

# TOWARDS A NATIONAL WATER OPERATORS CERTIFICATION SCHEME



*Paper Presented by:*

**Susan Peisley**

*Author:*

**Susan Peisley, Industry Liaison Officer,**

**Government Skills Australia**



*37th Annual Qld Water Industry Operations Workshop  
Parklands, Gold Coast  
5 June to 7 June, 2012*

# TOWARDS A NATIONAL WATER OPERATORS CERTIFICATION SCHEME

Susan Peisley, *Industry Liaison Officer*, Government Skills Australia

## ABSTRACT

I would like to introduce the proposed framework for the national certification of water operators. I have been fortunate enough to become involved in the project called “*The Certification Framework for Operators of Drinking Water Treatment Systems*”. The certification framework provides an assurance to regulators, communities and consumers that certified operators who treat drinking water are competent to perform the tasks required to ensure it is safe and are capable in identifying and responding to water quality risks and incidents.

It was explained to me like this – you need to have a 4 year trained licensed electrician to come into your workplace or home to fix a power point but there is no requirement for someone who operates a water plant that could impact a whole communities drinking water and their health.

This framework introduces a minimum competency standard for operators across all states and territories by aligning skills, knowledge and competency requirements to VET standards. It also ensures there is a requirement for on-going maintenance and development of skills and knowledge.

This project has been funded by the National Water Commission and was carried out by Government Skills Australia. The project commenced in June 2011 and the final report was delivered to the Water Commission on 30 March 2012. At this stage the framework is only a proposal. What is adopted and when, is yet to be decided.

## 1.0 THE PROJECT

The purpose of the certification framework is to provide a set of nationally consistent criteria that defines and recognises the minimum level of competency and capability required of operators who treat drinking water for safe human consumption.

The project had five stages:

### Stage 1 Desktop Research

- Contractor was engaged to complete the research
- Report was provided to the NWC 31 August 2011

### Stage 2 Round 1 Consultation

- Project manager was engaged
- Steering committee was formed
- Workshops were held around Australia

Stage 3 Draft certification framework was produced.

### Stage 4 Round 2 Consultations

- Draft certification framework was released for comment
- Workshops were held around Australia

## Stage 5 Proposed Certification Framework

- Proposed certification framework and final report submitted to the NWC.

There was extensive consultation with public health regulators, private and public water enterprises, peak bodies like WIOA, and RTO's alike. The draft framework was posted online for comment and 2 rounds of consultation workshops took place nationally. Sites in Queensland included Brisbane and Townsville as well as a teleconference with members of the Queensland Water Directorate. Some of you may have attended one of these consultation workshops.

It is at this point I should mention the scope of this project. A large amount of debate and discussion went into determining what was or wasn't included. In addition, the project scope was dictated by the National Water Commission.

The framework applies only to the operators of drinking water treatment processes; or where no treatment process exists, to those that monitor, sample and/or test raw water in compliance with public health regulatory requirements. It does not apply to professionals or para-professionals (such as engineers or chemists), non-operational supervisors, administrative workers, managers or senior executives.

In addition, it is recognised that the competency and capability of operators is just one component that ultimately ensures that drinking water is safe.

The standards identified are a minimum. Through negotiation with employers, regulators and other relevant stakeholders, competency and capability standards that exceed these minimum requirements may be appropriate. Drinking water suppliers are encouraged to exceed the standards identified in the certification framework wherever possible.

## 2.0 SCOPE OF CERTIFICATION

The framework applies to only one component of the total system – the water treatment process. It does not cover catchment, reticulation or wastewater treatment. It is recognised that issues such as the condition and management of a catchment (raw water source) and the investment in infrastructure, such as treatment facilities, secondary disinfection stations and the reticulation network itself, are of equal importance to supply drinking water.

The certification framework may be expanded to other components upon successful implementation in the drinking water treatment sector.

The water treatment process is inclusive of a water treatment facility and downstream chemical dosing and disinfection but nothing upstream – at this stage. It includes any process that changes the physical, chemical or biological properties of water from any source in order to make it safe for human consumption.

Treatment processes include, but are not limited to:

- Disinfection
- Coagulation and Flocculation
- Sedimentation and Clarification
- Dissolved Air Flotation

- Granular Filtration
- Membrane Filtration
- Reverse Osmosis
- Adsorption
- Ion Exchange
- Fluoridation
- Softening/Hardening
- Chemical Dosing

### **3.0 THE SYSTEM COMPLEXITY RATING**

Regulatory arrangements will require registered or licensed providers to participate in this framework as a component of any obligation to manage risk to public health.

The certification framework requires facilities to be rated into categories. These categories were debated and these categories were agreed in the final weeks of the project. The ratings proposed were;

- Low Complexity - Single Barrier maybe Disinfection Only,
- Medium Barriers – includes all conventional treatment systems
- High Complexity – number of conventional and/ or advanced treatment

Factors that will impact upon the rating will include, but are not limited to:

- Size of the facility
- Automation
- Number of connections
- Volume of Flow
- Emergency Response Requirements
- Microbial Risks
- Chemical Risks
- Physical Risks, just to name a few

The information required to undertake this rating will be determined through negotiation with state and territory regulators. The rating will utilise the risk management process described in the Australian Drinking Water Guidelines.

The System Complexity Rating shall be performed by the Drinking Water Supplier and reported to the state/territory health regulator using the agreed methodology.

It is the responsibility of the Drinking Water Supplier to ensure that the rating is current. Where a change in conditions occurs that would be reasonably expected to affect the resultant score, the rating must be resubmitted using the process agreed with the relevant state or territory regulator.

### **4.0 OPERATORS**

The certification framework focuses on the worker that interacts with the treatment processes, in accordance with public health regulatory requirements.

Certification is based on the requirement of a drinking water operator to:

- Achieve the necessary competencies specified in the water training package
- Demonstrate industry experience for the relevant treatment processes, and

- Continue to develop knowledge and skills as well as maintain currency of industry experience.

#### **4.1 Operator in Training**

An *Operator in training* is an operator who is gaining experience and performing routine tasks, usually under the supervision of a competent operator. They are undertaking training to attain relevant competencies from the water training package from the Certification Framework.

The *Operator in training* is not certified, but the drinking water supplier would be required to ensure opportunities are provided to the person to develop all necessary competencies. It was proposed they would be given a three year period to achieve certification.

#### **4.2 Certified Operator**

A *Certified Operator* has operational responsibility for water treatment processes. Duties performed would range from basic sampling, testing and reporting, through to chemical dosing, control and optimisation of treatment processes.

The *Certified Operator* may have responsibility for more than one treatment system at any one time, so long as it is reasonable to expect that drinking water quality and safety will be assured at all plants and the certification covers all treatment processes under the responsibility of that person.

#### **4.3 Independent Contractor**

An *Independent Contractor* may provide their expertise and services to a number of drinking water suppliers. They are individuals who work within the drinking water system and must meet the minimum requirements for certification.

### **5.0 COMPETENCY REQUIREMENT**

Competency is attained through the completion of fit for purpose units of competency contained within the National Water Industry Training Package. The processes within the facility will dictate the fit for purpose units required.

Roughly, it is anticipated a low complexity facility would equate to an operator with a Certificate II qualification, a medium complexity a Certificate II or III and a high complexity facility would require a Certificate III or IV.

Although this Framework specifies the minimum competency requirement, employers are encouraged to provide qualifications to their operators. The full qualification includes core units covering Environmental & OHS issues which are relevant to water treatment but not mandatory under this framework. There are many benefits to organisations to have staff undertake these core units.

Additionally, due to the complexity of many modern water treatment plants it is likely that the additional training required to achieve a qualification will be minimal. The

report suggests clusters of units aligned to processes.

## **6.0 EXPERIENCE REQUIREMENT**

Certification will also require ‘demonstrated competency’ to a judgment of proficiency by demonstrating a capability to reliably perform under conditions that are challenging or non-routine.

Capability is attained through direct exposure to workplace conditions. It can only be attained through participating in the operational setting unique to the water treatment system.

The length of time required proposed for certification as a guide was 6 months for a low complexity facility to 24 months high complexity facility.

## **7.0 THE CERTIFICATION PROCESS**

### **7.1 The Application Process**

Applications for certification would be made by the drinking water supplier endorsing the suitability of the operator. Application would be made using the instruments provided by the certifying body that are yet to be determined.

The criteria set by the certifying body might include:

- Evidence in the form of statements of attainment demonstrating that the applicant has been trained and is competent to operate all the unit processes at their treatment plant
- A statement of service
- Relevant job descriptions
- Notification of engagement in critical tasks reviews or projects.
- Endorsement that performance is consistent and demonstrates proficiency

It is recommended the certification will be valid for 5 years.

### **7.2 Maintenance of certified status**

Maintenance of certification is achieved by ensuring that the competencies and capabilities identified during initial certification remain current.

There are two methods proposed for maintaining certified status, a pathway of professional development or audit.

The professional development pathway as it suggests includes on-going engagement within the water industry, participation in refresher and professional development activities and by responding to changes in conditions, responsibilities, technology or treatment processes. The scheme recommended to the National Water Commission looks very similar to the existing WIOA scheme.

The steering committee recognised each workplace is unique and will influence the method by which their operators and managers will use the framework to ensure competence is maintained. These factors include the size of the workforce, the nature of the work being performed by the certified person, the geographic location and access to

technology.

To maintain certification Suppliers would be required to:

- Provide documentation of continued employment
- Advise the certifying body of any change such as; cessation of employment, transfer to another treatment system or any change to treatment processes that would impact upon the complexity rating of the system.
- Ensure that the competencies held remain directly relevant to the water treatment processes that are used within the system.
- Elect their staff to undertake an audit within three (3) months of the expiry of their certification or provide documentation of the completion of their professional development.

The certification audit would be performed by an operationally competent person, approved or nominated by the certifying body using an appropriate audit methodology/tool.

The audit would provide evidence that the competence of the certified operator is current and relevant to the tasks performed at a particular treatment facility.

Where the audit is unable to confirm the competence of the operator, it is suggested certification be extended for three months. During this time the Supplier would assist the operator to address any shortfall or gaps identified.

Where the three month extension expires, the certifying body would receive advice on a case-by-case basis. Where appropriate, the certification status of the operator may be amended to 'Inactive'.

## **8.0 CONCLUSION**

So in summary, the proposed certification framework is all about operators being trained and competent in the processes of the plant they work in. The regulator and water organisations would determine the complexity rating of the facility.

It is proposed to achieve certification an operator would achieve “fit for purpose” units of competency from the National Water Training Package and a length of time on the job.

Certification would be valid for 5 years and to maintain certification an operator would need to work for a drinking water supplier and participate in either audits or professional development.

The final report with the proposed framework was provided to the National Water Commission at the end of March. From here it is up to them to decide how it will progress. It is anticipated a subcommittee of Council of Australian Governments will decide what the framework will look like as well as how, when and if the certification of water operators goes ahead.

However, GSA is confident we have proposed a flexible but robust framework that was widely accepted and meets the need to have competent water operators in a wide range of different drinking water systems.