Water Industry Operators Association of Australia

23 August 2020

Australian Government - Productivity Commission
National Water Reform Inquiry
Lodgement online at water.reform.2020@pc.gov.au

Dear Commissioners

Submission to National Water Reform Inquiry

Thank you for the opportunity for the Water Industry Operators Association of Australia (WIOA) to provide comments to the Productivity Commission Inquiry into the 2004 Intergovernmental Agreement on a National Water Initiative (NWI) and offer suggestions on how WIOA considers the NWI might be improved.

WIOA's comments are primarily focussed on Information Request 10 on Page 22, and relate to the ongoing provision of a safe and reliable water supply. Our interest is centred on the ability of all Australian water service providers and the level of training and competency of their operaitonal staff to deliver safe drinking water and environmental management services to customers, rather than commenting on the reliability of being able to physically supply water during droughts.

We would welcome the opportunity to further discuss and elaborate on any of the issues raised.

Yours sincerely,

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WIOA Submission to the National Water Reform Inquiry

WIOA is a national Not-for-Profit Association with membership primarily drawn from individuals working in operational roles in the urban water industry. WIOA has a membership base of over 4,200 drawn from all Australian State and Territories, comprising 3830 individuals and 370 companies. Our Corporate Members include a significant number of water utilities, along with private enterprise employers of water industry operational staff.

As the Peak Body representing those working in operational roles within the water industry, one of WIOA's main aims is to promote the standards of education and training to ensure the competency of persons engaged in the water industry. We also aim to increase the knowledge and skills of water industry staff including accumulating and disseminating resources and information among them and providing skill development opportunities. Although not an RTO, WIOA provides non-accredited skill development training on a range of topics for operational staff employed in the urban water industry.

WIOA and our predecessor bodies, has a long history of active involvement in the development and maintenance of the national Water Training Package as it is predominantly operators who undertake the training described within the Package. We have exercised great care and attention to ensure that sound training standards, able to be readily converted to quality training have been created to allow the development and maintenance of skills and competence of all people in operational roles to the highest possible levels. Achieving this is vital given the extremely important role operational staff have in protecting public health and the environment.

Treatment plant operators are often the last line of defence in the protection of the public from waterborne disease. Errors can place thousands of people at risk as has been amply demonstrated in the disease outbreaks that occurred in Milwaukee (USA) in 1993, Walkerton (Canada) in 2000 and more recently Havelock North in New Zealand (2016). There are numerous other examples in the developed world which have been studied and reported in Hrudey & Hrudey (2014).

An important part of our work and relevant to our submission to this inquiry, is that WIOA is the industry endorsed Certifying Body for water, wastewater and recycled water treatment operators.

As the Certifying Body for treatment operators, WIOA has an important responsibility to ensure that people who undertake training and then become certified are capable of carrying out their responsibilities to the highest standard and that the certification program operates with integrity and transparency.

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In completing our submission, WIOA is specifically responding to Information Request 10 on Page 22, which poses the following questions:

- *Do water service providers supply high-quality water services in regional and remote areas?*
- *Are there examples of poor water quality, service interruptions, or other issues?*
- *Have regional water service providers adequately planned for extreme events?*

Whilst the numbers of operators employed in the water industry is not large, the roles and capabilities of employees in the industry are essential. A water crisis brought about through human error could potentially affect the health and wellbeing of individuals and communities, damage the environment and reduce the productivity of a wide range of associated businesses.

To minimise the risk to public health, the Australian Drinking Water Guidelines (ADWG) managed through the National Health and Medical Research Council (NHMRC), provides a solid platform for the management of drinking water and suggests a "catchment to tap" risk based approach to the management of drinking water quality.

State-based legislation, which includes various Safe Drinking Water Acts and Regulations, has introduced a regulatory framework that also follows the risk based approach to the management of drinking water quality as described in ADWG. It should be noted however, that no Australian jurisdiction has a minimum mandatory training standard for water treatment operators. In WIOA's view, this position is not consistent with community expectations.

As the ADWG and State based legislation are not prescriptive in describing the training for operational staff, the water industry has developed a voluntary Certification Framework - *"Water Industry Operator Certification Framework: Drinking Water, Wastewater, Recycled Water 2018".* Participation in the certification framework provides a mechanism for water utilities to demonstrate compliance with the Acts and Regulations.

A key component of the Certification Framework is the specification of minimum skills and knowledge required by treatment operators to work on water, wastewater and recycled water treatment plants. These competency requirements are aligned to the national vocational education and training (VET) system and in particular, to the Water Industry Training Package. Whilst participation in Certification is voluntary at this stage, there is a growing commitment from water industry employers to support certification. To date only around 250 of an estimated 15,000 treatment operators Australia wide have applied for certified status.

Apart from the lack of a specific regulatory driver for operator training, there are also emerging issues for the water industry from an operator training and development perspective. Due to the specialised nature of the skills and trianing required, the relatively low employee numbers compared to other sectors, and the geographically disperesed nature of the water industry workforce, the number of organisations delivering commercially viable training for the water industry is reducing. Being able to access and complete appropriate training for all operators is becoming increasingly difficult for water service providers and this is becoming an issue of great concern. Anecdotal evidence suggests that TAFE providers are moving away from these more "niche" industries in favour of the higher turnover and higher demand sectors which are more commercially viable, particularly in Victoria and New South Wales.

CASE STUDY - Water Research Australia's – "Value of Operator Competency Project"

In 2019, Water Research Australia undertook the Value of Operator Competency Project, a study to demonstrate the value of developing, building and continually growing a competent operator workforce. The project report noted that the ability of a frontline operator to capably and competently manage water quality safety risks is extremely important to public health and safety, and environmental outcomes. A frontline operator workforce without the right level of knowledge, skill and experience introduces a vulnerability to service delivery failure from human error. These failures compromise the ability of an organisation to meet customer and community expectations.

Research indicated that examples from international water quality incidents provided evidence of the value and benefits derived from an appropriately trained and competent workforce. These include:

- Assurance that the workforce is equipped with the required level of competency to fulfil roles and responsibilities, and is, therefore, well prepared to reliably deliver service obligations.
- A very high level of customer and community trust and confidence generated through the use of professional credentialing schemes that formally recognise the capability and competency of the workforce.
- Maintenance of service delivery standards now and for the future, particularly important considering the increasing complexity of water treatment technologies and automation.
- Portability of skills within the industry, enabling employees to move between employers and states/territories with minimal reskilling requirements - a robust supply of candidates with the capability to meet labour market needs.
- Increased staff confidence, engagement and innovation.
- Provision of an industry career pathway from entry-level roles through to career advancement.

The project demonstrated that value is derived from a well structured approach to employee learning and development; where defined minimum competency standards underpin roles and responsibilities, along with a commitment to maintaining and further developing competency.

A governance approach to employee training and competency, that is directly aligned to workplace requirements, provides the following benefits:

- A benchmark to assess the adequacy of employee training and competency.
- Ability to identify competency deficiencies and a basis to drive remedial action.
- A foundation to inform and build technical capacity, capability, and consistency across the industry.
- An industry credential as evidence of demonstrated basic minimum competency to capably perform duties.

Project Conclusion

The project findings suggest several factors affect the ability of the Australian water industry to guarantee that every organisation will have an appropriately trained and competent workforce. Therefore, this poses a barrier to fully experiencing the value and benefits mentioned above. For industries with a high duty of care for public health and safety, and environmental protection, it is imperative to derive the full value and benefits identified. These benefits provide the basis for effective human error risk mitigation strategies.

Project Recommendations

1. As a priority, it is recommended that regulators review frontline operator training and competency provision at an organisational level, using a nationally recognised and defined minimum competency benchmark. The regulatory review should seek to understand: the adequacy and efficacy of training provision, the alignment of training to roles and responsibilities and the water quality risks managed, provision of a 'fit for purpose' skill set, application of competency across the five operating principles, along with quality of learning and development opportunities offered. The objective is to determine if competency deficiencies reside within the water industry frontline operator workforce.

2. It is recommended that a targeted communication campaign is undertaken to improve the current understanding of frontline operator competency requirements. The industry at all levels must understand what constitutes the appropriate knowledge, skills and experience required to fulfil specific roles. The consequence of failing to meet these requirements is a potentially significant service delivery risk to water organisations. Organisations require an improved understanding of the efficiencies, a nationally consistent approach provides, such as streamlining skills-set creation through the guidance set out in the WIOCF to demonstrate workforce capability and competency.

3. It is recommended that the Australian water industry consider a further study targeted at water quality safety incidents and near misses specific to the Australian context to better understand the contribution of frontline operator competency (human error factors) to the root cause of these events.

4. It is recommended that the Australian water industry consider regulatory changes to drive a nationally consistent governance approach to the provision of frontline operator training and competency; either via mandated operator certification under the WIOCF or by defined minimum competency standards for frontline operator roles. Improving competency consistency is a step toward a more robust approach to human-error management within the Australian water industry

The Water Research Australia report on the Value of Operator Competency Project and the associated recommendations has been provided to all the water industry Regulatory bodies. To date there has been little public interest expressed in implementing any of the recommendations.

KEY MESSAGE

The Water Industry is essential to the protection of public health and the environment and for ensuring productivity and employment in many associated sectors of our communities. A mandatory Operator Certification requirement where defined minimum competency standards underpin roles and responsibilities, along with a commitment to maintaining and further developing competency should be implemented.

CONCLUSION

A change in regulation requring operational staff to meet mandatory defined minimum competency standards aligned to the treatment processes they are responsible for operating would deliver significant risk mitigation benefits and would also provide an additional stimulus to training for the water industry by increasing the numbers of operational staff seeking training opportunities.

WIOA strongly supports a solution which includes competency mapping to plant processes, continuing professional development and independent validation, which the National Operator Certification Framework currently delivers on a voluntary basis.

REFERENCES

Hrudey & Hrudey (2014) – *Ensuring Safe Drinking Water: Learning From Frontline Experience with Contamination* – American Water Works Association, ISBN 9781583219249NWI

Water Industry Operator Certification Framework: Drinking Water, Wastewater, Recycled Water 2018 - https://www.qldwater.com.au/Skills_water_operator_certification

Water Research Australia - Project Number **# 1111 :** Value of Operator Competency | A study to demonstrate the value of developing, building and continually growing a competent operator workforce, https://www.waterra.com.au/project-details/238

Water Industry Operators Association of Australia – Water Industry Operator Certification Scheme, https://wioa.org.au/certification/