



Service Connect Scheme Guidelines

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Preface

This document "*Service Connect Scheme*" is designed to provide the electrical contracting industry with information on how to gain accreditation to connect consumers' service apparatus into Western Power supply pillars and to install direct wired kWh master meters. It also lists the mandatory scheme requirements and electrical contractor/ worker obligations to remain accredited.

It is to be read in conjunction with Western Power Network Requirements and the Western Australian Electrical Requirements (WAER) issued by Energy Safety W.A and relevant Australian/ New Zealand standards. The updated version of the WAER is available on the Department of Consumer and Employment Protection (DOCEP) web site at www.energysafety.wa.gov.au.

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Introduction

Western Power has a statutory obligation under Regulation 242 of the Electricity Regulations 1947 to ensure that no electricity is supplied to an installation unless the service apparatus (consumer mains and meter) are installed in a safe condition.

In accordance with this regulation Western Power may authorize suitable persons to perform service connection work, however, adequate safeguards must be in place to enable the safe and correct connection of such service equipment. Western Power has ultimate responsibility to ensure that persons authorized to connect service apparatus are competent to undertake it safely and correctly.

The *Service Connect* scheme is a revamp of the former Western Power “H” accreditation scheme that was introduced during the late 1990’s to facilitate electrical workers connecting service equipment to the Network. A key change under the new scheme is that the scheme is contractor rather than worker based. Participating electrical workers must nominate the electrical contractor they are employed by. In some cases this will be the same person, however an EC number must be provided. Where workers undertake installations for multiple contractors, each EC number must be supplied in order for new connections to proceed.

As part of the transition to the new scheme, existing “H” accreditations will be converted to *Service Connect* accreditations subject to authorized electrical workers nominating their electrical contractor. Where existing “H” accredited workers may not be able to nominate a current contractor, their *Service Connect* accreditations will remain valid for a period of 2 years (until March 31, 2009). If these workers undertake consumer mains connections within this period they will be required to nominate a contractor before their tickets will be processed. If, however, they have not nominated a contractor before the end of the 2-year period, their accreditations will lapse. Retraining will be required to obtain *Service Connect* accreditation after this period.

Entry to the *Service Connect* scheme is voluntary. Where an electrical contractor is not authorized to perform this work, Western Power may perform the work at chargeable rates or an accredited contractor may be engaged. Where another contractor is involved, this contractor must assume responsibility for the consumer mains and main switchboard including MEN connection with appropriate Preliminary and Completion Notices submitted, together with the completion of the Service Connection Test Form.

The *Service Connect* scheme does not permit electrical contractors or workers to permanently energize installations as permitted under Western Power’s *Contractor Connect* scheme.

As was the case with the “H” accreditation scheme, *Service Connect* is limited to the installation of direct-wired meters and does not permit consumer mains connection to overhead distribution aerials. All instances of CT metering installations/alterations must involve Western Power’s Metering Services group.

Scheme Overview

The *Service Connect* scheme is electrical contractor based. Authorized electrical workers employed by registered electrical contractor are permitted to perform the following service work:

- Install direct wired KWh meters at the customer premises;
- Install and terminate customer's consumer mains to direct connected KWh meters;
- Terminate the customer's consumer mains at an **energised** Western Power supply pillar or universal pillar

Note: Under NO circumstances can the customer's consumer mains be terminated at a de-energised pillar due to a MEN fault being simulated during the testing of the distribution network.

- Operate the protective service device (fuse or circuit breaker) at the meter panel to carry out appropriate testing of the meter as per Appendix C.

On the completion of this work the service protection device shall be isolated to the OFF state and a caution tag attached to indicate that only the Network Operator's personnel may remove and energise the customer's installation.

- Disconnect the customers consumer mains from a Western Power supply pillar or universal pillar
- Replace and/ or upgrade the protective service device/s (fuse or circuit breaker) or associated wiring (not consumer mains) at the meter panel where supply is via a supply or universal pillar.

Notes:

1. Only where the electrical contractor and worker are registered under Western Power's Contractor Connect Scheme can the customer's installation be left energised on a permanent basis.
2. Service Connect does NOT permit energised cable jointing.
3. Service Connect does not permit connection to the Networks overheads distribution system.
4. Meter installations are limited to direct wired metering (non CT metered).
5. This scheme does not permit consumer mains or metering changeovers. Contractor Connect accreditation is required for this authorization.

Application

To be eligible to join the *Service Connect* scheme an electrical worker seeking accreditation must be an employed trade person and hold a current electrical workers licence endorsed "Electrical Mechanic". Applications will not be accepted from persons not holding this electrical trade qualification (electrical apprentices).

The worker must also be nominated by a currently licensed electrical contractor on the approved application form (*see Appendix B*), as Western Power will need to establish a worker/ contractor relationship prior to authorization.

Approval

On receiving the approved application form Western Power will undertake checks to ensure both the electrical contractor and nominated worker are eligible to join the scheme (hold valid contractor and worker licences and are not under current scheme suspension).

A contractor/ worker relationship will be established in Western Power's Electrical Licensing and Inspection system (ELIS) and the electrical contractor and worker will be advised on the application result. Information on the scheme will also be forwarded to both parties with details of training providers. Currently both the College of Electrical Training and Western Power's Power Training Services are listed as authorized training providers.

Once Western Power has approved an application, the applicant may then contact a training provider and undertake training.

Training

An approved training provider will conduct the training of electrical workers. Prior to an applicant being accepted by a training provider, advice must have been received from Western Power's Metering Services to confirm the eligibility of the applicant.

The applicant must present their current electrical workers licence to the training provider for verification when registering on the day training is conducted.

Prior to being authorized, applicants must successfully complete the *Service Connect* training course and in doing so must demonstrate competence in safe working practices and testing procedures required to terminate and connect customer's consumer mains to a live supply pillar and a direct connected meter. The applicant prior to authorization must pass a practical competency assessment.

Included in *Service Connect* training is the worker's requirement to complete a Service Connection Test form that specifies all tests that must be carried out to fit meters at the customer's premise and connect to a supply pillar. The electrical contractor must retain this form for a minimum of seven (7) years.

Key learning outcomes of the scheme include:

- Understand the role and obligations of electrical contractors and electrical workers under the *Service Connect* scheme.
 - Conduct pre-connection checks and tests.
 - Explain the MEN system.
 - Fit and connect a KWh meter.
 - Terminate and connect consumer's mains at a supply or universal pillar.
 - Test connection polarity.

Upon the electrical worker having successfully completed the approved training course, the training provider will then advise Western Power whether the applicant has been successful or unsuccessful.

If successful, the training provider will issue each successful electrical worker with a Western Power *Service Connect* identification card. Western Power will be advised by training providers of successful trainees and will then establish successful applicants in ELIS prior to workers being authorized to commence new installations.

The *Service Connect* identification card will specify the electrical worker's name, licence number and authorization details.

Western Power will retain application records and assessment results of all electrical workers for as long as they remain accredited. If the electrical worker's accreditation expires, records will be kept for a minimum of seven (7) years.

Electrical Contractor / Worker Obligations

To maintain their accreditation, electrical contractors and workers will be required to comply fully with all scheme requirements including:

- Workers are required to complete and certify a Service Connection Test form at the time of testing confirming that all pillar and meter connections are correct;
- Contractors must keep and maintain all completed Service Connection Test forms and copies of Completion Notices for a minimum period of seven (7) years. All such forms must be made available to Western Power on request or during audit;
- Contractors must conduct annual internal audits on all accredited electrical workers in their employ to ensure workers are meeting scheme safety outcomes and are competent to perform consumer mains connections;
- Contractors must advise Western Power within 14 days of the commencement of a new employee accredited under the *Service Connect* scheme;
- Contractors must advise Western Power within 14 days should a scheme accredited employee leave the company;

- Contractors should maintain a Register of Electrical Workers highlighting those accredited to perform *Service Connect* work.
- Contractors must maintain audit records for a minimum of seven (7) years.
- The electrical worker must have their *Service Connect* Identification Card available at all times when performing work.
- All work performed must be completed safely and correctly in accordance with the scheme training requirements.
- Contractors will be subject to a file/office audit once every five (5) years.

Process

Once an electrical worker has successfully completed the training course, the following processes will occur (see work flow, *Appendix A*):

- All electrical workers will be issued with a Western Power *Service Connect* identification card from their training provider;
- Service Connection Test forms (see *Appendix C*) will be made available to each accredited electrical worker;
- On commencement of work, the electrical contractor will submit a Preliminary Notice as required under Regulation 51 of the Electricity (Licensing) Regulations 1991;
- On completion of work, the electrical worker will check and test the installation in accordance with the approved checking and testing processes/methods as detailed in the *Service Connect* Training notes and in accordance with the Service Connection Test forms (*Appendix C*).
- The electrical worker will connect the consumer mains to Western Power supply, test for correct connections, activate the Service Protection device (meter fuses) and then test the meter.
- As the meter is being tested, results must be recorded on the Service Connection Test Form.
- On the completion of this work the service protective device shall be isolated to the OFF state and a caution tag fitted to indicate that only the Network Operator's personnel may remove and energise the customer's installation (or, alternatively, authorised Contractor Connect personnel).
- Within 3 working days of completing the installation, the electrical contractor must submit a duly completed Notice of Completion to Western Power.
- The electrical contractor will be required to store the Service Connection Test form together with a copy of the Completion Notice for a minimum of seven (7) years.

Western Power will establish an electrical contractor/ worker relationship in ELIS, verifying that only accredited contractor authorized workers are performing *Service Connect* work.

- Once established, the *Service Connect* scheme will be submitted to the Economic Regulation Authority (ERA) as a Western Power registration scheme for authorized meter installers for direct-wired meters. If accepted, the scheme participants will be listed on Western Power's website as authorized meter installers in accordance with sections 3.9 and 6.9 of the Electricity Industry Metering Code 2005.

Revocation of Accreditation

If an electrical contractor or worker is found not to be complying with the requirements of the scheme Western Power will review their accreditation. Scheme accreditation will be revoked where instances of serious or repeat non-compliance has occurred. In all instances, Western Power must be satisfied that appropriate measures have been implemented to ensure the non-compliance does not re-occur.

Any confirmed serious safety breach will be forwarded to the Energy Safety Directorate for further action.

An accredited electrical contractor or worker that has had their accreditation revoked will not be eligible for re-accreditation for a minimum period of six (6) months.

Appeals Process

Where an electrical contractor or electrical worker is aggrieved by any decision that may either prohibit their joining the scheme or suspend and remove them from *Service Connect*, they may appeal to Western Power to have the decision reviewed. Such an appeal must be in writing and clearly outline the reasons for the appeal.

The appeal must be submitted to Western Power not later than 14 days after the aggrieved party is advised of the decision.

Western Power will respond to the appeal within 28 days of receiving the written appeal, or if this is not possible, will advise the relevant party within this period of the timing for the review of the appeal. The appeal decision made by Western Power shall be final. An expert panel whose members were not involved in making the original decision will conduct a review of the appeal.





Western Power Audits

Western Power will audit the performance of electrical contractors and electrical worker workers participating in the scheme.

Electrical contractors will be subject to a desktop audit at least once every 5 years to ensure scheme compliance. Particular attention will be paid to the completion and filing of Service Connection Test forms and annual worker audits.

As part of Western Power's Sample Inspection System, service installations will be inspected during the course of normal new installation inspections. Particular attention will be paid to the correct connection of consumer mains and metering equipment. Service installation compliance with AS/ NZS 3000 and the WAER will also be inspected.

APPENDIX A – Service Connect Workflow

 Electrical Worker	 Electrical Contractor	 Training Providers	 WPC Metering Services	 WPC Connections Mngmnt
<ul style="list-style-type: none"> • Obtain "A" grade worker's licence • Apply for Service Connect accreditation • Attend Service Connect training • Receive Service Connect card and guidelines • Complete electrical work on site using Service Connection Test (SCT) form • Participate in contractor's annual audit program to test capabilities • Appeal any decision that advises impending suspension 	<ul style="list-style-type: none"> • Identify workers to undertake Service Connect training • Complete training application form and submit to training provider • Receive Service Connect guidelines • Submit tickets to WPC File ticket and SCT form • Advise WPC of change in accredited employee(s) • Undertake at least annual self audits of worker capabilities • Every 5 years participate in WPC audit of files • File documentation and results of self audit program • Appeal any decision that advises impending suspension 	<ul style="list-style-type: none"> • Power Training Services & College of Electrical Training • Train and assess workers in Service Connect accreditation • Advise worker/contractor of any failed assessments • Advise WPC within 5 working days of successful assessments • Issue workers with Service Connect card 	<ul style="list-style-type: none"> • Establish worker & contractor in ELIS and make changes as advised from time to time • Send Service Connect letter & scheme guidelines to contractor and worker • Inspect jobs and confirm compliance with Service Connect • Where serious breach, take appropriate action in accordance with Inspection Plan and suspend worker/contractor from scheme • Every 5 years undertake office audit of contractors • Log satisfactory audit results • If audit non-compliant, advise worker/contractor of potential suspension • Remove accreditation from of worker/contractor if required • Expert panel review of appealed decisions 	<ul style="list-style-type: none"> • Validate tickets for worker/contractor Service Connect accreditation • Advise worker/contractor if invalid submission where tickets rejected

APPENDIX B – Application Form

Service Connect Scheme Application Form

Please complete and send to Western Powers Metering Centre 6 Hillary Place Forrestfield, WA 6058
 Telephone 9359 7552 or fax 9359 7575

Electrical contractor details

Company trading name																										
Address																										
Suburb or town																Post code										
Contact name																										
Telephone	()											Fax	()					
EC licence number																										

Electrical worker application details	
Worker name	Worker licence number

On behalf of _____ (insert company name),
 I wish to nominate the above listed electrical workers to be authorised under Western Power's Service Connect scheme while they are under the employ of this company.

I agree to abide fully with the conditions of the scheme and understand that any failure to comply may result in this authorisation being revoked.

Name																						
Signature																Date		/		/		

APPENDIX C – Connection Test Form

Service Connection Test Form (Mandatory Test)

(To be completed by authorised electrical workers during the testing process)

Where expected test results are not achieved, testing must immediately cease, the consumer mains disconnected at origin and either the fault corrected or further advice sought prior to complete re-testing.

<i>PRE-TESTING VERIFICATION & VISUAL CHECKS</i>	<i>Initial</i>
The pillar is energised and the relevant installation consumer mains are not connected at the pillar	
For single metered installations a neutral link on the meter panel is not permitted (remove N/ Link & rewire panel)	
The SPD/ meter fuses are switched off or removed , and the customers main switch is also switched off	
The service equipment is wired in the correct sequence (Pillar → SPD → meter → customer main switch)	
Conductors are correctly wired into the meter (1Ø - ANNA) (3Ø - AA / AA / AA / NN)	
An independent ground earth is installed adjacent to the meter box for testing purposes	
No active and neutral conductors are transposed between the Pillar → SPD → meter → customer MSB	
The meter load neutral to the customers neutral link is verified and is disconnected at the meter	
The MEN connection at the customers main switchboard is installed and correctly connected	

<i>SERVICE APPARATUS TEST (connect consumer mains at origin/ pillar)</i> (Caution – The line neutral conductor could be live if connected incorrectly)	<i>Voltage</i> <small>(record max reading)</small>	<i>Expected Volt range</i>
Confirm line neutral & earthed parts are not live by testing from line neutral to: 1) load neutral 2) independent earth 3) metal meter enclosure		0 – 6
Confirm load neutral is not live by testing from disconnected load neutral to: 1) independent earth 2) metal meter enclosure		0
Confirm meter enclosure and load neutral are connected to earth by testing from SPD line terminal/s to: 1) independent earth 2) metal meter encl 3) load neutral 4) line neutral		225- 255
Confirm consumer mains are connected to SPD then to the meter by testing from meter line active terminal/s to: 1) independent earth 2) load neutral 3) line neutral (SPD still OFF)		0 – 6
If 3Ø, confirm 3Ø supply from pillar by testing between each active line terminal/s of the SPDs R – W ✓ <input type="checkbox"/> R – B ✓ <input type="checkbox"/> W – B ✓ <input type="checkbox"/>		390- 440
<i>METER CONNECTION TEST (Insert meter fuses or switch on SPD/s)</i>		
Confirm correct connections between meter and SPDs by testing from meter line active terminal/s to: 1) independent earth 2) metal meter enclosure 3) line neutral		225- 255
If 3Ø, confirm 3Ø supply at meter by testing between all phases of the line active terminals of meter R – W ✓ <input type="checkbox"/> R – B ✓ <input type="checkbox"/> W – B ✓ <input type="checkbox"/>		390- 440
Re-confirm correct supply at the meter by testing each phase between line active and line neutral R – N ✓ <input type="checkbox"/> W – N ✓ <input type="checkbox"/> B – N ✓ <input type="checkbox"/>		225- 255
Confirm the line neutral and line active conductors are not transposed by testing from line neutral to: 1) independent earth 2) disconnected neutral load tail		0 – 6
<i>METER LOAD TEST (de-energise meter and then reconnect load neutral tail)</i>	<i>Initial</i>	
Energise the meter and apply a meter load test between the active and neutral meter load terminal/s (Meter should pulse or rotate forward, indicating correct connection & recording)		
<i>EARTH LOOP IMPEDANCE TEST (for neutral integrity)</i>	Ω	
Confirm the main neutral conductor integrity and MEN connection at the main switch board by conducting an earth loop impedance test.		≤ 1 Ω

I, the undersigned hereby certify that I have performed and have accurately recorded all of the tests as listed above and confirm that the service apparatus is safely and correctly connected to the network.

Site Address:	Meter No:	Seal No: (If C. C.)
Elect Worker Name:	EW No:	EC No.
Signature:	Date:	

Note: The meter must not be left energised unless the E.W. is Contractor Connect authorised