1st ENTSO-E workshop for DSO TEG on Network Code on Emergency and Restoration

Date: 9 July 2014
Time: 09h30 – 12h30
Place: ENTSO-E premises, Brussels

MINUTES

Participants:

Chairman	Laurent Lamy	ENTSO-E
	Marc Malbrancke	INTER-REGIES
	Jakub Fijalkowski	E-Control
	Sébastien Grenard	ERDF
	Maxime BUQUET	GE
	Jorge Tello Guijarro	UNIÓN FENOSA DISTRIBUCIÓN
	Benoît de Neuville	Sibelga
	Gerald Heise	Enercity
	Paul de Wit	Alliander
	Graeme Vincent	Scottish Power
	Jacobo ALVAREZ	Eurelectric
	Konrad VON-KEYSERLINGK	European Commission
	Florien Chapalain	EU Turbines
	Jens Jacobs	ENTSO-E
	Tudal Loxq	ENTSO-E
	Fabian Heus	ENTSO-E
	Lukas Guertler	ENTSO-E
	Jaka Žvab	ENTSO-E
	Emmanouil Styvaktakis	ENTSO-E

Programme:

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No	Subject	Time	Lead
1.	**Welcome & NC ER status**	9:30-9:45	**Laurent Lamy** *ENTSO-E Convenor of NC ER Drafting Team*
2.	**Discussion on the topics from questionnaire sent by ENTSO-E**	30 min	**Laurent Lamy** *ENTSO-E Convenor of NC ER Drafting Team*
3.	**System defence plan principles – initial thoughts** Q & A	60 min.	**Tudal Loxq**, NC ER Drafting Team member DSOs representatives
4.	**Coffee break**	10 min.	
5.	**System Restoration plan design principles - initial thoughts** Q & A	30 min.	**Fabien Heus**, NC ER Drafting Team member DSOs representatives
6.	**Information exchange, communication tools and protocols** Q & A	20 min.	**Jens Jacobs**, NC ER Drafting Team member DSOs representatives
7.	**Conclusion**	15 min.	**Laurent Lamy** *ENTSO-E Convenor of NC ER Drafting Team*
8.	**End of Workshop and lunch**	12:30	

1.   Welcome

Laurent Lamy welcomed the participants, explaining that the aim of the meeting is to exchange views with DSO representatives on topics from the network code on Emergency and Restoration.

Jacobo Alvarez (Eurelectric) presented the four Brussels based Associations (GEODE, CEDEC, Eurelectric, EDSO). The focus of the presentation was on general DSO views on the future NC ER and proposals for ENTSO-E for a smooth drafting process.

2.   Discussion on the topics from questionnaire sent by ENTSO-E

Smart grids

ENTSO-E is considering how to cover the issue of smart grids in the NC ER. Therefore we would like to get the view of DSOs on this topic, do you consider this should be covered in the NC ER on European level as regulation or should it be left to each member state to deal with this issue in their national grid code?

Current ENTSO-E approach is not to make specific provision regarding smart grids in the code, but we also do not intend to block smart grids with any provision in NC ER.

DSOs feedback:

CEDEC assumes that smart grid term is too vague in such a context and the NC ER should not separate the elements/technologies. There should be just general functions in the NC ER requirement without imposing any specific technology. DSOs see no need to have specific requirements in the grid, important is that the code doesn't forbid any new technologies. In case needed in the later stage, the network code can be amended in order to include any needed provisions on new technologies.

When speaking of Classic telecommunications means and a need to be very reliable, DSOs propose to consider also smart solutions that could help in the case of communication. NC ER to avoid duplication of communications links, due to the duplications of cost.

Regarding question on islanded operation, DSOs never allow islands to take place, they trip the lines in order to avoid the islanded operation.

Now micro grids are more like private networks and are only experiment so far in some EU member states. Also not economically efficient at the moment, therefore bottom up solution should not be preferred solution for the restoration issues from DSOs perspective.

LFDD - Dispersed generation issue

LFDD scheme shall be designed according to principles set forth in NC ER, using capabilities required in NC DC. Of course, dispersed generation is a major issue when implementing the LFDD scheme, because it influences the real "Demand" that can be disconnected. DT ER approach is to define a functional target in the code without limiting the technical means to reach this target (kind of relays, distribution of relays...).

In addition, the NC DC foresees a yearly DSO notification of LFDD settings.

DSOs feedback:

CEDEC refers to NC ER A12(2)a and proposes that the details should be decided on a national level, as all the grids are not built the same way and specifics mainly rely on historical design of the grid, which could be different across Europe.

Solutions to depend on a time, size, penetration threshold, if the amount is not sufficient DSOs to revise their LFDD plan. Consideration of different LFDD setting according to the season settings (summer, winter).

If there are many small DSOs the provision should also include a coordination between DSOs.

Compliance testing

Defence and Restoration Plans are prepared on the basis of the best TSO/DSO knowledge, supported by technical analyses and experience. Nevertheless, Defence and Restoration Plans normally are not verifiable in practice during normal operation of the system. There is a chance that some plans may never be realised and some equipment may never be triggered. For this reason it is difficult to ensure that prepared Plans are reliable without on-site tests. Some of the equipment tests can be done during maintenance (i.e. relays, protections), but most functions or capabilities need special dedicated approaches (i.e. Black Start Capability).

Testing of Significant Grid Users (Power Generating Modules + Demand Facility providing DSR + HVDC System) capabilities that are used by Defence and Restoration Plans is already required by Articles 34 and 35 [NC RfG], Article 38 [NC DC] and Article 66 [NC HVDC].

As a synthesis of these articles:

The Relevant Network Operator shall have the right to request that the [SGU] carries out compliance tests and simulations not only during the operational notification procedures according to Chapter X but repeatedly throughout the lifetime of the [SGU]. Such a request may be made in particular according to a plan or general scheme for repeated tests and simulations or after any failure, modification or replacement of any equipment with possible impact on the compliance to the requirements under the relevant Network Code.

To ensure reliability of these capabilities, NC ER defines a maximum periodicity to perform these tests.

Current proposal of capacities to be tested according to the type of facilities:

- Black Start [every 3 years]
- Houseload operation [types C and D, after any modernisation or after two unsuccessful consecutive tripping in real operation
- LFSM- O [every 6 years for type B, every 5 years for type C, every 3 years for type D]
- LFSM- U [every 5 years for type C, every 3 years for type D]
- LFDD / LVDD relays behaviour (capability for operation from a nominal AC supply input) [every 5 years]
- Demand Side Response: demand modification [every year]

DSOs feedback:

DSOs are pleased to hear that before putting any requirements in the NC ER draft they are being consulted to express their views. Moreover this does not need to be specified in the code, existing LFDD relay are certified for certain time. Too short periodicity of testing can be rather costly. If testing is required then TSO and DSO should define the periodicity and it should be under NRA approval.

All such requirements in all the codes (connection and operational) for compliance testing should be harmonised in sense of procedures, same concern was also expressed for the DCC.

DSOs would rather see this request for compliance testing to be defined on national level. ACER disagrees that this should be defined on the national level and points out this needs to be harmonised on EU level.

DSOs wonder whether any analysis on the proposed periodicity of tastings of facilities has been already done by ENTSO-E. Current proposals in the code are based on practices across Europe, but for DSR there is no current practice.

3.   System defence plan principles – initial thoughts

ENTSO-E presents general objectives of the chapter with further explanation of the main items.

System Defence Plan consists of measures to be undertaken to prevent the propagation or deterioration of an incident in the Transmission System, in order to avoid a widespread disturbance and Blackout State:

- Technical measures: System Protection Schemes such as Automatic Low Frequency Demand Disconnection Scheme;
- Organisational measures: procedures to be followed in different situations.

System Defence Plan requires coordination between:
- TSOs and
- TSO and DSOs and SGUs in its Responsibility Area.

DSOs remarks on the code:

It is hard to read the code without knowing where all the definitions can be found.

To ease the reading ENTSO-E has established an online glossary called EMR.

https://emr.entsoe.eu/glossary/bin/view/GlossaryCode/GlossaryIndex

In Article 4(3) wording "best endeavours" is used, which should be avoided according to the EC guidance.

Article 6(3) - Seems like NC ER predicts to use the capabilities of type A. ENTSO-E emphasizes that when TSOs design LFDD plan they know that the loss of these type A generation needs to be compensated. TSOs should take into account all the capabilities from other codes. ACER explains if something is required, then the codes should use these capabilities otherwise it is not economically efficient.

Article 6(4) - last sentence is repetition from RfG and DCC, to be checked/deleted.

Article 6(5)(a)- there is no list of prerequisites in this provision, DSOs ask to put more details in the code or to amend the definition. ENTSO-E explains that in next steps the elements will be put in code in case needed.

Article 6(7) – meaning of wording "after major changes" is not clear. To elaborate further which are major changes.

Article 7 – there is no derogation set in this article.

Article 7(2) – article to include wording "in coordination with DSOs". DSOs will send a written proposal for wording in this provision.

Article 8(2)(c)- not clear enough what is the objective of this provision. ENTSO-E has no specific procedure in mind at the moment. Intention is to let the door opened in order to have a possibility to include any procedure in case needed, to be under NRA approval.

Article 11 - when making reference, please state also the paragraph in LFCR not only the article.

Article 11(3) – same remark as A 6(3) regarding type A generation.

Article 12( ) – Please be more precise which pumps are meant in this article. ENTSO-E will amend the wording with "Energy Storage".

Article 12(2) – is your intention really to address all DSOs, also the ones that are not connected to TSO grid or this are only relevant DSOs for DSR? If this is the case then you need to specify/define which are relevant for DSR.

Article 12 (b)- wording "geographically evenly spread" to be more precise.

Article 13(2) – not clear what is to be the content of this provision. ENTSO-E plans to write down a provision regarding on-load tap changer scheme.

Article 13 and 14 are one of the main concerns of DSOs, therefore DSOs would appreciate to see the context of provisions before the next workshop. ENTSO-E plans to send the proposal in the advance of the next release and DSOs will be asked for feedback.

4. System Restoration plan design principles - initial thoughts

The objective of Restoration plan is to bring back the system from Emergency or Blackout State to Normal State, as soon and as efficient as possible. ENTSO-E presents general objectives of the chapter with further explanation of the provisions items include in the chapter.

DSOs remarks on the code:

Article 17 –DSOs wonder if the intention is to use type A generation for restoration purposes. References to be more specific, referring to exact articles and paragraphs.

Article 17(6) – not clear enough what is meant with bottom up and top down approach, to be explained in the code better or to be further explained in the supporting document.

Article 18 – no derogation mechanism is foreseen, DSOs think this might be useful.

Article 18 – to put the wording "in coordination with DSOs" in the provisions.

Article 22(1)(b) – not clear enough what is meant by this provision.

Article 22(3) – term "frequency leader" to be as a definition, also to further explain in the supporting.

Article 24 – DSOs stress that this is very important topic for DSOs.

5. Information exchange, communication tools and protocols

DSOs remarks on the code:

General remarks:

- As information exchange is already largely covered in NC OS, there should be no duplications of communication channels introduced in NC ER code.
- All requirements put on SGUs (DSOs and PGMs and demand with DSR) deviating from present ones to be justified by CBAs, if not already covered in the NC RfG or NC DCC.

Article 26

Not very clear provision, wording "redundant" should not be mentioned for channel A. Provision to be written in a way to have a link between channel A and B.

Not clear meaning of "blackout proofed" term, definition to be introduced or wording improved.

To consider having common minimum backup power supply figures defined on Synchronous Area level. Would be nice to see some CBA when defining these figures regarding minimum backup power supply.

Please put reference to NC OS where possible.

The term "substation" is not yet defined in the code.

Article 27

The current wording "The most important" substations is not clear enough, DSOs are asking ENTSO-E to define some criteria for the relevant/important substations.

COMPLIANCE AND REVIEW chapter

<u>DSOs remarks on the code:</u>

Article 32 - Compliance testing of DSO activities

DSOs are asking which items are intended to be developed in this article. The intention is to put in the code the testing of LFDD relays. DSOs express a wish to receive the proposal of this provisions rather early in order to give feedback to ENTSO-E.

6. Conclusion - Summary of the main issues discussed during the workshop

DSOs will send their remarks on paper to ENTSO-E in order to take them into consideration for the next code release. ENTSO-E is looking forward to receive DSOs remarks.

Presentations and the code related documents can be found on ENTSO-E NC ER website.

https://www.entsoe.eu/major-projects/network-code-development/emergency-and-restoration/Pages/default.aspx