional development opportunities for operators. Some of the key professional development initiatives we have implemented are:

- Cross skilling of operators. Providing water and wastewater operators the opportunity to learn new skills by creation of a consistent training and certification framework both for drinking water and recycled-water. This has enabled us to identify training overlaps between drinking water and recycled water, better manage training pathways for operators, and cover rosters when operators are away on training, by utilising crossed-skilled staff.
- Industry site tours. We have implemented an annual program of site tours to other water and wastewater treatment facilities around Victoria. This gives our operators exposure to the operational practices of the wider water industry, allows them to build networks and contacts with other water businesses, as well as expand their knowledge of water and waste water treatment processes.
- Operational secondments. We have always had a practice within Veolia of providing opportunities for staff mobility. With the advent of certification, this practice has been extended to operators, providing short to medium term operational secondments.

Further benefits have been establishment of Veolia’s reputation as an industry leader in operator certification. Through the process of certification we have built up an extensive knowledge and expertise for delivery of high quality industrially-relevant training. As a result we have been able to assist other water businesses with their training requirements through delivery of industry training workshops and seminars in Queensland and Victoria (WIOA Operator Journal, 2014). These have contributed to the on-the-job learning requirements of operators across the industry and enhanced our reputation as a highly reputable water business.



*Figure 3: Industry workshop on membrane management. Held In November 2013 at Veolia's Castlemaine WTP for operators from various water businesses across Victoria.*

### **3 REGISTRATION OF VEOLIA'S NEW ZEALAND OPERATORS**

Veolia in New Zealand has a strong commitment to the promotion of operator up-skilling and competency. This has been demonstrated with our culture of knowledge building and sharing between operators, including having highly experienced technical staff on our team, some of whom also happen to be qualified trainers.

We play a strong role in training governance and leadership, with representation on national training steering committees such as the Industry Partnership Group. This group was originally assembled by the Primary Industry Training Organisation to provide oversight and direction on development of the New Zealand water training initiatives.

We have a history of supporting operators through training and qualification, as well as our demonstrated leadership and governance of matters relating to training. This has included the recent Technical Review of Qualification (TRoQ) project. We believe we are well positioned to be an active participant in a future re-launch of the Water Operations Professionals Registration Scheme.

### **4 CONCLUSIONS**

The general feeling across the water industry in Australia is the NCF will be an important step towards achieving nationally consistent quality standards for drinking water treatment. The Water Operations professional Scheme provides the same opportunity for New Zealand water businesses.

The potential benefits of operator certification and registration for businesses include:

- Certification driving innovation in training management and delivery, resulting in major cost savings.
- Reduced drinking water quality risk to the business through better trained and competent operators.
- Improved team culture through new opportunities for professional development and career pathways.

Further benefits to the whole water industry include:

- Opportunities to develop industry benchmarking to drive continuous improvement and industry best practice.
- Development of mentoring, secondment and collaborative training initiatives for businesses to develop knowledge and resources.
- Turning around the attrition of skilled operators through retirement and loss of staff to other industries.

The Victorian experience of the implementation of the Guidelines and WIOA Certification Scheme provides valuable insights to the implications of the NCF in Australia and the Water Operations Professionals Scheme in New Zealand.

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## **REFERENCES**

- Victorian Water Industry Association, Victorian Department of Health (2010), 'Victorian Framework for Water Treatment Operator Competencies Best Practice Guidelines', 31pp.
- WIOA, (2011), 'Water Industry Operator certification Scheme', Water Industry Operator Association, Shepparton, Vic, 14pp.
- Government Skills Australia, 2012, 'Proposed National Certification Framework 2012', Adelaide, S.A., 37pp.
- Harris, J., Northcott, K., (2013), 'Drinking water operators as health professionals – the journey towards certification', *Water*, December 2013, AWA, pages 39-43.
- Northcott, K., (2013), 'WIOA Operator certification scheme – 12 months in', *WaterWorks*, November 2013, WIOA, page 27.
- Evans, A., (2014), 'Microfiltration workshop', *Operator*, February 2014, WIOA, page 4.