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ENTSO-e
Operational Security Network Code

OS Code Objectives

Ensure safe, secure and efficient system operation

Common security principles & minimum standards

Co-ordination between TSOs

Enable integration of RES & innovative technologies

Update for JESG meeting 20th Feb 2013

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OS NC Timeline and status update

Activity	Date
ACER publishes Framework Guidelines (FG)	December 2011
ENTSO-E 1st & 2nd Public Workshops	19 March and 2nd July
Formal Consultation Starts	3 September
ENSTO-E Public Workshop (during consultation)	18-19 September
JESG walk through workshop	3-4 October
Formal Consultation Ends	3 November
ENTSO-E Public Workshop (NC after consultation)	20 December
Final Code submitted to ACER:	**28th Feb 2013**
ACER Code Review completes	**May 2013**
Network Code submitted to Comitology	**June 2013**
Network Code applies from:	**2014**

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Summary of Code Content

Seeks to establish common security principles, harmonising of system operation and coordination of operational activities. Applicable to TSO, DSOs, generators and consumption.

Chapters topics cover:

- System states, Freq control, Voltage control
- Fault level mgt, Congestion mgt, N-1 analysis
- Protection (SPS), Stability mgt, Testing and monitoring
- Data (structural, forecast, measurements)
- Training and certification

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Update

- Large number of iterations in the last few weeks
  - Addressing December 2012 Stakeholder workshop feedback
  - Addressing ACER comments received in January
  - Legal clauses discussions between ENTSO-E and ACER
  - Definitions and consistency between Codes
- Supporting paper expansion and finalisation
  - ACER requests for more detail on baseline, change and justifications. Plus mapping to FWGL requirements
- OS NC now with ENTSO-e Assembly for TSO voting
- Issue to ACER on 28th Feb 2013
- Stakeholder Hot Spots? a view on draft OS NC, see next 2 slides
  - caveat that OS NC could yet be revised for specific requests from Entso-e Assembly between now and 28th Feb before approval to release to ACER

Potential hot spot areas and changes since OS NC December Stakeholder workshop (1)

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- Significant re-write of Articles 1-5 (Scope, definitions, regulatory aspects, regulatory approvals, recovery of costs)
- Removed references in articles to 3(3), NRA approvals are now a specific list 4(2):
  - Modifications to an existing generator
  - Definition for the Low Freq Disconnection scheme
  - Methodology for defining minimum inertia
  - Methodology for recovering costs of testing compliance
- Frequency criteria moved to LFC NC and more cross references to LFC
- Type A is not a Significant Grid User (SGU) under the OS NC [OS NC 1(3)]
- SGU is:
  - Directly connected demand site or generation facility
  - Type B,C, D generation
  - Demand sites undertaking DSM, or Re-despatching Aggregators

Potential hot spot areas and changes since OS NC December Stakeholder workshop (2)

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- Key area is provision of data to TSO (or DSO) from embedded generation
  - Type A – no new obligations over that required by RfG, volume & location data from DSOs
  - Type B and C – structural data (static modeling data and installation information) [OS NC 24(1)]
    - Requirement to consult NRA/DSO/SGUs on the detailed content
  - Type B and C - forecast availability and scheduled output (Type B if >1MW) (*this for GB Medium pwr stns is a by exception request in GB today under the GB G.Code*)
  - Type B (and C) – metered output if >1MW (*can be aggregated by DSO with TSO agreement*)
  - Existing generators not subject to RfG or not derogated shall provide details of their freq & V capability in comparison to the RfG [OS NC 9(4)]
- Demand sites data provision
  - Direct connected – structural data, forecast consumption, DSM planned/actual applied
  - DSM Aggregator – structural data, forecast DSM by area, estimated actual DSM [OS NC 29(2)]
- TSOs to define criteria for re-sync of embedded gen without first needing DSO / TSO approval [OS NC 9(7)]
- TSOs shall define reactive or power factor ranges / set points to be maintained by DSOs & directly connected sites in accordance with DCC [OS 10(16)]