VESI Gap Analysis Review

Final - 1.11.2019

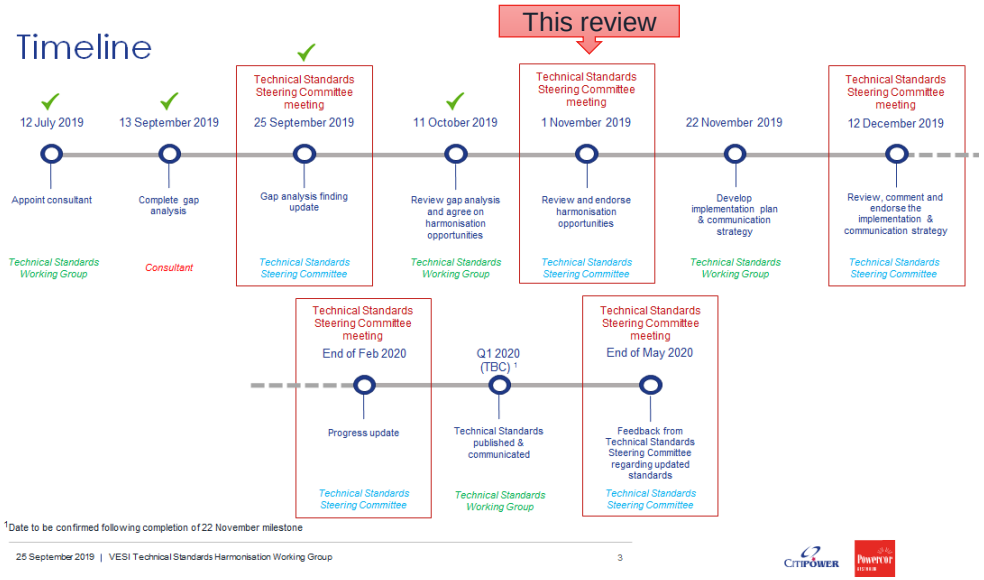
Purpose of review and next steps

Purpose

- As per our plan (see below) the purpose of this review is to agree on which criteria from the individual distribution businesses' standards are to be aligned/harmonised and included in the proposed VESI URD Standard and which will not be.
- Committee representatives are to review the criteria in the subsequent slides and record their agreement or disagreement (with reasoning) on the VESI gap analysis review survey spreadsheet (attached to the email).

Next steps

- At the Technical Standards Committee meeting on 1 November 2019 those criteria that committee representatives have disagreed with will be discussed and a final agreement will be made by the Technical Standards Committee.
- Once all criteria have been agreed upon by the Technical Standards Steering Committee, the Technical Standards Working Group will develop a implementation plan and timeframe to develop the VESI URD Standards.
- As part of the implementation plan a review of the draft VESI URD Standards by the Technical Standards Steering Committee will be included to review and agree upon the final details of the criteria (i.e. aligned clearance measurement, requirements for marker tape, etc).



Review instructions

- To assist with the review each criteria has been previewed by the Technical Standards Working Group and allocated into 2 groups:
  1. Out of scope – criteria will not be aligned and will not be included in the VESI URD standards. Red slide (figure 1).

     Criteria deemed to be out of scope will be for the following reasons:
     - System planning and electrical requirements – as these do not fall within the civil URD requirements
     - Requirement not applicable to URD installations
     - Network specific requirements - as these are not required by the majority of DBs & would provide no benefit to URD installations

  2. Agree to align or no gap – criteria will be aligned and included in the VESI URD standards. Green slide (figure 2)
- Technical Steering Committee member are asked to review each criteria and confirm if they agree or disagree with “agreed alignment” (last column in each slide). Each response is to be documented in the attached VESI gap analysis review survey.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
1	General Objectives	Preparation of Overall System Planning to: • Maximum utilisation of the assets; • Provision for future demand growth; • Integration of the development into the larger DNSP network In a multi-stage development, the Overall Design should be done for all stages including: • ADMD • Location and type of Padmount substations • Route and size of HV cable • LV circuit arrangement • Route of LV mains cable • Location of paralleling switches • Padmount transformer utilisation • Calculated % voltage drop at LV circuit ends	Not Specified	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Figure 1 – Slide with criteria out of scope

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
52	LV Cable Joints	LV Joint bays are typically 1.2 x 1.8m.	Not Specified	Same as UE	Same as UE	• DBs to align with UE criteria. • Criteria to be include in VESI URD standards.

Figure 2 – Slide with criteria in scope

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
1	General Objectives	Preparation of Overall System Planning to: • Maximum utilisation of the assets; • Provision for future demand growth; • Integration of the development into the larger DNSP network In a multi-stage development, the Overall Design should be done for all stages including: • ADMD • Location and type of Padmount substations • Route and size of HV cable • LV circuit arrangement • Route of LV mains cable • Location of paralleling switches • Padmount transformer utilisation • Calculated % voltage drop at LV circuit ends	Not Specified	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
2	Capacitance	Not Specified	Design to limit capacitance. Consult with DNSP to ensure limits not reached or DNSP to propose suitable remedies. DNSP has introduced Low Capacitance cables.	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
3	ADMD	The LV network is designed and installed at the outset based on the ultimate ADMD. (ADMD) appropriate to customer class, location, property type, gas and slab heating availability.	Same as UE	Same as UE	Same as UE	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
4	ADMD	High density (units or cluster housing)	Not Specified	Not Specified	1.6kVA ~ 5.4kVA	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
5	ADMD	Category 1 – Medium density • Initial 3.1kVA per property; • Ultimate 5kVA per property.	3 ~ 12kVA	4.5kVA for both natural gas and all electricity areas	2.8kVA ~ 12kVA	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
6	ADMD	Category 2 – Up market prestige properties • Up to 10kVA per property.	5 ~ 10kVA depends on gas availability	10kVA for all electricity with electric storage heating	3.1kVA ~ 15kVA	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
7	ADMD	Not Specified	2.5 ~ 12kVA	Not Specified	Low density 3.1~15kVA	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
8	ADMD	Not Specified	Not Specified	10kVA	Single rural lot (no reticulated gas) • 5kVA for lot 1500 ~ 4000m2 • 6kVA for lot > 4000m2	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
9	Max Demand	MD = Au x N	Same as CP/PAL	Not Specified	MD = A x N x (1 + 12/(A x N))	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
10	Transformer	Not Specified	Not Specified	Not Specified	Selection table for number of customers allowable for a given kVA rating transformer appropriates to customer class, location, and property type.	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
11	Voltage Drop Calculation	A nominal max voltage drop of 6.0% from the substation to any service tee-joint, and allow 1.5% voltage drop in service, i.e. 7.5% voltage drop from the substation to any service pit in the system. • AS/NZS 60038 - 400/230V +10% / −6%. • DNSP LV voltage system is normally designed based on an ultimate ADMD. It is assumed that the voltage at the substation terminals is normally above the nominal voltage, e.g. 430/240V.	Same as UE	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
12	Voltage Drop Calculation	% volt drop = 0.579A.N.L. (R. cosF + X. sinF) (1 + 4.14/√N) (1 + 12/ A.N.) /1000	Same as UE	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
13	Prospective Fault levels at the Customers' premises	3-ph - 10kA	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
14	Prospective Fault levels at the Customers' premises	1-ph - 6kA	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
15	Prospective Fault levels at the Customers' premises	• Ensure sufficient service cable length to limit the prospective fault current. • The first service tee joint must be placed on the mains cable to maximise the length of mains cable, and service cable to the pit must be 12m minimum.	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
16	HV Cable Route Selection	• Vicinity planned developments to be considered • Easy reach • as short as practicable • cable easements through public space where saving >10% length • future access • spare conduit • Where the route through private allotments the cable would normally be cut either end of the properties and replaced in the event of failure. • Consider cable installation • Advice from installers • Where possible, substation in/out cables not in same trench. • Follow large roadways	Not Specified	Same as UE	Not Specified	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
17	System Configurations	• Gather information on the staging of adjacent developments • Approval of DNSP's System Planning • Adjacent feeders should originate from different buses at the zone substation • Achieve both Padmount transformer utilisation and minimising the cost	Not Specified	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
18	HV Feeder Tee's	• All feeder tees are made at Padmounts where they are switched • Not use buried tee joints on the HV Network • The number of Padmounts connected to the spur needs to be determined in consideration of the number of customers affected by a single event and likely restoration times. • No more than 15 Padmount 100kVA substations should be connected on a fused spur. • If the number of Padmounts becomes unmanageable, make a second tee connection to the backbone.	Same as UE	• <=5 Padmount 100kVA substations on a fused spur. • Ties required with adjacent feeders at intermediate points along the feeder and at the end of feeders. • Additional ties within the same feeder is required where No interfeeder ties inbetween.	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
19	Service Cable	• Standard service cable is 4C16 Cu XLPE • Up to 80 Amps can be connected to a single phase 230 Volt supply • Max 2 off 4C16 Cu customer's mains can be connected in a service pit	Same as UE	Same as UE	Same as UE	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
20	Paralleling Switches	The LV mains cable from adjacent substations may be inter-connected by a Normally Open “paralleling switch” to provide a restricted supply to an adjacent substation under contingency conditions.	Same as UE	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
21	Paralleling Switches	Paralleling facilities to enable a substation to be out of service and about 1/3 of its design load to be carried from peripheral substations ignoring voltage regulation.	Same as UE	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
22	Paralleling Switches	A minimum of two parallels should be provided for each substation.	Same as UE	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
23	Paralleling Switches	Not Specified	Not Specified	Not Specified	Shall be installed approximately halfway along an LV cable.	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
24	Service Pillar	Not Specified	Not Specified	Not Specified	Only used in customer installations for customer supplies up to 170A	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Overall Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
25	Performance Measures	• Transformer Utilisation – 100 lots per transformer (315 kVA, 500 kVA) • Voltage drop 6% to the service tee joint (Mandatory requirement) • LV cable per lot - 13 metres	Not Specified	70 ~ 110 lots per substation	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
26	Cable Proposal Plan	Same as Jemena	Not Specified	Contains the detailed and dimensioned lay out of the electricity reticulation design including installation requirements.	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
27	Cable Proposal Plan	A typical cable proposal plan includes: • Cable route and offsets to property boundaries; • Cable installation details; • Trench cross sections; • Size and type of cables and conduits; • Paralleling pillars; • Substation/s; • Location of service pits; • Approximate locations of joints; • Location, type and size of all conduits; • Dimensioned location of public lighting columns; • Public lighting column, lantern and lamp details; • Kerb lines; • Building lines; • Lot numbers and street names; • Cable easements; • Service offsets; • Location of existing UG cables and poles relevant to the construction works; • Drains and drainage pits; • Location of property crossovers and footpaths; • A schematic drawing of each Padmount with a table of labels for all cable terminations and HV switch numbers;	Not Specified	Same as UE	Not Specified	• DB's to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standard - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
28	Cable Installation	Power cables will be direct buried in the ground and protected with an approved cable cover.	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
29	Cable & Conduit Installation	Same as Jemena	Same as Jemena	In following locations the cable shall be installed in conduit: • Crosses a roadway or other paved surface (other than driveways); • Passes through an easement or crosses the easement of another authority; • Is in the close proximity of other assets (e.g. street corners, passing drainage pits);	Not Specified	• DBs to align with UE/Jemena/ AusNet criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
30	Cable & Conduit Installation	Same as Jemena	Same as Jemena	Considerations with placement of cables and conduits: • Ease of installation and minimise the risk of damage to cables; • Avoid severe changes in direction • Minimum bending radii of cables; • Road crossing conduits for service cables should as near as practicable to right angles; • Conduit ends must not be located under proposed driveways; • Conduit ends must not be within 5m of a property boundary; • Conduit ends should be clear of drainage pits; • Conduit protected with cable covers where crossing the easement of another authority (other than on roadways); • UG cables and conduits must have an orange marker tape at least 150mm above the cable or conduit except where the conduit is installed by boring; • A schedule of services offsets including cable alignments shall be included on the cable proposal drawing (cable offsets will be subject to municipal approval).	Not Specified	• DBs to align with UE/Jemena/ AusNet criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
31	Cable & Conduit Installation	Not Specified	Fill with BENTONITE only as last resort and need to be approved by DNSP	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
32	Cable & Conduit Installation Parameters	Crossing another roadway: * offset the crossing conduit from the perpendicular * Nominally 15~20o bend * avoid: • Excessive infringement of the space allocation of other services; • Digging around other services on the roadway splay; • Excessive excavations to accommodate the roller sets necessary for 900 bends; • The larger mechanical loads to be managed during installations on 900 bends.	Not Specified	Not Specified	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
33	Cable Ampacity	Not Specified	Buried Cables: AR = BR x Fgt x Fd x Fg x Fgr	Uses Tables	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
34	Cable Thermal Rating	Not Specified	I^2 x t = K^2 x S^2	Not Specified	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
35	Fault Duty	Not Specified	HV distribution cables: • Fault level: 11kV, 350MVA - 18.4kA, 22kV, 500MVA - 13.1kA • Distribution Cables by CB Protection - 0.7s primary protection, 1.25s back-up protection • Distribution Cables by Fuse Protection - 0.04s Consumer Cable: • Fault level: 11kV, 350MVA - 18.4kA, 22kV, 500MVA - 13.1kA • Sheath/screen capable of carrying Full fault current • Cables by CB Protection - 0.7s primary protection, 1.25s back-up protection • Cables by Fuse Protection - 0.04s • Cables on load side of the consumer's CB with OC protection only - 0.5s primary protection, 0.7s back-up protection. Fault duty similar to the CB protected cables. • Cables on load side of the consumer's CB with OC & EF protection - 0.12s primary protection, 0.5s back-up protection.	Not Specified	Not Specified	• Out of scope – Network Protection & Control requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
36	Cable Earthing & Bonding	Not Specified	Same as Jemena	HV Cables Between Distribution Kiosk SS • Screens, Metallic Sheaths and armours earthed both ends • Terminated with Elbow Connectors • Sheath/screen shall be capable of carrying full fault current	Not Specified	• Out of scope – Earthing requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
37	Substations	A 315 kVA transformer is initially installed for the initial ADMD and upgraded in future to 500 kVA providing the ultimate ADMD.	500kVA most commonly used.	500kVA is installed unless 315kVA is deemed appropriate.	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
38	Substations	• 100 kVA Loop Padmount substations in semi-rural areas developments is more practical. • No more than 15 padmount 100kVA substations should be connected to a spur.	Not Specified	• Each rural padmount should Not exceed 10 lots • No more than five rural padmounts should be connected to a spur.	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
39	Substations	Supply from adjoining LV sources must be fully utilised to maximise transformer utilisation.	Not Specified	Same as UE	Not Specified	• Out of scope – System Planning requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
40	Substations	Principles and guidelines: • achieve the best practicable transformer utilisation • provide a substation site drawing • obtain the municipality's approval to the site and associated works • installation must have the least impact practical upon a subdivision	Same as UE	• Optimal benefit of the HV switchgear; • Comply with voltage drop limitation	Not Specified	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
41	Substations	The site should be chosen in the following order of preference: • In a municipal reserve; • In a corner lot at the rear of the property; • In a lot with the largest frontage; or • Equally placed across the adjoining boundary of two allotments	Same as UE	Same as UE	Not Specified	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
42	Substations	Name of the substation • Each substation must be named on the cable proposal drawing. • The name must consist of the combination of the name of the street in which the substation is installed and the name of the nearest intersecting street, e.g. Xxx - Yxx. • Substations names must be confirmed with the DNSP.	Not Specified	Same as UE	Not Specified	• Out of scope – Drafting/Labelling requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
43	Substations	Name of LV cables: • All LV cables emanating from a substation must be named and labelled with the streets (suitably abbreviated if necessary) in which the LV cable has service cable connections. • The names given must be sufficient to allow the identification of the LV cable that supplies to each service pit.	Not Specified	Same as UE	Not Specified	• Out of scope – Drafting/Labelling requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
44	Substations	Not Specified	Four types of earthing systems are used: • CMEN • Common Earthing System • Bonded Earthing System • Separate HV/LV Earthing System	Not Specified	Not Specified	• Out of scope – Earthing requirement. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
45	Substations	Not Specified	Civil requirements: • Kiosk Plan provided to civil details • Civil plan show finished site level within kiosk reserve area and >2m outside each boundary on reserve • Drainage required on all kiosk sites to prevent water run-off to adjoining properties	Not Specified	Not Specified	• DBs to align with AusNet criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
46	Cable Head Pole (CHP) Structures	Direct connected CHP used with 3C185 or 3C240 cable and either a Ring or IFT Padmount	3C240, 3C300 standard ZSS feeder exit cables terminated outside the ZSS on a CHP.	Same as UE	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
47	Cable Head Pole (CHP) Structures	Fuse or Switch-fused CHP used with a 3C35 cable and 22kV Loop or Ring Padmount	Same as UE	Same as UE	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
48	HV Cable Joints	Optimise the joint positions: • Optimise the utilisation of cable drum lengths and minimise the number of cable joints • HV cable supplied on a full single drum normally approximately 500m (for substation to substation without a joint).	Not Specified	Same as UE	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
49	HV Cable Joints	HV Joint bays are typically 1.5m x 4.0m.	buried heat shrink type.	Same as UE	Same as UE	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
50	HV Cable Joints	• HV Joint positions shall be min 3m from a conduit end or paved surface, and ensure clearance from other obstructions and services to provide sufficient excavated space for jointing. • Where a substation close to the edge of a subdivision stage, install conduit between the substation and the edge of the subdivision to “pull in” the cable at a future date and avoid a joint.	Not Specified	Same as UE	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
51	Cable	If the cable has to pass through multiple bends it may be better to install the cable now.	Not Specified	Not Specified	Not Specified	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
52	LV Cable Joints	LV Joint bays are typically 1.2 x 1.8m.	Not Specified	Same as UE	Same as UE	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
53	LV Cable Joints	•service tee joint positions should minimise the service cable lengths and clear of obstructions to enable an excavated space sufficient to permit jointing. • Mains tee joints are used to make a solid connection to through mains power cable to extend a mains cable into other streets. • The joint position should be selected to minimise the length of the tee cable, and >=2m along the cable route from the property line of the tee street. • Service cables and service tee joints must be shown on the Cable Proposal Plan. • Joint bay sizes are similar to service tee joint. • Service tee joints and mains tee joints should be clear of future driveways and conduit ends by at least 1.5m to provide sufficient space for a replacement joint if ever required.	Not Specified	Same as UE	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
54	LV Cable Joints	Not Specified	Not Specified	Service cable conduit end at the power cable alignment should >=5m from an adjoining property boundary.	Not Specified	• DBs to align with Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standard - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
55	LV Cable Joints	URD service cable shall be terminated in service pit in Submersible Insulated Piercing Connectors (SIPC) for conductor range of 6mm² to 50mm².	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
56	LV Cable Joints	Not Specified	Not Specified	Not Specified	• 2 ports for connecting one service cable, or 4 ports for two cables and a public light cable. • Connector can be used twice, the initial shear bolts are blue and the replacement shear bolts are yellow.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
57	Service Cables	The service cable must be installed in conduit between the power cable alignment. • For 4C16 Cu cable, the max cable length 30m.	Same as UE	Same as UE	Not Specified	• CP/PAL to align with UE/Jemena/ AusNet criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
58	Public Lighting Cables	Lighting columns must be supplied from the nearest service pit unless: • The service pit already supplies a public lighting column; or • The pit is located physically past a paralleling pillar.	Not Specified	Same as UE	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
59	Public Lighting	Each pole is to have an adjacent service pit with public lighting cable looped from pit to pit.	Not Specified	Not Specified	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Design Standard - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
60	Pillar	The paralleling pillar should be placed in a non-traffic hazard location and should be protected from damage by the placement of two protective bollards spaced 1m apart. Lighting column may be used as one of the protective bollards.	Same as UE - Not specify pillar location.	Same as UE	Same as UE - Not specify the space from protective bollards	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
61	Pillar	Not Specified	Not Specified	Not Specified	• Supplied with a reflective tape to increase its visibility	• Out of scope – Material requirement. • This criteria will not be included in the VESI URD standard.

Design Standard - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
62	Pillar	Paralleling pillars should be centrally placed in the front of an allotment between the driveway and the property boundary.	Not Specified	Same as UE - >=7m to property boundaries.	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
63	Pillar	LV service and public lighting cables are not to be connected to paralleling pillars.	Not Specified	Same as UE	Same as UE	• AusNet to align with UE/Jemena/CP/PAL criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
64	Pillar	LV cable, service cable or public lighting cable supplied from a Padmount circuit must not extend past the location of any paralleling switch. I.e., Service pit shall be supplied from a cable joint located on the same side of the paralleling pillar.	Not Specified	Same as UE	Same as UE	• AusNet to align with UE/Jemena/CP/PAL criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
65	Service Pits	Service pits must be located at property boundaries to enable servicing two properties from one pit and must be arranged to minimise the number of pits and length of service cable to be used.	Not Specified	Same as UE	Same as UE	• AusNet to align with UE/Jemena/CP/PAL criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
66	Service Pits	Pits at both boundaries of allotments that may be suitable for future subdivision.	Not Specified	Same as UE	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
67	Service Pits	A second pit cannot be installed on a lot if that pit is supplied from a separate LV circuit	Not Specified	Not Specified	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Design Standard - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
68	Separation from Trees	Not Specified	Not Specified	Same as CP/PAL	Where new UG cables to be installed in an area where trees are established, a Vegetation/tree Management Plan, may include a co-ordination drawing with trees clearly marked, shall be sent to the relevant Council or Responsible Authority . • Where coincident planning, design, or installation of trees and UG cables, follow DNSP's guidelines. • Where tree planting encroaches into the Worksafe No Go Zone, consultation with DNSP is essential.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
69	UG Manholes - Pits	Not Specified	Not Specified	Not Specified	• UG systems in Inner Urban CBD areas consist of installation of manholes (pits) for pulling and jointing of cables. • Pit design must provide the minimum bending radius required for cable installation and sufficient room for cable jointing's. • The height of the pit will depend upon the type of opening, number of layer of conduits and required cover on conduit. • Designs for these systems may only be undertaken DNSP personnel.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Design Standards - Detailed Design

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
70	UG cables on Bridge Crossings & Structures	Not Specified	Not Specified	Not Specified	A detailed bridge/structure crossing design shall be undertaken and submitted to DNSP for approval. The design shall include the following: • Method of bridge installation or attachment and cable mechanical protection • Transition of cables from ground to bridge • Design of supports, attachments, or clamps by a structural engineer • Warning signage and labelling • Earthing design for metal conduits, cable trays, attachments and supports as appropriate • Bridge maintenance control measures by the owner	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Padmount/Kiosk substations

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
71	RMU	The final Padmount in the radial system must fit Insulated Bushing Covers to the outgoing cable bushings.	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
72	Typical Dimensions	Typical Trench for cables: • Common trench widths 0.2m ~ 0.9m • Sand above/below cable min 100mm for bedding and screening • Backfill with excavated material (clean and free of impurities and rocks) • Slabs should be 100±50mm above the cable when backfill is complete • Slab overlap cable by >40mm • Slabs overlap each other by 50mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installation - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
73	Embedment	Not Specified for: • Conduit installation. • Installation in Thermal Resistivity Critical area. • Construction of the embedment.	Not Specified for: • Installation in Thermal Resistivity Critical area. • Construction of the embedment.	Not Specified for: • Conduit installation. • Installation in Thermal Resistivity Critical area. • Construction of the embedment.	For TR Non-critical: • Washed sedimentary sand (to AS2758) min 100mm above/below direct buried cables • Natural excavated soil min 50mm above/below conduits	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
74	Embedment	Not Specified	Not Specified	Not Specified	For TR Critical: • TR shall be <=0.8 K.m/W at 5% moisture content, or as specified by DNSP • Dry mixes or fluidised thermal material • Min 50mm below conduits	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
75	Embedment	Not Specified	Not Specified	Not Specified	• The bedding and screening material shall be tamped to ensure there is no air space left. • Mechanically operated rammers shall not be used for this purpose.	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
76	Backfill for TR Non-critical	With excavated material	with excavated material	With excavated material, No large rocks	For Non-Paved areas: Cable directly buried - Backfill with excavated material (clean and free of impurities and rocks) Cable in conduit - Backfill with excavated material	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
77	Backfill for TR Non-critical	Not Specified	Not Specified	Not Specified	For Paved areas: • Wet mix of Class 2A, 20mm crushed rock in 150mm layers. Each layer shall be at optimum moisture content and thoroughly compacted with mechanical rammers to 95% modified relative compaction before the next 150mm is added. Where specified, the final layer shall be surfaced with a 25mm compacted layer of cold mix asphalt consolidated.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
78	Backfill for TR Critical	Not Specified	Same as CP/PAL - sand/cement mix (14:1)	Not Specified	• Dry mixes or fluidised thermal material up to 300mm (+150/-50mm) below ground level + and ground reinstatement • TR shall be <=0.8 K.m/W at 5% moisture content, or as specified by DNSP • A thermally stable backfill may be used in conjunction with the wet mix thermal backfill, and shall be shown on a DNSP's approved construction drawing.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
79	Type A	Directly bury, LV only without cover slab, and separate from parallel services of other authorities >0.5m • Trench width: 0.2m • Trench depth: 950mm min • Cable depth: 750mm	Same as UE	Not Specified	Allowed for HV cable. Trench depth = 100 + 750 + cable diameter. Trench 0.4m wide	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
80	Type B	Directly bury, LV only with cover slab • Trench width: 0.3m ~ 0.4m • Trench depth: 800mm min • Cable depth: 600mm • Polymeric slab quantity: 1 • Polymeric slab width: 200mm or 300mm	Same as UE - Min depth 450mm if covered with mechanical cover or in conduit.	Same as UE	Same as UE - Trench depth = 100 + 600 + cable diameter. Trench 0.4~0.7m wide.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
81	Type C	Directly bury, HV only or HV & LV with cover slab(s) • Trench width: 0.4m ~ 0.9m • Trench depth: 800mm min • Cable depth: 600mm • Polymeric slab quantity: 1 ~ 4 • Polymeric slab width: 200mm or/and 300mm • Slabs overlap each other by 50mm	Same as UE	Same as UE - overlap by min 40mm and >50mm above cable Doc Number JEN MA 0006,Drawing SP5/1007	Same as UE - Trench depth = 100 + 600 + cable diameter. Trench 0.4~0.7m wide.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
82	Type D	Shared with Telco HV and/or LV Directly bury, with Telco conduits, cover slab(s) • Trench width: 0.45m ~ 1.1m • Trench depth: 800mm min (at location of Telco pit, width to be increased by 200mm) • Cable depth: 600mm • Telco conduit depth: 450mm • Polymeric slab quantity: 1~4 • Polymeric slab width: 200mm or/and 300mm • Slabs overlap each other by 50mm • Marker/Warning tape must not be installed above any other authority's assets (e.g. Comm) • Separation between LV cable and Telco conduit: 100mm • Separation between HV cable and Telco conduit: 300mm • Separation between LV cable slab and Telco conduit: 150mm min • Separation between HV cable slab and Telco conduit: 250mm min • Telco conduit: D50 and/or D100 • Telco cables to be close to the building line side of the trench • Slabs to be close to the road pavement side of the trench • HV cables to be on road side of LV cables	Same as UE	Same as UE	Same as UE - Trench depth = 100 + 600 + cable diameter, width 0.6~1.2m	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
83	Optical Fibre Communication Cables	Not Specified	Not Specified	Not Specified	Installed in conduit in relation to DNSP's electrical power cables: • adjacent to HV & LV cables - direct buried or in conduit; • within a sub-duct inserted in an existing spare power cable conduit.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
84	Min Cable Spacing (Horizontal or Parallel)	Not Specified	Same as CP/PAL	Not Specified	• 25mm between 1 Service or P/L and 1 LV cables • 25mm between 2 Service or P/L cables • 50mm between 2 LV cables • 100mm between 1 LV and 1 HV cables • 50mm between 2 HV cables • 75mm between 1 LV cable and 1 LV conduit • 100mm between 1 LV cable and 1 HV conduit	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
85	Min Clearance (Horizontal or Parallel between outer walls)	Same as CP/PAL - 75mm for 125D & 150D conduits	Same as CP/PAL	Same as CP/PAL - 75mm for 125D & 150D conduits	• 25mm between 1 Service or P/L and 1 LV conduits • 25mm between 2 Service or P/L conduits • 75mm between 2 LV conduits • 75mm between 1 LV and 1 HV conduits • 75mm between 2 HV conduits	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
86	Min Cable Conduit Spacing (Vertical or Crossing between outer walls)	Not Specified	Not Specified	Not Specified	• 500mm between subtransmission cable/conduit and cable/conduit of different voltages • 100mm between HV cable and Service or P/L cable. • 25mm working clearance between HV or LV main cable and Service or P/L cable that installed in UPVC conduit (or have a plastic cover slab installed in between) to cross HV cable. • 25mm working clearance between cables/conduits and all insulated or non-conductive assets.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
87	Cable Spacing	Not Specified	Cable spacing can be reduced and/or depth of burial can exceed 600mm for max 15m without derating the cable	Not Specified	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
88	Mechanical Protection	Polymeric slab: • 200W & 300W, straight • 210W & 300W, corrugated • profile Not specified, 200W & 300W	Polymeric slab: • 200W & 300W, straight • 210W & 300W, corrugated • profile Not specified, 200W & 300W	Polymeric slab: • 200W & 300W, straight • 210W & 300W, corrugated • Corrugated type preferred. Straight only in special applications.	Polymeric slab: • 200W & 300W, straight • 210W & 300W, corrugated • 1200mm length, Corrugated type preferred.	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
89	Mechanical Protection	Cable installed in conduit without slabs - buried depth >=600mm	Same as UE	Same as UE	Same as UE - trench depth = 100 + 50 + conduit diameter	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
90	Mechanical Protection	Cable installed in conduit and covered with slabs - buried depth: 200mm min	Same as UE - slabs & layer of concrete >=15MPa at 28 days.	Not Specified	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
91	Marker/ Warning Tape	Orange warning/marker tape installation depth: 300±50mm and min 150mm above cable/conduit	Same as UE - depth 300mm(-50/+150)	Same as UE - Depth 300mm, min 200mm	Same as UE - Depth 300mm(-50/+150)	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
92	Marker/ Warning Tape	Not Specified	Not Specified	150mm wide, Printed "Caution, Electric Cable Below"	150mm or 300mm width	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
93	Marker/ Warning Tape	Not Specified	Not Specified	Not Specified	The maximum side overhang of tape shall not be more than 200mm.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
94	Marker/ Warning Tape	Not Specified	Not Specified	Not Specified	Where cross another authority's asset, a second run of marker tape shall be installed <=150mm above the lower asset for a distance of 2m either side of the crossed asset.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
95	Lightning protection	Not Specified	High Lightning Prone Areas protection considerations – • Bury Metal Shield wire above UG Cables. Separation distance greater than specific design value; • Semi Conductive plastic sheath as outer sheath; • Enclosing the cable in metal enclosure or having steel tapes wrapped around cable.	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
96	Ploughing	Not Specified	Not Specified	Not Specified	Best suited to soils that are relatively rock free to 1m depth. • Normal dual layer HDPE/PVC sheathed cable is used. • A marker tape can be installed at the same time at a lesser depth. • Cable installed at least 750mm depth, and 1m for HV cable. • In areas prone to lightning a bare earth conductor should be installed in parallel with the cable. • Drum lengths to fit the limits of the plough equipment and avoid cutting cable near asset.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Trench

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
97	CHP HV Cable	Not Specified	Not Specified	Not Specified	Bury depth >1500mm may be required by HV cable bending radius. HV cable to return to nominal max depth within 2m from pole attachment.	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
98	Space Factor	Not Specified	Same as CP/PAL	Not Specified	50% - do not fill the conduit with cable to more than 50% of its cross sectional area	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
99	Boring	Not Specified	Not Specified	Not Specified	• For direct bore applications, multiple conduits may be inserted in a single larger diameter bore, such that the conduits are touching. • Pressure filling or grouting of the voids between the conduits may be required. • Identify the position of individual conduits that may twist and rotate when drawn-in.	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
100	Maximum Continuous Length	• Straight with no bends : 150m • Straight with a break for pulling : 225m • Straight with 90º displacement (X + Y) : 150m • Straight through and manhandled without pulling eye : 30m • Straight with no pulling eye required : 30m with 4m min break in conduit • Straight into building with pulling eye : 150m • Straight into building and cable pulled through building: 150m	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
101	Maximum Continuous Length	Min break in conduit for manhandling cable into building entry conduit : 4m	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
102	Maximum Continuous Length	• Straight with 90º bend and pulling eye at one end : 30m	Not Specified	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
103	Jointing	• PVC pipes joined using solvent cement • Steel pipes joined using screwed couplings	Same as UE	Also fibre reinforced cement joined using collars and rubber inserts	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
104	Seal	Conduits provided with suitable non-perishable endcaps or plugs & 6mm PE draw wire.	Same as UE	Same as UE - 3mm PE rope	Not Specified	• DBs to align with UE/Jemena criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
105	Road Crossing	Min cover: 0.6m Conduit >=D100 to extend beyond agricultural drain.	Same as UE	Same as UE	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
106	Road Crossing	Roadway conduit positions marked with "E" on both kerbs vertically above the conduit	Same as UE	Same as UE	Not specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
107	Road Crossing	Offset from lot boundary DB cable: 2.05m Telco cable: 1.75m	Same as UE	Same as UE	Not Specified	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
108	Min Clearance (Vertical or Crossing between outer walls)	Not Specified	Not Specified	Not Specified	• 75mm between conduits • A reduced working clearance of 25mm may be applied for crossing situations but only where the minimum clearances are impractical to achieve.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
109	Min Clearance (subtransmission cables/conduit)	Not Specified	Not Specified	Not Specified	• 600mm between subtransmission cables/conduit and cable/conduit of different voltages • 500mm between subtransmission cables/conduit and cable/conduit of different voltages.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
110	Min Clearance	Same as AusNet - Enclosed with split concrete	• To structure slab foundation: 300mm • Cannot achieve - to be enclosed with split concrete mix 20MPa to AS3600	Not Specified	Same as AusNet- Does not mention Concrete	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
111	Min Clearance	Not Specified	Same as CP/PAL	Not Specified	To Water Main <=200D: • Separate trench - 500mm(Horizontal or Parallel) • Share trench - 300mm (Horizontal or Parallel) • 225mm min (vertical & crossing) To Water Main pipe 200D ~ 375D: • Separate trench - 1000mm (Horizontal or Parallel) • Share trench - 600mm (Horizontal or Parallel) • 225mm min (vertical & crossing)	• DBs to align with CP/PAL/AusNet criteria. • Criteria to be included in VESI URD standards.

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
112	Min Clearance	Same as CP/PAL- 300mm to drainage / sewerage pipe	Same as CP/PAL	Same as CP/PAL- 300mm to drainage / sewerage pipe	To Sewer Main pipe <=300DIN: • Separate trench - 500mm min (Horizontal or Parallel) • 225mm min (vertical & crossing) To Sewer Main pipe >300DIN: • Separate trench - 1000mm min (Horizontal or Parallel) • 300mm min (vertical & crossing)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
113	Min Clearance	Not Specified	Same as CP/PAL	Not Specified	To Gas reticulation pipe <=50D: • 300mm min (Horizontal or Parallel) • 150mm min (vertical & crossing) To Gas reticulation pipe >50D: • 500mm min (Horizontal or Parallel) • 150mm min (vertical & crossing)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
114	Min Clearance	Not Specified	Same as CP/PAL	Not Specified	To Gas transmission pipe: • 500mm min (Horizontal or Parallel) • 300mm min for trench <=1.5m wide (vertical & crossing) • 500mm min for trench >1.5m wide (vertical & crossing)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
115	Min Clearance	Same as CP/PAL- 150mm to LV slab, 250mm to HV slab	Same as CP/PAL- 150mm to LV slab, 250mm to HV slab	Same as CP/PAL- 150mm to LV slab, 250mm to HV slab	To Communications: • LV - 100mm min • HV - 300mm min • LV cover slab - 50mm min (Horizontal or Parallel) • HV cover slab - 200mm min (Horizontal or Parallel) • Cross underneath communications conduits.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
116	Min Clearance	Not Specified	Same as CP/PAL	Not Specified	To Storm water pipe: • 300mm min (Horizontal or Parallel) • LV • 100mm min (vertical & crossing) • HV • 300mm min (vertical & crossing) • LV cable cover slabs • 50mm • HV cable cover slabs • 250mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
117	Min Clearance	Not Specified	Not Specified	Not Specified	Boring crossing Rural waterways: • 1m below the hard bed of the lowest point of the waterway • 5m separation from the top of the batter either side of the drain	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
118	Min Clearance	Not Specified	Not Specified	Not Specified	Min crossing clearance above cable cover slabs: • 50mm to LV • 250mm for HV for communication cables	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
119	Min Clearance	Not Specified	Same as CP/PAL	Not Specified	To metallic, earthed or conductive assets: • 100mm working clearance to LV cables • 300mm working clearance to HV cables • 25mm working clearance to cable installed in UPVC conduit • 300mm horizontal clearance to metallic lighting poles • 25mm working clearance between LV mains cables inside substations and switchgear, and cables must not touch any metalwork or the concrete foundation plinth. • LV cable tails inside substations and switchgear must not touch each other, any metalwork or the concrete plinth. • 25mm between each phase of LV cable tails inside substations and switchgear must. • 25mm working clearance to HV cables and tails unless a purpose specific insulated gland fitting, clamp, or connection facility is utilised.	• DBs agree to align, however exact position to be determined.* • Agreed criteria will be included in the VESI URD Standards

*** Changed from out of scope to in scope, as discussed at the Technical Standards Steering Committee meeting on 01/11/2019.**

Installations – Cable & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
120	Spacers	Not Specified	Not Specified	Not Specified	To maintain clearances between conduits, cables and other assets only where necessary. Spacers may be applied as follows: • Between DNSP conduits • Between DNSP cables or cables and conduits • Between DNSP assets and pipe systems of other authorities • Between DNSP assets and other rigid structures or assets	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations - Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
121	Conduit	Service Conduits must extend past edge of easements 300mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
122	Bend Radii, 90 degree PVC	• 32 OD 312mm • 63 OD 325mm • 80 NB 600mm • 100 NB 600mm • 125 NB 2200mm • 150 NB 2200mm	Not Specified	• 32 OD 312mm • 63 OD 325mm • 80 NB 600mm • 100 NB 600mm • 125 NB 2200mm • 150 NB 2200mm	• 32 OD - 310mm • 50 OD - 325mm • 63 OD - 325mm • 80 NB - 550mm • 100 NB - 600mm, 900mm, 1100mm • 125 NB - 760mm, 2000mm • 150 NB - 2500mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
123	Bend, 45 degree PVC	Not Specified	Not Specified	Not Specified	• 50 OD - 550mm • 63 OD - 350mm • 100 NB - 1100mm • 150 NB - 2500mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
124	Bend, 22 degree PVC	Not Specified	Not Specified	Not Specified	• 63 OD - 2500mm • 150 NB - 2500mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
125	Bend, 15 degree PVC	Not Specified	Not Specified	Not Specified	• 100 NB - 1100mm • 125 NB - 2000mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
126	Joints	Not Specified	Not Specified	Not Specified	• The spigot must be inserted to the full length of the socket. • Excessive pooling of solvent cement at the root of the socket is unacceptable. • The spigot jointing direction shall follow cable pulling direction.	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations – Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
127	Mechanical Protection	Not Specified	Not Specified	Not Specified	The following must be ensured to prevent crushing of conduit resulting in change of nominal bore size of conduit: • Conduit body shall be free of any physical deformations i.e. changes in the shape or size • No sharp rise or falls in the trench profile • Conduit must be laid flat against the ground surface • The ground on which the conduit laid shall not have short lengths of inconsistent hardness. • A foam pig will be used to clean out the contents inside the conduit prior to cable installation.	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
128	Min Bending Radius - Pulling	22kV 3C240, Al - 2100mm	22kV 3C240, Al Std - 2100mm std, LC - 2320mm	22kV 3C240, Al - 2130mm	22kV 3C240, Al - 2040mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
129	Min Bending Radius - Pulling	22kV 3C185 Al - 1975mm	22kV 3C185 Al Std - 2000mm std, LC - 2160mm.	22kV 3C185 Al - 2000mm	22kV 3C185 Al - 1900mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
130	Min Bending Radius - Pulling	22kV 3C35 Al - 1390mm	22kV 3C35 Al - 1375mm	22kV 3C35 Al - 1480mm	22kV 3C35 Al - 1478mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
131	Min Bending Radius - Pulling	11kV 3C240 Al - 1860mm	Not Specified	Not Specified	11kV 3C240 Al - 1338mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
132	Min Bending Radius - Installed	22kV 3C240, Al - 1260mm	22kV 3C240, Al - LC - 1390mm	22kV 3C240, Al - 1280mm	22kV 3C240, Al - 1224mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
133	Min Bending Radius - Installed	22kV 3C185 Al - 1185mm	22kV 3C185 Al - LC - 1300mm	22kV 3C185 Al - 1200mm	22kV 3C185 Al - 1136mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
134	Min Bending Radius - Installed	22kV 3C35 Al - 830mm	Not Specified	22kV 3C35 Al - 890mm	22kV 3C35 Al - 887mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
135	Min Bending Radius - Installed	11kV 3C240 Al - 1100mm	Not Specified	Not Specified	11kV 3C240 Al - 892mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
136	Max Pulling Tension	22kV 3C240, Al - 14.2kN	22kV 3C240, Al - 22.5kN	22kV 3C240, Al - 21.6kN	22kV 3C240, Al - 23.0kN (pulling with stocking on outer sheath)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
137	Max Pulling Tension	22kV 3C185 Al - 11.4kN	22kV 3C185 Al - 22.5kN	22kV 3C185 Al - 16.7kN	22kV 3C185 Al - 20.0kN (pulling with stocking on outer sheath)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
138	Max Pulling Tension	22kV 3C35 Al - 5.3kN (pulling with stocking on outer sheath)	Same as UE	3.2kN	Same as UE	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
139	Max Pulling Tension	11kV 3C240 Al - 22.2kN	Not Specified	Not Specified	11kV 3C240 Al - 19.0kN (pulling with stocking on outer sheath)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
140	Side Wall Bearing Pressure	Not Specified	Same as CP/PAL - Max 14.21kN/m	Not Specified	Max Allowable Pressure with Caterpillar: a) 10kN/m for smooth extruded Pb or Al sheathed cables b) 7.5kN/m for wire screened cables c) 20kN/m for corrugated Al sheathed cables - The caterpillar gripping force on cable during push shall not exceed 350kg/m (3.4kN/m). - The caterpillar shall have a pressure gaugeand mechanism to measure and ensure the applied pressure not >350kg/m. - The winch for cable pulling must have the dynamometer to measure and ensure the pulling tension applied within the maximum permissible pulling tension.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
141	Joining and Sealing	Not Specified	Not Specified	Not Specified	The end of a new cable (that may be part of a future extension) shall be placed into a service pit and fitted with a sealed end. The existing cable end to be located and the new cable shall be laid over the top of the existing leaving sufficient length for the joint. Min 1500mm cable length to be provided from the end of the existing cable to the end of the new cable. The additional length of service cable shall be 0.6 m in pit and 1.0 m above pit.	• DBs to align with CP/PAL criteria. • Criteria to be included in VESI URD standards.

Installations - Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
142	Service Cable	Not Specified	Not Specified	Not Specified	The service cable's outer sheath shall be stripped back 500mm to leave 500mm of cores to work on.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
143	Ground Marker	Not Specified	Ground marker posts where cable does not follow easily defined paths: • every change of direction • Where the cable crosses a road, fence line, etc. • Where a visual line of sight is not maintained between markers • Where distance between the markers is excessive • If the cable run cannot be visually determined using only 2 markers	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
144	General	Top of pits to be levelled with final ground/footpath	Same as UE	Not Specified	Same as UE	• DBs to align with UE criteria. • Criteria to be included in VESI URD standards.

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
145	Typical Dimensions	<430mm to property boundary.	Same as CP/PAL	Not Specified	Installed close as possible to title boundary. If installed in footpath or driveway, pit outer edge >150mm from edge of footpath (titled boundary side)	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
146	Typical Dimensions	150mm thick	Same as CP/PAL	Not Specified	The footpath or driveway shall be min 200mm thick to form a concrete collar to support the pit.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
147	General	Same as CP/PAL	Same as CP/PAL	Not Specified	Service Conduit (where required public lighting conduit) extended to mains cable offset.	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
148	Typical Dimensions	Same as CP/PAL	Same as CP/PAL	Not Specified	Consumer service mains entry conduit extended 300mm inside from of title boundary, and to be sealed	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
149	Typical Dimensions	Same as CP/PAL	>50mm	Not Specified	Conduit extended 75±25mm into the pit	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
150	Typical Dimensions	Same as CP/PAL	Not Specified	Not Specified	Installed on a 50mm (min) base of compacted crushed rock	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
151	Conduit Burial	Service conduit burial depth: 600mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations - Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
152	Gatic Pit	Not Specified	Not Specified	Not Specified	Must be approved by Technical Standards group prior to installation and must meet the following criteria: • Min 400 x 400mm for fitting current DNSP pit inside • Have the word “Electricity” cast into the lid with a surrounding circle (as per existing pit lid design)	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Pillar

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
153	Paralleling Switches	Not Specified	Not Specified	Not Specified	The switch links screw connectors require a torque of 50Nm for proper connection to the cables.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Pillar

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
154	Paralleling Switches	Not Specified	Not Specified	Not Specified	The switch links are supplied and permanently installed with rubber protective inserts to protect against ingress of moisture and dirt.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Pillar

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
155	Bedding	Not Specified	Not Specified	Not Specified	The area inside the skirt shall be reinstated using compacted bedding sand to 90mm below the top of the skirt	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Pillar

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
156	Locking	Not Specified	Not Specified	Not Specified	A self-locking tie for securing the pillar cover, or stainless steel wire secured with copper crimp links.	• Out of scope – Material Specific. • This criteria will not be included in the VESI URD standard.

Installations - Electrical Clearance

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
157	Terminations	Not Specified	Indoor (11kV/22kV) • Phase to earth 150mm/140mm • Phase to Phase 180mm/240mm • Minimum Insulator surface creepage 290mm/355mm • Internal creepage to Earth over surface of cable 130mm/190mm Outdoor (11kV/22kV) • Phase to earth 180mm/280mm • Phase to Phase 230mm/330mm • Minimum Insulator surface creepage 430mm/385mm • Internal creepage to Earth over surface of cable 130mm/190mm	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - HV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
158	Joints	Not Specified	Straight Joints - Connect Cable segments (generally buried heat shrink type) Back to back elbow terminations are used to continue the cable run in for instance loop through shells.	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
159	Min Bending Radius - Pulling	4C240, AL - 610mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
160	Min Bending Radius - Pulling	4C185, Al - 550mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
161	Min Bending Radius - Pulling	Not Specified	Not Specified	Not Specified	3C120, Al - 380mm	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
162	Min Bending Radius - Installed	4C240, AL - 410mm	Same as UE	Same as UE	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
163	Min Bending Radius - Installed	4C185, Al - 370mm	Same as UE	Same as UE	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
164	Min Bending Radius - Installed	Not Specified	Not Specified	Not Specified	3C120, Al	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
165	Max Pulling Tension	4C240, AL - 19.2kN (pulling with stocking on PVC sheath)	22.5kN	6.1kN	28.8kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
166	Max Pulling Tension	4C185, AL - 14.8kN (pulling with stocking on PVC sheath)	19.8kN	5.5kN	22.2kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
167	Max Pulling Tension	Not Specified	Not Specified	Not Specified	3C120, AL - 10.8kN (pulling with stocking on PVC sheath)	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
168	Min Bending Radius - Pulling	4C16, Cu - 150mm	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
169	Min Bending Radius - Pulling	2C16, Cu - 125mm	Same as UE	Same as UE	100mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
170	Min Bending Radius - Pulling	4C35 Cu - 285mm	Not Specified	Not Specified	275mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
171	Min Bending Radius - Pulling	190mm	190mm	Not Specified	4C50 Cu - 300mm	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
172	Min Bending Radius - Installed	4C16, Cu - 100mm	Same as UE	Same as UE	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
173	Min Bending Radius - Installed	2C16, Cu - 85mm	Same as UE	80mm	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
174	Min Bending Radius - Installed	4C35 Cu - 190mm	Not Specified	Not Specified	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
175	Min Bending Radius - Installed	4C50 Cu - 130mm	Same as UE	Not Specified	Not Specified	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
176	Max Pulling Tension	4C16, Cu - 3.2kN	4.5kN	Same as UE	4.5kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
177	Max Pulling Tension	2C16, Cu - 1.6kN	2.3kN	Same as UE	2.2kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
178	Max Pulling Tension	4C35 Cu - 3.5kN	9kN	Not Specified	9.8kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations – LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
179	Max Pulling Tension	4C50 Cu - 4.1kN	12.6kN	Not Specified	14.0kN	• DBs agree to align, however exact position to be determined. • Agreed criteria will be included in the VESI URD Standards

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
180	Terminations	Not Specified	Indoor LV cable terminations are used in kiosk, pad mount substations and distribution cabinets Outdoor terminations are used for LV Cable Head Poles (CHPs).	Not Specified	Not Specified	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - LV Cable

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
181	Joints	• Mains Tee Joints • Straight Joints • Service Tee Joints • Paralleling Pillar connections	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Installations – Substation

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
182	Earth	Earth wires buried within substation site. Earth wires in road reserve within 10m of substation site.	Same as UE	Not Specified	Not Specified	• DBs to align with UE/AusNet criteria. • Criteria to be included in VESI URD standards.

Installations - UG Asset

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
183	Buried at lesser depth	Not Specified	A copy of the as-built drawing with details shall be forward to DBYD & SDME. Record shall be kept in the project file regarding to the reasons.	Not Specified	• Where cables or conduits approved to be installed less than standard depth, “Shallow Electrical Cable” surface marker sign(s) shall be installed at approved intervals and locations. • Where installed in a pedestrian footpath, the surface markers shall be flush with the footpath level. • Accurate as-built detailing (actual depths) on cable drawings, a record of shallow installation and location of surface markers shall be maintained in GIS. • The Project Responsible Officer should determine if additional warning signs need to be installed in potential high risk locations. • Cable markers on posts would be typically spaced at regular intervals, near turning points, at prominent locations or near features along the cable route. • Above ground warning signs must be on secure and long-term permanent marking. • Cable warning signs should be recorded in GIS.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - UG Asset

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
184	Marking - Remote & High Risk Locations	Not Specified	Not Specified	Not Specified	• Accurate as-built detailing (actual depths) on cable drawings, a record of shallow installation and location of surface markers shall be maintained in GIS. • cable warning signs should be recorded in GIS. • Determined by the Maintenance Group, isolated above ground marker posts may be cyclic inspection and verify continued presence.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Cables & Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
185	Approval	To be approved before backfilling by DNSP's responsible officer	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Inspection - Conduits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
186	Approval	Not Specified	Not Specified	Not Specified	Where nominated by DNSP the installed conduit system shall be inspected using an approved CCTV system.	• Out of scope – Not for URD. • This criteria will not be included in the VESI URD standard.

Installations - Service Pits

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
187	Approval	To be approved before backfilling by DNSP's responsible officer	Same as UE	Same as UE	Same as UE	• No Gap, all DBs will have the same criteria and this information will be included in the VESI URD Standards

Inspection - Auditing

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
188	Approval	Not Specified	Not Specified	Same as CP/PAL	Follow DNSP's auditing process at each stage	• Out of scope – Auditing process requirement. • This criteria will not be included in the VESI URD standard.

Inspection - Auditing

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
189	Non-Conformance	Not Specified	Not Specified	Non-conformances shall be rectified and signed off at each audit stage of the electrical works. Follow up Confirmation of the rectification shall be carried out by the auditor. Copies of all audits including the non-conformances sign off shall be provided to DNSP.	Not Specified	• Out of scope – Auditing process requirement. • This criteria will not be included in the VESI URD standard.

Inspection - UG cables on Bridge Crossings & Structures

Criteria Ref.	Criteria	Current UE criteria	Current AusNet criteria	Current Jemena criteria	Current CP/PAL criteria	Agreed alignment
190	Approval	Not Specified	Not Specified	Not Specified	Where conduits used, an audit of the installation shall be carried out by a VEDN endorsed auditor prior to coverage or backfill of any conduit portion not visible upon completion. The as-constructed installation details, particularly conduit ends, ground transitions, offsets and depths, must to be recorded by an approved DNSP cable detailer prior to coverage or backfill.	• Out of scope – Auditing process requirement. • This criteria will not be included in the VESI URD standard.