

Technical Standard - TS105A (Forms)

Standard Forms for SA Power Networks Underground & Overhead Electricity Distribution and Sub-Transmission Cable Networks

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Empowering South Australia

Date	Details	Author	Authorised
March 2018	 Removed 'TS105 F-40 form' from TS105 Part B Section 5.0 - Clarified mandatory requirements 	A Pradhan	J Ali
March 2019	 Updated Internet website links and Reviewed all Forms Clarified Project Works Categories: ✓ Section 5.1 - Contestable Project Works (eg URDs) ✓ Section 5.2 - Regulated Project Works (eg PLEC, Non-Contestable) ✓ Section 5.3 - Major Project Works (eg 66kV) ✓ Section 6 - Non-Project Works Added New Forms and Updated Appendices: ✓ TS105 Part C - Project Details - Major Project Works ✓ TS105 Part D - Index of Forms - Major Project Works ✓ TS105 Part E - Index of Asset Information Forms - Non-Project Works 	A Pradhan	J Ali
May 2020	Minor update to TS105 F2	A Pradhan	M Napolitano
24 August 2020	 Minor update to TS105 F42 Updated Section 8 - Who You Should Talk To? 	A Pradhan	M Napolitano
22 September 2020	Added TS105 F75 (transferred from TS107)	A Pradhan	M Napolitano

Revision Notice:

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1. Purpose

This technical standard contains electronic standard forms in PDF interactive format that are important for recording accurate asset information and are a pre-requisite to SA Power Networks acceptance of the SA Power Networks Civil and Electrical Infrastructure Works Compliance.

It provides easy access to all personnel including external contractors (ie for Contestable or Non-Contestable works) involved in the planning, design, selection, construction, inspection and or testing activities associated with SA Power Networks electricity distribution and sub-transmission cable system.

2. Scope

This technical standard contains forms which are designed for end users who can fill in accurate asset data (Online or Offline) electronically to expedite **Compliance Process**.

These technical standard forms are applicable for all parties, whose activities are associated with SA Power Networks electricity distribution and sub-transmission networks, and which will become a component of SA Power Networks infrastructure.

These technical standard forms are also applicable to electricity supply installed to provide a service point for the connection of a customer from existing low voltage mains.

This technical standard form series **does not** include the requirements for the activities associated with the third-party equipment installation on or within SA Power Networks facilities. Please refer to TS116 and submit form TS105 F25 to SA Power Networks Facilities Access Contract Manager (FACM) via email at facilitiesaccess@sapowernetworks.com.au.

3. Deviation from this Standard

Deviation from any specific requirement(s) of this Standard will only be permitted with the written approval of SA Power Networks Manager Network Planning (MNP).

Contact via 'Standards and Equipment Hotline' on (08) 8404 4200 or send an email to: networkstandards@sapowernetworks.com.au.

4. General Process

- 1. Click on required hyperlinked forms listed in Appendices A.2 and A.3: 'Forms Grouping as per Project Works' and download the forms and save them in your folder.
 - a) Note that you shall download a fresh copy of the form for each project/job.
 - b) Also note that SA Power Networks regularly update these forms.
- 2. Once downloaded you can use the forms on-site (ie when away from desktop environment).
 - a) Fill the form on-site and record data directly on the interactive PDF form.
 - Save asset data entered on your flash drive or CD. b)
- The interactive PDF format is flexible, which allows editing data entry, filing, archiving. 3.
- 4. On completion, email files to SA Power Networks as specified on the individual form.
- 5. We do not recommend hard paper photocopying, printing, scanning, or faxing of forms; however, forms completed in this way are also acceptable.

5. **Project Works**

Part of our Network Management acceptance and sign off to SA Power Networks Civil and Electrical Infrastructure Works Compliance and issuing of the Authority to Proceed-Connection and Energise is that the Contractor/Constructor is required to supply all the relevant test sheets completed and in full.

There are three (3) types of project works:

- 1. Contestable Project Works (eg URDs)
- 2. Regulated Project Works (eg PLEC, Non-Contestable)
- 3. Major Project Works (eg 66kV)

5.1 Contestable Project Works (eg URDs)

For any Contestable Project Works (eg URDs) conducted by the third party and asset will be vested to SA Power Networks, the forms TS105 Part A and TS105 Part B must be submitted at least 10 business days prior to commencement, along with all applicable forms that are listed in the column of Appendices A.2 and A.3: 'Forms Grouping as per Project Works'.

5.2 Regulated Project Works (eg PLEC, Non-Contestable)

For any Regulated Project Works (eg PLEC, Non-Contestable) conducted on the asset owned by SA Power Networks, the forms TS105 Part A and TS105 Part B must be submitted at least 10 business days prior to commencement, along with all applicable forms that are listed in the column of Appendix A.2: 'Forms Grouping as per Project Works'.

5.3 Major Project Works (eg 66kV)

For Major Project Works (eg 66kV), the forms TS105 Part C and TS105 Part D must be submitted at least 10 business days prior to commencement, along with all applicable forms that are listed in the column of Appendix A.2: 'Forms Grouping as per Project Works'.

6. **Non-Project Works**

The works/activities carried out for Asset Routine Inspection, Periodic Maintenance, Accidental Pole Replacement, Luminaire Replacement, Emergency and similar, are considered as non-project works.

For Non-Project Works, the form TS105 Part E must be submitted along with all applicable forms that are listed in the column of Appendix A.2: 'Forms Grouping as per Project Works'.

7. Non-Compliance

Our authorities may conduct audits and inspections to verify compliance with this document. Non-compliance to this document could result in one or all penalties being imposed on the offending party at the discretion of our authorities, such as:

- 1. Impose financial penalties as prescribed within the SA Electricity Act 1996 & SA Electricity (General) Regulations 2012 and SA WHS Act 2012 & SA WHS Regulations 2012.
- 2. Recover all costs associated with the repair of damaged infrastructure.
- Issue a directive to cease work and or removal of the offending person from the site. 3.
- 4. Ban an offender from working near SA Power Networks infrastructure until further notice.
- 5. May withdraw a company's endorsement with SA Power Networks.

Note: Where SA Power Networks as an Asset Owner apply any of the above penalties, SA Power Networks may advise all other asset owners of the details.

8. Who You Should Talk To?

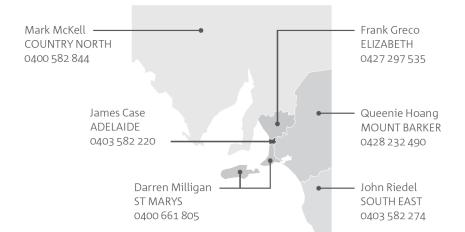
General Enquiries and Support: Please contact Builders and Electrical Contractors Service on 1300 650 014 (8am to 5pm, Mon to Fri) or Email: appointments@sapowernetworks.com.au

Faults and Emergencies: Please call our 24/7 phone line. 13 13 66.

Dial Before You Dig Enquiries: Visit website at www.1100.com.au

For Connection or Altering your Power: click here Basic Enhanced Connection Information

Contact our Customer Solutions Managers



SA Power Networks Managers / Officers	Area	Contact Number	Email Address
Network Access Officer (NAO)	Network Access Permit (NAP)	8404 5409	Nao@sapowernetworks.com.au
Compliance Coordinator (CC)	Contestable Project Works		Compliancegroup@sapowernetworks.com.au
Facilities Access Contracts Manager (FACM)	Facilities Access	8404 5399	facilitiesaccess@sapowernetworks.com.au
Rick Niutta (Compliance Coordinator)	Regulated Project Works	0418 714 475	Rick.Niutta@sapowernetworks.com.au
James Kokkinos (Civil Engineer - Team Leader)	Civil Project Management	0427 580 070	James.Kokkinos@sapowernetworks.com.au
Allison Purnell-Sullivan (Environment & Sustainability Manager)	Environment & Sustainability	0413 622 151	Allison.PurnellSullivan@sapowernetworks.com.au
Matthew Napolitano (Manager Network Planning)	Network Planning	0433 555 117	Matthew.Napolitano@sapowernetworks.com.au

For Documentation Access or For Approval of Non-Standard Special Purpose E Drawings:

For E-Drawings, Non-Standard Special Purpose E Drawings (E SP), AutoCAD standard templates and Instructional manuals, please contact 'Standards and Equipment Team' via Hotline on (08) 8404 4200 or send an email to: networkstandards@sapowernetworks.com.au

For 'Service & Installation Rules':

If your question relates to our 'Service & Installation Rules', you should contact our Network Connections Manager on (08) 8404 4898 or send an email to: appointments@sapowernetworks.com.au

Appendices

A.1 Types of Forms (Complete Listing)

Main Forms	
TS105 Part A	Project Details - Contestable Project Works (or) Regulated Project Works
TS105 Part B	Index of Forms - Contestable Project Works (or) Regulated Project Works
TS105 Part C	Project Details - Major Project Works
TS105 Part D	Index of Forms - Major Project Works
TS105 Part E	Index of Asset Information Forms - Non-Project Works
	tification & Compliance Forms
<u>TS105 C1</u>	SA Power Networks Civil Infrastructure Works Notification Form
<u>TS105 C2</u>	SA Power Networks Civil Infrastructure Works Compliance Form
	ks Compliance Forms
<u>TS105 F1</u>	Authority to Proceed Request (ATPR) - For Electrical Contractor
<u>TS105 F2</u>	Documentation - Check List
<u>TS105 F3</u>	SA Power Networks Full Electrical Infrastructure Works Compliance Form
<u>TS105 F4</u>	SA Power Networks Partial Electrical Infrastructure Works Compliance Form
Notification of	Contractor Works Program Form
TS105 F20	SA Power Networks Notification of Contractor Works Program
Equipment Te	
<u>TS105 F30</u>	UG HV and LV Equipment Test Form
	Fest - Underground Asset
TS105 F35	Certificate of Test - Earth Stake Test - Transformer/Switching Cubicle
TS105 F36	Certificate of Test - Additional Earth Stake
<u>TS105 F37</u>	Certificate of Test - Earth Stake Test for Cut Rods - Pits
<u>TS105 F38</u>	Certificate of Test - Earth Stake Bore Log
Construction C	
<u>TS105 F39</u>	Construction Check - Switching Cubicle
<u>TS105 F41</u>	Construction Check - Padmount Transformer
<u>TS105 F42</u>	Construction Check - Pits and Pillars
<u>TS105 F43</u>	Construction Check - Public Lighting
<u>TS105 F44</u>	Construction Check - Cable Traceability and Drum Numbers
<u>TS105 F45</u>	Test Equipment Calibration Check
Certificate of T	Fest - Overhead Asset
TS105 F60	Certificate of Test - Pole Footings
TS105 F61	Certificate of Test - Poles
TS105 F62	Certificate of Test - Overhead LV Construction
TS105 F63	Certificate of Test - LV Combined Construction - O/H and UG at Over/Under Pole
TS105 F64	Certificate of Test - O/H and Over/Under Services
TS105 F65	Certificate of Test - Overhead HV Construction
TS105 F66	Certificate of Test - O/H and URD O/U Construction
TS105 F67	Certificate of Test - O/H Transformer Construction
TS105 F68	Certificate of Test - O/H Public Lighting Construction
TS105 F69	Certificate of Test - BBCC
TS105 F70	Certificate of Test - ABC - HV
TS105 F71	Certificate of Test - ABC - LV
TS105 F72	Certificate of Test - IUC
<u>TS105 F73</u>	
	Certificate of Test - Earth Stake - Poles
TS105 F74 TS105 F75	Certificate of Test - Earth Stake - Poles Certificate of Test - Earth Stake Test - For Cut Rods - Poles Certificate of Test - Overhead Conductor Measurement Sheet

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Forms Grouping as per Project Works A.2

Contestable (URD) and Regulatory (Non-Contestable & PLEC) Project Works	Major Project Works (eg 66kV)	Asset Information Forms (Non-Project Works)
	Main Forms	
TS105 Part A Project Details - Contestable Project Works (or) Regulated Project Works	TS105 Part C Project Details - Major Project Works	TS105 Part E Index of Asset Information Forms - Non-Project Works
TS105 Part B Index of Forms - Contestable Project Works (or) Regulated Project Works	TS105 Part D Index of Forms - Major Project Works	
		Asset Information Forms
		<u>TS105 F5</u>
		<u>TS105 F6</u>
		<u>TS105 F7</u>
		<u>TS105 F8</u>
		<u>TS105 F9</u>
		<u>TS105 F10</u>
Civil Works Notificatio	n & Compliance Forms	
TS105 C1	TS105 C1	
(Civil Works - Notification)	(Civil Works - Notification)	
<u>TS105 C2</u>	<u>TS105 C2</u>	
(Civil Works - Compliance)	(Civil Works - Compliance)	
Electrical Works (Compliance Forms	
<u>TS105 F1</u>	<u>TS105 F1</u>	
(Authority to Proceed - ATP)	(Authority to Proceed Request - ATPR)	
TS105 F2 (Documentation - Check List)	<u>TS105 F2</u> (Documentation - Check List)	
TS105 F3	TS105 F3	
(Electrical Works Compliance - Full)	(Electrical Works Compliance - Full)	
TS105 F4	<u>TS105 F4</u>	
(Electrical Works Compliance - Partial)	(Electrical Works Compliance - Partial)	
Notification of Contractor		
Works Program Form		
<u>TS105 F20</u>		

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A.3 Forms Grouping as per Project Works (Continued)

Contestable (URD) and Regulatory (Non-Contestable & PLEC) Project Works	Major Project Works (eg 66kV)	Asset Information Forms (Non-Project Works)
Equipment Test Form		
<u>TS105 F30</u>		
Certificate of Test - UG Asset		
<u>TS105 F35</u>		
<u>TS105 F36</u>		
<u>TS105 F37</u>		
<u>TS105 F38</u>		
<u>TS105 F39</u>		
Construction Check Forms		
<u>TS105 F41</u>		
<u>TS105 F42</u>		
<u>TS105 F43</u>		
<u>TS105 F44</u>		
<u>TS105 F45</u>		
Certificate of Test - OH Asset		
<u>TS105 F60</u>		
<u>TS105 F61</u>		
<u>TS105 F62</u>		
<u>TS105 F63</u>		
<u>TS105 F64</u>		
<u>TS105 F65</u>		
<u>TS105 F66</u>		
<u>TS105 F67</u>		
<u>TS105 F68</u>		
<u>TS105 F69</u>		
<u>TS105 F70</u>		
<u>TS105 F71</u>		
<u>TS105 F72</u>		
<u>TS105 F73</u>		
<u>TS105 F74</u>		
<u>TS105 F75</u>		

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A.4	Definitions	
	Cable System	The cable system includes components such as power cables, cable joints, cable terminations, cable accessories etc, which forms part of the SA Power Networks infrastructure, in connection with electrical sub-transmission and distribution network, and will form the underground portion between the locations as specified.
	Circuit	Any number of conductors connected for the purpose of carrying current.
	CMEN	'Common Multiple Earth Neutral', which has a neutral that is common to the HV (high voltage) and LV (low voltage) systems and <u>is continuous back to the substation earth</u> .
		Whereas Local CMEN system is only used in an isolated location, where the neutral <u>is not connected back to the substation earth</u> . Refer to <u>TS109</u> for more information.
	Conduit	Conduits are PVC or HDPE tubes the primary purpose of which is to protect an underground cable from physical or water damage.
	Contestable Works	Means works as described in our document 3302 – Construction Terms and includes the design and construction of the new connection assets and/or the modification of the existing connection assets and/or any necessary extension. With contestable works, the applicant/ developer is required to fund these works which includes labour, materials and other associated services. The contestable works become part of our network unless special arrangements are made.
		The applicant/developer may contract with either us or another accredited designer/contractor to design and carry out the works. If another accredited designer/contractor is selected to perform any part of the works, the applicant/developer shall first contract with us that these works will be performed according to SA Power Networks requirements
	Contractor	A third-party contractor and their sub-contractor who performs works (eg Design / Construction / Testing) on the SA Power Networks infrastructure.
	Distribution Network	Any plant, equipment, structure, pole, building, conductor, cable, fixture, attachment, or other thing that comprises part of the infrastructure that SA Power Networks utilises to provide distribution connection services below 66kV.
	DIT	'Department of Infrastructure and Transport. Visit <u>http://www.dpti.sa.gov.au/</u> .

A.2: Definitions (continued)

Electricity Infrastructure	 Can mean any one or all the following: 1. electricity generating plant 2. powerlines 3. substations for converting, transforming, or controlling electricity 4. equipment for metering, monitoring, or controlling electricity 5. any wires, equipment, or other things (including tunnels and cavities) used for, or in connection with, the generation, transmission, distribution, or supply of electricity; 6. anything declared by regulation to form part of electricity infrastructure, but does not include anything declared by regulation not to form part of electricity infrastructure
MEN	Multiple earthed neutral is also known in EIC 60364 as a TC-N-S earthing system. Part of the system used a combined PEN (protective earth – neutral) conductor, which is at some point split up into separate PE and N lines. The combined PEN conductor typically runs between the transformer/supply neutral and the entry point into the building and may be earthed at numerous points. The PEN conductor is only separated into distinct PE and N conductor at the installation switchboard. In the SA Power Networks MEN system, this LV earthing/neutral system is kept distinctly separate from the HV earthing systems.
Non- Contestable Works	 means the works described as such in the Offer and includes: the preparation of the Specifications for the Contestable Works; all work required to complete the connection of the Contestable Works to the Distribution Network and the final commissioning and energisation of the Contestable Works; the design and construction of any required augmentations to the existing Distribution Network; and the overall project management of the above work;
Project Manager	SA Power Networks Network Project Manager, Delivery Project Manager, Network Project Officer, Network Service Officer, Customer Service Officer, Strategic Project Manager, or any Officer / Supervisor who is ultimately responsible for the management of a project.
Sub- Transmission Networks	66kV lines in the case of SA Power Networks. Any plant, equipment, structure, pole, building, conductor, cable, fixture, attachment, or other thing that comprises part of the infrastructure that SA Power Networks utilises to provide 66kV connection services.
Terms and Conditions	SA Power Networks publication Terms and Conditions for External Contractor Construction, as amended from time to time.

A.5 References

The following listed documents are for additional information but may not be a conclusive list and other documentation may be required on a project specific basis. Refer to the following SA legislative acts and regulations, SA Electricity Code, the SA Power Networks' publications, relevant AS/NZS and ENA standards for more detail. **Please note:** It is your responsibility to ensure you have complied with all relevant standards and you have used the latest version.

South Australian Legislations:

- Electricity Act 1996 and Electricity (General) Regulations 2012
- Electricity (Principles of Vegetation Clearance) Regulations 2010
- Environment Protection Act 1993 and Environment Protection Regulations 2009
- Work Health & Safety Act 2012 and Work Health & Safety Regulations 2012

Essential Services Commission of South Australia (ESCOSA) Codes:

SA Electricity Distribution Code (EDC)

Energy Networks Association (ENA) Publications:

- ENA NENS 03: National Guidelines for Safe Access to Electrical and Mechanical Apparatus
- ENA NENS 04: National Guidelines for Safe Approach Distances to Electrical and Mechanical Apparatus

Australian Energy Market Commission (AEMC) Publications:

• National Electricity Rules (NER) - Schedule 5 of Chapter 5 of the NER

The Department of Infrastructure and Transport (DIT) Publications:

The Office of Technical Regulator (OTR) Publications:

SA Power Networks' Documents:

Manuals (for Examples):

Manual 14	Safety, Reliability, Maintenance & Technical Management Plan
Manual 26	Insulation Coordination and Over Voltage Protection Design Principles

Technical Standards & NICC Brochures (for Examples):

NICC400	Information for an applicant undertaking a contestable extension
NICC401	Information on Network Design and Installation by an External Contractor
NICC403	Guidelines for Excavation near SA Power Networks Stobie Pole (up to and including 33kV) - under development
NICC404	Working in the Vicinity of SA Power Networks Infrastructure - NAP Process
TS085	Trenching and Installation of Underground Conduits and Cables (up to and including 33 kV)
TS099	Distribution and Sub-Transmission CAD Drafting Standards
TS100	Electrical Design Standards for Underground Distribution Cable Networks (up to and including 33 kV)
TS102	Easement standard for distribution networks
TS109	Earthing of the Distribution Network
TS110	Electrical Design, Civil/Electrical works & Testing for 66 kV UG Sub- Transmission Networks
	in a Caulan

Relevant E Drawing Series

Any applicable Standards Australia Publications: