SUBMISSION

3 August 2023

Electrical Safety Office
Office of Industrial Relations
GPO Box 69
Brisbane QLD 4001

Email: espolicy@oir.qld.gov.au

Dear Sir/Madam

Re: Review of the Electrical Safety Act 2002 (Final Report 2021)

The Queensland Water Directorate (***qldwater***) is the central advisory and advocacy body within Queensland's urban water industry, working with our members to provide safe, secure and sustainable urban water services (drinking water, sewerage and wastewater treatment) to Queensland communities.

In providing these essential services, the urban water sector own and operate water and wastewater treatment plants, pumping stations, reservoirs, and a range of other water technologies/ infrastructure. There are currently 370 water supply schemes and 265 sewage schemes ranging from large-scale infrastructure in South-East Queensland (SEQ), to facilities in regional and remote Queensland (including those servicing island communities).

The Queensland sector is comprised of 75 service providers directly employing nearly 7,000 people. Of the 75 publicly owned water service providers, 66 are local councils outside of SEQ, 15 of these are Aboriginal councils and two are Torres Straight Island councils.

Our membership includes all councils, the council owned Statutory Authorities in south-east Queensland (Urban Utilities and Unitywater) and the two state-government owned statutory authorities (Gladstone and Mt. Isa Water Boards). The urban water sector and some of our members are obligated entities under the *Security of Critical Infrastructure Act 2018 (Cth).*

The sector is experiencing unprecedented workforce and skilling challenges evidenced through high vacancy rates. This is being exacerbated by geographical factors, limitations in Award structures within local councils, TAFE Queensland's withdrawal from delivery of training for the sector in 2022, and a lack of visibility of the sector.

The urban water sector is increasingly utilising renewable technologies (including, but not limited to solar), where climate change mitigation strategies and cost benefits permit, or where remote locations favour such technologies.

We welcome the opportunity to provide a submission on the Review of the *Electrical Safety Act 2002*. ***qldwater*** provides this submission without prejudice to any submissions from our members or other urban water providers.

Background

qldwater understands that the review of the *Electrical Safety Act* was to ensure Queensland's electrical safety laws continue to provide high safety standards for workers and communities, while recognising that new and emerging technologies have had significant effects on electricity generation, storage, and supply.

qldwater welcomes the acknowledgement of new technologies and the increasing rate of technological change as part of this review. The urban water sector is adopting more 'plug and play' type technologies which has the capacity to make installation and maintenance more efficient, particularly benefitting remote-area plant and councils with limited continuous access to trade-qualified and licenced staff or contractors.

Matters of Particular Consideration for the Urban Water Sector

1. ***Work Involving Water Equipment (Section 72, Regulation)***

qldwater understands that the intent of this section applies to work pools and water features as per the definition in the Explanatory Notes:

water equipment means designated equipment that is in, or that surrounds the water container of, a swimming pool, paddling pool, spa pool, water feature or water tub.

Amendments to this section may have unintended consequences for water treatment and wastewater treatment plant including but not limited to replacement of parts on chlorinators.

We also note the number of pools and water features that are owned and operated by local councils and specifically request that targeted consultation occurs with the sector around any amendments to Section 72.

2. ***Hazardous Atmospheres***

qldwater acknowledges the definitional issues outlined in the Report (December 2021, page 63), and particularly the acknowledgement that there is a changing profile of (atmospheric) risk associated even within fixed areas. This is particularly the case for the urban water sector.

Therefore, ***qldwater*** supports Recommendation 20 with regards to clarifying the meaning of '*an area in which the atmosphere represents a risk to health and safety from fire or explosion*' to assist with straightforward application to real world situations.

We do request that the urban water sector is a key stakeholder in all future work by the Office of Industrial Relations to progress this recommendation.

3. Climbing Poles of Electricity Entity Prohibited (Section 278 of the Regulation)

qldwater wishes to note urban-water specific issues which will impact on Recommendation 82, most notably around telecommunications and electrical infrastructure deployment on critical water assets.

There are numerous deficiencies relating to telecommunication infrastructure deployment (which requires electrical connection) in the regulatory legislation framework (*Telecommunication Act 1997, Cth),* which are negatively impacting upon the urban water sector.

These deficiencies include (but are not limited to) the following:

1. conflicts associated with a water service provider's ability to meet their legislative obligations and statutory functions (which include public health functions[1]) and the ability to control (including maintaining and operating) its assets due to the impacts associated with telecommunication equipment being deployed directly onto water infrastructure and/or on sites;

2. deficiencies in the regulatory legislative framework surrounding the telecommunication deployment in general and unacceptable risks to drinking water quality, public health, asset protection and worker safety (including exposure to electro-magnetic emissions radiation). We note, these issues have been extensively canvassed by the water sector;

3. amendments being made to the regulatory framework in a piecemeal fashion to expedite the rollout out of technologies (5G infrastructure and other telecommunications facilities) in circumstances where water public utility landowners/asset owners' interests and concerns have not been adequately addressed or sufficiently advanced despite these concerns being notified to the relevant Federal Government Department in 2017, and noting that these concerns also include legacy issues associated with redundant and unknown equipment; and

4. conflicts between the Commonwealth legislated critical infrastructure security obligations, owed by water services providers who are responsible for critical infrastructure (to prevent "material risks" by the requirement to develop, adopt and maintain critical infrastructure risk management plans applying to critical infrastructure assets along with codified "physical security obligations" and mandatory annual reporting which includes attestations from boards and their equivalents), under the *Security of Critical Infrastructure Act 2018 (Cth*) and land obligations owed to telecommunication carriers under the *Telecommunication Act.*

Telecommunication equipment requires an electrical connection which has also led to the installation of power poles directly onto water infrastructure (such as reservoirs). Please refer to Attachment 1 showing an example of an electricity pole which has been fitted to the external wall of a water reservoir (at height).

[1] Due obligations of public health, the water sector is unique to other industry groups and requires further protective measures. The provision of a safe and reliable drinking water supply is critical for the health and wellbeing of all persons.

The direct conflict associated with a water service provider's ability to meet its legislative obligations and statutory functions and the ability to control (including maintaining and operating) its assets due to the impacts associated with telecommunication equipment has been problematic for water services providers across Queensland. This concern has escalated with the increasing deployment of 5G and occupation of telecommunication equipment on water assets (coupled with the legacies of unknown and old technologies which remain on water sites). This raises safety, security and operational issues, particular in relation to drinking water quality, public health, asset protection, worker safety (for example, ensuring workers are not exposed to electromagnetic emissions (EME) radiation, or the potentially fatal impact of a high-pressure water main physical breach).

qldwater cautions against the imposition of any further restrictions on the ability of water providers to access and maintain their assets due to the presence of electricity infrastructure (such as *poles and wires)* on water infrastructure.

4. Safety Switches on All Sub-Circuits (all Settings), Chapter 10

qldwater seeks clarification on the benefits of mandating a residual current device in preference to an over-current device. If a circuit is correctly earthed within a correctly earthed installation, the perspective short circuit current would immediately disconnect the supply (quicker than the 0.03 second requirement for a safety switch).

Safety switches are cost-prohibitive for multi-circuit installations (particularly for financially vulnerable councils and other stakeholders), and they also require a program of continuous and regular testing.

qldwater does support a risk assessment approach (as referenced by Stanwell Corporation on page 109), for high risk industrial/commercial fixed equipment for safety reasons. An alternative could be equipotential bonding and adequate earthing with HRC-overcurrent protection to ensure the automatic disconnection of supply in fault conditions (which would reduce the risk of mechanical failure in RCDs and MCBs due to prolonged periods of inattention).

Simply adding a safety switch to all circuits is a 'band-aid' for a poor installation as it can mask inadequate earthing for fixed equipment. A preferred approach to manage safety concerns, is to introduce earth-loop impedance testing on all circuits to identify low impedance, so to ensure the disconnection of supply should an issue arise. It would also identify the need for any rectification (which may be a safety switch or further earthing).

If safety switches or testing is mandated, a suitable timeframe for management or compliance and appropriate funding must be considered for remote areas and/or some installations based on financial vulnerability (for example regional and remote councils).

qldwater does support the use of safety switches for all circuits supplying portable equipment.

qldwater and our members are committed to robust, evidence-based health and safety regulation informed by engagement with impacted industries. We welcome the opportunity to work with the Office of Industrial Relations to communicate all relevant matters (electrical and other) to the urban water sector.

Please do not hesitate to contact me if you have any questions.

Yours faithfully

[redacted]

Attachment 1