

Company Directive

STANDARD TECHNIQUE: NC2F/6

Relating to Design Approval

Policy Summary

This document describes the procedure for approving an Independent Connection Provider's design for electrical infrastructure as part of the contestable work for a New Connections scheme.

It should be read in conjunction with POL: NC2 which provides an overview of the New Connections procedure.

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Implementation Date: April 2026

Approved by



Laura Henry
Head of Connections Strategy

Date: 31st March 2026

Target Staff Group	Field Operations and Network Design
Impact of Change	Amber
Planned Assurance checks	To be checked by Connection Policy Engineer

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IMPLEMENTATION PLAN

Introduction

This document has been revised to provide further clarification on the design submission and approval process for EHV projects.

Main Changes

Update and clarification of EHV and 132kV design submission process with new Appendix A detailing compulsory design submission components.

Removal of generic design approval process for EHV and 132kV designs.

Impact of Changes

Target Staff Group	Staff responsible for receiving and reviewing EHV and 132kV design submissions in the Network Design and Engineering Policy Teams ICPs who submit EHV and 132kV design submissions
Impact of Change	Amber – Changes impact the required components for EHV and 132kV design submissions

Implementation Actions

NGED Teams to be provided with voiced over presentation detailing the changes.
ICPs will be notified of the change through a briefing at ICP engagement event.

[ST:NC2F Changes Presentation](#)

Implementation Timetable

This policy shall apply to any new partial or full design submission made on or after 7th April 2026. New partial or full submissions following a previous separate partial submission made on or after 7th April must comply with this policy.

Re-submissions responding to comments made by NGED prior to 7th April should comply with this policy where possible.

REVISION HISTORY

Document Revision & Review Table		
Date	Comments	Author
April 2026	- Renamed section 8.0 to EHV AND 132KV DESIGN SUBMISSION - Updated supporting documents in 8.1 to include ST:SD2A 8.2 to 8.9 Added which details compulsory Design Submission structure and document register and clarifies other design submission requirements 8.5 detailing internal process removed as will be covered by internal process guide 8.10 updated to include pre-design meeting and summarise NGED internal process - Appendix A EHV and 132kV Design Submission Components added - Appendix B Design Submission Process added 9.1 and 9.2 added detailing how Design Submissions are to be sent to NGED - Reference to generic approval removed from 9.3 9.4 Clarification that partial design submissions are outside standards of performance 9.6 added which clarifies the responsibility of the ICP for the design as per the FNA&AA 9.7 to 9.10 added to clarify ICP responsibilities ahead of works starting - Section 11.0 on generic approval removed 10.7 to 10.11 updated to reflect design components in Appendix A 10.12 added to show partial design submission process - Addition of point 2.2 regarding the contestability of the Point of Connection (PoC) determination 3.2 text amended for clarification	Andrew Berndes Ephie Chalakateva
April 2022	8.4 Added to clarify the unmetered connection process and design approval. - Document Reviewed.	Kyle Smith
March 2018	New Section 12 added to provide for partial design approval submissions and assessment.	S Hennell / P Jewell
September 2015	New Section 11 added to provide for generic design submissions and assessment.	S Hennell / P Jewell
October 2014	- Document Reviewed. 2.1 & 2.2 Old Text relating to the ECSG has been removed. 3.1 Text amended for clarification. 9.1 & 9.2 Reference to the 33, 66 and 132kV process.	Paul B Smith
February 2014	7.4 revised to refer to Network Access and Adoption Agreement.	Paul B Smith

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1.0 INTRODUCTION

- 1.1 This document describes the procedure for approving an Independent Connection Provider's (ICP's) design for electrical infrastructure as part of the contestable work for a New Connections Scheme.
- 1.2 It should be read in conjunction with POL: NC2 which provides an overview of the New Connections procedure.

2.0 ICP ELECTRICAL DESIGN ACTIVITIES

- 2.1 The ICP can provide the design for all connections infrastructure which is deemed as contestable works in NGED's Statement of Methodology and Charges for Connection.
- 2.2 The Point of Connection (PoC) to the Distribution System determination is a non-contestable activity in NGED's Statement of Methodology and Charges for Connection. However, if the ICP holds the Self Determination of PoC NERS accreditation, they have the right to determine and design the PoC to NGED's Distribution System. NGED will require the ICP to sign up to the Extension of Contestability (EoC) Agreement before they can self-determine their PoC to NGED network.

3.0 NEW CONNECTION OFFER REQUEST & CONNECTION DESIGN

- 3.1 When a Customer requests a firm Connection Offer from NGED, they do not state whether they wish to contest any elements of the works at this stage. Therefore, NGED will issue a Dual Offer which provides a breakdown of all the contestable and non-contestable elements of the connection works. To comply with Licence Condition 52 and facilitate Competition in Connections, NGED also state in the Dual Offer that the Customer has the option to appoint an ICP to carry out the contestable elements of the new connection.
- 3.2 If a Customer wishes to appoint an ICP to carry out the contestable works of their connection, they should notify NGED as soon as possible of the appointed ICP. The ICP must sign up to one of the Framework Network Access and Adoption Agreements (FNA&AAs), depending on whether they are carrying out the design only, the construction only or both design and construction of the contestable connection works. NGED will then liaise with the ICP for the design and construction of the connection in accordance with licence condition 15.

4.0 PROVISION OF POINT OF CONNECTION INFORMATION

- 4.1 A Connection Provider wishing to carry out the design work will need to establish the exact location of the point of connection to NGED's existing distribution system. NGED will provide this information using an appropriately scaled plan in the Connection Offer for the non-contestable works. See also Standard Technique NC2A for further information relating to the preparation of a Connection Offer.

5.0 PROVISION OF TECHNICAL INFORMATION

- 5.1 An ICP will require technical information to assist them with the site design, procurement and installation of materials. The following documentation is available on NGED's website and should be referred to in the Connection Offer:

Electricity Association Engineering Recommendation G81,

- Part 2 - Materials Specification Framework Document + NGED's Framework Appendix
- Part 3 - Installation and Records Framework Document + NGED's Framework Appendices Parts 1, 2 and 3

And where the ICP is carrying out the design;

- Part 1 - Design & Planning Framework Document + NGED's Framework Appendix

- 5.2 The Design & Planning Framework Document outlines design requirements including:

- Voltage regulation
- Maximum earth loop resistance
- Cable ratings
- HV/LV substation ratings

- 5.3 The ICP will be expected to work to the National Framework documents and the associated NGED Framework Appendices.

- 5.4 No direct charge shall be made for the provision of technical information.

6.0 REQUESTS FOR ADDITIONAL DESIGN REQUIREMENTS

- 6.1 On occasion NGED may opt for a design that exceeds the requirements of the Framework Documents, for example to provide additional LV linking or increase conductor sizing to permit later network extension not covered by the ICP's programme of works.

- 6.2 A written request should be made to the ICP detailing the changes required. The changes may be in excess of the minimum cost scheme, therefore it will be necessary for NGED to pay an allowance to the ICP equating to the difference between the asset chosen as a requirement of the minimum cost scheme and the asset installed. See Standard Technique NC2B for further information.

- 6.3 Any request for additional design requirements should be made at an early stage and, if possible, before the ICP commences the design work.
- 6.4 Any agreement on actual assets to be installed and the level of allowance given should be provided for under the terms of the Network Access and Adoption Agreement.

7.0 DESIGN SUBMISSION HV AND LV

- 7.1 The ICP shall submit its design to NGED for approval. The design must comply with all applicable engineering standards and statutory legislation as identified in G81, Part 1 - Design & Planning Framework Document and NGED's Framework Appendix.
- 7.2 Use of the same design tool as NGED will simplify the approval process therefore it is recommended that the Planner discusses this with the ICP prior to the commencement of design work. NGED cannot however, insist on which design tool the ICP ultimately uses.
- 7.3 The design shall include:
- copies of input and output from the design package used;
 - a statement of the design parameters used;
 - a drawing showing the network layout to a suitable scale showing, routes, joint positions, cable sizes, link boxes and LV phase connections;
 - Confirmation that the design meets the requirements of the Framework document as supplemented by the NGED Appendix.
- 7.4 Unmetered connections which do not require significant mains extension or HV works can go straight to the Live Jointing Notification Certificate process without the need for a parent enquiry and formal design approval. The ICP will include their design at the same time as the jointing request.

8.0 EHV AND 132KV DESIGN SUBMISSION PROCESS

- 8.1 For 33kV, 66kV and 132kV the ICP shall submit its design to NGED for approval. The design shall comply with all applicable engineering standards and statutory legislation.

To assist ICPs in the development of their designs and identify the requisite elements of a comprehensive design submission, the following documents are available:

- Outline Design Guide for Customers Seeking NGED Adoption of Indoor 33kV Switchgear Within Associated Switch-rooms/Housings;

- Outline Design Guide for Customers Seeking NGED Adoption of 66Kv Switchgear, Associated Equipment, Compound & Control Room;
 - ST: SD2A 132kV Connection Requirements
- 8.2 To ensure that ICPs submit full and comprehensive designs, the structure of all design submissions must contain sections A to H and a document register, as detailed in Appendix A. The submissions must be further broken down into sub-sections as detailed in Appendix A, however these may not be applicable to all sites.
- 8.3 The document register records all documents submitted as part of each Design Submission. This should be split into sections and record the date of the submission, drawing names, descriptions, revision number and drawing status. It should record all documents previously submitted.
- 8.4 Design Submissions which are not submitted in the structure detailed in Appendix A or do not contain a document register will be immediately rejected.
- 8.5 ICPs must submit a full design submission containing all information detailed in Part 1 to 4 from Appendix A. No drawings or information should be omitted to be "submitted at a later date", other than those identified in Part 5 – Post Construction Submission.
- 8.6 Prior to a full design submission, it is possible to submit partial design submissions as detailed in Section 11. Submission or approval of partial designs does not negate the need for a complete full design submission to be made for final approval.
- 8.7 When resubmitting a Full or Partial Design Submission following NGED's Design Submission response the ICP should only include drawings which have been updated or are new. This should be clearly recorded in the document register as well as any drawings which have now been superseded.
- 8.8 Only a single design submission should be made at any one time. While an ICP has a submission being reviewed by NGED, the ICP cannot make subsequent partial submissions or amendments. If changes are required by the ICP during the review period, the original submission shall be withdrawn and a new submission be made which will be treated as such.
- 8.9 On completion of a project, the ICP shall submit to NGED the final 'as constructed' drawing plans (Part 5), as described in Sections I and J in Appendix A. These drawings should detail as laid / installed construction plans and detail any changes that were implemented during the construction phase and where a revised design submission was not required.
- 8.10 Section J including post construction earthing information and cable/ overhead drawings is required before energisation of the site. ST:DO6A requires cable recordings to be provided a minimum of 5 working days before energisation.

8.11 For each 33, 66 and 132kV design submission, a number of respondents within NGED will need to assess respective technical elements of the submission. To facilitate this process, NGED will:

- Offer a meeting prior to the first design submission to address any site-specific questions from the ICP
- Receive the Design Submissions through a central regional inbox and assess the completeness of the Design Submission prior to internal circulation
- Circulate the Design Submission internally for technical review with reviewers completing a Design Submission response form
- Communicate a single Design Submission response form to the ICP once all internal parties have reviewed the submission

9.0 DESIGN APPROVAL

9.1 Design Submissions at LV and HV shall be submitted to the planner responsible for the ICP's enquiry.

9.2 Design Submissions at EHV and 132kV shall be submitted to the associated regional inbox for the ICP's enquiry.

- For EHV and 132kV enquiries in East Midlands
nged.pndeastmidlands@nationalgrid.co.uk
- For EHV and 132kV enquiries in West Midlands
nged.pndwmids@nationalgrid.co.uk
- For EHV and 132kV enquiries in South West
nged.pndswest@nationalgrid.co.uk
- For EHV and 132kV enquiries in South Wales
nged.pndswales@nationalgrid.co.uk

9.3 Following receipt of the design submission NGED shall study the ICP's design and either provide confirmation of approval, or an explanation for rejection. Such rejection shall not be unreasonably withheld.

9.4 Design approval is governed by a Standard of Performance in accordance with licence condition 15. Acceptance or reasoned rejection must be given within 10 working days of receipt of the design for schemes requiring LV and/or HV works. For schemes involving EHV or 132kV works acceptance or reasoned rejection must be given within 20 working days of receipt of the full design. Partial designs are considered to be outside of the Standards of Performance in accordance with licence condition 15, however they will be assessed in a timely manner by NGED and the timescales above will be endeavoured to be met.

- 9.5 Charges for providing design approval will be recovered by inclusion of the fees within the Connection Offer. The design approval fees must align with those published in NGED's Statement of Methodology and Charges for Connection.
- 9.6 The ICP accepts full responsibility for any contestable design that it undertakes. No approval, review or comment, or failure to approve, review or comment by NGED shall relieve the ICP of any liability or responsibility for the contestable design. The ICP has sole responsibility for ensuring that the contestable design conforms in all respects with the specification and the standards set out in any relevant Site Specific Agreement.
- 9.7 NGED will not energise and adopt assets installed by an ICP without an approved full design submission.
- 9.8 Work should not start on site until the appropriate area of the Design Submission has been approved.
- 9.9 Prior to any overhead line, cable, civil or electrical works starting on site a program of works must be provided to NGED so that inspections of works can be arranged. Starting works without providing a program may result in retrospective intrusive inspections. Please refer to Standard Technique NC2N and clauses 12.6, 12.7, 12.8 and 13.4 of the Framework Network Access and Adoption Agreement (FNA&AA).
- 9.10 Under clause 13 of the Framework Network Access and Adoption Agreement programs for the purposes of inspections should be provided to NGED a minimum of 5 working days ahead of works starting and then every 5 working days after, covering a period of the following 14 calendar days with details of works to be undertaken in each half-day period. This does not replace the need for more high-level programs to be agreed between NGED and ICP as part of the development of the project for the purposes of coordination and outage planning.

10.0 PARTIAL DESIGN APPROVAL

- 10.1 NGED will consider partial design submissions for EHV and 132kV connections for approval. Submissions for partial design approval should be sent to the regional inboxes as per 10.2 and ICPs should make clear their requirement for a partial design approval.
- 10.2 A design submission can be split into three parts to help accelerate the progression of the site works, prior to the full design submission once all the detailed design is complete. The parts allow for design approval to progress alongside the customer's scheme progression. The parts are:
- Part 1 - High level electrical design and plant approval
 - Part 2 - Cable and overhead line technical design
 - Part 3 - Site civil works, primary layouts and infrastructure
 - Part 4 - Full detailed design
 - Part 5 – Post Construction Submissions

Note that Part 5 is required on completion of the project and therefore does not form one of the required parts for design approval

- 10.3 ICPs must submit a partial design submission containing all information detailed in Part 1, 2 or 3 from Appendix A. No drawings or information should be omitted to be "submitted at a later date", other than those identified in Part 5 – Post Construction Submission. NGED are unable to accept individual drawings. The ICP will be responsible for ensuring partial submissions remain compatible and interface correctly with future submissions.
- 10.4 Irrespective of any previous submission or approval of partial design submissions the ICP must submit a Full Design Submission (Part 1 to 4) for final approval. Submission of this Full Design Submission will trigger the Standards of Performance timescales.
- 10.5 The partial design process is intended to allow projects to progress alongside design approval. Equipment can be ordered and worked started following partial approval as described in 10.7 to 10.10 and a program must be provided as described in 9.8 to 9.10.
- 10.6 The partial design section responses will remain provisional only until full design submission approval. NGED reserves the right to require design modifications or remedial works associated with previously 'approved' parts, where necessary, to ensure overall compliance with relevant NGED standards and specifications although this will only be in exceptional circumstances.
- 10.7 **Part 1 - High level electrical design and plant approval** is aimed at facilitating the Customer /ICP to order long lead plant items such as circuit breakers, isolators, transformers, etc. This should be approved prior to the ICP ordering long lead time items. The Part 1 pack will consist of the following:
- **Section A High Level Electrical Design:** High level electrical design i.e. Location Plan, Overall Single Line Diagram, main connections and protection diagram.
 - **Section B High Level Plant Design:** Appropriate proposed plant (Switchgear, isolators, transformers, CTs, VTs, etc.) detailed specifications i.e. Technical Oder Clarification Sheet (TOCS) or Schedule of Equipment (SoE).
- 10.8 **Part 2 - Cable and overhead line technical design** is aimed at facilitating the customer/ICP to order the relevant overhead conductors and/or underground cables and start works where applicable. It should be approved prior to any equipment order and cable/overhead lines works starting. The Part 2 pack will consist of the following:
- **Section C Overhead Line Design:** Construction details and route plans including proposed conductors and ratings.
 - **Section D Underground Cable Design:** Construction details and route plans including proposed cable size and ratings. Where the ICP is responsible for installation of fibre for the connection then the construction details and route plans should be included.

10.9 **Part 3 - Site civil works, primary layouts and infrastructure** is aimed at facilitating the Customer/ICP to physically start the civil works. It should be approved prior to any civil works starting. The Part 3 pack will consist of the following:

- **Section E Substation Civil Design and Primary Layouts:** Proposed substation compound and building layout and technical drawings, site surveys and structural design reports. Where the ICP is responsible for installation of a telecoms tower the construction details should be included.
- **Section F Earthing Design:** Detailed earthing design report and drawings.

10.10 **Part 4 - Full detailed design** is the completion of the approval process. This will be the full design submission. It should be approved before any electrical works are started. The Part 4 pack will consist of all the components outlined in Parts 1-3 as well as the following:

- **Section G Detailed Switchgear Design:** Detailed full electrical design including the AC/DC schematics, interlocking and multicore schedules.
- **Section H LVAC and Battery System Design:** Battery and charger sizing studies, drawings associated with 110V and 48V systems and derivation of LVAC supplies.

10.11 **Part 5 - Post Construction Submissions** are required once construction of the Project is complete. They are not required for design approval however they are an important part of the CIC process between NGED and the ICP. Section J including post construction earthing information and cable/ overhead drawings is required before energisation of the site. ST:DO6A requires cable recordings to be provided a minimum of 5 working days before energisation. Part 5 will consist of the following:

- **Section I Substation As-Built:** Full electrical design including substation general arrangement, detailed the AC/DC wiring, interlocking and multicore schedules
- **Section J Other As-Built:** Post construction earthing information and cable and overhead drawings

10.12 The table below shows an example partial design submission process. Note that all documents are sent on the first partial submissions and first full design submission, subsequent submissions only contain update documents.

	Submission 1 (Partial)	Submission 2 (Partial)	Submission 3 (Full)	Submission 4 (Full)	Submission 5 (Post Constr.)
Part 1	All docs sent	Updated docs sent	All docs sent		
	Not Approved	Approved	Approved		
Part 2		All Docs sent	All docs sent	Updated docs sent	
		Not Approved	Not Approved	Approved	
Part 3			All docs sent		
			Approved		
Part 4			All docs sent	Updated docs sent	
			Not Approved	Approved	
Part 5					All docs sent
					Approved

DESIGN SUBMISSION COMPONENTS

The design submission should be organized in the following sections and sub-sections. Further details of what should be included in each sub-section is provided.

Document Register	Submissions must contain a document register which records all documents submitted as part of each design submission. This should be split into sections, as per Appendix A, and record the date of the submission, drawing names, descriptions, revision number and drawing status. Drawing status should be "For Approval", "For Information Only", "For Construction" or "As Built". It should record all documents previously submitted.
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Part 1 – High Level Electrical Design & Plant Approval		
Section A High Level Electrical Design	Location Plan	A plan showing the substation location in relation to the whole site. This should show the access route to substation from public highway. It is the responsibility of the ICP to obtain land and access rights for the substation, the ICP should engage directly with NGED's Consents & Wayleaves Team to confirm requirements.
	Overall SLD	Site specific electrical Single Line Diagram showing all key items of equipment between the Point of Connection and Metering Location.
	Main Connections and Protection Diagram	Site specific electrical Single Line Diagram showing main connections at the Connection Point Substation and associated protection configuration. This should show an overview the CT and VT connections to the associated relays and trip signals.
Section B High Level Plant Design	Circuit Breaker Specification	Specification of all circuit breakers to be installed in the form of the specification sent to the manufacturer. Consideration to be given to the interlocking requirements where appropriate. E.g. Technical Order Clarification Sheet (TOCS) or Schedule of Equipment (SoE). <i>See ST:SD2A Sections 3 & 4.</i>
	Disconnecter Specification	Specification of all disconnectors to be installed in the form of the specification sent to the manufacturer. Consideration to be given to the interlocking requirements where appropriate. E.g. Technical Order Clarification Sheet (TOCS) or Schedule of Equipment (SoE). <i>See ST:SD2A Sections 3 & 6.</i>
	VT Specification	Specification of all voltage transformers to be installed in the form of the specification sent to the manufacturer. E.g. Technical Order Clarification Sheet (TOCS) or Schedule of Equipment (SoE). <i>See ST:SD2A Sections 3 & 4.</i>
	Surge Arrestor Specification	Where the Surge Arrestors are a long lead-time item, details of the Surge Arrestors to be installed.

Part 2 – Cable and Overhead Line Technical Design		
Section C Overhead Line Design	Construction Details	Construction details on any OHL works to be completed by the ICP.
	Disconnecter Details	Details on any disconnectors which form part of the OHL and are not within a substation.
	OHL Route Plan	Details of the OHL route including route plan, route profile and line schedule. It is the responsibility of the ICP to obtain land rights for the overhead line, the ICP should engage directly with NGED's Consents & Wayleaves Team to confirm requirements.
	Surge Arrestor Specification	Details of the surge arrestors to be installed on OHL.
Section D Underground Cable Design	Rating Assessment	Assessment of the rating of the cable, for 132kV cables a detailed assessment of the sheath bonding arrangement is required.
	Construction Details	Construction details on any cable works to be completed by the ICP. Including information on cable, joints, excavation and installation specification and special engineering difficulties. For complex cables routes a cable pull report is required.
	Cable Route Plans	Details of the cable route including joint locations. It is the responsibility of the ICP to obtain land rights for the cable route, the ICP should engage directly with NGED's Consents & Wayleaves Team to confirm requirements.
	Surge Arrestor Specification	Details of the surge arrestors to be installed on cable termination.
	Fibre Construction Details	Construction details on any fibre works to be completed by the ICP. Including information on fibre, chambers, excavation and installation specification. See <i>ST:SD2A Section 16</i> .
	Fibre Route Plans	Details of the fibre route including chamber locations. See <i>ST:SD2A Section 16</i> .

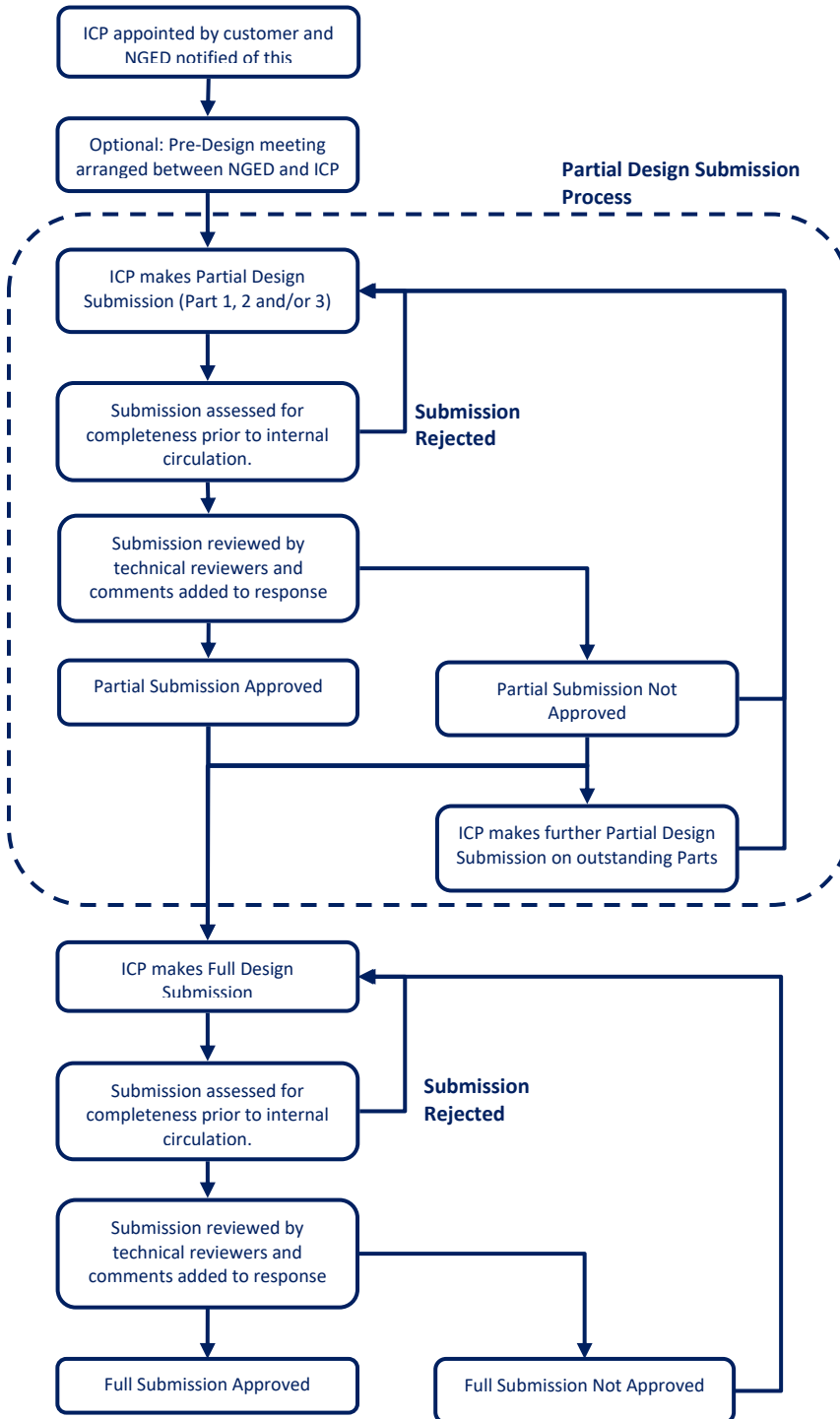
Part 3 – Site Civil Works, Primary Layouts and Infrastructure		
Section E Substation Civil Design and Primary Layouts	Substation Site Layout	Plans showing the physical layout of the substation and access road route from the main public highway. This must include all outdoor switchgear, structures, buildings, elevations, foundations, fencing, drainage and cable routes with associated ducting & cable troughs.
	Substation Compound Technical Drawings	Drawings showing compound surfacing, structure & foundation designs (including reinforcement and earth connections), ground works, access road construction makeup, drainage details, fencing details, ducting and cable troughs, supporting structures, post isolators, busbars and clamps etc. See <i>ST:SD2A Section 17</i> .
	Substation Building Technical Drawings	Civil drawings showing building structure and substructure materials and construction, access door and cable/multicore trench etc. See <i>ST:SD2A Section 17</i> .
	Substation Building Internal Layout	Building layout showing all electrical equipment (including security panels and room for future expansion), heating, lighting, dehumidification, air-conditioning (if appropriate), cable containment and LVAC fit out. See <i>ST:SD2A Section 8</i> .

	Site Surveys, Security and Risk Assessments	A site-specific Flood Risk Assessment, where substation is sited in a low flood risk area evidence must be provided to prove this. A site specific Interpretive Ground Investigation Report. Full structural calculations for all structural elements of the substation. Security layout (alarm panels, sensors, cameras and lights), physical security (electric fence, doors and gates), noise pollution and EMF risk assessment as appropriate. See <i>ST:SD2A Sections 17 & 20</i>
	Microwave Tower Structure and Foundation Design	Drawings showing microwave tower structure and foundations. Reports showing structural assessment and survey results where required. See <i>ST:SD2A Section 16</i> .
Section F Earthing Design	Earthing Study & Report	Report showing earthing assessment of the site, confirming hot/cold status. See <i>ST:SD2A Section 18</i> .
	Earthing Construction Drawings	Drawings showing earthing layout with construction details to NGED specification. See <i>ST:SD2A Section 18</i> .

Part 4 – Full Detailed Design		
Section G Detailed Electrical Design	General Arrangement Drawings	Switchgear, protection panels, intertripping panels and any other secondary electrical equipment general arrangement drawings including cabling and holding down details.
	Schematic and Protection Drawings	Schematic AC/DC diagrams showing protection relays, model identifiers, instrumentation and metering arrangements and terminal block presentation.
	Interlocking Arrangement	Where required site specific interlocking arrangement which shows the logic of the proposed mechanical and electrical interlocking. See <i>ST:SD2A Section 5</i> .
	Multicore Schedule	Multicore block diagram and cable schedule for information purposes only.
Section H LVAC and Battery System Design	110V Battery & Charger Sizing Calculations	Report showing the standing and transient loads imposed on the battery and charger system. A populated NGED “Battery Calculator” spreadsheet showing battery capacity and charger current rating are adequate. See <i>ST:SD2A Section 9</i> .
	110V Battery Charger and Distribution Board Drawings	Datasheets on the battery, charger and distribution board showing manufacturer, type, ratings and specification. Battery, charger and DC Distribution board general arrangement and schematic drawings. See <i>ST:SD2A Section 9</i> .
	48V Battery Charger Sizing Calculations	Report showing the standing and transient loads imposed on the battery and charger system. A populated NGED “Battery Calculator” spreadsheet showing battery capacity and charger current rating are adequate. See <i>ST:SD2A Section 9</i> .
	48V Battery Charger and Distribution Board Drawings	Datasheets on the battery, charger and distribution board showing manufacturer, type, ratings and specification. Battery, charger and DC Distribution board general arrangement and schematic drawings. See <i>ST:SD2A Section 9</i> .
	Derivation of LVAC Supplies	Confirmation of the arrangement of supplying LVAC to the site and the installation of any provision for mobile generators where required. See <i>ST:SD2A Section 8</i> .

Part 5 – Post Construction Submissions		
Section I Substation As-Built	As-Built Drawings	All as-built drawings associated with the substation assets to be adopted by NGED in .dwg format, suitably referenced in the drawing register. Including but not limited to substation layouts, AC/DC schematics, interlocking, general arrangements and multicore schedules.
Section J Other As-Built	Post Construction Earthing Information	Post installation earthing tests to confirm earth impedance shall be interpreted via MALZ. CDEGS files for the final design shall be submitted. A GIS-compatible ESRI shapefile of the hot zone contours shall be provided.
	Post Construction Cable & Overhead Drawings	Drawings showing as-built cable or overhead assets. Standards for cable recording are detailed in ST:DO6A.

EHV AND 132kV DESIGN SUBMISSION PROCESS



SUPERSEDED DOCUMENTS

This document supersedes ST: NC2F/5 dated April 2022 which has now been withdrawn.

RECORD OF COMMENT DURING CONSULTATION

Link to the comments table:

[Comments Table.](#)

ANCILLARY DOCUMENTS

The Electricity Act 1989 as amended by the Utilities Act 2000
The Electricity (Connection Charges) Regulations 2002
The Electricity Safety Quality and Continuity Regulations 2003
National Grid Electricity Distribution (South West) plc's Distribution Licence
National Grid Electricity Distribution (South Wales) plc's Distribution Licence
National Grid Electricity Distribution (East Midlands) plc's Distribution Licence
National Grid Electricity Distribution (West Midlands) plc's Distribution Licence
Statement of Methodology and Charges for Connection to National Grid Electricity Distribution (South West) plc's Electricity Distribution System;
Statement of Methodology and Charges for Connection to National Grid Electricity Distribution (South Wales) plc's Electricity Distribution System;
Statement of Methodology and Charges for Connection to National Grid Electricity Distribution (East Midlands) plc's Electricity Distribution System;
Statement of Methodology and Charges for Connection to National Grid Electricity Distribution (West Midlands) plc's Electricity Distribution System.
POL HS9 and associated STs - CDM Regulations
POL: NC2 New Connections
NGED Manual of Earthing Practices

KEY WORDS

Network Access and Adoption Agreement, Connection Offer, Design Approval, ICP, SLC15.