National Grid - Distributed Generation Owner Operator Forum

28 September 2022

Distributed Generation Owner Operator Forum

Meeting notes & slides from previous events

We hold a regular forum aimed at owners and operators of MW scale renewables connected to WPD's network. Working in partnership with Regen, these meetings provide an opportunity for DG owners and operators to engage with us, contribute towards improved processes and tackle arising issues.

Previous areas of discussion have included:

- WPD work to address grid constraints;
- Improving communication with generators on outages and constraints; and
- Potential approaches for forecasting and mitigating outages.

2022

10 February presentation slides
PDF / 3 MiB

10 February notes
PDF / 223 KiB

Future Forum Meeting Dates

Our next forum date is the 28 September 2022 (webinar).

If you or a colleague would like to join the forum then please contact Olly at Regen on: ofrankland@regen.co.uk for further details.

Attendance is free of charge and limited to MW scale owner/operators of DG assets.

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Generation Portal

Click here for our Post Energisation Document

This leaflet has been designed to try to offer you a synoptic review of some areas you may wish to investigate further with us and that may pop into your mind once you have a connection to your site.

Remember, we are here to help you generate onto our network, so please take a moment to familiarise yourself with the document's contents, and for those of you who are familiar with NGED, hopefully it will be a handy aid memoir on who to contact within our organisation.

Log in

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

WPD Post-energisation Guide

WPD operate a Distributed Generation Online Portal where users can view upcoming outages/export constraints and access general background information for each generator site.

This information is focussed, at the moment, on generator connections at 33kV, 66kV and 132kV. Please visit generation.westernpower.co.uk to access the portal. To sign up to the portal, or if any contact details (and gate access codes etc.) have changed for a generator site within our area please contact; wpdswestwalesgen@westernpower.co.uk.

Please ensure WPD have up to date contact details for your generation site.

Timescales for Planned Outages

WPD receive notification from National Grid of Year Ahead (April through until end of March) planned outages on the England & Wales Transmission System at the end of Week 49 every year. WPD then begin planning the Year Ahead work on our Distribution System. All outages (including National Grid outages) are entered into WPDs Outage Management

Export Constraints/ Interruption to Supply

For certain system planned outages WPD might apply a full or partial export constraint to a generation site. In some cases, the generation connection may be within the isolated section where WPD wishes to undertake work.

In such cases, the generator site will be temporarily disconnected from

Outage Notification

DG customers can access any upcoming planned outages via the Generation Portal. A Four Week Report is also sent out by our Control Centre every Friday. This report details any export constraints/ interruptions to supply that a DG customer can expect at their generation site within the next four weeks.

Independent chair: Olly Frankland, senior project manager, Electricity Storage Network/Regen

13.00 **Introduction, action review and objective setting from the chair and Danielle Greedy, control support engineer, National Grid Electricity Distribution (previously known as Western Power Distribution)**

13.10 **Improving industry and WPD communications to address outages/constraints**

- Forum member feedback on communication
- Overview of a selection of previous planned outages of significant length
- Options for restricted export for generation during planned outages

Danielle Greedy, control support engineer, National Grid Electricity Distribution

13.25 **Generation portal update**
Danielle Greedy, control support engineer, National Grid Electricity Distribution

13.40 **Flexibility Services Q&A**
Joe Davey, DSO energy management centre engineer, National Grid Electricity Distribution

14.00 **Break**

14.10 **Accelerated Loss of Mains Change Programme update**
Andrew Akani, primary system design manager, National Grid Electricity Distribution

14.25 **Review specifications for connection control panels**
Will Topping, primary system design engineer, National Grid Electricity Distribution

14.40 **SF6 monitoring and carbon reporting**
Andy Martyr-Icke, Environment team, National Grid Electricity Distribution

14.55 **Discussion/AOB**

15.00 **Close**

Electricity Distribution

Distributed Generator Owner / Operator Form

28th September 2022

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WPD → National Grid Electricity Distribution (NGED)

September 2022 - WPD branding replaced by NGED branding.

This includes all WPD branding at work sites, PPE, websites / online portals, etc.

DG Portal due for rebrand 27th September 2022.

WPD email addresses have now been replaced by an NGED email address.

All old WPD website links should redirect to the new rebranded NGED websites.

NGED Email Addresses

All queries should be sent to the below email addresses;

South West & Wales	nged.swestwalesgen@nationalgrid.co.uk
East Midlands	nged.eastmidgen@nationalgrid.co.uk
West Midlands	nged.westmidgen@nationalgrid.co.uk

Emails will be picked up by NGED Control Shift Assistants who will pass on to relevant person.

All outage queries should still go to the person responsible for undertaking the works.

These email addresses will be attached to the outage notification / available to view on the DG Portal.

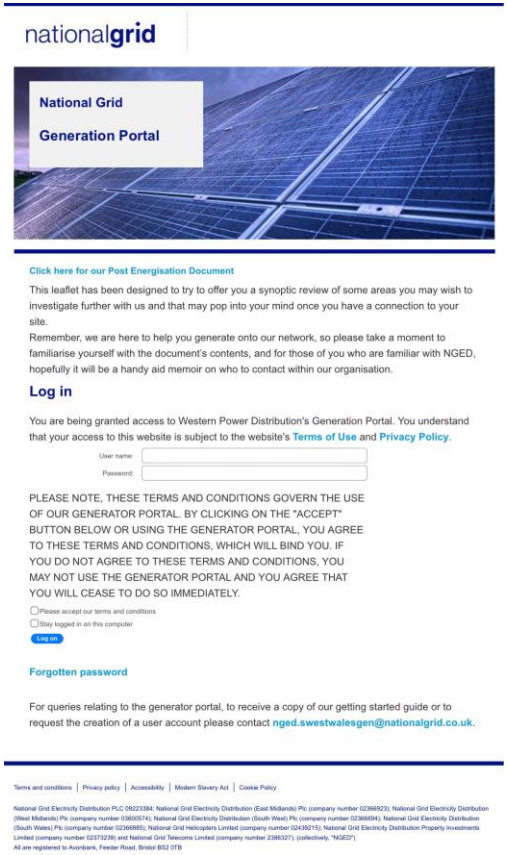
National Grid Electricity Distribution DG Portal

Rebrand Date - 27th September 2022.

Website:
www.generation.nationalgrid.co.uk

All user account details remain the same.

Any portal related queries to be sent to;
nged.swestwalesgen@nationalgrid.co.uk



NGED DG Portal Update

- Currently built on a platform that is due to expire in June 2023.
- Work has started to rebuild on a new platform by the above date.
- Open to suggestions for additions / improvements to existing portal whilst it is being rebuilt.
- Plans for inclusion of 11kV outage data in progress.

Outage Plan 2022/23 Update

We are now approaching end of ‘Outage Season’ (early March – end of October).

Outstanding Outage Approvals;

- South West & Wales – 205
- East Midlands – 123
- West Midlands – 83

National Grid (TO / ESO) Year Ahead Outage Plan due beginning of December 2022.

NGED will start collating 132kV outages middle of December – End of January 2023.

NGED 33kV outage plan starts early February 2023 for completion by end of month.

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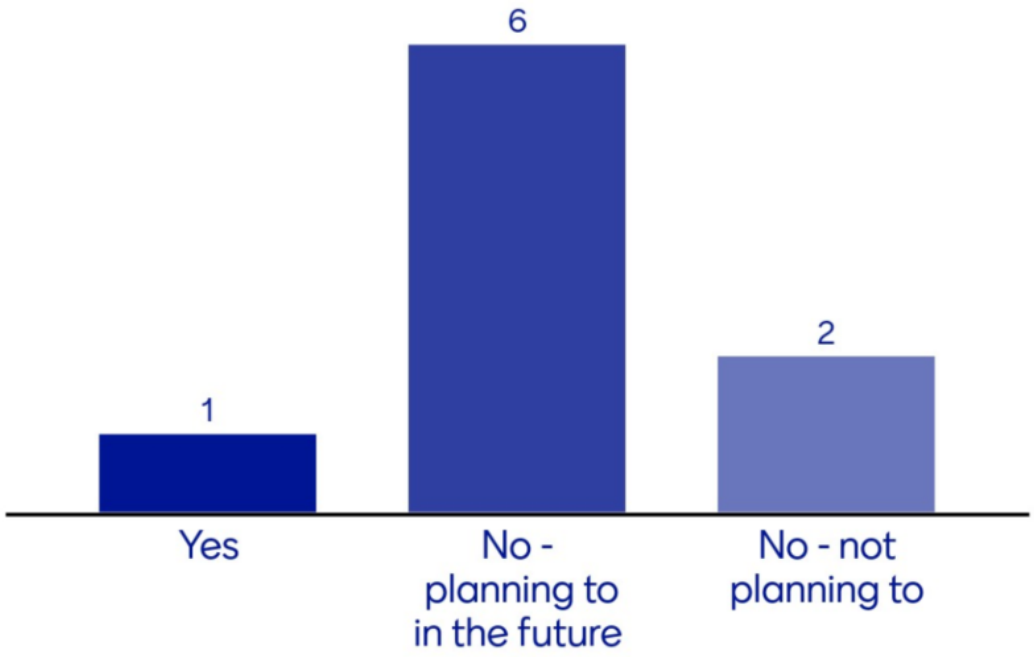
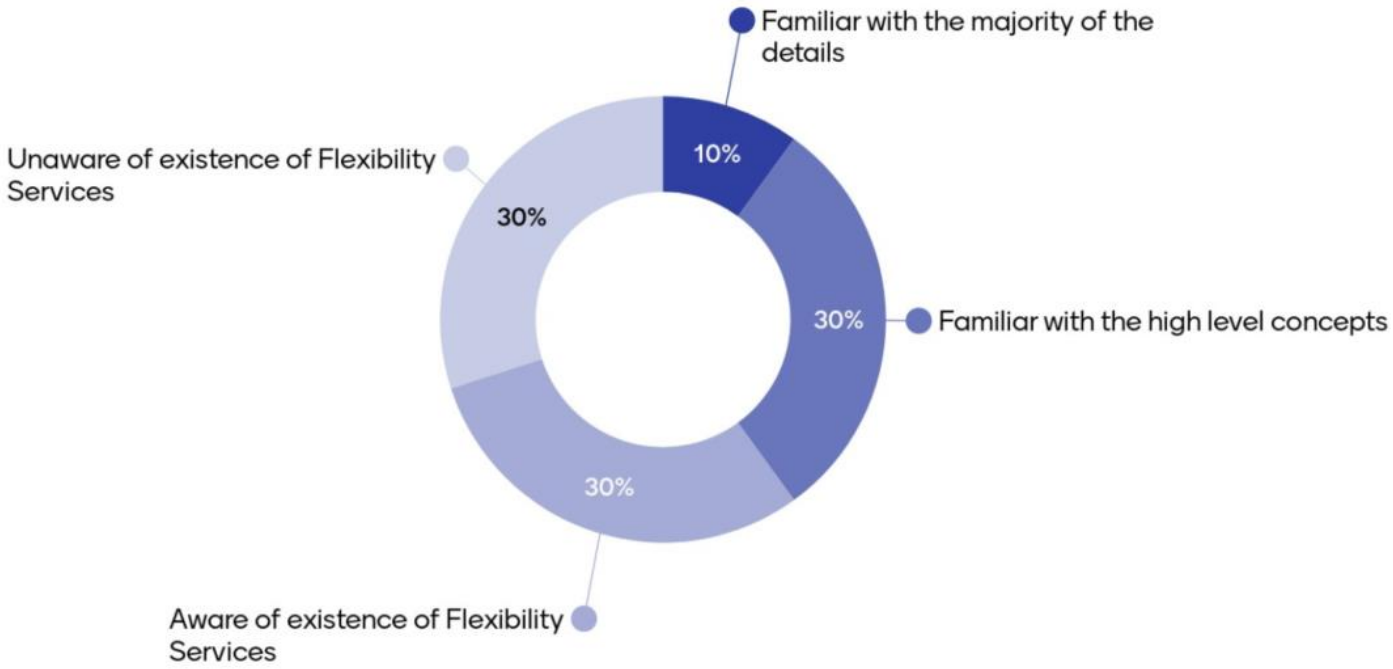
Have you participated in any flexibility services?



How familiar are you with National Grid Electricity Distribution's flexibility services?



What are the key barriers you have faced with the Flexibility Services or what has prevented you from participating?

Co-location

N/A - I haven't been involved in this (others within organisation may have)

Was just made aware of this. Will have to take a deeper look into it internally.

Haven't been involved in this within my organisation.

additional generation through existing connection.

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Break

We will see you shortly

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Accelerated Loss of Mains Change Programme update

Andrew Akani
Primary System Design Manager
10th May 2022

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ALoMCP Background

- G59/3-3 published on 1 Feb 2018 to include new LOM settings:
  - Removed Vector Shift as Loss of Mains protection.
  - Increased ROCOF settings to 1Hz/s, 500ms time delay.
  - Retrospective for existing sites, implementation by 31st Aug 2022.
  - Non-Domestic generators greater than 16A/phase (3.68kW single phase, 11.04kW three phase).
- Inverters may contain G59 settings
  - These settings also need to either be changed or disabled
  - ENA guidance on inverters https://www.ena-eng.org/ALoMCP/mankb

ALoMCP Background

- The ALoMCP is a joint initiative with the NGESO, Energy Networks Association, distribution network operators and independent distribution network operators.
- The ALoMCP offered funding to non-domestic distributed generators that were connected before 1 February 2018 to upgrade their hardware to improve network resilience, and support wider initiatives helping meet the UK's net zero targets.
- Grants were available through quarterly application windows.
- 10th May 2022 was the final application deadline for funding through the programme (registration portal) and for owners to take advantage of financial support to carry out the work.

ALoMCP Progress Update

- End of programme update still in progress.
- Window 11, final window, closed on 10th May 2022
  - 2,972 applications received (5.3GW) out of approx. 21,000 sites (approx. 8.6GW).
  - 1,915 sites completed works (evidence received for over 4.6GW).
  - 1,845 sites paid, over £5.67m.

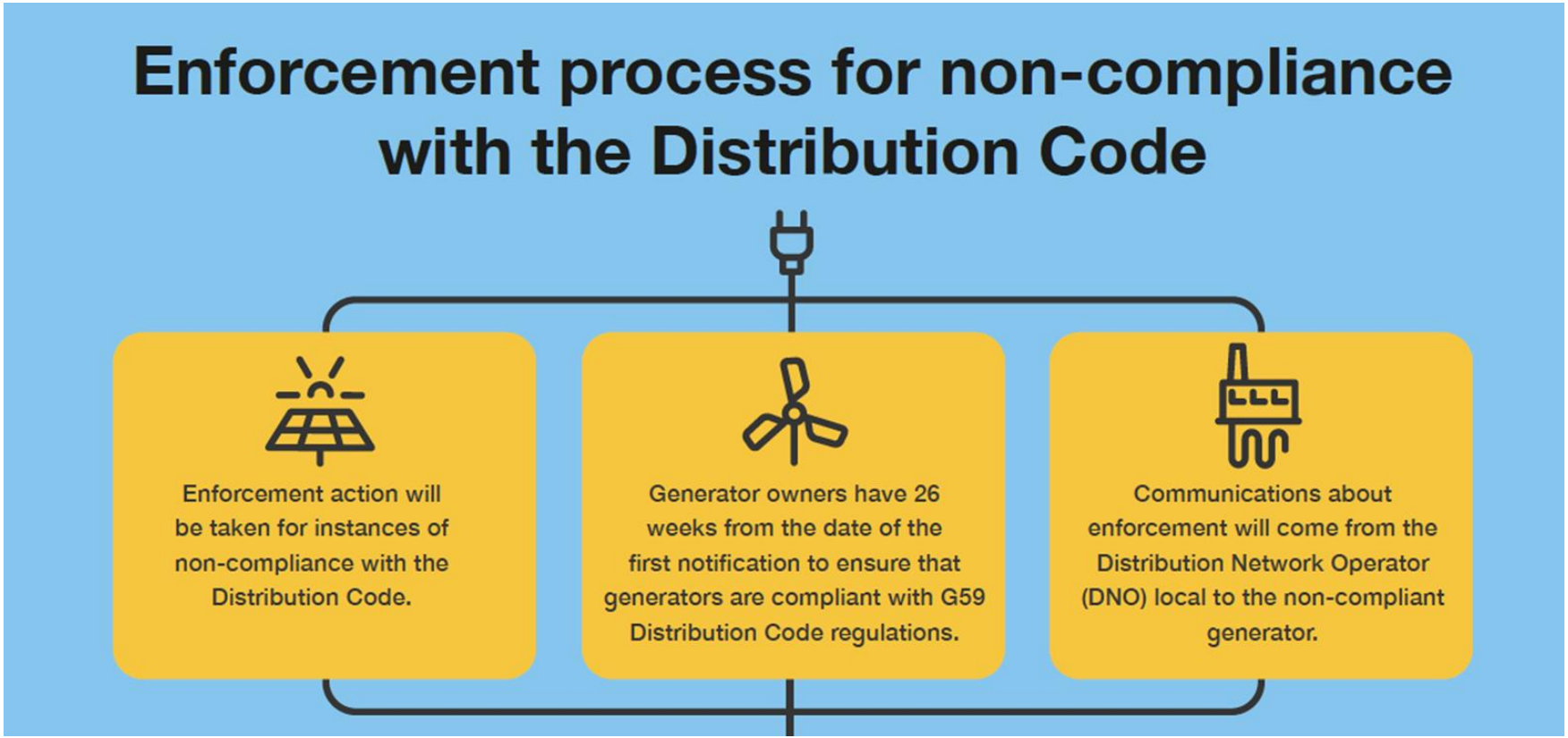
Compliance Outside ALoMCP

- There maybe sites that didn't participate through the programme either due to already having achieved compliance in the past or simply choosing not to receive funding. **These Customers MUST still notify the programme of their compliance:**
  - Customers can also contact ALoMCP mailbox to notify us of any G59/3 compliance outside of the programme.
- 1,484 sites (2.59GW) declared Compliance Outside of the Programme declared so far
- Evidence requirements to confirm compliance consist of:
  - Completed Compliance Declaration Form provided by DNO
  - G59/3 Test sheets for all generation that shows the compliant settings, or
  - Manufacturer Data sheet/Picture of device model (to confirm compliance at inverters).

What if I am not compliant, or declare compliance?

- Compliance with the Loss of Mains regulations is **not optional**.
- The changes are **mandatory**.
- Generators that are not compliant after the deadline will not be tolerated due to the inherent risk that they pose to Great Britain's power supply and communities.
- Those not compliant from **1st September** will be subject to an **enforcement process** that could result in the de-energisation of your site.

Enforcement measures for non-compliance



Enforcement measures for non-compliance

ALoMCP Contact Details

- NGET ALoMCP Contact details:
  - Email: nged.alomcp@nationalgrid.co.uk
  - Telephone: 0800 0328880

- Please feel free to contact us with any queries.

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Connection Control Panel (CCP) Overview

28th of September 2022

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Agenda

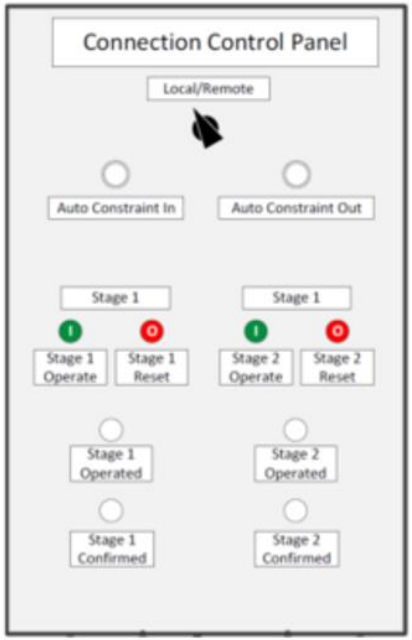
- What is a Connection Control Panel (CCP)
- Need for a CCP
- Signals communicated
- Internal logic
- Uses for CCPs

What is a CCP

Formerly known as Generator Constraint Panel (GCP) it is a box mounted in the substation at a connection. Monitors operation and presents signals that the site must adhere to.

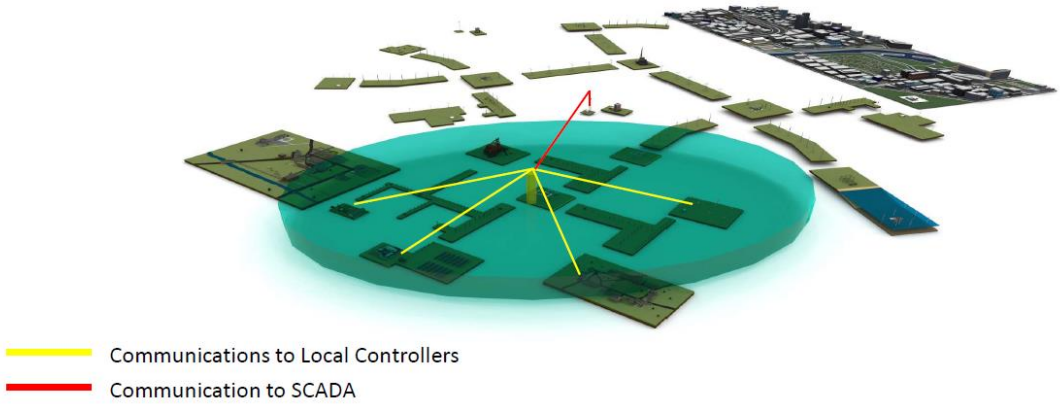
It connects to National Grid's RTU and communicates directly to PowerOn

It can be interacted with manually on site or remotely from our Control Centre



Need for a CCP

- Means of instantaneous interaction with each site
- Allows logic to be implemented locally
  - Can handle failures in communication
- Operational signals can be automatically sent to all/groups of sites
- Simple implementation allow use with various automation schemes

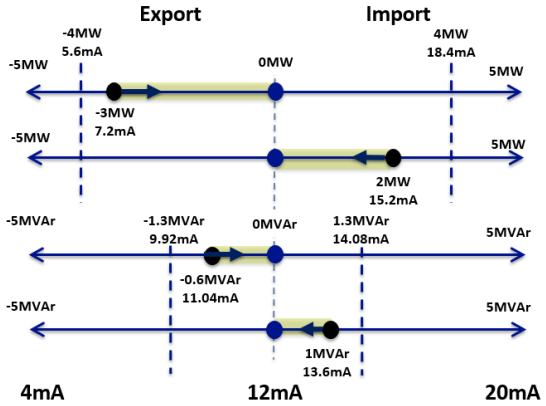


Signals communicated

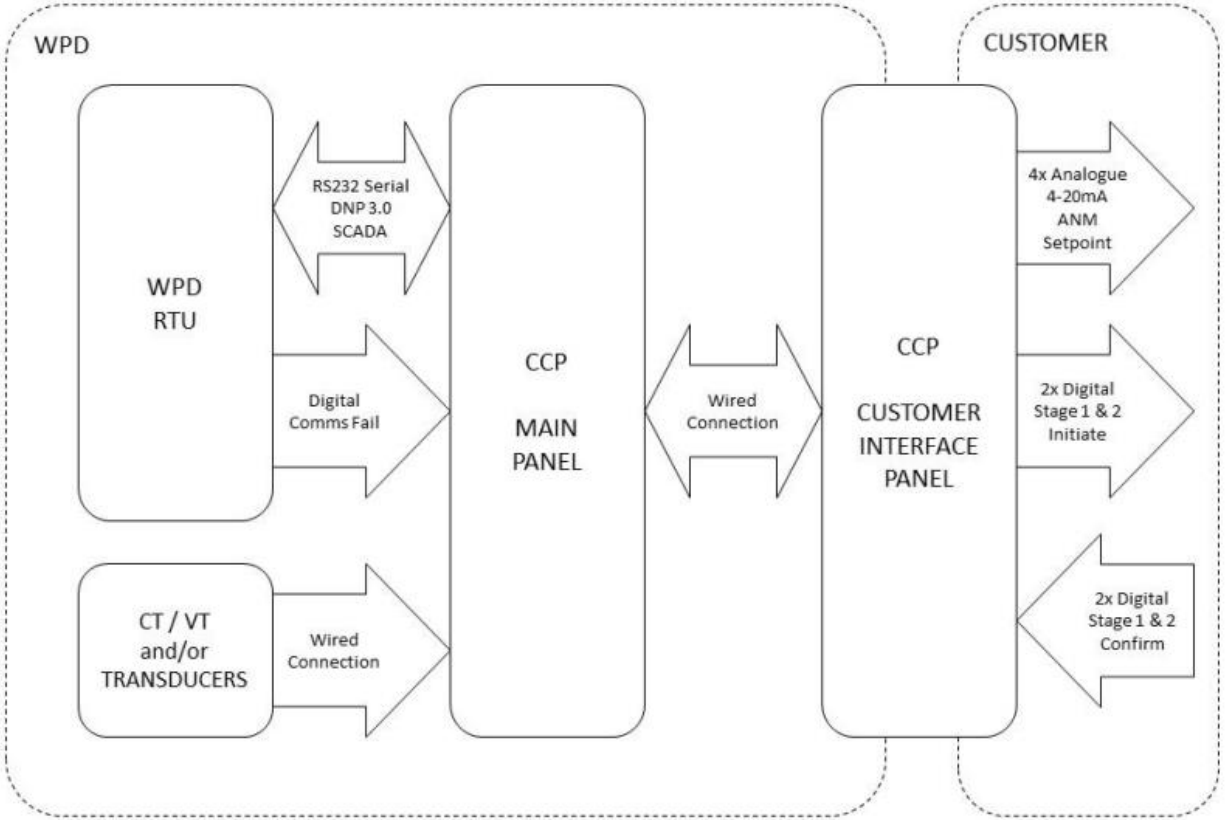
- Stage 0
  - Used for ANM
- Stage 1
  - Used for all connections and “soft tripping”
- Stage 2
  - Used for all connections for immediate disconnection

Channel Name	Channel Number
Real Power lower bound P^{Lower}	Ch0
Real Power upper bound P^{Upper}	Ch1
Reactive Power lower bound Q^{Lower}	Ch2
Reactive Power upper bound Q^{Upper}	Ch3

Site Capacity (Power):	+/-4MW @ 0.95 leading power factor (+/-1.3MVAr)
Site Capacity (mA signal):	5.6mA P^{lower}, 18.4mA P^{upper}, 9.92mA Q^{lower}, 14.08mA Q^{upper}
Example set point (Power):	-4MW P^{lower}, 2MW P^{upper}, -0.6MVAr Q^{lower}, 1MVAr Q^{upper}
Example set point (mA signal):	7.2mA P^{lower}, 15.2mA P^{upper}, 11.04mA Q^{lower}, 13.6mA Q^{upper}



Signals communicated



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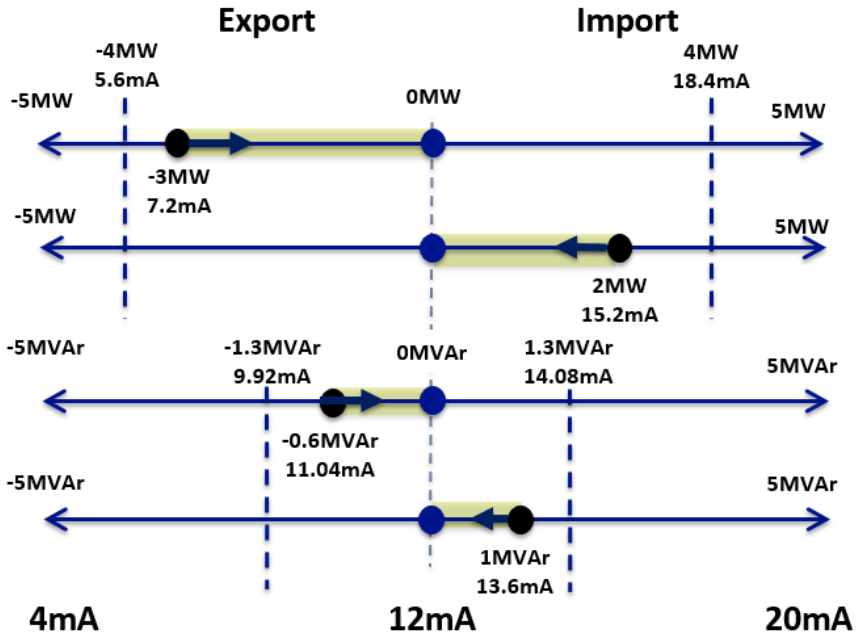

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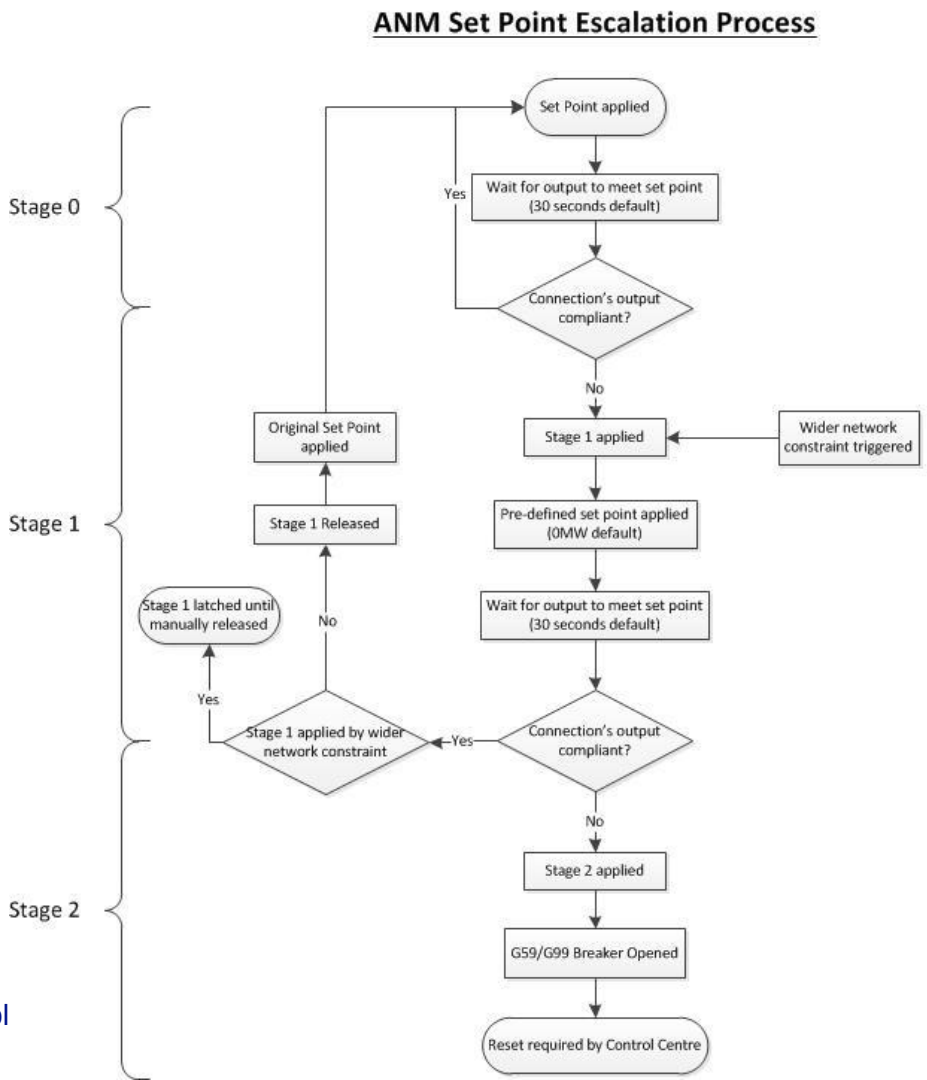
Internal Logic



Uses for CCPs

- Local voltage constraints
- Soft intertrips
- Active Network Management
- National Grid Transmission – N-3 Operational Tripping Scheme
- Connect and Manage

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