

1. SCOPE

This document details SP Energy Networks Connection Registration and Management process for complex EHV Design Approvals as an addendum to CON-04-005 “Register of Adopted Asset Requests (RAAdAR) Process for Contestable Connection Projects “


2. ISSUE RECORD

This is a Controlled document. The current version is held on the EN Document Library.

It is your responsibility to ensure you work to the current version.

Issue Date	Issue No.	Author	Amendment Details
March 2014	Issue 1	Alastair Oldfield	
December 2017	Issue 2	Alastair Oldfield	Updates to document references
November 2020	Issue 3	Gary Barnes & Bev Hudson	Changed Address
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3. ISSUE AUTHORITY

Author	Owner	Issue Authority
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4. REVIEW

This is a Controlled document and shall be reviewed as dictated by business / legislative change but at a period of no greater than three years from the last issue date.

5. DISTRIBUTION

This document is not part of a Manual maintained by Document Control and does not have a maintained distribution list but is published on the SP Energy Networks website.

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7. RELATED DOCUMENTS

This document is one of a suite of specifications, specifically CON-04-005 Register of Adopted Asset Requests (RAdAR) Process for Contestable Connection Projects, relating to this subject area.

The following list of documents may have relevance to the complex design and should be read in conjunction with CON-04-005, CON-04-010, CON-04-009 and is not exhaustive.

A review of these specifications will need to be undertaken with the SPEN design engineer to establish those pertaining to the project and will be issued on a project-specific basis.

PROT-03-020 – 33kV Protection and Control Equipment.

PROT-03-019 – Primary and Secondary Substations Protection and Control Equipment.

PROT-01-006 – 33kV Protection and Control Application Policy.

PROT-01-009 – Protection and Control Setting Policy.

PROT-15-027 – TGN - 11kV and 6.6kV Protection and Control Settings Guidance.

PROT-03-015 – Automatic Voltage Control Systems.

PROT-16-001 – Technical Specification – Distance Protection.

PROT-16-002 – Technical Specification – Feeder Unit Protection.

PROT-16-006 – Technical Specification – Overcurrent and Earth Fault Protection.

PROT-16-007 – Technical Specification – Overall Protection.

PROT-16-008 – Technical Specification – Protection Trip Relays.

PROT-16-009 – Technical Specification – Command Based Teleprotection.

SUB-03-025 – General Specification for the Civil Engineering and Building Design and Construction of Primary Substations.

SUB-02-013 – Policy for the Interface with Independent Distribution Network Operators Installations.

INS.50.42.06 – Metal enclosed switchgear up to 52kV.

TEL-03-009 – Specification for Testing of G.652 Single Mode Fibre Cables.

TEL-03-010 – Gen Specification for Fibre Optic Cable.

TEL-03-012 – Spec for Underground Fibre Optic Cables.

8. GENERAL

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9. INTRODUCTION

Please refer to CON-04-005 “Register of Adopted Asset Requests (RADAR) Process for Contestable Connection Projects” document for the end-to-end process. This document outlines the specific process for approving design for complex EHV contestable connections projects, i.e. involving 33kV/11kV/132kV substations.

9.1 Regulatory Obligations

To enable SPEN to meet its regulatory obligations for contestable metered connections, and to facilitate the contestable metered connections market, the process must be followed in full. CON-04-005 “Register of Adopted Asset Requests (RADAR) Process for Contestable Connection Projects” details Standard Licence Condition 15 for non-contestable connection services. This process includes the timing of the transfer of information, how that information will be configured in the RADAR system and the details of what information must be posted for each project.

The process and information requirements are detailed in the following stages of a contestable connection project lifecycle:

- System Admin – Setting Up Company on RADAR
- POC Module
- Design Module
- Construction Module
- Connections Module
- Project Closure Module

9.2 Phased Design Approval Elements

Due to the complexity of design for EHV substations, SPEN have developed a ‘phased’ design approval process as follows:

- Design #1 Initial High Level Design Approval
- Design #2 Cable and OHL Routes Design Approval
- Design #3 Plant and Equipment Design Approval
- Design #4 Substation Civil Works Design Approval
- Design #5 Protection and Communications Design Approval

Where the ICP is ready to submit either some or all of the elements of the phased design approval process for complex EHV projects, they may upload each element at the same time. However, each element of the complex EHV design approval must be submitted in separate metered design requests as outlined in this section. Please note that the above order does not have to be strictly adhered beyond that of the Initial high level design approval and can be submitted as each element becomes available. The numbering can be changed to suit however, the naming convention will need to be followed as per the guidance below.

Design Approval Guidance –please follow this link [Information for ICPs and IDNOs - SP Energy Networks](#)

SLC15 design approval timescales for EHV and Other Connections apply to each element of the phased design approval process, i.e. 20 working days from receipt of each proposed design.

9.3 Compliant Requests

Designs submitted by an ICP that contain all the information required by SPEN to proceed with the approval request are deemed to be compliant. The status of a compliant design will remain at Pending until the design is completed.

9.4 Non-Compliant Requests

If an ICP submits a Design that does not contain all the information required by SPEN to proceed with the approval request, SPEN will mark the outcome of the design as 'Failed Min Info', i.e. assessed by SPEN as a non-compliant request. SPEN require ICPs to upload the correct documents or information into the RAdAR project, create a new metered design request and attach all the required documents to the re-submitted design. The project will progress to the next stage when previous designs have been approved with the appropriate documentation supplied.

9.5 Provision of Design Approval

For each design approval phase, if the complex EHV contestable works design information has been assessed as not meeting SPEN requirements, the “*Design Request*” status will be set to “*Technical Rejection*” and the ICP informed of the reasons.

N.B. All subsequent “Design Requests” for each phase must include all the information submitted and approved in previous elements of the phased design approval process for complex EHV projects, not just replacements to the documentation that were deemed unsatisfactory.

Once each phase of the complex EHV contestable works design has been assessed as satisfactory, SPEN updates the “*Design Request*” status to “Approved” and the ICP is informed. The timing starts when the initial “*Design Request*” is created. The timing stops when the initial “*Design Request*” is either, “Approved”, “Failed Min Info” or “Technically Rejected” by SPEN.

N.B. To enable subsequent Design Requests to be submitted the original Design Request must be cancelled by the ICP and a new “Design Request” submitted as per the note above. All documents Approved in the previous designs need to be included in subsequent design submissions also.

To distinguish any new documents when uploading into subsequent design approvals please add “*Comments*” to the document prior to uploading, informing the relevant CIC Design Engineer of the new documents within the design submission.

10. PHASED DESIGN APPROVAL

Once the developer has decided which applicant will deliver the contestable element of the complex EHV project, the successful NERS accredited ICP may submit a series of phased designs (*RAdAR Metered Design Requests*) for assessment and approval by SPEN.

Please refer to the Design Approval Guidance section here [Information for ICPs and IDNOs - SP Energy Networks](#)

The ICP must obtain approval of all design phases within six months of the submission date of the initial high level metered design request.

10.1 Initial High Level Design Approval

The ICP submits the following information in the initial high level design request. Metered Design Request:

- Copy of signed and dated POC Quote Acceptance section, included with the quotation.
- Confirmation of ICP and developer registered company address.
- Confirmation from the developer of the ICP's appointment as the preferred accredited connection installer.
- Engineering Report.
- Schematic of proposed electrical system, indicating single/double substations and proposed size of transformer.
- Confirmation of POC positions.
- Confirmation of proposed protection system.
- Indicative cable and overhead line routes.

For example, the initial Design phase could be entitled: "***D1 High Level***"

The ICP creates a "*RAdAR Metered Design Request*" and attaches the above documents to this request and then submits.

The POC Category will be automatically assigned to the Design Request in accordance with Ofgem's Standard Licence Condition.

SPEN updates the "*Metered Design Request*" status to "*Approved*" and the ICP is informed. Once the initial design request has been approved the ICP may proceed to the Construction Module of the RAdAR Project and now submit whereabouts.

Only aspects of construction work that have previously been approved.

A Project Delivery Contact will be assigned to the RAdAR Project at this point. Any relevant surveys can be initiated at this time after confirming payment has been received for any works involved.

10.2 Cable and Overhead Line Routes Design Approval

The successful NERS accredited ICP submits the following information for the Cable and Overhead Line Routes Design Request:

- Cable Specifications.
- Plans of Cable Routes by Voltage (including auxiliary cables).
- Ducting Specifications and Layout.
- Road Crossings.
- Volt Drop Calculations.
- Pole Specifications and Overhead Line Routes Plans by Voltage.
- Joint Specifications, Positions and Terminations.
- A full itinerary of equipment and materials, including types, sizes and ratings employed.
- One plan per voltage level to include all elements identified above.
- List of drawings submitted, with version control (to include drawing name/ref, voltage, revision number and date).

For example, the second Design phase could be entitled: **“D2 CABLE-OHL”**.

The ICP creates a new *Metered Design Request* and attaches the above documents to this request, and then submits.

The point of connection category is automatically assigned (EHV Demand) to the *“Design Request”* in accordance with Ofgem’s Standard Licence Condition.

Once the second design phase for the complex EHV contestable works design has been assessed as satisfactory, SPEN updates the **“D2 CABLE-OHL”** status to *“Approved”* and the ICP is informed.

10.3 Plant and Equipment Design Approval

The successful NERS accredited ICP submits the following information for the Plant and Equipment Design Request:

- A full itinerary of plant, equipment, and materials, including types, sizes and ratings employed.
- General Layout Arrangement Plan.
- Individual Plant and Equipment Specifications.
- Circuit Diagrams for Plant and Equipment Specifications.
- Battery.
- LVAC.
- Fuses.

For example, the third design phase could be entitled: “**D3 PLANT-EQUIP**”.

The ICP creates a new “*Metered Design Request*” binder and attaches the above documents to this request, and then submits.

The point of connection category is automatically assigned (EHV Demand) to the “*Design Request*” in accordance with Ofgem’s Standard Licence Condition. Once the third design phase for the complex EHV contestable works design has been assessed as satisfactory, SPEN updates the “**D3 PLANT-EQUIP**” status to “*Approved*” and the ICP is informed.

10.4 Substation Civil Works (where applicable)

The successful NERS accredited ICP submits the following information for the Substation Civil Works Design Approval binder:

- List of drawings submitted, with version control (to include drawing name/ref, voltage, revision number and date).
- Site Layout Drawings (both plan and elevation views).
- Transformer Bunding.
- Drainage Layout.
- Fencing Details.
- Heating and Lighting Details.
- Signage Details.
- Civil Drawings, Details and Calculations, including loading characteristics.
- Substation Earthing Schematic and Calculations – including earthing studies conducted by an SPEN-approved contractor.
- Earth Mat Details.
- Fence Earth Details
- Environmental Report.
- Noise Abatement Assessment.
- Planning Application.
- Foundation Plans.
- Fire Regulations.

For example the fourth design phase could be entitled: “**D4 SUB-CIVIL**”

The ICP creates a new “*Metered Design Request*” binder and attaches the above documents to this request, and then submits.

The point of connection category is automatically assigned (EHV Demand) to the “*Design Request*” in accordance with Ofgem’s Standard Licence Condition.

Once the fourth design phase for the complex EHV contestable works design has been assessed as satisfactory, SPEN updates the “**D4 SUB-CIVIL**” status to “*Approved*” and the ICP is informed.

11. PROTECTION AND COMMUNICATIONS

The successful NERS accredited ICP submits the following information for the Protection and Communications Design Approval binder:

- List of drawings submitted, with version control (to include drawing name/ref, voltage, revision number and date).
- Full suite of Wiring Schematics.
- INO Interface (SCADA).
- RTU Drawings.
- Communications (fibre) Drawings.
- 11kV Switchgear Control Relay Panel Circuit Diagrams, Wiring Diagrams and General Arrangements.
- 33kV Switchgear Control Relay Panel Circuit Diagrams, Wiring Diagrams and General Arrangements.
- Panel Circuit Diagrams, Wiring Diagrams and General Arrangements.
- Battery Schematic Wiring Diagrams.
- Multicore/Multipair Cable Schedules and Layout.
- Marshalling Kiosk Circuit Diagrams, Wiring Diagrams and General Arrangements.
- All Other Ancillary Circuit Diagrams, Wiring Diagrams and General Arrangements.

For example, the fifth design phase could be entitled: **“D5 PROT-COM”**.

The ICP creates a new *“Metered Design Request”* and attach the above documents to this request, and then submits.

The point of connection category is automatically assigned (EHV Demand) to the *“Design Request”* in accordance with Ofgem’s Standard Licence Condition.

Once the final element of the complex EHV contestable works design has been assessed as satisfactory, SPEN updates the **“D5 PROT-COM”** status to *“Approved”* and the ICP is informed.

The adoption and connection agreements details can only be finalised when the final phase of the design approval process has been approved by SPEN. SPEN will then upload the following documents into the *“Design Module”* of the relevant RAdAR Project:

- Construction & Adoption Agreement.
- Bi-Lateral Connection Agreement (if applicable).
- Any additional documents / Connection Agreements required on a site-specific basis.

12. CONTRACT VARIATION ACCEPTANCE

Subject to the final design gaining approval, any variations to the POC costs will be calculated and a formal design approval issued as per CON-04-005 “**Register of Adopted Asset Requests (RAdAR) Process for Contestable Connection Projects**”.

The ICP sends any variation payments of the non-contestable charge, together with the signed Contract Acceptance form, issued with the Design Approval Letter to:

SP Power Systems Ltd
General Administration
10th Floor
320 St Vincent Street
Glasgow
G2 5AD

The ICP also signs and uploads the following documentation into the RAdAR project within the requisite period, i.e., one calendar month from approval of the final “*Design Request*”. For further clarification please see CON-04-005 “Register of Adopted Asset Requests (RAdAR) Process for Contestable Connection Projects**”.**

Copy of variation payment of non-contestable connection charge.

- Copy of completed contract acceptance form.
- CDM information.
- Sub-contractor details.

This information is uploaded within the “*Conditions Precedent*” section of the RAdAR Project.

If the contract acceptance documents do not meet SPEN requirements, the “*Preconditions Precedent*” status will remain as “*Not Confirmed*” and the ICP informed of the deficiencies.

When the above requirements have been satisfied, SPEN marks the “*Preconditions Precedent*” as “*Confirmed*”, this will be done after the last connection has been made but the Preconditions must be met before the construction phase of the Project.

SPEN initiates the procurement process for any upstream design works only when the contract acceptance has been acknowledged and payment received. This occurs prior to the design being submitted within the POC Module.

SPEN reserve the right to amend the charges applicable to the project as a result of any amendments or variations to the design not known at the time of approving the high-level design. All costs incurred by SPEN will be subject to SPEN’s General Terms and Conditions, in particular to the phased design approval process Extra Costs and Effect of Termination, in the event that the ICP does not proceed to construction.

Please follow this link to the Terms & Conditions section [Regulation - SP Energy Networks](#)

13. SIGNED AGREEMENTS

When the ICP has obtained the appropriate signatures for all outstanding agreements and documents issued by SPEN, the ICP uploads the following signed documentation into the RAAdAR project in the **Conditions Precedent section**.

IDNO SITES

Construction and Adoption Agreement
 Bi-Lateral Connection Agreement
 Site Responsibility Schedule (HV only)

 Confirmation of Disconnection Request Progress

ICP SITES

Construction and Adoption Agreement
 Connection Agreement (HV only)
 Live Jointing Application Form and Plan (As required)
 Site Responsibility Schedule (HV only)

 Generation Connection Agreement (LV/HV)
 Confirmation of Disconnection Request Progress

The ICP must scan and upload entire documents into the relevant RAAdAR project.

The ICP also sends the signed hard copies of the Construction and Adoption Agreement (two copies of the bi-partite agreement or three copies of the tri-partite agreement) to SPEN Design & CIC offices:

Scotland

55 Fullarton Drive
 Cambuslang
 Glasgow
 G32 8FA

England & Wales

3 Prenton Way
 North Cheshire Trading Estate
 Birkenhead
 CH43 3ET

The ICP sends the signed hard copies of the Bi-lateral Connection Agreement (IDNO) and the Connection Agreement (HV) to the Competition in Connections offices as above.

If the ICP’s signed documentation is assessed by SPEN as unsatisfactory, the “*Conditions Precedent*” status remains at “*Not Approved*” and the ICP notified of the deficiencies.

If SPEN assesses the ICP’s signed documentation as satisfactory, SPEN countersigns the agreements and updates “*Conditions Precedent*” status to “*Approved*”. SPEN sends hard copies of the signed agreements to the ICP for their records.

The ICP may not progress to the “*Connections Module*” until the Connections Pre-Requisites requirements detailed in CON-04-005 have been satisfied.

14. APPENDIX

