

UTILITIES TECHNICAL REGULATION

ANNUAL COMPLIANCE REPORT 2016–17

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1 INTRODUCTION

1.1 TECHNICAL REGULATION

The Utilities Technical Regulation Team (UTR) within Access Canberra operates under the *Utilities (Technical Regulation) Act 2014* (the Act). The statutory office holder under the Act is the Technical Regulator, a role held by the Director-General of the Environment, Planning and Sustainable Development Directorate. The Technical Regulator reports to the Minister for Climate Change and Sustainability.

The objects of the Act are to:

- ensure the safe, reliable and efficient delivery of regulated utility services;
- promote the long-term serviceability of regulated utility networks and services;
- promote design integrity and functionality of regulated utility networks;
- > ensure the safe and reliable operation and maintenance of regulated utility networks and regulated utility services to protect the following:
 - the public;
 - people working on regulated utility networks and regulated utility services;
 - property near regulated utility networks and regulated utility services; and
 - the environment.

Regulated utility services include services delivered by licensed utilities; as well as small and medium scale electrical generation, registrable dams, some district energy services and regulated utility services prescribed by the Minister.

1.2 LICENSED UTILITY PROVIDERS

Within the Australian Capital Territory (ACT) utilities are licensed by the Independent Competition and Regulatory Commission (ICRC) under Part 3 of the *Utilities Act 2000*. Licensed utilities operating in the ACT during 2016–17 included:

- > Electricity Transmission
 - ► TransGrid
- > Electricity Transmission, Distribution and Connection
 - ActewAGL Distribution*
- > Gas Transmission
 - ► East Australian Pipeline Limited
- > Gas Distribution and Connection
 - ActewAGL Distribution*
- > Water and Sewerage Supply
 - ► Icon Water Limited
- * On 1 January 2018 ActewAGL Distribution changed its name to Evoenergy as a result of a decision by the Australian Energy Regulator. ActewAGL remains the name for the retail side of the business.

1.3 UTILITY COMPLIANCE

The Technical Regulator may issue a written direction to require compliance by a regulated utility when satisfied that the utility has contravened, or is likely to contravene, a technical code. Whilst there were areas of non-compliance with various requirements of technical codes by licensed utilities during 2016–17, none were serious enough to warrant the issue of a direction by the Technical Regulator under section 18 of the Act. However, there are a number of important issues identified in this report that will be closely monitored by the Technical Regulator. These include:

- Electricity adequacy of the data used by ActewAGL Distribution to determine quality of supply in accordance with the <u>Electricity</u> <u>Distribution (Supply Standards) Code</u> (section 3.5).
- > Gas safety of gas meters in medium-density high-rise apartments (section 5.1); and ensuring the continued integrity of a pipeline which experienced a perforation along the light rail corridor.
- > Water adequacy of demonstration of the safety of some Icon Water Dams (section 7.3); and inability to deliver full fire flows to some customers under all operating circumstances (section 7.7).

The Act requires that Operating Certificates be issued by the Technical Regulator for unlicensed regulated utility services provided in the ACT. Unlicensed utilities include solar farms, the Inner North Reticulation Network (INRN - an existing recycled water network), the owning of registrable dams and the light rail network. The Technical Regulator had no compliance issues with unlicensed utilities during the reporting period.





2 LEGISLATION AND POLICY

2.1 NEW LEGISLATION ENACTED DURING 2016–17

Minor legislative amendments were introduced as part of the *Planning, Building and Environmental Legislation Amendment Bill 2016*, an annual process by which various minor amendments are made to legislation administered by the Environment, Planning and Sustainable Development Directorate. During 2016–17 this included changes to the Act by setting 200kW as the lower limit for generators requiring an operating certificate based on current industry practice; and adding an option for utilities to report incidents to the Technical Regulator by email.

2.2 UTILITY CODE REVIEW PROGRESS 2016–17

Following the commencement of the Act on 28 November 2014, a major focus of UTR has been a thorough revision of technical codes approved under the Act. UTR recognises the opportunity of working with industry to create a new regulatory framework that facilitates modern streamlined regulation and adopts best management practices, enables innovation and improves stakeholder engagement.

UTR acknowledges the constantly changing environment that utility network businesses operate within and the impacts of market changes and consumer choice on utility products and services.

UTR recognises the need to address current code deficiencies limiting safe and efficient utility operations, regulation and compliance.

To this end UTR's major focus for the next period is the continued development of a single code for each of the licensed utility sectors (electricity, gas and water) that will rationalise existing disparate and contradictory Codes and incorporate consistency of general requirements across all sectors. Provision will be made for sector-specific requirements where appropriate.

Engagement with the utilities enables UTR to consider their concerns and develop appropriate regulatory requirements. Informal consultation with ActewAGL Distribution and Icon Water commenced during 2016–17 and will continue during the next reporting period for the purpose of seeking input from each utility on specific code issues.

3 ELECTRICITY UTILITY PERFORMANCE 2016–17 – ACTEWAGL DISTRIBUTION

Electricity utility services are provided to the ACT via TransGrid, the transmission service provider, which supplies ActewAGL Distribution as the distribution service provider.

ActewAGL Distribution's performance in delivering these services during 2016–17 was largely satisfactory, however some aspects of the utility's performance did not fully comply with technical code requirements. The more salient performance issues are reported below.

3.1 NOTIFIABLE INCIDENTS

ActewAGL Distribution reported the following Notifiable Incidents during 2016–17:

TABLE 1: NOTIFIABLE INCIDENTS

	2015-16	2016–17
Deaths	0	0
Dangerous Incidents Includes:	53	59
• Fires	17	16
Electric Shocks	36	43
Serious Property Damage	13	0
Serious Environmental Damage	3	0
Total Notifiable Incidents	69	59

UTR and ActewAGL Distribution are working together to improve the clarity of reporting requirements to ensure the comprehensive reporting and investigation of incidents as well as measures to avoid their occurrence.

3.2 POLE INSPECTION AND MAINTENANCE

A key risk factor to ActewAGL Distribution's operations and the community is the structural integrity of their power poles. To control this risk they have a rolling condition testing program for power poles. The purpose of the program is to confirm that poles in their network remain safe (structurally adequate). 'Condemned' poles are deteriorated poles that represent an increased risk to public safety and supply continuity. ActewAGL Distribution procedures require that condemned poles are replaced or remediated within 12 months for distribution poles and 24 months for transmission line poles. This procedure is based on the assessment by ActewAGL Distribution that if left for a longer period the risk to the community from a falling pole becomes unacceptable.

Advice provided by ActewAGL Distribution and summarised in **Table 2** indicates that during 2016–17 its timeliness to attending to condemned poles has significantly deteriorated thereby increasing the number of distribution poles not remediated or replaced within 12 months from 33 to 135.

In 2016–17 the number of condemned transmission line poles (61 or 10.6%) has also significantly increased compared to previous years.

In March 2017 UTR commissioned an audit of ActewAGL Distribution's pole management systems. The audit identified a number of deficiencies requiring attention for effective pole management. This included deficiencies in addressing condemned poles in a timely manner.

UTR is continuing discussions with ActewAGL Distribution regarding the findings of this audit to improve pole management.



TABLE 2: CONDEMNED POWER POLES IN ACTEWAGL NETWORK

	2013-14	2014-15	2015-16	2016–17
Total number poles Distribution Transmission 	50,911 49,442 1,469	50,704 49,234 1,470	50,683 49,206 1,477	50,319 48,846 1,473
Number of poles tested DistributionTransmission	16,243 16,042 201	11,103 10,695 408	13,501 13,365 136	12,521 11,945 576
Number of poles condemned (as a % of poles tested)DistributionTransmission	1,547 (9.5%) 1,547 0	837 (7.5%) 837 0	1,091 (8.08%) 1,074 17	834 (6.66%) 773 61
Number of condemned poles replaced or remediated within required 12/24 months period Distribution 	1,225 1,211 14	1,520 1,510 10	1,106 1,106	1,163 1,162
Transmission	ΤŢ	10	0	1
Number of condemned poles not replaced or remediated within required 12/24 months period.	934	51	33	135
Distribution	911	43	33	135
• Transmission	23	8	0	0
Dangerous poles and pole failures (requires urgent action)DistributionTransmission	No data	No data	8 8 0	4 3 1



3.3 VEGETATION MANAGEMENT

Maintaining adequate clearances within close proximity of power lines is an important bushfire mitigation measure that also affects power supply reliability. During 2016–17 UTR continued working with ActewAGL Distribution to improve vegetation management practices near powerlines. A proposal was collaboratively developed to amend the Act by assigning clear responsibility for vegetation management near overhead power lines in the urban area, on rural leased land and in national parks and reserves. This work will continue throughout the next reporting period.

ActewAGL Distribution has a rolling inspection and clearance cycle for vegetation management. Distribution powerlines are inspected for vegetation clearance requirements every three years in urban areas, whilst in bushfire prone areas they are inspected annually. Transmission lines are inspected annually.

In the 2016–17 reporting period all scheduled areas were inspected and any identified bushfire risk issues were mitigated prior to the commencement of the bushfire season.

3.4 PHOTOVOLTAIC ELECTRICITY GRID PROTECTION REQUIREMENTS

Privately owned solar panels have been installed widely throughout the ACT over the past 10 years. Photovoltaic (PV) Inverters are an essential component of all these installations and automatically operate to disconnect PV-generated electricity supply from the ActewAGL electricity network if supply from the grid is disrupted for any reason.

To ensure that the safety features of inverters continue to operate satisfactorily in the event of a power failure in the ActewAGL grid, the Electricity Service and Installation Rules require inverters to be tested every five years to ensure they are functioning correctly and will not cause a safety hazard for maintenance staff.

ActewAGL Distribution has advised there are now 18,486 PV installations in the network as shown in **Table 3**.

ActewAGL Distribution advise that they have sent PV Inverter re-test reminders to customers with PV installations over five years old as per **Table 4**.

This results in approximately 7,000 PV installations more than five years old where their condition is unknown. If faulty, they are a potential safety hazard for maintenance staff.

ActewAGL Distribution has considered this safety hazard and resolved that if a customer fails to respond after a third reminder then their PV installation will be disconnected from the electricity network. UTR will continue to monitor progress regarding this management strategy to ensure that the safety risk to ActewAGL maintenance staff is minimised. To date, ActewAGL Distribution has not disconnected any customer's PV installations despite ACAT directing them to do so.

TABLE 3: PHOTOVOLTAIC INVERTERS (PV) CONNECTED TO THE ELECTRICITY NETWORK

Year	Number of PV systems connected each year
2016–17	1,188
2015-16	1,274
2014–15	1,240
2013-14	2,062
2012–13	1,723
2011-12	4,823
2010-11	3,537
2009–10	1,881
2008–09	445
2007–08	226
Prior to 2007–08	87
Total installed	18,486

TABLE 4: PV INVERTER CUSTOMER RE-TEST REMINDERS SENT BY ACTEWAGL DISTRIBUTION AND CUSTOMER RESPONSES

	Prior to 2016–17	2016–17	Total
Number of re-test reminders sent by ActewAGL to customers with PV installations over 5 years old.	7,870	1,632	9,502
Test reports received by ActewAGL	3,127	864	3,991
Number of PV Installations Disconnected for non- compliance with testing requirement	0	0	0
Number of PV Installations older than 5 years	6,176	4,823	10,999
Number of untested in-service PV Installations older than 5 years.*	3,049	3,959	7,008
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* Does not allow for any PV Installations that may have been removed from service as this information is not available, but the number is expected to be minimal.

3.5 QUALITY OF SUPPLY – ANNUAL SURVEY

The *Electricity Distribution (Supply Standards) Code* requires ActewAGL Distribution to report annually on quality of supply parameters within its network, as referenced in the code. However, they have only reported survey results for some quality of supply parameters, and the survey monitoring points are not compliant with the requirements of the code and *AS 61000 Electromagnetic compatibility* (EMC). The percentage of non-compliant sampled sites is high at circa 36%.

In 2016–17 the number of sites sampled has increased but continues to be low, to the point where it is considered insufficient to provide a statistically valid representation of network performance. ActewAGL Distribution also received 24 customer complaints of high voltage; 22 (92%) of these were substantiated.

UTR is continuing discussions with ActewAGL Distribution regarding the parameters of the sampling program. It is recommended that sampling involves an adequate sample size for the whole of the Canberra electricity network, considers all variables that contribute to the quality of supply and that the sample sites selected and monitoring points are representative of the quality of supply that customers will receive. An effective strategy would include a program monitoring random sites throughout Canberra in accordance with AS 61000.3.100 Electromagnetic compatibility (EMC) Limits – Steady state voltage limits in public electricity systems, and another program focused on monitoring areas with a high exposure to power quality problems because of network changes eg. high concentration of PV installations, network re-configurations.

Table 5 summarises survey results for the past four years and shows that there is a high percentage of overvoltage at surveyed sites. Overvoltage can cause premature equipment failure and possibly injuries. More effective management of this issue by ActewAGL Distribution is required to improve performance and compliance.

3.6 DEFECTIVE NEUTRAL

Defective neutrals are of concern because they increase the risk of personal injury and equipment damage.

It is encouraging to report that the number of neutral defects reported in 2016–17 has continued to decrease, as shown in **Table 6.**

3.7 RELIABILITY INDICATORS

The *Electricity Distribution (Supply Standards) Code* sets supply reliability targets for Customer Average Interruption Duration per interruption (CAIDI), Interruption Frequency (SAIFI), and System Average Interruption Duration per customer (SAIDI).

The targets for SAIFI and SAIDI were met but as shown in **Table 7** the CAIDI result, whilst an improvement on past years, again failed to meet the target. This is considered a minor non-conformance as CAIDI is considered a secondary reliability indicator.

The results indicate that compared to last year customers experienced supply interruptions less frequently but for a longer duration.

3.8 EMERGENCY PLANNING

During 2016–17 ActewAGL Distribution submitted its annual update of the Electricity Networks Emergency Management Plan as required by the *Utilities (Emergency Planning Code).*

The plan submitted integrates with ActewAGL Distribution's Crisis and Emergency Management Framework and was accepted as meeting the code requirements.

TABLE 5: QUALITY OF SUPPLY

	2013-14	2014-15	2015-16	2016–17
Number of sites where voltage levels were proactively surveyed	40	44	19	55
Number of proactively surveyed sites requiring remedial action due to overvoltage	10 (25%)	25 (57%)	8 (42%)	20 (36%)
Number of Customer high voltage complaint initiated surveys	26	Unknown	21	24
Number of valid customer complaints	10 38%)	Unknown	17 (81%)	22 (92%)

TABLE 6 - DEFECTIVE NEUTRALS

	2014-15	2015-16	2016-17
Defective neutrals	65	39	28

TABLE 7: ELECTRICITY SUPPLY RELIABILITY

Parameter	Target	2013-14	2014-15	2015-16	2016–17
Interruption Duration per outage(CAIDI) minutes	74.6	98.9	100.3	85.71	92.84
Interruption Frequency (SAIFI) Number	1.2	0.69	0.82	0.92	0.90
Interruption Duration per customer (SAIDI) minutes	91	67.8	82.5	79.04	83.74



4 ELECTRICITY TRANSMISSION SERVICE PROVIDER PERFORMANCE 2016–17 - TRANSGRID

TransGrid submitted a satisfactory Electricity Network Safety Management Plan and associated supporting documents and advised the following statistics in relation to the ACT for 2016–17:

4.1 ELECTRICITY TRANSMISSION SUPPLY CODE – SECOND POINT OF SUPPLY

The *Electricity Transmission Supply Code* was approved by the Minister for the Environment and Climate Change on 11 July 2016. This code establishes a regulatory requirement for TransGrid to deliver a geographically separate transmission supply point for the ACT by 31 December 2020. This will ensure continuity of supply should the existing Canberra Substation point of supply experience a complete failure - a special contingency event.

The *Electricity Transmission Supply Code* also establishes interim procedures governing contingency planning by ActewAGL Distribution following a special contingency event before the geographically separate transmission supply is established. TransGrid submitted a satisfactory Supply Security Status Report as required in January 2017.

TABLE 8: TRANSGRID PERFORMANCE STATISTICS

Transgrid Performance Statistics	2016-17
Energy not served events (reliability)	Nil
Major asset failures	Nil
Number of Poles/Towers: • Tested • Condemned	406 Nil
Number of Vegetation:EncroachmentsEncroachments not cleared prior Bushfire Season	5 Nil
Death of a person	Nil
Dangerous Incidents: • Fires • Electric Shocks • Public Injuries • Worker & Contractor injuries	Nil Nil Nil Nil
Serious Property Damage	Nil
Environmental breaches	Nil



5 GAS UTILITY PERFORMANCE 2016–17 – ACTEWAGL DISTRIBUTION

ActewAGL Distribution's performance in delivering gas utility services was largely satisfactory during the 2016–17 reporting period. Over the period of this report there continues to be improvement by the utility in its practice for new gas meter set installations.

UTR acknowledges ActewAGL Distribution's improvements in compliance and application of the relevant technical standards during the reporting period. ActewAGL Distribution reported being compliant with its licence to provide gas distribution and connection services under the Utilities Act 2000 for the reporting period.

5.1 SERIOUS GAS ACCIDENTS AND INCIDENTS

ActewAGL Distribution reported one serious gas incident during the reporting period 2016–17.

The nature of this incident was a corrosive perforation of the 450mm diameter steel pipeline located at the intersection of Northbourne Avenue and Rudd Street, in Civic – Canberra's CBD and main shopping precinct. While the incident had no impact to the supply of gas to customers and at no time was an unacceptable risk to the public, the incident management ran over several days with the Emergency Services Agency and ACT Policing involved to provide traffic control over 48 hours whilst temporary repairs were undertaken.

UTR expressed concerns at the integrity of this steel gas main due to the development of a rust hole that allowed the loss of gas containment. The same gas main is located within various sections of Civic and runs parallel to the proposed Capital Metro light rail alignment along Northbourne Avenue.

ActewAGL Distribution defined the incident as an isolated pin-hole leak resulted from a localised corrosion defect during construction, which led to the development of a rust hole perforation.

UTR sought clarification from the utility regarding the potential for further such occurrences and the utility's measures to confirm and maintain the integrity of the specific pipeline.

The utility advised that they were unable to conduct a detailed pipeline integrity assessment to identify any additional defects due to the nature of construction of the pipeline.

As an alternative ActewAGL Distribution has undertaken to perform 'condition inspections' as opportunities are presented from the light rail project's construction works which involve exposing sections of the pipeline. Should any defects be identified, ActewAGL Distribution will provide UTR with reports detailing anomalies identified and associated remediation plans.

In order to manage and maintain the integrity of the pipeline, ActewAGL Distribution referred UTR to the existing management systems (including such systems as pipeline inspections, patrol and emergency management etc) under their Safety and Operating Plan as being appropriate for the ongoing safe operation and management of the pipeline.

UTR continues to monitor the ongoing management, integrity reviews and controls by ActewAGL Distribution of the pipeline.

5.2 SAFE GAS METERING

As recorded previously in UTR's annual compliance reports, UTR continues to hold safety related concerns for domestic gas meter set installations located inside buildings prior to July 2014.

Such gas meter set installations are designed to operate without any form of utility intervention (either inspection or maintenance) for the term of their service life. The ActewAGL Distribution service life for these installations is 15 years.

While odorant added to gas aids with leak detection, it does not aid the control mechanism to stop or decrease the volume of potentially escaping gas. The adequacy of apartment ventilation, first response access and ability to isolate the gas supply for these installations remains of concern to UTR.

UTR is concerned that the current operating regime may in the event of an internal gas meter set fault expose occupants of an apartment to gas escaping into occupied areas within the service life of the installation.

During the reporting period, UTR commenced an independent investigation and review into the safety of existing gas meter set installations located inside apartments. UTR anticipates a report of the findings from this investigation and review will become available during the next reporting period.

5.3 GAS METER MAINTENANCE

As reported previously, ActewAGL Distribution's current maintenance practice requires that only large capacity gas meter set installations (greater than 10m3/h capacity) are periodically maintained or inspected. This practice leaves the majority of gas meter set installations not scheduled for any form of maintenance or inspection whilst in service.

UTR has concerns with this approach for gas meter set installations located within medium density high rise apartments. In the event of an emergency where gas is released, options for termination of supply and utility access to equipment for gas isolation can be restricted. ActewAGL Distribution in the two previous reporting periods undertook to confirm the appropriateness of its maintenance practices for all classes of gas meter set installations via the completion of independently facilitated Formal Safety Assessments (FSAs). Such FSAs and final reports (which were planned to be completed in the previous reporting period) remain outstanding. UTR continues to seek resolution of this safety concern with ActewAGL Distribution.

5.4 AGED GAS METER REPLACEMENT

As a part of its meter management program ActewAGL Distribution undertook a review of meter populations reaching the end of their in-service life. Under the provisions of the *General Gas Metering Code 2000*, these aged meter populations may be tested (via sample tests) for assessment as to whether their performance (e.g. accuracy and integrity) supports an extension to their in-service operational life ('Life Extension'). ActewAGL Distribution sample tested specific meter populations during the period.

5.5 TESTING OF GAS METERING EQUIPMENT

ActewAGL Distribution provided a *FY17 ActewAGL Domestic and l&C Meter Life Extension Report* which outlined the process to support the extension of the operational life of specific populations of gas meters by five years beyond their 15 year life cycles. The report demonstrated the relevant sample testing processes and test results required for life extension acceptance of the respective aged meter populations (in accordance with AS 4844: 2006 Gas meters – inservice compliance testing).

ActewAGL Distribution reported being compliant with the Gas General Metering Code for the reporting period.

5.6 NETWORK PLANNING AND REVIEW

As part of ActewAGL Distribution's management of the network it undertakes network performance reviews for the purpose of validating network supply performance and network capacity. A network capacity report was completed identifying capacity upgrade requirements together with timings of associated projects.

ActewAGL Distribution has advised that network pressure gauging programs indicated there are no immediate supply issues in the network. Pressures at terminal points were advised as being above required minimum pressures for the respective networks.

5.7 DOMESTIC GAS PRESSURE REGULATORS

ActewAGL Distribution has reported a three-fold increase in the number of domestic gas pressure regulators replaced over the last four years. ActewAGL Distribution advises that the increase is the result of a potential design fault in the spindle and plastic cap of a particular population of regulators that has potential to lead to a gas leak. As a consequence, a systematic change out program of these regulators is a contributor to the increased replacement quantities.

Additionally, in conjunction with the end of service life aged gas meter replacement programs the consumer gas regulator is also being replaced at the same time as an operational efficiency practice, regardless of operational condition or previous change out age.

5.8 GAS LEAKAGE SURVEY

ActewAGL Distribution, as part of its annual network integrity program reported that it undertook a significantly reduced leakage survey program during the reporting period, accounting for the completion of only one suburb (survey length of 46.3kms).

Historically, ActewAGL Distribution has undertaken a program ensuring 100% of the gas network is surveyed for leaks over a five year period (reflecting 20% of the network being surveyed each year). The surveyed quantity completed in this reporting period represents only 6.2% of the 100% historical annual length surveyed. The annual leakage survey approach facilitates a planned approach to managing identified leaks in a coordinated manner. UTR is to confirm with ActewAGL Distribution that the outstanding survey length of 707km (length not completed during this reporting period) is to be completed in addition to the 20% within the next (2017–18) reporting period.

The survey results indicate continued low levels of network mains leakage, reflective of the modern nature of the ActewAGL Distribution network.

The number and severity of leaks at meter installations identified and reported reflects consistent results with previous reporting periods.

5.9 PIPELINE PROTECTION – CATHODIC PROTECTION

ActewAGL Distribution reported being compliant with the protection criteria under AS2832.1 for Cathodic Protection Systems (CP) and CP performance during the reporting period. Such CP systems are required for the ongoing integrity and protection of the steel network.

The Canberra light rail infrastructure remains identified as potentially having an adverse effect on CP performance within the light rail corridor. UTR and ActewAGL Distribution continue to work with Canberra Metro and associated stakeholders for the purpose of ensuring controls are in place where required to mitigate impacts on the gas network.

5.10 ANNUAL REPORTING

Over the last two reporting periods, the quality and availability of information supplied to UTR by ActewAGL Distribution has generally been viewed as adequate. Some issues in regard to adequacy and accuracy of requested information and non-compliance with code requirements remain a concern for UTR, for example:

Gas metering data

As previously reported, UTR has needed to repeat its request for gas metering information in order to obtain adequate and accurate information in regards to gas metering location data.

Gas Safety and Operating Plan Code

ActewAGL Distribution's last approved Safety and Operating Plan (SaOP) by the Technical Regulator was in 2015. A subsequent SaOP was submitted to UTR in 2016 which on review by UTR incorporated a number of minor issues that UTR requested to be addressed. In some instances these issues were addressed in the SaOP submitted by ActewAGL Distribution in 2017 with some residual issues still outstanding. UTR will be seeking closure of these matters during the current reporting period.

General Gas Metering Code - Approval of Meter testing Procedures

Under Clause 12.2 of the code, the utility is required to seek approval from the Technical Regulator of its testing procedures to support test outcomes for specific meter populations where they seek extension to the operating life of such meters.

For the previous two reporting periods, ActewAGL Distribution has not formally requested acceptance of its meter testing procedures nor requested approval to extend the life of meter populations determined as being within acceptable tolerance in the test reports.

Test report submissions provided to UTR in 2016 and 2017 were produced by a meter testing authority. The reports contained test results of populated gas meters for the two specified years.

UTR will be seeking clarification of this administrative matter and of the status of meter testing and meter life extensions from ActewAGL Distribution during the current period.



6 GAS TRANSMISSION PERFORMANCE 2016–17 – APA GROUP

- - -

East Australian Pipeline Limited (a wholly owned subsidiary of APA Group) holds a utility licence for one of two transmission pipelines entering the ACT. APA Group operates and maintains the Moomba to Sydney pipeline system (MSP) on behalf of EAPL including the Dalton (NSW) to Canberra (ACT) spur line.

In conjunction with the ACT, APA Group also submits a comprehensive annual report to the NSW Regulator for the Sydney to Moomba pipeline (MSP) which includes numerous laterals and spurs lines of which the Dalton to Canberra licensed spur line is included.

APA Group performance of operating, maintenance and quality of supply on the gas transmission Dalton to Canberra licensed spur line for the reporting period was considered by UTR as satisfactory.

6.1 SERIOUS GAS ACCIDENTS AND INCIDENTS

APA Group reported no serious gas accidents or incidents during 2016–17.

As a part of its commitment to public safety APA Group undertakes landholder and local council gas safety awareness programs. These programs are designed to mitigate the occurrence of serious gas accidents or incidents.

APA Group also continues to monitor activities on, over and around the pipeline easement via aerial surveillance and land vehicle patrols to ensure construction activities do not impede the pipeline operation and/or easement integrity.

6.2 GAS SAFETY AND OPERATING PLAN

The Gas Safety and Operating Plan Code 2000 requires APA Group to prepare and periodically update a Safety and Operating Plan (SaOP). APA utilises the Pipeline Management System (PMS) within the Australian Standards (AS 2885 Pipelines – Gas and Liquid Petroleum) to meet and exceed the requirements of this code. The PMS describes how APA Group plans to safely operate and manage the gas transmission assets under management.

6.3 EMERGENCY PLANNING

APA Group has a national emergency planning model to cover multi-jurisdictional requirements. APA Groups Transmission National Emergency Response & Security Manual (320-MN-ER-0001) has been deemed as acceptable by UTR as meeting the requirements intended by the Emergency Planning Code.



7 WATER UTILITY PERFORMANCE 2016–17 – ICON WATER

Icon Water's performance in delivering water and sewer utility services and its co-operation with UTR were both satisfactory during 2016–17. The organisation has committed significant resources toward the development of an asset management system that complies with the International Standards for Asset Management (ISO55001). This is expected to rationalise the capital expenditure and operating expenditure programs as it is vertically integrated within the business.

Reportable items for the year include:

- Four of the five Scheduled Dams are not fully compliant with Utilities (Dam Safety Code).
- Icon Water is unable to fully comply with the conditions of its 2004 agreement with the ACT Fire Brigade. This has potential impacts for 4,000 water customers (3% of customers).
- Performance in relation to sewer main breaks and chokes continues well below the industry average.
- Icon Water continues to improve the administration of its Liquid Waste Acceptance Policy, but has yet to commit to a system that avoids cross subsidy.

An audit for this year was conducted on the processes for approval and acceptance of gifted assets through Greenfield development (subdivision for land release) – see section 7.6 below.

7.1 SERIOUS ACCIDENTS AND INCIDENTS

UTR recognises that the nature of the water and sewer network is such that, when compared with the gas or electricity networks, the risk profile for Icon Water staff and the public is generally lower. Nevertheless, Icon Water has an established means of reporting accidents and incidents directly to UTR when they do occur as required by the Act.

During 2016–17 Icon Water reported no serious accidents or incidents.

7.2 EMERGENCY PLANNING

During 2016-2017 Icon Water submitted updates of the draft Water Supply and Sewerage Emergency Management Plan and Dam Safety Emergency Plans as required by the *Utilities (Emergency Planning Code)* and the *Utilities (Dam Safety Code)*. The plans integrate with Icon Water's Emergency Management System (EMS) and were accepted as meeting requirements of the applicable codes.

7.3 DAM SAFETY

Icon Water is licensed to provide water services in accordance with Section 11 of the *Utilities Act 2000*. In order to meet its supply obligations, Icon Water operates and maintains a water network including multiple water storages. Twenty (20) of the water storages are also 'registrable' dams as defined in Part 8 of the UTR Act. However as a licensed utility Icon Water does not require an operating certificate for its dams.

The largest five dams are also 'Scheduled Dams' under the ACT Dam Safety Code. Icon Water is fully responsible for the safety of its dams. In order to mitigate the substantial consequences of a dam failure it conducts an inspection and surveillance program for all of its dams generally in accordance with the requirements of ANCOLD (Australian National Committee on Large Dams).

During 2014-2015 Icon Water first acknowledged that it could not demonstrate the current safety of its 'Scheduled Dams' in the manner required by the *Utilities (Dam Safety Code)* due to historical shortcomings in its surveillance program. Whilst Icon Water considers its surveillance indicates that there is no imminent risk, it has provided UTR with assurance it will undertake the necessary safety assessment to demonstrate full compliance of the five 'Scheduled Dams' by December 2018. At 30 June 2017 Icon Water has commenced safety reviews and confirmed that it remains on track to meet this commitment.

Dam anchor inspections for three dams are scheduled for 2017–18. If these inspections or pending dam safety reviews reveal defects, the necessary remedial works will extend the dates when Icon Water is able to demonstrate full safety compliance of its 'Scheduled Dams'.

Currently only one of the five Icon Water 'Scheduled Dams' is fully demonstrated as safe, as noted in **Table 9**.

Fifteen (15) of the 'registrable' dams are not 'Scheduled Dams' and are not covered by requirements of the ACT Dam Safety Code. They are typically potable water storage tanks built on hills in the Canberra urban area. Some are quite high risk dams due to their location above existing residences. As a means of good risk management Icon Water is voluntarily working towards compliance with ANCOLD and ACT Dam Safety Code requirements for these dams.

7.4 SERVICE DELIVERY TARGETS – SEWER MAINS

Icon Water's 2017–18 to 2020–21 Statement of Corporate Intent notes that the most significant environmental risk that the utility manages is the uncontrolled release of raw sewage. The uncontrolled release of sewage can occur from the sewer network:

- 1. If the sewer network lacks sufficient capacity to pass peak sewer flows; or
- 2. If due to deterioration of the sewer network breaks and chokes occur in the network, or excessive amounts of rainwater or stormwater infiltrate the sewer network.

Icon Water's sewer network is sized to pass sewer flows with a 1 in 10 year probability of exceedance. It has routine planning practices to ensure that sections of the sewer network that need augmentation are identified and augmented in a timely manner. Therefore deterioration of the sewer network is the major cause of uncontrolled release of sewage from the network.

Section 7.2.1 of the Bureau of Meteorology's 2015–16 report on the performance of urban water utilities (1) notes that "The performance of a sewerage system is influenced by such factors as soil type, pipe material, and sewerage configuration, as well as age, tree root intrusion, the management of trade waste, the volume of sewage inflows, and rainfall. The results are a partial indicator of the condition of the network and level of customer service. It should be noted, for the above reasons, care should be taken in comparing the performance of utilities against each other using these indicators." In this context the Bureau of Meteorology report notes that the incidence of sewer main breaks and chokes in the Icon Water's sewer network over time is consistently the second or third worst of the 14 Australian Utilities having more than 100,000 properties connected to sewer, and is approximately 60% above the average incidence of breaks and chokes for these utilities. Table 10 summarises yearly performance.

The 2014–15 Technical Regulator's Annual Report first noted Icon Water's performance in relation to the incidence of breaks and chokes in its sewer network.

UTR is encouraged that Icon Water engaged AECOM/ SEAMS (UK) to develop an analytical model to more efficiently target its maintenance activities to reduce sewer chokes. However as noted in the 2015–16 Annual Report Icon Water also needs to review its maintenance practices and its design standards.

7.5 TRADE WASTE

Icon Water has taken a significant step forward in its understanding of the Liquid Trade Waste (LTW) market, by adding 1,144 new customers during the reporting period. This represents a 35% increase bringing the number of registered LTW customers to 4,433. This increases the level of confidence that capture is approaching the true size of the LTW market. Work has also continued on updating customer records, currently held in three different formats, in preparation for integration with the proposed new Customer Relationship Management (CRM) system.

Inspections of customer LTW facilities increase by 223 (59%) demonstrating a worthwhile refocusing of resources to improve compliance. The total of 601 inspections represents 14% of the customer base, which is a modest coverage, but the maximum that can be justified under a random selection inspection program. The inspections revealed 279 (46%) non-compliant sites, including customers who were unaware of LTW approval requirements.

UTR expects the ongoing implementation of LTW systems to include processes which will lead to the demonstration of high levels of compliance, and avoid any cross subsidy.

7.6 AUDIT OF GREENFIELD ASSETS

The audit of Icon Water's design and acceptance standards for gifted assets from Greenfield developments was completed during 2016–17. The audit was conducted by an experienced and independent water industry consultant. The purpose of the audit was to provide assurance that gifted assets are of sufficient standard to support Icon Water in its long term requirement to deliver "safe, reliable and efficient" utility services.

The audit findings have been summarised in a list of 13 actions as agreed between UTR and Icon Water. This is not a large list considering the range of activities involved in generating and accepting gifted assets. The list covers design standards, management of the design and construction acceptance processes, and the handling of gifted unsatisfactory assets.

Half of the listed audit outcome actions have been scheduled for completion by June 2018, which is commendable. The remaining items have longer time frames, some being dependent on corporate policy development. UTR will monitor progress on each of the agreed audit actions.

The standards review project and alignment with national water and sewerage standards, through the Water Services Association of Australia is worthy of particular mention.

Dam	Hazard Category	Adequately demonstrated current dam safety	Date Dam Safety will be demonstrated
Corin	Extreme	No	December 2018 (4)
Bendora	High A	No	December 2018 (4)
New Cotter	Extreme	Yes (1)	Demonstrated
Googong	Extreme	No (2)	September 2018 (4)
LMWQCC Storage	Low	No (3)	December 2018 (4)

TABLE 9: DEMONSTRATION OF SAFETY OF ICON WATER 'SCHEDULED DAMS'

(1) Safety of the New Cotter Dam was demonstrated as part of the commissioning and handover process for the dam.

(2) An independent peer review of the risk assessment completed for Googong Dam in 2015 concludes that further work is required to demonstrate the safety of Googong Dam with regard to earthquake risk. The NSW Dam Safety Committee also raised separate concerns about the structural integrity of Googong Dam and its Saddle Dam in its letter of 1 August 2014.

(3) A safety review has not been completed since the LMWQCC Storage Dam was constructed in 1995 and is now due.

(4) Dates are as confirmed by Icon Water in September 2017.

TABLE 10: SEWER MAIN BREAKS AND CHOKES

Service standard	Industry ⁽¹⁾ Average 2015–16	Icon Water annual results				
		Actual 2013–14	Actual 2013–14	Actual 2014–15	Actual 2015–16	Actual 2016–17
Sewer main breaks and chokes (per 100 km of sewer main)	32	42	57	52	54	49

(1) Bureau of Meteorology, National Performance Report 2015-16: urban water utilities, Part A, March 2017 (ISBN: 978-0-642-70687-4)

Icon Water identified this project early in the audit process and has supported it with the resources sufficient to bring design standards into the zone of industry best practice. This project will produce benefits for both asset providers and Icon Water.

7.7 FIRE FLOWS

In its 2015-16 annual return Icon Water first advised that during periods of peak water network demand it is unable to simultaneously provide full fire flow capability to approximately 4,000 water customers (3% of customers) as required by its 2004 agreement with the ACT Fire Brigade.

The Executive Summary of a Status Report prepared by Icon Water and dated 31 October 2017 confirms the reported advice of 2015-16 in the following manner:

A hydraulic modelling analysis of our water network carried out in 2017 showed that 2.8% of our existing network failed or marginally failed to conform to the WSSS fire flow requirements.

In reponse to this Icon Water has engaged an independent technical consultant to review its water network modelling tools and processes, peak design and demand, fire flow design standards and water network capacity. Icon Water has made a commitment to implement the recommendations of the review and will prioritise rectification of water network deficiencies so that the network is fully compliant by 30 June 2020.

Icon Water is working collaboratively with ACT Fire and Rescue towards adoption of industry accepted standards for fire flow standards.

7.8 CLOSURE OF SEWERAGE PUMP STATION OPERATION AND MAINTENANCE MANUAL AUDIT

UTR initiated an independent audit of the status of operation and maintenance (O&M) manuals at a sample of the 26 sewage pump stations operated by Icon Water. The audit revealed significant deficiencies in completeness, currency and safety provisions of the O&M manuals.

Icon Water advised that it would use this opportunity to revisit the purpose and presentation of the O&M manuals at all sewage pump stations. The subsequent manuals revision project included reformatting into hardcopy and digital, the latter to tie in with the upgrading of digital work records for field personnel. The last manual was made operational during November 2017, five months ahead of the project completion date. Icon Water has used an adverse audit finding to generate a positive outcome for compliance with benefits for its own operations personnel.



8 UNLICENSED REGULATED UTILITIES

8.1 SOLAR FARMS

During 2016–17 the Technical Regulator issued Provision of Service Operating Certificates to two of the ACT's solar farms allowing them to generate over 15 MW of power for the electricity grid which contributes to the ACT's renewable energy target of 100% of electricity to be delivered using renewable energy by 2020.

To enable full cost recovery for unlicensed regulated utility services, in particular the assessment of regulatory plans for solar farms, the *Utilities (Technical Regulation) Operating Certificate Fees Determination* was introduced in September 2016. The fees include an hourly rate for assessment of a regulatory plan, an annual fee for reviewing compliance reports and cost recovery fees for audits and inspections.

All solar farms reported operation and maintenance in accordance with their annual maintenance plans. No incidents were reported.

8.2 STORMWATER HARVESTING -INNER NORTH RETICULATION NETWORK (INRN)

The Inner North Reticulation Network (INRN) was the first significant stormwater harvesting and irrigation scheme, using public assets, to be developed in Canberra. The INRN was constructed prior to the introduction of the *Utilities (Technical Regulation) Act 2014* and was not required to hold a utility licence under the *Utilities Act 2000*. The INRN operates under a five year Ministerial exemption, which commenced in December 2014. However it does require a Provision of Service Operating Certificate under the Act. UTR is working with the asset operator, Transport Canberra and City Services (TCCS), toward this end. Testing, along with the development of management systems and operational guidelines, is ongoing.

8.3 TRANSPORT CANBERRA CITY SERVICES (TCCS) DAMS

The Access Canberra Dams Register includes a list of 39 registrable dams. These are dams meeting the definition for a registrable dam in accordance with Part 8 of the Act. Twenty of the dams are owned by Icon Water, one is owned by the National Capital Authority (NCA) and the remaining eighteen are owned directly by the ACT Government.

Annual reporting on the Icon Water dams is included at Section 7.3 of this report. Scrivener Dam, owned by the NCA is exempt from the provisions of ACT legislation. However the NCA generally conducts its operation and maintenance activities for the dam in a manner consistent with the Act. Transport Canberra & City Services (TCCS) is the custodian of dams owned directly by the ACT Government.

Under Part 6 of the Act TCCS must obtain an Operating Certificate covering all of the dams owned directly by the ACT Government. TCCS's operation and maintenance regime for the dams must at all times comply with the conditions of the Operating Certificate.

After a transition period of two years the provisions of the Act became effective for existing dams from 1 March 2017.

During 2016–17 TCCS has worked with the Technical Regulator to identify requirements for compliance with the Act and anticipates that an Operating Certificate covering the 18 registrable dams will be completed during 2017–18.

8.4 LIGHT RAIL

On 30 June 2017 the Technical Regulator approved the issue of the Design and Construct Operating Certificate for Canberra Metro to cover the design and construction of the electrical elements of the light rail network. The Operating Certificate was approved subject to work being completed in accordance with the Utilities (Technical Regulation) (Light Rail Regulated Utility (Electrical) Network Code) Approval 2016 and the Utilities (Technical Regulation) (Light Rail Regulated Utility (Electrical) Network Boundary Code) Approval 2016.

A condition of the approval is that the independent certifier is engaged throughout the design, construction and commissioning of the light rail system and that UTR must be advised in writing of any changes to existing certification arrangements. UTR continues regular discussions with Canberra Metro and the independent certifier to ensure that a range of systems and processes are in place to ensure the light rail system meets legislative requirements.





9 FOCUS FOR 2017-18 WORK PROGRAM

9.1 UTILITY CODE REVIEW

The revision of Technical Codes approved under the *Utilities (Technical Regulation) Act 2014* remains a major focus for 2017-18. Consultation with utilities has commenced and will continue during the next reporting period.

9.2 OTHER PRIORITIES

Other priorities for UTR during 2017-18 include the following:

- Support utilities in meeting their regulatory obligations.
- Support utilities with delivery of their Emergency Management Plans.
- Prepare annual compliance and performance questionnaires for utilities.
- > Review utility compliance and performance reports.
- Conduct various audits of utility performance focusing on known problem areas.
- > Provide regulatory support for the development of renewable energy in the ACT.
- > Finalise a policy position on dam safety in the ACT.
- > Deliver the powerline fire safety policy.
- > Issue Operating Certificates for solar farms.
- > Monitoring conditions and compliance relating to the light rail.