

Electricity Specification 627

Issue 2 December 2010

LV Live Jointing Regime for an ICP to Undertake Unmetered Connections Work on Street Furniture (Tripartite Agreement)

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Approved for issue by the Technical Policy Panel

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Issue and Amendment Summary

Amendment No. Date	Brief Description and Amending Action
0	Issue 1
24/05/06	First issue as EPD 617
	Prepared by: J G Lucas
	Approved by the Technical Policy Panel and signed on its behalf by:
0	Issue 1 (as ES627)
04/03/09	 First issue – Document reviewed and re-issued as ES 627. Re-formatted as an ELECTRICITY NORTH WEST electricity specification, re-titled & general principles amended / enhanced to reflect regulatory change and current industry practice. Standard documents amended to cover specifications ES 626 and ES 627. Prepared by: G.H.Smith
	Approved by the Technical Policy Panel & signed On its behalf by:
0	Issue 2
21/12/10	 Second issue – Document has been amended to facilitate the introduction of live jointing of new street furniture service connections. The document also been reformatted as an Electricity North West electricity specification, Prepared by: D C Ball Approved by the Technical Policy Panel & signed On its behalf by:

LV LIVE JOINTING REGIME FOR AN ICP TO UNDERTAKE UNMETERED CONNECTIONS WORK ON STREET FURNITURE

1. INTRODUCTION

This document details the principles and operating regime for Contestable live jointing on LV unmetered connections within the Electricity North West distribution service area.

2. SCOPE

Approved and Accredited Independent Connection Providers (ICPs) may undertake live LV jointing on existing single phase LV unmetered Service connections. The Live Working regime applies to street furniture sited within highway land and is restricted to Service disconnections, Service transfers, new service to existing mains connections, installation of new mains and combinations of these activities e.g. Service reconnects, same column transfers, new service connections, etc.

3. DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

The following definitions shall apply throughout this document:

Accident	any work-related event which has given rise to injury, ill- health, fatality, damage to property, plant, products or the environment, production losses or increased liabilities
Accredited	ICPs that have satisfied the requirements of Electricity North West to undertake live jointing work on the LV network.
Approved	Approved in writing by Electricity North West.
Authorised	Nominated in writing by an appropriate officer of Electricity North West to carry out specified duties.
СР	An Electricity North West Code of Practice.
Commissioning Requirements	The tests that have to be passed prior to making live a Service.
Construction	Electric Lines and Electrical Plant forming part of the Extension Assets and Reinforcement (both Contestable and Non-Contestable Assets).
Contestable Works	Construction of Electricity Distribution Networks by Approved Independent Connection Providers under Ofgem's Competition in Connections regime.
Daily Whereabouts	A schedule of work, in an Approved format, that is intended to be undertaken on the following day.

Dangerous Occurrence	An Incident requiring notice under Regulation 3(1) of RIDDOR 95.	
ES	An Electricity North West's Electricity Specification	
Distribution Safety Rules	The Safety Rules for working on the Electricity North West's electrical network.	
Energisation Process	This is deemed to have commenced when there has been any physical connection between the new cable and the existing live system.	
Handed-over	Contestable network construction having been completed and the ICP's permission to work live having been withdrawn.	
Incident	An unplanned event which that has the potential to cause injury or loss or damage to equipment	
Independent Connection Provider (ICP)	An Approved and Accredited company under the NERS scheme to undertake Contestable electricity distribution works.	
Inspection and Monitoring	Inspection and Monitoring by us of the Contestable Work constructed by an ICP.	
Low Voltage (LV)	Refers to the 230 /400V network.	
NERS	National Electricity Registration Scheme	
Pre-commissioning	Any work that is undertaken prior to the new system being physically connected to the existing system.	
Promoting Authority	The organisation responsible for the provision and maintenance of the Street Electrical Fixtures (street lighting	
	and street furniture) within a defined area.	
Service	and street furniture) within a defined area. For the purpose of this document a Service is defined as a cable providing an electricity connection from a LV main cable or service cable to an item of street furniture.	
Service Street Electrical Fixture	For the purpose of this document a Service is defined as a cable providing an electricity connection from a LV main	
Street Electrical	For the purpose of this document a Service is defined as a cable providing an electricity connection from a LV main cable or service cable to an item of street furniture. A permanent fixture which is or is intended to be connected to a supply of electricity and which is in, on, or is associated	

4. CANDIDATE COMPETENCY

The Electricity at Work Regulations 1989 require that no person shall be engaged in any work activity where technical knowledge and experience is necessary to prevent danger or (where appropriate) injury unless they possess such knowledge and experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work.

In accordance with the Health and Safety series booklet HS(R25) - "Memorandum of Guidance on the Electricity at Work Regulations 1989", technical knowledge and experience necessitates:

- (a) adequate knowledge of electricity;
- (b) adequate experience of electrical work;
- (c) adequate understanding of the system to be worked on and practical experience of that class of system;
- (d) understanding of the hazards which may arise during the work and the precautions which need to be taken; and
- (e) the ability to recognise at all times whether it is safe for work to continue.

Certain parts of the Electricity Safety, Quality and Continuity Regulations 2002 are also relevant to work on underground services, in particular the requirements to protect, mark and record the positions of underground equipment.

All staff engaged in working on live LV electricity systems shall have appropriate technical knowledge, experience and authorisation for the duties to be undertaken.

5. **OPERATING REGIME**

5.1 General Principles

Issue 2

- 5.1.1 All live LV work shall be performed under the ICP's Distribution Safety Rules.
- 5.1.2 All LV jointing shall be undertaken in accordance with the ICPs approved jointing regime which should be agreed with Electricity North West.
- 5.1.3 All jointers required to work live at LV shall be Authorised in writing by Electricity North West (Address 2).
- 5.1.4 ICPs shall have a current contract with a LA to undertake the works.
- 5.1.5 ICPs shall have obtained the appropriate NERS Accreditation before they will be permitted to undertake live work on LV Street Electrical Fixture Service cables.
- 5.1.6 All joints and connectors shall be covered by a current type test approval and shall be approved by Electricity North West prior to installation.
- 5.1.7 The ICP shall ensure that Electricity North West has full rights of access to undertake all relevant work within the work areas as described in these procedures.
- 5.1.8 ICP's staff shall <u>not</u> be Authorised to enter live substations.
- 5.1.9 A Tripartite Adoption Agreement, between the Promoting Authority, the appointed ICP and Electricity North West shall be completed prior to the ICP entering a "live working regime". Such Agreement shall remain in place throughout the "live working regime".

- 5.1.10 Before any live working commences on site, an "Entering the Live Working Regime Application for Consent to Connect" form (see Appendix A) shall be completed by the ICP and sanctioned by Electricity North West. Copies of the completed form shall be retained by the ICP and Electricity North West(Address 3).
- 5.1.11 The project requiring "Live Working" may consist of a defined number of units of work in a specific project or an open number of units of work within a clearly defined geographic area.
- 5.1.12 Live working may be terminated at the request of either party by completing the "Exiting the Live Working Regime" form (see Appendix B).
- 5.1.13 ICPs shall submit their Daily and Weekly Whereabouts to Electricity North West in the Approved manner, as determined by the Connections Compliance Manager.
- 5.1.14 Electricity North West shall undertake audits of the works and shall expect any defects identified to be rectified by the ICP, except under the conditions described in sub-section 6.6.2. The timescale for rectifying any defects will be agreed between the ICP and Electricity North West
- 5.1.15 Electricity North West(Address 3) shall be notified upon energisation of LV mains using the "Completion Certificate Mains Jointing" form (see Appendix C).
- 5.1.16 Electricity North West (Address 3) shall be notified upon energisation of new Street Electrical Fixture Services using the "Completion Certificate Service Jointing" form (see Appendix D).
- 5.1.17 ICPs shall comply with Electricity North West 's Electricity Specifications ES210 Third-Party Constructed New Connections, Extensions and Alterations, and ES211 - Design Specification for Third-Party Provided New Connections of Street Electrical Fixtures.
- 5.1.18 The failure of the ICP to comply with any of the processes detailed in this document will result in Electricity North West withdrawing the facility of live working.

5.2 Electrical and Non-Electrical Incidents

- 5.2.1 Reporting of Electrical Incidents, Accidents and Dangerous Occurrences
 - 5.2.1.1 Electrical Incidents, Accidents and Dangerous Occurrences shall immediately be reported to Electricity North West (Address 1) and the following information shall be provided:
 - name of person reporting the Incident;
 - name of ICP;
 - location of the Incident;
 - type of Incident;
 - injury to persons including members of the public; and
 - description of any damage caused.

- 5.2.1.2 Following an electrical Incident, Accident or Dangerous Occurrence all live work at the site of the Incident, Accident or Dangerous Occurrence shall cease and third party representatives instructed to remain on site until a Electricity North West representative attends to investigate and, if necessary, make the system safe. Live jointing at the site shall not recommence until instructed by the Electricity North West representative, who will ensure that his instruction is recorded on the Electricity North West significant event log.
- 5.2.1.3 The ICP shall comply with the Electricity North West Incident investigation procedures and assist in the investigation as necessary.
- 5.2.1.4 The ICP shall provide Electricity North West with a 24 hour contact name and telephone number so that Electricity North West can contact a responsible person to notify of any Accident, Incident or Dangerous Occurrence. Similarly, the ICP shall provide details of a safety expert who may be contacted to discuss and resolve safety matters. It is imperative that this person is able to contact all of the ICP's Authorised staff at all times they are at work.
- 5.2.1.5 Electricity North West is responsible for formal reporting under RIDDOR 95 Regulation 3 (1) if Electricity North West is in charge of the activity, owns the equipment or owns the land. The ICP is responsible for reporting any other situations.
- 5.2.2 Non-Electrical Incidents

The ICP and the Health and Safety Executive, if necessary, shall investigate nonelectrical Incidents, with any report being made available to Electricity North West.

5.2.3 Suspension of Live Jointing by the ICP

If live jointing works are suspended on site for any reason then the ICP shall immediately notify the reason to Electricity North West' Electricity Operations, System Operations (Address 2) who may choose to send a representative to site.

5.3 Electrical Safety Management System

The ICP shall be responsible for the management and safety of its representatives. Before undertaking work on live Street Electrical Fixture Services the ICP shall have in place an Approved electrical safety management system.

5.4 Leaving Site

Before leaving site, the ICP shall ensure that the electrical network (either energised or with the potential to be made live) is left in a safe manner which does not expose the network or the public to undue risk.

6. COMMISSIONING REQUIREMENTS

6.1 Notification Requirements

- 6.1.1 The ICP shall notify Electricity North West in advance of undertaking <u>any</u> live jointing work by the submission of a Weekly Whereabouts programme which provides details of the following two weeks cable laying and jointing programme. The Whereabouts programme shall be provided to Electricity North West by 1600hrs on the Thursday preceding the two week programme period.
- 6.1.2 Minor changes to the agreed programme shall be notified to Electricity North West by the submission of a Daily Whereabouts programme issued by 1600 hrs on the working day preceding the day the work is programmed to be undertaken.

6.2 Low Voltage Mains

Before commissioning a section of LV mains cable the tests scheduled in Section 3 of the "Completion Certificate - Mains Jointing" (see Appendix C) shall be completed.

Once the main is energised the declaration shall be signed and the form sent to Electricity North West (Address 3) within 5 working days, together with an 'as constructed' drawing.

All as laid records are to be submitted on the approved Electricity North West "As Laid Records" Form (see Appendix E)

6.3 Services

Before commissioning a Service (including unmetered connections), the Pre-Energising Commissioning tests scheduled in Section 3 of the "Completion Certificate - Service Jointing" form (see Appendix D) shall be completed.

After the Service is energised the Post-Energising Commissioning tests scheduled in Section 3 of the form shall be carried out, the declaration signed and the completed form sent to Electricity North West (Address 3) within 5 working days, together with an 'as constructed' drawing.

All as laid records are to be submitted on the approved Electricity North West "As Laid Records" Form (see Appendix E)

6.4 Cut-out Requirements

The ICP shall install the cut-out and following energisation and testing of the Service installation shall then insert the fuse carrier. If the ICP is satisfied that the wiring installation is safe to energise then it is permissible for a suitably rated fuse to be installed within the fuse carrier. The fuse carrier shall be placed in position and secured to the cut-out case using an Approved mechanical sealing arrangement.

6.5 Service Position

All service positions shall be secure & waterproof prior to the energisation of the incoming Service cable.

6.6 Notification to Promoting Authority

The ICP shall be responsible for informing the LA of the progress and completion of his works.

6.2 Faulty Cables

- 6.6.1 If, during the Pre-commissioning tests, a fault is discovered on the newly installed Service then the ICP shall be responsible for locating the fault, undertaking its repair and ensuring that any changes are recorded on the "as laid" drawings.
- 6.6.2 If, during the Energisation Process, a fault is discovered on a newly installed Service that has had a physical connection to the existing live network then the Service shall be considered as Handed-over and the ICP shall immediately inform Electricity North West (Address 1). Electricity North West will undertake a fault repair and the costs associated with this work shall be charged to the ICP.
- 6.6.3 Once a Service is energised then all faults shall be reported to Electricity North West (Address 1) as detailed in section 5.2.1 of this document. Faults include such things as loss of connection to the street furniture, the presence of moisture in a cable, cables found to be dead when they are expected to be live. Electricity North West shall seek to recover the costs associated with the fault repair from the ICP.

6.3 Cable Damage

All damage to cables shall be reported to Electricity North West (Address 1) who will arrange for repairs to be undertaken and for the costs associated with the repair to be invoiced to the appropriate party.

7. CONTACT ADDRESSES

7.1 <u>Address 1</u>

For URGENT Operational & Safety Problems (24 hours).

Low Voltage Customer Call Centre	Tel	0800 195 4141
High Voltage DSMC	Tel	0161 228 2628

7.2 Address 2

For Authorisation of Jointers or Operational and Safety Enquiries.

Electricity North West		
Electricity System Operations	Tel	01772 848294
Hartington Road	Fax	01772 848195
Preston		
PR1 8LE		

7.3 Address 3

For General Queries, Consent to Connect Notification and Commissioning Forms.

Electricity North West		
Electricity Connections	Tel	0871 687 0501
PO Box 426	Fax	0161 886 7787
Manchester		
M16 0UQ		

8. DOCUMENTS REFERENCED

Electricity at Work Regulations 1989

Health and Safety series booklet HS(R25) - "Memorandum of Guidance on the Electricity at Work Regulations 1989"

The Reporting of Injuries Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)

The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR)

Distribution Safety Rules

CP411LV - Mains Practice -Cable Jointing up to and including 1000V

ES210 - General Specification for Third-party Constructed New Connections, Extensions and Alterations

ES211 - Design Specification for Third-party provided New Connections of Street Electrical Fixtures

9. **KEYWORDS**

Accident; Cable; Connection; Contestable; Cut-out; ICP; LV; Main; Safety; Service; Third Party.



Entering the Live Working Regime	
Metered and Unmetered Electricity Service Installations	
Notice of Application for "Consent to Connect"	

To be completed by an ACCREDITED INDEPENDENT CONNECTION PROVIDER

Section 1 – Project details

Electricity North West Reference Number: ICP Reference Number:

Location Details
Title:
Details:

I owr	n / City:	

Company name:	Company / Authority name:
Contact name:	Contact name:
Contact telephone number:	Contact telephone number:
Contact facsimile number:	Contact facsimile number:
Contact email:	Contact email:

Developer / Pro	moting Authority
Company / Authority name:	
Contact name:	
Contact telephone number:	
Contact facsimile number:	
Contact email:	
Drawing reference of the plan submitted with this	During of Live working period:
application:	From: To:

Section 2 – Declaration and Sanction

ICP Declaration				
The following is hereby confirmed:				
 An Adoption Agreement is signed by the Electricity North West representative, the representative of the ICP and the Developer/ Promoting Authority is in place for the above works. All proposed works meet the design specification as outlined by Electricity North West. Work should only be undertaken by appropriated trained ICP staff having sufficient training, knowledge and experience and holding an Electricity North West authorisation covering the work to be undertaken. No work will be undertaken outside the live working boundary, neither shall works commence unless this application form is countersigned by an Electricity North West representative. 				
Signed:	Signed: For and on behalf of (company name):			
Print nar	ne: Print designation:	Date:		
	Electricity North West Sanction			
Live Working Approval:				
The above noted ICP is hereby approved to undertake Live Jointing within the physical boundaries of the above site as defined by the attached plan.				
All Live Working must be in accordance with Electricity North West ES 626 and ES 627.				
Signed:	For and on behalf of Electrici	ty North West:		
Print nar	ne: Print designation:	Date:		

Appendix A



Exiting the Live Working Regime Metered and Unmetered Electricity Service Installations Notice of Application for "Consent to Connect"

To be completed by an ACCREDITED INDEPENDENT CONNECTION PROVIDER

Section 1 – Project details

Electricity North West Reference Number:

ICP Reference Number:	
	Location Details
Title:	
Details:	
Town / City:	
ICP	Developer / Promoting Authority
Company name:	Company / Authority name:
Contact name:	Contact name:
Contact telephone number:	Contact telephone number:
Contact facsimile number:	Contact facsimile number:

Contact email:	Contact email:
Reference for the As Laid drawing submitted with this	
application on Electricity North West As Laid Form (See	
Appendix F in ES 627 or Appendix E in ES 627)	

Section 2 – Comments

Comments provided by Electricity North West				
Signed:	Print:	Date:		
Comments provided by ICP				
Signed: Print: Date:				
Section 3 – Declaration and Revocation				

The following is herebyAuthorisation	confirmed: for live working within the above site boundar	y has ceased and no further live work by the
		een made aware of all live equipment within the
Signed:	For and on behalf of (company	name):
Print name:	Print designation:	Date:
	ENW Revocation	

All permissions to work live within the above site boundary are revoked.			
Signed:	For and on behalf of Electricity North West		
- 5	· · · · · · · · · · · · · · · · · · ·		
Print name:	Print designation:	Date:	

Appendix B

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Completion Certificate – Service Jointing Metered and Unmetered Electricity Service Installations

Section 1 – Checklist

	ICP
An as laid drawing(s) has been prepared and is attached to the	
form using Electricity North West As Laid Drawing Form (See	
Appendix F in ES 626 or ES 627)	
The person undertaking the associated tests and completing this certificate is duly authorised within the Quality Management	
System	

Section 2 – Project Details

Electricity North West Reference Number:
ICP Reference Number:

Location Details	ICP
Title:	Company name:
	Contact name:
Details:	Contact telephone number:
	Contact facsimile number:
Town / City:	Contact email:

Section 3 – Completion Certificate

Pre-energisation – commissioning test results

Note – minimum Insulation Resistance to be > or = 100 $M\Omega$ at 500V

	lr		sistance (M	Ω)		Continuity Test
L1 - N/E	L1 - N/E	L1 - N/E	L1 - L2	L1 - L3	L2 – L3	Yes/No
			1		1	

I hereby confirm that electricity mains have been installed to the above noted development and energised on:-		
Time: Date:		
Signed:	Ed: For and on behalf of (Company name):	
Print name:	Job title:	
	Date:	

Appendix C

ES627.doc



Completion Certificate – Service Jointing Metered and Unmetered Electricity Service Installations

Section 1 – Checklist

	ICP
An as laid drawing(s) has been prepared and is attached to the	
form using Electricity North West As Laid Drawing Form	
(Appendix E in ES 626 or ES 627)	
The person undertaking the associated tests and completing this	
certificate is duly authorised within the Quality Management	
System	

Section 2 – Project Details

Electricity North West Reference Number: ICP Reference Number:

Location Details ICP		
Title:	Company name:	
	Contact name:	
Details:	Contact telephone number:	
	Contact facsimile number:	
Town / City:	Contact email:	

Section 3 – Completion Certificate

Pre-energisation – commissioning test results

Note – minimum Insulation Resistance to be > or = $100M\Omega$ at 500V

		Plot N	Number / Ui	nmetered f	Street Furr	liture Refe	rence	
LV Service continuity test (Y/N)								
Insulation resistance (MΩ)								

Post-energisation – commissioning test results

Note – maximum earth loop impedance for PME services to be 0.35Ω ; for non PME services to be 0.8Ω

		Plot P	Number / U	Inmetered S	Street Furr	iture Refe	rence	
		1	,					
Earth loop impedance (Ω)		, 	/					
Phase colour (L1, L2, L3)					{			
Phase rotation check (Y, N or N/A)			[]					
Is polarity correct? (Y/N)								
Cut-out sealed ?(Y/N)		1						
Date Energised								

 I hereby confirm that electricity services have been installed to the above referenced Services or Street Furniture as described above

 Signed:
 For and on behalf of (Company name):

 Print name:
 Job title:

 Date:
 Date:

Appendix D

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Code	Driver	Definition
A	Demand Connections (DNO)	Assets built by us due to load.
B	Demand Connections (ICP)	Assets built by 3 rd parties due to load.
ပ	Diversions	Replacement or upgrade of existing assets in respect of performing diversion work.
	Reinforcement (P2/6)	Assets installed/replaced to reinforce network to provide additional network capacity.
E	Reinforcement (Fault Levels)	Assets installed/replaced to reinforce network to decrease the fault level of the network equipment or prevent equipment fault levels from being exceeded.
H	ESQCR	Assets installed/removed to comply with ESQCR regulations.
ى	Asset Replacement	Old assets replaced by new ones because the old ones were worn out
H	Asset Replacement (Consequential)	Old assets replaced by new ones because another associated asset needed to be replaced and it was sensible to change this one at the same time.
-	Asset Refurbishment	Planned replacement of assets to restore the asset to its original condition (or modern equivalent spec)
Ŀ	Rising and Lateral Mains	Investment undertaken on ENW owned cable or busbar systems in multi occupancy buildings.
×	VA (Within Nat Park or AONB)	Assets installed/replaced to enhance visual amenity within National Park or Area of Outstanding Natural Beauty.
Г	VA (Outside Nat Park or AONB)	Assets installed/replaced to enhance visual amentity outside National Park or Area of Outstanding Natural Beauty.
Ν	Generation Connections (DNO)	Assets built/replaced by us for generation purposes.
z	Generation Connections (ICP)	Assets built by 3 rd parties for generation purposes.
0	Low Carbon Networks	Costs incurred specifically to build networks with a low carbon impact.
Ч	Faults	Reactive replacement of an asset following its functional failure.
ð	NTR	Non Trading Rechargeable (Work on an asset that was at the request of a third party, or 3^{rt} party damage to our equipment if we know who has damaged it.)
Я	Other	Assets installed/replaced for any reason not defined by this list, eg transfer of st ltg after fault
s	Dismantlement (use for Decommission only)	Assets removed from network for any reason not defined by this list, but not replaced.
Addit	Additional Comments	
Confi	Confirmation of Drawings received by Data M	Data Management (to be signed upon receipt)
	Signature	
	Print Name	Date Received

Definitions for Commission/Decommission Drivers