

GC0156 - Assurance Activities Subgroup Report

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Executive Summary

The ESO has been directed by the Secretary of State that in accordance with Special Condition 2.2 of the National Grid Electricity System Operator's Transmission Licence, The Electricity System Restoration Standard is set at –

- 60% of electricity demand being restored within 24 hours in all regions, and
- 100% of electricity demand being restored with 5 days nationally.

It is an essential requirement for the NETS to have electricity system restoration capability. The ESO delivers this requirement by determining and procuring sufficient system restoration capability for the NETS on an ongoing basis.

The directive requires the ESO to –

- Ensure and maintain an electricity restoration capability; and
- Ensure and maintain the restoration timeframe.

Note: In accordance with the advice from BEIS- at GC0156 “electricity demand” will be calculated by way of the forecast of the next peak transmission demand.

The objectives of the Assurance Activities Subgroup were to develop the assurance framework and performance monitoring framework, to enable the industry performance against the ESRS to be evaluated and to review, assess and modify the ESRS Working Group recommendations and create proposals to the GC0156 Working Group.

This report presents the requirements identified by the Assurance Activities Subgroup and their suggested implementation routes together with the relevant changes to Codes. The report covers the following:

- Proposals from the Assurance Activities Subgroup to the GC0156 Working Group:
 - Outline of any changes necessary to Grid Code and associated documents
 - Outline of any changes necessary to Distribution Code and associated documents
 - Identification of any new industry documentation, i.e., standards or codes etc, to implement the assurance framework.
 - Indication of how the above changes affect the ESO, TOs, CATOs, OFTOs, DNOs, restoration service providers, and any other users.
 - Disagreements and perceived challenges.

1 Introduction

1.1 Secretary of State Direction

The ESO has been directed by the Secretary of State that in accordance with Special Condition 2.2 of the National Grid Electricity System Operator's Transmission Licence, The Electricity System Restoration Standard is set at –

- a) 60% of electricity demand being restored within 24 hours in all regions, and
- b) 100% of electricity demand being restored with 5 days nationally.

It is an essential requirement for the NETS to have electricity system restoration capability. The ESO delivers this requirement by determining and procuring sufficient system restoration capability for the NETS on an ongoing basis.

The purpose of this direction is to require that the ESO –

- a) Ensures and maintains an electricity restoration capability; and
- b) Ensures and maintains the restoration timeframe.

Note: "electricity demand" will be calculated by way of the forecast of the next peak transmission demand.

1.2 GC0156 & Assurance Subgroup

The ESO has raised Grid Code modification GC0156 to ensure that the industry is aware of what its needs to do to ensure and maintain an electricity restoration capability, and restoration timeframes.

This document presents the needs identified by the Assurance Activities Subgroup and their suggested implementation routes together with the relevant changes to Codes.

Terms of References

Purpose/Scope

To develop the assurance framework and performance monitoring framework, to enable the industry performance against the ESRS to be evaluated.

Review, assess and modify the ESRS Working Group recommendations and create proposals to the GC0156 Working Group.

Inputs

- ESRS Assurance working group report recommendations
- The current restoration assurance arrangements
- Relevant codes
- An understanding of the restoration process, demand restoration requirements, restoration service provider (volumes, geographic distribution), and how these may change in the future

Outputs

A report, to be delivered by 20 October 2022, covering all the below aspects and including an appropriate level of detail for assurance of the functional requirements:

- Proposals from the Assurance Framework Subgroup to the GC0156 Working Group:
 - Outline of any changes necessary to Grid Code and associated documents
 - Outline of any changes necessary to Distribution Code and associated documents
 - Identification of any new industry documentation, i.e., standards or codes etc, to implement the assurance framework.
 - Identification of likely necessary actions beyond the scope of GC0156
- Indication of how the above changes affect the ESO, TOs, CATOs, OFTOs, DNOs, restoration service providers, and any other users, including timescale and cost for the adoption of any proposals where this is available from subgroup members. Note – potential cost impacts will be forwarded to the Markets and Funding Mechanism Subgroup.

Provide regular progress updates to general GC0156 group.

Propose draft legal text for Grid Code and Distribution Code and associated documents.

Members (Update based on Nominations list)

Role	Name	Organization
Chair		NGESO
Technical secretary		NGESO
Generator rep		
TO Rep		
DNO Rep		
Other		
Etc		

Standing Agenda

1. Safety/Wellbeing/inclusion Moment
2. Actions Update
3. Progress/project update
4. Analysis and discussion of issues within scope
5. Decisions/Actions
6. Risk/Issues for escalation to GC0156
7. AOB

Logistics

- Cadence –Meetings scheduled bi-weekly.
- Duration – 2 hours

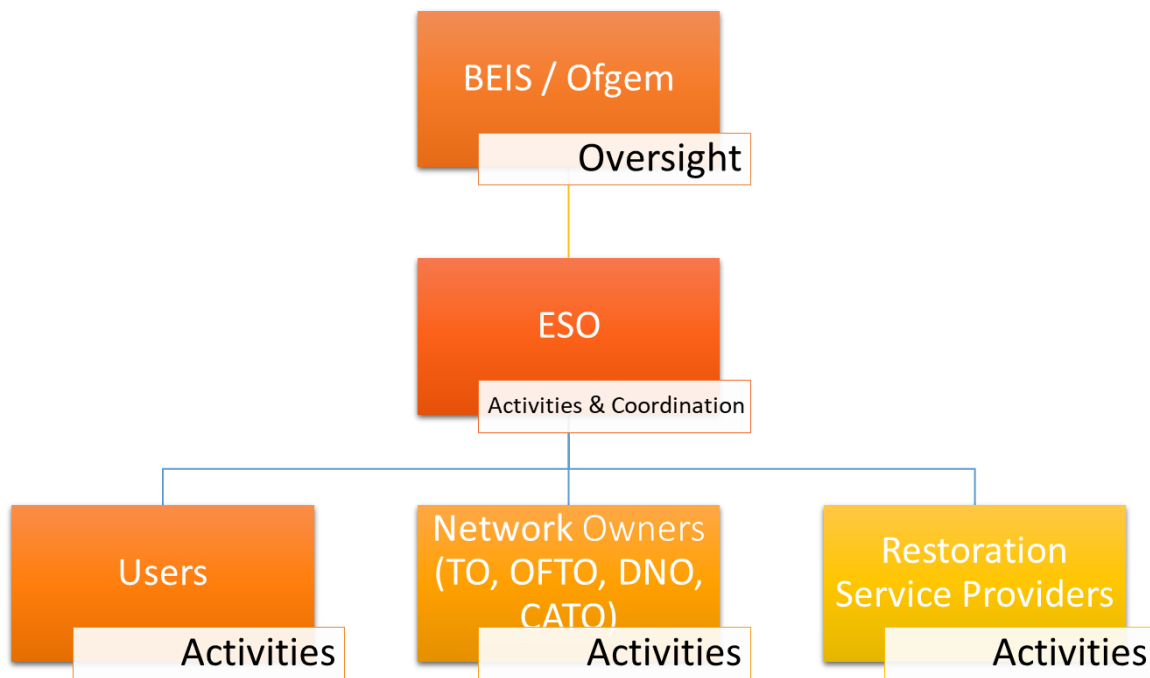


- Location – Teams Meeting
- Submissions due and pre-read – slides/papers with clear confirmation of input/decisions needed 5 business days prior. Papers are to be read ahead of the meeting.
- Minutes – to be taken and circulated with the Action/decision Log
- Quorum – All standing members to attend. Deputies can attend with full decision-making authority delegated.
- Disagreement - Proposals will be based on majority decisions. Disagreement from the proposals shall be recorded.

Note: CATOs are not yet defined in the Grid Code, hence are not referenced in the draft legal text for GC0156, however, the subgroup considered CATOs and once implemented via GC0159, the legal text will be amended to include CATOs.

2 Compliance & Monitoring

Proposal



It will be for the ESO & Ofgem as the monitoring body to assess individual, regional and GB assurance levels. This process will be aligned to the Assurance Framework. Templates and processes to be made available at a later stage by the ESO following engagement with the Monitoring Body.

3 Network & Demand Activities

3.1 Restoration Skeleton Network Review

Proposal

Parties required

ESO, TOs, OFTOs, CATOs, TO HVDC Networks, DNOs & IDNOs (directly connected only).

Description

Provide evidence that new or reconfigured Transmission and Distribution Networks are assessed and designed with the capability to

- Meet requirements identified to support the implementation of ESRS e.g. create and sustain parts of the system within a LJRP and DRZP
- then energise further sections of network to access [generation], demand and energise relevant substations.

Requirement

In line with the planning of network infrastructure (within Planning Timescales), to provide evidence of energisation routes that are suitable for use within 24 hours (0-60% demand loading) of the start of a restoration process.

This will involve a process being established to consider Restoration within the long-term design process across the network operators. This assurance activity checks that the process has been completed and a design is in place.

Test/Reporting Cycle

Studies will be done periodically (on a three yearly basis per specific study need) but reported annually

Annual reporting to the Monitoring Body

List of routes and studying completed.

Date(s) updated report.

Confirmation of Assurance/capability.

Contribution to Preparedness Level

Adequate network design is in place for the Restoration strategy.

Disagreements

None

Legal Text References

STC for TOs, OFTO

OC9.1.1, OC9.2.1, ECC7.11.3, ECC6.4.6, PCA5.7, OC2.4.1.3.2, OC5.7.4.2(iv), OC9.4.7.5.3

Alternatives

None

3.2 Restoration Skeleton Network Availability

Proposal

Parties Required

ESO, TOs, OFTOs, CATOs, TO HVDC Networks, DNOs & IDNOs (directly connected only).

Description

Report on the assessment of the operational availability of routes utilised in the restoration plans and as part of the operational planning process, DNOs will notify the ESO of outages and TOs will notify ESO of outages affecting DRZPs and LJRP that would interfere with the use of those plans as part of the restoration strategy during the period.

Requirement

For LJRP, within planning and operational timescales, assess the outages/availability of the network within LJRP required to deliver the requirements provided for in Restoration Service Providers Contracts. This includes consideration of circuit outages.

For DRZP, within planning and operational timescales, assess the outages/ availability of the network within DRZPs across each DRZ to deliver upon the requirements provided for in Restoration Service Providers Contracts. This includes circuit outage considerations.

Annual reporting to the Monitoring Body

Statistical summary of Skeleton Network availability at various Planning and Operational timescales, TO/DNO Network asset assessments, Year ahead handover, operational planning, and outturn.

Date(s) of assessment.

Contribution to Preparedness Level

Adequate network is available to implement the Restoration strategy.

Disagreements

None

Legal Text References

STC/STCP 11.1 and STCP 11.2 To follow

PC.A.5.7, OC2, OC5.7.4

Alternatives

None

3.3 Remote Synchronization Testing

Proposal

Parties required

TOs, OFTOs, CATOs, TO HVDC Networks, DNOs & IDNOs (directly connected only).

Description

Report on the capability of power islands to be synchronized as expected.

Requirement

Test power island Synchronization, i.e. demonstrate the ability to resynchronise adjacent power islands. It involves the Restoration Service Provider starting up as usual, re-energising a dead test section of the NETS and then synchronising to the NETS at a Transmission Owners' substation other than that at which this normally occurs. As a minimum, the capability assessment shall include a dummy remote synchronisation.

Test/Reporting Cycle

At least every three years

Annual reporting to the Monitoring Body

List of synchronization points established for LJRPCs, DRZPs and as required for system restoration purposes outside the scope of LJRPCs and DRZPs and for each synchronising point:

- Date(s) of last test(s).
- Confirmation of capability.

Contribution to Preparedness Level

Power Island Synchronisation last tested.

Disagreements

None

Legal Text References

OC5.7.2.3(d) and OC5.7.2.6(v)

Alternatives

None

3.4 Low Frequency Demand Disconnection Test

Proposal

Required Parties

TOs, CATOs, TO HVDC Networks, DNOs & IDNOs (directly connected only).

TOs, DNOs. Currently mandatory. Appendix A5 of Grid Code European connection conditions for new distribution networks.

Description

Report on the capability of Low Frequency Relays.

Requirement

Test in line with OC6 of the Grid Code. As a minimum, the relay capability assessment shall comply with ENA's Technical Specification 48-6-5, ENA Protection Assessment Functional Test Requirements Voltage and Frequency Protection. Grid Code CC.A.5.4.1 (ECC.A.5.4.1 for new distribution networks).

Measure

Self-evaluation.

Test/Reporting Cycle

Each Network Operator and Relevant Transmission Licensee shall aim to execute testing on its low frequency demand disconnection relays installed within its network and in service at least once every three years, although this may be extended to no more than every five years if considered to be required for operational purposes.

Annual reporting to the Monitoring Body

List of Low Frequency Relays in service/maintained.

Date(s) of last Test(s).

Confirmation of Assurance/capability.

Contribution to Preparedness Level

Low Frequency Relays last tested in purposes of restoration alone:

Disagreements

None

Legal Text References

CC/ECC.6.4.3, CC/ECC.A.5.6.4

Alternatives

None

4 Anchor and Top Up Restoration Service Providers

4.1 Anchor Restoration Service Providers Tests

Proposal

Classification

Mandatory.

Required Parties

ESO, DNO, Anchor Restoration Service Providers

Implementation

Codes and contract between ESO and Anchor Restoration Service Provider

Codes and contract between ESO, Anchor Restoration Service Provider and DNO

Description

Test in line with requirements within OC5.7.2

Note, for Anchor Restoration Service Providers within a Distributed Restoration Zone Plan, energise the busbar of the local substation.

Requirement

To demonstrate its technical capability to start from shut down without any external electrical energy supply and energise the busbar of the local substation to which it is connected.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last Test(s).

Confirmation of Assurance/capability.

Disagreements

None

Legal Text References

OC5.7.2

Alternatives

None

4.2 Top Up Restoration Service Providers Tests

Proposal

Classification

Mandatory.

Required Parties

ESO, DNO, Top Up Restoration Service Providers

Implementation

Codes and contract between ESO and Top Up Restoration Service Provider.

Codes and contract between ESO, Top Up Restoration Service Provider and DNO.

Description

Disconnect and shutdown the Top Up Restoration Service Provider from the Network and restart the plant and apparatus from shutdown following the restoration of an external electrical energy supply.

Whilst the external electrical energy may be supplied from the network, rather than an anchor generator, it is important to ensure that this supply is monitored so it doesn't go beyond the capability of that anchor generator.

Note: for Top Up Restoration Service Provider within a Distributed Restoration Zone Plan, test as far as practicable due to network configuration.

Requirement

To demonstrate its technical capability to start from shut down following the restoration of an external electrical energy supply and to then provide services in line with the Top Up Restoration Contract.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last Test(s).

Confirmation of Assurance/capability.

Disagreements

None

Legal Text References

OC5.7.2.4

Alternatives

None

4.3 Resilience to Partial or Total Shutdown of Restoration Service Providers

Proposal

Classification

Mandatory.

Required Parties

For ESO, Restoration Service Providers

Description

Restoration Service Providers will be required to assure the resilience of their plant and apparatus for at least 72 hours.

Their plant and apparatus should be such that their plant can be shutdown in a safe manner in a Partial or Total Shutdown such that it does not pose a risk to plant or personnel without supplies for up to 72 hours so there is some assurance that the plant will not have to be subject to major component replacement thereafter.

Requirement

Annual reporting confirming the current plant is in good condition, has the required capability and evidenced as appropriate.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last test(s).

Confirmation of capability.

Disagreements

None

Legal Text References

CC/ECC.7.10, CC/ECC.7.11

Alternatives

None

4.4 Quick Resynchronisation Unit Test

Proposal

Classification

Mandatory. (ECC 6.3.5.6 – Directly Connected RfG Compliant Plant)

Required Parties

ESO, RfG compliant plants and DNO's

Implementation

ECC.6.3.5.6 requires a quick resynchronisation capability and as part of this requirement if a power generating module has a minimum re-synchronisation time greater than 15 minutes it is required to have a trip to house load capability. Simulation Studies to demonstrate this are covered in ECP.A.3.6 and the actual test including trip to house load is undertaken through the OC5.7.

Description

Test in line with requirements within OC5.7

Requirement

For the generating unit to trip and resynchronise with the system without Auxiliary or external electrical supplies.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last test(s).

Confirmation of capability.

Disagreements

None

Legal Text References

OC5.7.2.5

There are no changes envisaged, other than updating terminology.

Alternatives

None

4.5 Distribution Restoration Zonal Control Test

Proposal

Classification

Mandatory.

Required Parties

DNO led, Anchor and Top Up Restoration Service Providers that are referenced in a DRZP, ESO.

Implementation

Codes and contract between ESO, DNO and Restoration Service Providers.

Description

Test in line with requirements within OC5.7.2.6

Requirement

For each Distribution Restoration Zone Controller, at least every three years, to demonstrate its technical capability to operate as per the Distribution Restoration Zone contract.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last test(s).

Confirmation of capability.

Disagreements

None

Legal Text References

OC5.7.2.6

Alternatives

None

4.6 Dead Line Charge Test

Proposal

Classification

Mandatory.

Required Parties

ESO, Anchor Restoration Service Providers that are referenced in LJRP or DRZP, TOs, DNO.

Implementation

Codes and contract between ESO, DNO and Anchor Restoration Service Provider.

Description

The Anchor Restoration Service Provider referenced within a DRZP to re-energise a dead test section of the Network that would be energised when the DRZP is implemented.

For Anchor Restoration Service Provider referenced within LJRP, the test is described in OC5.7.2.1.

Requirement

The Anchor Restoration Service Provider to energise a dead test section of network that would be energised when the DRZP is implemented, isolated from the system by the Network Operator/Owner.

Typically, this will be completed as part of the Anchor Restoration Service Provider Tests in OC5.7.2.1

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last test(s).

Confirmation of capability.

Disagreements

None

Legal Text References

OC5.7.2.3 (d)

Alternatives

None

4.7 Remote Synchronisation Tests

Proposal

Classification

Mandatory.

Required Parties

ESO, Anchor and Top Up Restoration Service Providers that are referenced in LJRP or DRZP, TOs, DNOs.

Implementation

Codes.

Description

A Restoration Service Provider or the action of a Distribution Restoration Zone Controller to re-energise a dead test section of the Network with the Network Operator. The Restoration Service Provider or Distribution Restoration Zone Controller, led by the Network Operator, then synchronises the Power Island on the test network area with the main power system.

Requirement

Demonstrate the ability to create and re-synchronise power islands, controlling Voltage and Frequency.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last test(s).

Confirmation of capability.

Disagreements

None

Legal Text References

OC5.7.2.3(d)

Alternatives

None

4.8 Assurance Visits

Proposal

Classification

Mandatory.

Required Parties

ESO led, Restoration Service Providers (LJRP and DRZP), TOs, DNOs.

Implementation

Codes, Contracts between ESO, DNOs and Restoration Service Providers.

Description

Validate that Restoration Service Providers have the appropriate documentation, operational and training procedures in place to support Restoration.

Requirement

ESO and each Restoration Service Provider referenced in an LJRP shall carry out an Assurance Visit at least every three years.

DNO and each Restoration Service Provider referenced in a DRZP shall carry out an Assurance Visit at least every three years.

ESO, TO(s) and DNO(s) to assure the Restoration Service Providers documentation, operational and training procedures.

Share key themes from lessons learnt across the industry.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last visit(s)

Confirmation of Assurance.

Disagreements

None

Legal Text References

OC5.7.4

Alternatives

None

5 Communications Assurance

On 04.08.2022, the Assurance Activities Subgroup agreed for the assurance activities relating to communications to be discussed and agreed within the Communications Infrastructure Subgroup.

Members of the assurance activities subgroup also agreed to have the outcome of this review put in their report.

Proposal

Classification - Mandatory. CC/ECC.6.5.4.4

Required Parties

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Parties shall confirm that potential failure scenarios have been envisaged and that contingency plans for service restoration have been prepared, tested and are in place. Contingency plans shall guarantee the impacted parties' ability to fulfil, as a minimum, its service obligations in the event of a Power Network failure.

Requirement

Stakeholders shall confirm the resilience of the voice systems by its ability to withstand a minimum of 72 hours under a Restoration event. Note: demonstration should be achieved by complying with Restoration Auxiliary Power Source Tests.

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

List of Voice systems (internal/external) installed.

Minimum service obligations per system installed.

Confirmation of resilience from the relevant parties

Statement of compliance.

Disagreements

SPEN – Not in agreement to annual submission

Legal Text References

OC5.7.4.3(i), CC/ECC.6.5.4.4

Alternatives

None



5.1 Control Systems Resilience Demonstration – Client Application Power Resilience

Proposal

Note - Main Control Centre and Disaster Recovery SCADA (DRS) Centres

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes – G&D, CC/ECC7.10 and Test Plan.

Description

Relevant parties shall confirm the Control System's ability to withstand a minimum of 72 hours under a Restoration event. *Note: demonstration should be achieved by complying with Restoration Auxiliary Power Source Tests.*

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last check(s)

Statement of compliance around Power Resilience.

Disagreements

None

Legal Text References

G&D, CC/ECC7.10, OC5.7.4.3(i)

Alternatives

None

5.2 Control Systems Resilience Demonstration – Server Power Resilience

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Power supply requirements of the Control System environment to withstand a sustained Restoration event.

Requirement

At least annually, stakeholders shall demonstrate the Control System's ability to withstand a minimum mains independence event of 72 hours under a Restoration event. Note: demonstration should be achieved by complying against Restoration Auxiliary Power Source Tests.

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last check(s)

Statement of compliance around Power Resilience.

Disagreements

None

Legal Text References

G&D, CC/ECC7.10, OC5.7.4.3(i)

Alternatives

None



5.3 Control Systems Resilience Demonstration – Server Architecture & Connectivity

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Demonstration can be achieved via compliance with Network & Information Systems (NIS) regulations, provided the stakeholder (1) didn't have a 'significant impact' on the continuity of the service over the assessment period, (2) provides the relevant compliance status report (red/amber/green) against the individual elements of the NIS Regulations and (3) shares the planned roadmap for achieving compliance.

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

List of key resources required to ensure Control System's Operability.

Test results demonstrating ability to lock down Control System to external interference.

Test results demonstrating ability to operate Control System with no external connections (standalone).

Disagreements

None

Legal Text References

G&D, CC/ECC7.10, OC5.7.4.3(i)

Alternatives

None

5.4 Control Systems Resilience Demonstration – Alarm Event Handling

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Assess the performance of the Control System when handling a Restoration event.

Requirement

Stakeholders shall demonstrate the Control System's ability to handle challenging events like a blackout (stress tests).

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last Test(s)

Event(s) considered, test(s) conducted over the review period, test results.

Statement of compliance on the Control System's ability to handle challenging events.

Disagreements

None

Legal Text References

STCP.02-1 for Transmission Licensees

OC5.7.4.3(ii)

Alternatives

None

5.5 Control Systems Resilience Demonstration – Diagram & Topology

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Assess Control System's performance to an upstream de-energised Network and actions required to demonstrate the Network topology as de-energised.

Requirement

At least annually, stakeholders shall demonstrate the capability of the Control System to handle customer incidents when the entire Network is shown in a de-energised state.

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last Test(s)

Test results demonstrating the system's ability to handle customer incidents when the entire Network is shown in a de-energised state.

Risk assessment and mitigation actions taken over the review period to address dependencies and criticality of other supporting IT systems on the core Control System.

Statement of compliance.

Disagreements

SPEN & NPG – Confirmed they would not take this activity back to the experts within their organisations to confirm if this assurance activity is appropriate.

Legal Text References

OC5.7.4.3

Alternatives

None

5.6 Cyber-Security Tests

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Codes.

Description

Demonstration can be achieved via compliance with Network & Information Systems (NIS) regulations, provided the stakeholder (1) didn't have a 'significant impact' on the continuity of the service over the assessment period, (2) provides the relevant compliance status report (red/amber/green) against the individual elements of the NIS Regulations and (3) shares the planned roadmap for achieving compliance.

Requirement

At least annually, stakeholders shall demonstrate the cyber-security of their Voice and Control Systems.

Measure

Self-evaluation of whether Cyber resilient test/audit to be carried out in line with the NIS regulations

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last Test(s)

Test results demonstrating the Voice and Control System's ability to defend themselves against computer failure including cyber-attacks.

Risk assessment and mitigation actions taken over the review period to address cyber-security vulnerabilities.

Statement of compliance.

Disagreements

None

Legal Text References

CC/ECC6.5, CC/ECC7.10.5, CC/ECC7.11, OC5.7.4.3(i)

Alternatives

None

5.7 Telephony Services

Proposal

Classification

Mandatory.

Applicability

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Implementation

Grid Code, Distribution Code, STC Codes and Contracts

Description

To ensure that communication infrastructure and applications are maintained to a high standard.

An end-to-end confirmation of the voice route should be confirmed by a live test at least once per year.

Requirement

Reporting of Service Level Agreement compliance.

Report of infrastructure and service provision.

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last Test(s)

Annual statistics on compliance.

Contribution to Preparedness Level

Statement of compliance last issued

Disagreements

None

Legal Text References

CC/ECC6.5.5, DOC 5.7.3.7, OC5.7.4, ECC6.5.4.4

Alternatives

None

6 CUSC parties

6.1 Resilience to Partial or Total Shutdown of CUSC parties

Proposal

Classification

Mandatory. (CC/ECC.7.11)

Required Parties

For ESO, CUSC Participants

Description

ESRS will need the Users to be able to operate once auxiliary supplies are returned from the system. CUSC Parties, including existing parties, will be required to ensure that their plant and apparatus has a resilience period of up to 72 hours such that when supplies are restored their plant and apparatus shall be returned to service in an equivalent time scale that would be expected from a cold plant

Their plant and apparatus should be such that their plant can be shut down in a safe manner in a Partial or Total Shutdown and remain in a safe state without external supplies for up to 72 hours so there is some assurance that the plant will not have to be subject to major component replacement thereafter.

Requirement

Annual reporting confirming the current plant is in good condition and has the required capability, evidenced.

Data submissions to inform ESO on the designed resilience level, estimated durations to start and synchronise with a Power Island via OC2 with notifications of any change to capability.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

Date(s) of last check(s)

Evidence of designed resilience level

Disagreements

SSE Gen - Disagree with the retrospective 72hrs resilience requirement especially for generators that were designed and connected to the grid a long time ago. Also mentioned that it might be practically impossible for some generators to implement this requirement.

ESO/Proposer – Plants that cannot be modified retrospectively to meet the requirements can apply for a derogation from Ofgem.

Legal Text References

CC/ECC.7.10, CC/ECC7.11

Alternatives

None

7 Planning and Training

7.1 Restoration Procedure Review

Proposal

Classification

Mandatory.

Required Parties

ESO, Restoration Service Providers, CUSC Participants, Offshore TOs, Onshore TOs, CATO, DNOs, IDNOs

Description

Internal organisational review of all relevant restoration related procedures to ensure these are up to date. These internal procedures are separate from the LJRP and DRZPs themselves.

For example: for ESO - restoration procedure; for TO and DNO - loss of external grid supplies; for Generators - loss of network procedures.

Requirement

Procedure review

Measure

Self-evaluation

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last Review

Statement of compliance.

Disagreements

None

Legal Text References

OC5.7.4

Alternatives

None

7.2 LJRP & DRZP Reviews

Proposal

Classification

Mandatory. (OC9.4.7)

Required Parties

ESO, DNO, Anchor and Top-up Plant Owners, Offshore TOs, Onshore TOs, CATO.

ESO leads the review of LJRP. DNO leads the review of DRZPs.

Implementation

Codes (between ESO, TO and Anchor and Top-up Plant Owners) and contract (between ESO, DNO and Anchor and Top-up Plant Owners).

Description

Review to increase the familiarity around the relevant plan and also an opportunity to agree any areas for development.

Review and re-issue on a need basis following a change that has a material impact.

Requirement

Restoration plan(s) reviewed, agreed and ready to re-issue at least every three years and/or when applicable.

Test/Reporting Cycle

At least once every three years and/or when applicable.

Annual reporting to the Monitoring Body

Date(s) of last Review

Statement of compliance.

Disagreements

None

Legal Text References

OC9.4, OC5.7.4, OC9.4.7.5.3, OC9.4.7.5.1

Alternatives

None

7.3 Awareness Training for Restoration Service Providers and CUSC parties

Proposal

Classification

Mandatory.

Required Parties

ESO, Transmission Owners (Offshore TO's, Onshore TO's, CATOs), Distribution Network Operators (DNO & IDNO), Restoration Service Providers and CUSC Parties.

Description

Requirement for parties captured under the EU code definition of "Restoration Service Providers" and CUSC Parties, to attend annual awareness training every 3 years on Restoration and Resilience processes and procedures.

ESO to provide an annual awareness presentation communicating key facts of the restoration process to industry parties.

Requirement

To report key statistics around industry training, number of staff, percentage complete, high-level description of training delivered.

Attendance Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last Training(s)

Statement of compliance.

Disagreements

None

Legal Text References

OC5.7.4, DOC 5.7.5

Alternatives

None



7.4 Cross Industry Training

Proposal

Classification

Mandatory (OC5.7)

Required Parties

ESO, Transmission Owners (Offshore TO's, Onshore TO's, CATOs), Distribution Network Operators (DNO & IDNO), Anchor and Top-up plants, CUSC Parties.

Description

The capability for cross industry desktop exercises to include all relevant parties, extending to LJRPs, DRZPs and CUSC parties.

Requirement

Opportunity for key members of staff from across the industry to attend desktop exercises with ESO. This will provide learning for the restoration process and create subject matter experts that can cascade learning to the industry. In addition, it will allow for training in the sharing of available generation across regions and review this process.

Test/Reporting Cycle

At least once every three years

Annual reporting to the Monitoring Body

Date(s) of last Exercise(s)

Statement of compliance including parties involved.

Disagreements

None

Legal Text References

OC5.7.4, OC9.4.7.5.3

Alternatives

None



8 Equipment & Plant Assurance Activities

8.1 Auxiliary Power Sources - REFERENCE TEST ONLY

Proposal

Classification

Mandatory

Required Parties

ESO, Restoration Service Providers, TOs/OFTOs/CATOs, DNOs

Description

Assess the performance and capability of backup auxiliary power sources.

Requirement:

At least annually, demonstrate the Auxiliary Power Source's capability to operate minimum of 72 hours post-power outage event.

Specific requirements per technology:

- Diesel Generator: as a minimum, the capability assessment shall include a fuel quality test and a load test run at rated output for a minimum of two hours.
- Uninterruptable Power Source: as a minimum, the annual capability assessment shall include a load test (Steady-state and transient load).
- Batteries: as a minimum, the annual capability assessment shall include a capacity test (discharge test) and an Impedance test. *Note: the assessment will take cognisance of the fact that once back up supplies are restored, the batteries duty may be complete and that therefore the batteries duty is likely to cover the period between loss of grid supplies and back up supplies, unless the batteries are the source of site back up supply, being established.*

Measure

Self-evaluation.

Test/Reporting Cycle

At least once every year

Annual reporting to the Monitoring Body

List of Auxiliary Power Sources installed/maintained.

Date(s) of last test(s).

Statement of compliance.