

Connections **update**

Issue 8 | CiC Code of Practice

Code of Practice (CoP) scope

- A: Introduction
- B: The Connections process
 - The Connections application
 - Determining the Point of Connection
 - Design approval
- C: Accreditation and Authorisation
 - Independent Connection Provider (ICP) accreditation under National Electricity Registration Scheme (NERS)
 - Authorisation of individual ICP employees
- D: Auditing and inspection
 - Auditing - assessment of ICP organisation under NERS scheme
 - Inspection - DNO inspection of works
- E: The Legal process
- F: Governance arrangements
- G: Reporting requirements
- H: Dispute resolution

The Connections application

Convertible quote

- Current status – normally all quotes over £30K
- Implementation complete by end October

Quote offers three options

1. All work
2. Non-contestable only
3. Non-contestable plus closing joint



We are now looking at ways to simplify the quote further.

Governance & Reporting

Governance Panel

- Six DNO and six non-DNO representatives
- Non-voting representation by Ofgem, NERS and customers
- Anyone may submit a change proposal
- The Panel will establish working groups to assess and prioritise change proposals
- The Panel will make recommendations to Ofgem for their decision

Reporting

- A standard template for DNOs to produce annually to demonstrate compliance with the CoP.

Welcome to our special edition Connections update newsletter about the Competition in Connections Code of Practice.

In our Autumn issue of Connections update we spoke about a new Code of Practice (CoP) for Competition in Connections. Since then we've been busy working with other Distribution Network Operators connection providers and customers to finalise the CoP. On 30 October the new licence condition (LC52) and CoP take effect.

We've now completed our preparations and this update sets out the arrangements we've put in place for the CoP going live.

If you have any questions please contact a member of my team below who will be happy to help.

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Director of Connections



Useful contacts

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Determining the Point of Connection (PoC)

Scope Low Voltage (LV)

- Requested capacity up to 140kVA
- The existing network is a three phase network
- Existing and proposed networks are underground
- Minimum existing mains cable size at and upstream of PoC is 120mm² Al or equivalent
- Maximum length of LV main (existing + proposed) between substation and end of main is 300 metres

| Requested capacity (after diversity) | Minimum size existing transformer | Minimum size existing mains cable |
|--------------------------------------|-----------------------------------|-----------------------------------|
| 71kVA - 100kVA | 500kVA | 185mm |
| 101kVA and 140kVA | 750kVA | 240mm |

LV scope not applicable

- In London (LPN) interconnected LV network area
- On an existing single phase, two phase or split phase network
- Within a 'development area' (i.e. where other new connections to same network are expected within next 12 month period)
- Distributed Generation (although G83 is permitted)
- Where demand characteristics likely to cause disruption to other customers
- Where reinforcement is required

Standard design matrix (LV up to 70kVA)

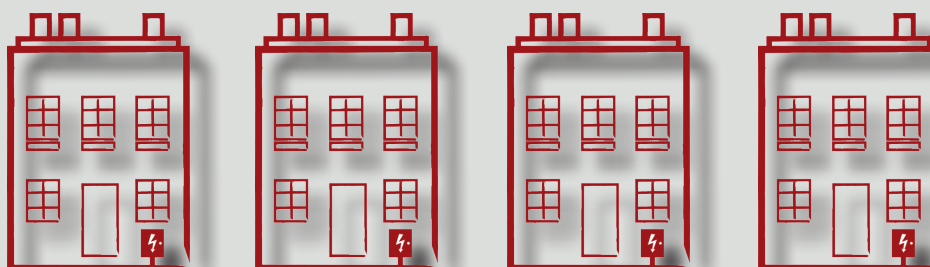
| Capacity requested | Min. existing underground main size | Min. existing ground mounted transformer size |
|--|-------------------------------------|---|
| Up to 70kVA | Al 120mm ² | 300kVA |
| (Maximum LV mains circuit length 300 metres) | | |

- ICP assesses existing demand on the distribution substation using maximum demand readings provided
- ICP provides details to support proposed PoC decision
- For detailed guidance as to circumstances where the ICP may not propose a PoC, please refer to EDS 08-0115 Loading of Secondary Transformers and EDP 08 0412 ICP Self Determination of the Point of Connection Procedure.

Technical Assessment (LV 71kVA - 140kVA)

- Assess existing demand on distribution substation using maximum demand readings provided or taking live load readings at source
- Assess existing demand on LV main in relation to the premises expected to be already connected
- Assess existing domestic demands using UK Power Networks published design ADM figures
- Assess existing industrial and commercial demands using assumed loads provided
- Model proposed LV network on 'Windebut' / similar to check that loads, voltage and earth loop impedance at all parts of network remain within acceptable/statutory limits
- Provide full details to support proposed PoC decision

| Capacity requested | Minimum existing underground main size | Minimum existing ground mounted transformer size |
|--|--|--|
| 71-100kVA | Al 185mm ² | 500kVA |
| 101-140kVA | Al 240mm ² | 750kVA |
| (Maximum LV mains circuit length 300 metres) | | |



Scope High Voltage (HV)

- Requested capacity is up to 1000kVA (East of England and South East of England only)
- The existing network is a three phase network
- Existing and proposed network are underground

Except where:

- The PoC would be in the existing LPN network area
- Within a 'development area'
- Distributed Generation
- Demand characteristics likely to cause disruption to other customers
- Reinforcement is required



Technical Assessment (HV <1000kVA - EPN/SPN)

The ICP will:

- Assess existing demand on HV feeder and feeder group by studying load profile data provided
- Model proposed HV network to ensure compliance with ENA ER P2/6 - Security of Supply and UK Power Networks design standards
- Provide full details to support proposed PoC decision

ICP responsibilities

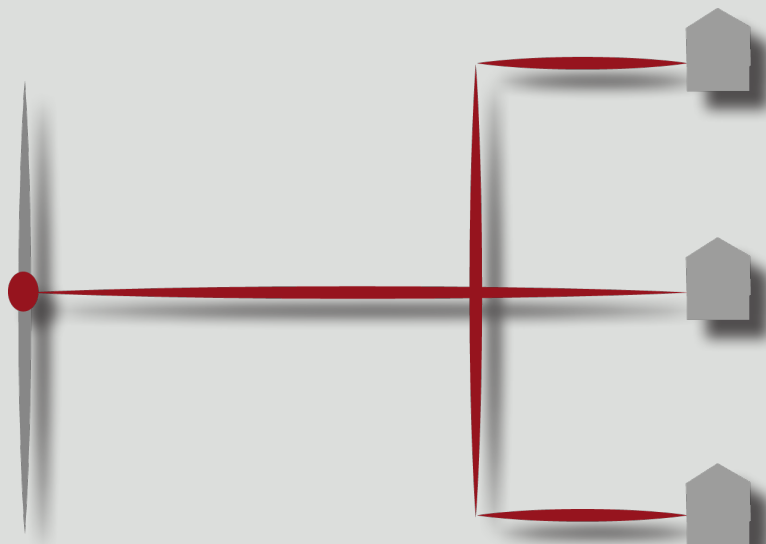
ICP will:

- Have NERS self-determination of Point of Connection accreditation
- Use suitably qualified and experienced staff
- Accept liability for cost of remedial works arising from failure to comply with the procedure
- Be permitted to access UK Power Networks substations, feeder pillars or link boxes with appropriate UK Power Networks competency
- Comply with all UK Power Networks design and engineering standards

UK Power Networks will provide information to comparable level of accuracy as is provided to its own employees.

Process details

- ICP to notify UK Power Networks of Intent to self-determine PoC; submission of PoC design; quote sent to client; quote accepted by client
- ICP to identify PoC on UK Power Networks 1-500 cable record
- For HV PoC, UK Power Networks will confirm earthing parameters once notified of quote acceptance
- UK Power Networks will inspect PoC designs or loads over 70kVA within 5 /10 working days for LV/HV PoCs respectively
- UK Power Networks will email the ICP identifying any issues or required amendments
- Where ICP's PoC is not suitable, UK Power Networks will confirm to the ICP a revised PoC location and give reason



Auditing and inspection

The Code of Practice uses the term auditing to describe assessment of ICP organisation under NERS scheme and inspection to describe DNO inspection of its own and an ICP's work.

Inspection

- Purpose - to address the risks of poor workmanship and non-compliant assets being connected to the DNO distribution network
- Objective - a common compliance framework for all connection providers, including UK Power Networks
 - Quality of workmanship is acceptable;
 - Materials used meet the published specifications;
 - Testing and commissioning is carried out in accordance with the applicable policies and procedures; and
 - All installations adhere to the agreed design for the project.

Sampling and risk methodology

- General principle - all connections have an equal chance of selection to be inspected
- Risk matrix - we need to assess the safety risk associated with each type of work to determine which areas to prioritise
- A sampling approach ensures that each connection within that work type is equally likely to be selected for inspection, irrespective of who completes the work (DNO or ICP)

Follow-up actions

- Written report for each inspection, including an overall assessment - pass, conditional pass or fail
- Common follow-up process will be used to ensure all required actions are completed
- A follow-up process will apply for all connection providers that have a safety critical failure or where there is a continued drift from approved policy and procedure.

The 'Legal' process

New CoP Agreement

We have created a simple Competition in Connections Code of Practice Framework Agreement that enables all the activities included in the CoP. Any ICP wanting to carry out these activities should contact Martyn Crocker to get an agreement underway.

Consents

- CoP formalises use of IDNO Incorporated Rights arrangements
- New consents policy document CON 08 111
 - Brings together existing guidance e.g. model Heads of Terms
 - Matrix sets out what consents are required in what circumstances - also applies to s16

Access to data and records

To enable PoC identification, we will provide access to:

- Network cable records and LV operational diagrams via eMAPS
- Electronic copies of HV operational diagrams for EPN & SPN
- Secondary substation maximum demand readings
- Distribution transformer rating
- Number of customers connected at individual secondary sites
- Primary substation HV feeder load details
- Other information e.g. a site's ESQC rating, and access details

ICP AP/SAPs will be provided access to UK Power Networks Systems to allow the submission of HV switching applications.



Design approval

A progression from UK Power Networks existing ICP Design Fast-Track Scheme.

Scope

- LV and HV contestable network extension designs
- Excluding;
 - EHV network extension designs
 - Distributed Generation, apart from any G83 compliant design

Responsibilities

ICP will:

- Have appropriate NERS accreditation (design)
- Use suitably qualified and experienced staff to create and assess the design
- Accept liability for cost of remedial works arising from failure to comply with the procedure

UK Power Networks will provide information to comparable level of accuracy as is provided to its own employees.

Process detail

To enter the scheme, ICP must:

- Submit at least 12 designs in a rolling 12 month period and achieve at least a 50% first-time acceptance rate
- Attend a design workshop for design managers and designers to share best practices and discuss any notable design issues or concerns

Following this workshop, the ICP's design acceptance performance will be tracked for three months, at which point a design fast-track level will be determined.

Determining design fast-track Level

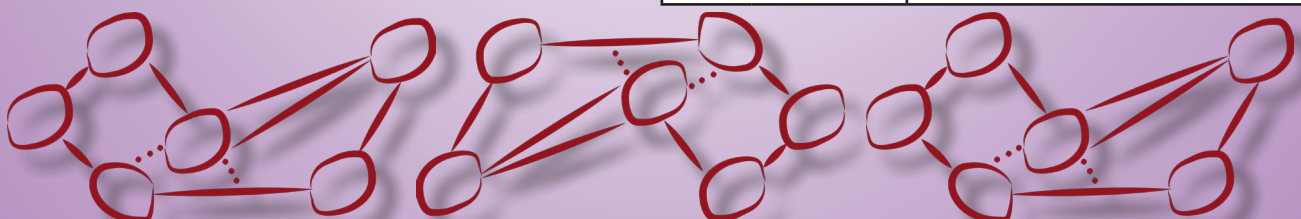
- Awarded independently for LV and HV designs
- A key enabler to achieving a higher level is the amount of assistance provided to the ICP by the UK Power Networks designer
- Minimal assistance e.g. phone or email exchange to resolve any design issue or query is discounted
- The need for a face-to-face meeting or use of the Referral Response Process may be classed as heavy assistance
- Fast-track level determined by three-monthly review where level of assistance is discussed.

Criteria

ICP approved designer

- When an ICP reaches level three of the design fast-track process at either LV or HV, UK Power Networks will notify the ICP that UK Power Networks recognises them as an approved designer
- The ICP should still continue to submit all designs to UK Power Networks for their records.
- UK Power Networks will continue to undertake inspections and random surveillance audits of ICP designs
- If an ICP's performance falls below the minimum approved designer requirements then, after a remedial period, the ICP will lose their approved designer status and move to the appropriate fast-track level
- UK Power Networks will notify Lloyds NERS when an ICP achieves, or loses, the Approved Designer status

| Level | Submissions fast-tracked | Criteria |
|-------------------|--------------------------|---|
| 1 | 30% | <ul style="list-style-type: none"> • Over a 12 month rolling period, achieve a 70% first-time acceptance rate, maintaining >12 projects • Achieve required standard with minimal assistance |
| 2 | 70% | <ul style="list-style-type: none"> • Over a 12 month rolling period, achieve a 90% first-time acceptance rate, maintaining >12 projects • Achieve required standard with minimal assistance |
| 3 | 100% | <ul style="list-style-type: none"> • Over a 12 month rolling period, achieve a 100% first-time acceptance rate, maintaining >12 projects • Achieve required standard with minimal assistance |
| Approved designer | | <ul style="list-style-type: none"> • Achieve level three in either LV or HV design fast-track • Maintain the submission of a minimum of 12 projects over a 12 month rolling period • No design deficiencies highlighted during review period (conducted every three months). |



Accreditation and Authorisation

Clarification - these arrangements describe the current UK Power Networks preferred approach for Authorisation but we will work together with any ICP to develop and agree effective arrangements for any alternative options that the ICP would prefer to use. I.e. all options in the Code of Practice are available for all activities to suit the ICP's preferences.

ICP access to UK Power Networks distribution system

CiC CoP 'option 1' will apply to Craftspersons "ICPs shall operate under their own Safety Management System (SMS), including the ICP's Safety Rules, which shall be of an equivalent relevant standard to the DNO's (in all cases the SMS should align to OHSAS18001 or equivalent)."

Scope

An ICP **Authorised Person's** competency will permit the following **LV operational work**:

- Identify LV cables via signal injection
- Install LV back feeds for final connection cable jointing or maintain supplies during HV final connection works
- Pre-condition LV network to enable LV final connection jointing within LPN normally interconnected network area
- Isolate LV cable to enable final connection in line with UK Power Networks safe working practices, e.g. isolating clean LV pot-ended feeder to enable jointing to be completed dead
- Install LV load monitoring equipment in secondary substations

An ICP **Senior Authorised Person's** competency will permit the following **HV operational work**:

- Manage connections to the UG network in all three network areas, including the LPN normally interconnected network
- The ICP SAP will be permitted to apply underground Circuit Main Earths only
- The ability to sectionalise the HV network to facilitate a new connection. This will include the operation of overhead apparatus, for example, an ABSD.

Process details

- Network access to undertake operational activity and/or connection activity provided via a SORN process
- UK Power Networks will enable ICP access to LV or HV distribution network
- Any legal consents to be completed before ICP submits programme of works requesting consent to connect
- Programme of works to include SORN request form, copy of cable records and other specified documents

ICP self-connection - scope

LV jointing

Final connection of underground (UG) mains and services for connections to the UG network.

HV jointing

Final connection of newly installed UG mains and/or distribution plant to the UG network.

CiC CoP 'option 2' will apply (initially) to those carrying out Operational Activity i.e. Authorised Person and Senior Authorised Person

"ICPs shall operate under the DNO's Safety Management System, including the DNO's version of the Model Distribution Safety Rules. The DNO will determine the relevant competency requirements and issue authorisations to the ICP's employees or contractors."

Responsibilities

The ICP will:

- Ensure a Safe System of Work, Safety Rules and relevant procedures, to satisfy as a minimum the standards required within the UK Power Networks Distribution Safety Rules and supporting procedures
- Have appropriate NERS accreditation
- Use suitably qualified and experienced staff to undertake the final connection works and/or operational activity, with appropriate competency certificate
- Accept liability for cost of remedial works arising from failure to comply with the procedure.

UK Power Networks responsibilities

- We will issue the ICP staff with AP and SAP certificates
- We will provide information to comparable level of accuracy as is provided to our own employees
- We may withdraw use of this procedure from any ICP that does not comply with its terms
- We will provide HV test plugs on request
- We will inform ICP of any known non-standard network conditions.

Process details: HV works

- Two methods for ICP to complete HV final connection:

UK Power Networks SAP to issue Permit to Work to ICP cable jointer

- ICP responsible for jointer competence (COP Option 1)
- Excludes connection to HV overhead network

ICP SAP to take full control of works

- ICP responsible for jointer competence (COP Option 1)
- ICP AP/SAP competence assessed by UK Power Networks (COP Option 2)
- ICP uses UK Power Networks safety rules and documents