UCTE comments to
ERGEG Draft Guidelines of Good Practice for Operational Security

Reference	Content	Comment
	Rules and Responsibilities	
4.1.1.	The regulatory authorities shall enable, enhance and enforce a secure operation of the electricity grids as well as the cooperation and coordination among the TSOs, DSOs and other stakeholders and market participants through adequate regulatory framework.	More precisely.
4.1.2.	The regulators have to ensure that the TSOs have full power to give dispatching orders to market participants to ensure secure system operation.	Only the regulator/legislator can guarantee that fact.
4.2.1.	(1) ~~coordinate and~~ follow up the actions of market participants and customers in order to achieve adequate operational security and efficient utilisation of the power system;	The TSO haven't the rights to coordinate the market participants.
	~~(2) prepare and distribute information about power system related matters that have relevance to the electricity market, as well as matters of significance to the general security of supply;~~	The GPP should define requirements which are necessary for a secure system operation. This requirement has nothing to do with a secure system operation. In our opinion this requirement would regulate the issues of the electricity market.
	(4) inform the regulators about developments in the power system. ~~and the short term balance between supply and demand;~~	It is TSOs' operational task to keep the frequency at its nominal value resulting in a short term balance.
	(5) coordinate operation with DSOs, other TSOs, generators and large customers (who are connected to a transmission level) ~~in case of emergencies.~~	This shall be done not only in emergencies but also in normal conditions (to avoid emergencies)
	(6) have the responsibility to implement appropriate defence and restoration plans and procedures ~~load shedding systems~~ in coordination with other TSOs and;	Load shedding is only one of the elements of the "Defence Plan". TSOs are also responsible for the restoration plans, therefore this point should be formulated more general "defence and restoration plans

		and procedures".
	(7) ~~have full powers to~~ give dispatching orders to market participants to ensure system operation ~~in emergency situations~~.	Only the legislator can enforce full power to TSO, see 4.1.2 this shall refer not to emergencies but also to normal conditions (to avoid emergencies)
4.3.	This section refers only to those DSOs which are directly physically connected to the transmission grid, but not to those which are subsequently connected (e.g. as smaller DSOs) to other DSOs and have no direct connection to transmission grid.	All DSOs directly connected or subsequently connected must support operational security by their means (such as underfrequency load shedding). We propose to add point 4.3.4.
4.3.4.	The DSOs which have a direct connection to the TSO grid must ensure that in case they have subsequently connected DSOs the instructions from the TSO are distributed to them.	
4.3.3.	The DSOs shall participate in emergency planning, restoration procedures and exercises planned and carried out by TSOs. In particular, the DSOs shall contribute to operational security by installing and maintaining load shedding systems, designed in coordination with TSOs. The DSO's shall realize the dispatching orders given by the TSO's to ensure system operation in emergency situations	This addition is necessary for a secure grid operation.
4.3.5.	(1) accept and fulfil the grid connection agreement (2) ensure the requested data supply to TSO	These requirements are necessary for a secure grid operation. Without them we have no possibilities to ensure a secure grid operation. Please add these requirements and make sure that TSOs will legally be entitled to force all market participants to comply with them.
4.4.1.	(1) accept and fulfil the grid connection agreement (2) ensure the requested data supply to TSO	These requirements are necessary for a secure grid operation. Without them we have no possibilities to ensure a secure grid operation. Please add these requirements and make sure that TSOs will legally be entitled to force all market participants to comply with them.
4.5	Consumption units connected to high transmission grid	There is no indication of the size of the consumption.

		Some criteria should be added in order to limit the applicability to relevant ones.
4.6.	Trader / Balance-responsible-parties	A further important group of market participants is missing (the Trader/Balance-responsible-parties). Please add this group.
4.6.1.	(1) accept and fulfil the balance-group- agreement (2) ensure the requested data supply to TSO	These requirements are necessary for a secure grid operation. Please add these requirements.
Rules for Synchronous PSO		
5.2.2.	Within a synchronous area, organization of the TSOs (e.g. ENTSO) shall jointly define a drafting procedure, describing the steps from its initiation to rules implementation.	More precise.
5.2.3.	The description of the rules shall leave no room for interpretation. In this respect, compliance criteria shall identify precisely what the TSOs, DSOs, generators and balance-responsible parties have to do or which requirements they should meet to comply with these rules.	TSO aren't the only market participants having the impact on reliability.
5.2.4.	Synchronous area rules shall be published in an organised manner. Even if these rules apply to TSOs, they should be understandable by all affected ~~interested~~ parties.	Only for the affected parties the rules must understandable.
5.2.6.	When such an interface involves third countries, EU TSOs shall try to reach an agreement with the TSOs from these countries providing for a high level of operational security. ~~These agreements shall be made public as far as they concern operational security.~~	These agreements might contain sensible information concerning the security of the grid operation. With respect to protection of critical infrastructure it is not helpful to publish such sensible information.
5.3.2.	The compliance monitoring process shall rely, at least partly, on on-site audits. The audit shall be executed by experts from the TSOs with participation of independent auditors e.g. representatives from the Commission and regulatory authorities.	"Compliance monitoring audits" should not be executed entirely by representatives of the EC and regulators, but by TSO organization (the future ENTSO-E) with participation of representatives of EC and regulatory authorities. Such solution will be sufficient for providing transparency of the compliance monitoring process and simplicity and will consider the fact that

		e.g. some UCTE members are not members of the European Union.
5.3.5.	Any TSO which can no longer comply with an operational rule, shall immediately inform any possibly impacted TSOs and the compliance monitoring authority. Remedial measures shall be implemented without any delay to preserve the secure system operation. These measures shall be agreed with the other impacted TSOs. As soon as possible, the affected TSO shall establish a mitigation plan that will allow the TSO to comply with the violated rule(s). This plan shall be agreed ~~by other impacted TSOs~~ and must be formally agreed upon by the compliance monitoring organisation which sets the rules for mitigation plans.	It is important that the TSO organization which monitors the compliance is informed of the compliance problem and of the mitigation plan. This is to constantly have a good overview of the compliance situation in the synchronous system. Furthermore the compliance monitoring organization must agree on the formal correctness of the mitigation plan.
Technical Framework for OS		
6.1.	Security criteria defined at the synchronous area level should not be "the lowest common denominator". Each TSO should in a verifiable manner constantly work on implementing the best practices of TSOs whose security criteria are higher.	Solution proposed in Draft GGP would result in tendency to lower security of operation of interconnected power system. While "best practice" may be an inappropriately high standard, the "lowest common denominator" approach might be not sufficient to ensure an adequate level of system reliability. Such attitude to the NERC reliability standards was applied in USA.
6.1.1.1	Each TSO shall have an obligation for the transparent and specific	In some countries this is actually the task of the

	definition and description of the security criteria applied within its own control area that leaves no room for interpretation.	regulator who publishes the grid code.
6.1.1.2.	TSOs at the regional level and at the level of the whole synchronous areas shall define and implement security criteria and load-flow based contingency analysis (including dynamic and probabilistic ones in cases when a specific risk is deemed realistic) beyond the own control area border, taking into account the following aspects:	Dynamic and especially probabilistic analyses are complex and not always necessary for a risk free network operation. Besides, there is a lack of consensus among experts on the relevance of specific probabilistic parameters and on how they should be interpreted. Nevertheless, these analyses are part of security criteria and therefore needed. However, the load-flow calculations are the main instrument of the security analyses, whereas the use of other considerations is rather restricted. This should be stressed in the text in an appropriate manner.
6.1.1.2	(1) all interconnection tie lines between control areas; (2) cross-effect of contingencies of critical network elements in one control area on the situation in the adjacent control area; (3) Cross-effects of relevant ~~any~~ external impacts (e.g. weather, social events, etc.) own ~~one~~ contingencies/security criteria between the control areas.	More clear.
6.1.1.4.	Beyond the static approach, each TSO shall assume the obligation to define the dynamic scenarios and possible adaptations to the contingency lists in advance.	It is not clear what is meant by “dynamic scenarios”.
6.1.1.7.	The implementation of the defined security criteria shall be completed, at the very least, through the regular ~~steady state~~ security assessment, run on a periodical basis within the (n-1 or n-X) contingency analysis in each control area.	It is not clear what is meant by “steady state” in this context.
6.1.1.9.	The actual outcome of the contingency analysis within the control areas concerning cross-border effects of contingencies shall be exchanged between the affected TSOs.	To exchange every result of the n-1 security calculation is not necessary. Only an exchange is necessary if there is a cross-border effect on contingencies.
6.1.2.4.	At an operational planning stage, each TSO does everything in its	TSOs can’t ensure enough available power plants.

	power ~~shall ensure~~ that sufficient levels of auxiliary services (e.g. active and reactive power reserves, balancing service) will be available in real time to meet security criteria and the requirements set at synchronous area level. Cross-border exchange of active power reserves shall be agreed between TSOs.	
6.1.2.5.	~~Reactive power flows on cross-border lines and voltage at boundary substations shall be jointly studied and agreed at the operational planning stage by the TSOs involved. In principle, reactive power exchanges shall be kept at minimum or zero.~~	Reactive power exchanges are a normal physical phenomenon that can be only hardly controlled. The right approach is to fix the voltage level at each side and to control them.
6.2.1.	Interconnection capacities may not be limited in order to solve congestions inside national grids without taking into account cost-effectiveness and the minimisation of the impact on the Internal Electricity Market.	The development of load flow based capacity calculation and allocation methods is accompanied by the fact that all grid devices are taken into account regardless whether it is an interconnection or not. In this context we embrace that this rule softens the requirement from the Regulation (EC) No 1228/2003.
6.2.2.2.	In transmission capacity calculations, the TSOs shall apply the security criteria defined in 6~~5~~.1.	It seems that the reference is incorrect.
6.2.2.6.	TSOs shall perform a ~~calculation~~ determination of both long-term (including the following year and the following months) and short-term transmission capacities (in particular for each hour of the following day and preferably also for the following week).	An exact calculation is not possible, especially in long term horizons. Due to growing uncertainties transmission capacity determination shall be done day ahead and intra day only - assuming worst case scenario in the longer time horizons might result in zero transmission capacity.
6.2.2.7.	For long term capacity calculation, transmission capacity shall be based on the definition of forecasted worst-case scenarios. The ~~calculation~~ determination methodology shall include the determination of base case(s) taking into account different generation (including different hydro and wind regimes), load and network topology scenarios and, if necessary, assumptions on loop flows generated by countries external to the region.	
6.2.2.8.	For short term capacity, the ~~calculation~~ determination of the technical transmission capacity shall include the determination of a base case indicating the level(s) of pre-existing flows taken as the starting point for the ~~calculation~~ determination process.	

6.2.2.9.	Those principles shall be approved by regulatory authorities as part of the general scheme (paragraph 5.2.2.4).	This reference does not exist.
6.2.2.10.	The security criteria applied for transmission capacity calculation shall be ~~clearly~~ defined and approved by regulatory authorities as part of the general scheme (paragraph 5.2.2.4). Their ~~coordinated and coherent~~ implementation throughout the affected synchronous areas and the integrated electricity market shall be guaranteed by the TSOs through the compliance monitoring process and regularly evaluated by regulatory authorities.	1) This reference does not exist. 2) Such a standardisation is difficult because the security levels and the frameworks are different.
6.2.2.12.	The principles for calculating the transmission capacity available to the market shall be agreed by the affected TSOs of the interconnected systems and principles for agreement must be published.	In the near future we will not calculate the NTC values any more but we will use the flow based capacity allocation method. Thus we must agree on the principles for calculation.
6.2.3.1.	~~(2) The relevant base cases and hypothesis, with assumptions made for generation, load, DC interconnections and loop flows, including the flows of electricity through each interconnection, bottleneck or critical branch pre-existing to the allocation process, for the different time frames;~~	With this requirement we would have to publish sensible data of our critical infrastructure which could be used by terrorists.
6.2.3.1	(3) Maximum physical capacity and adopted reliability margin, duly justified, per all interconnection**s** between adjacent TSOs, in specific cases also per bottleneck or critical branch, for the different time frames.	The proposed text is inaccurate when speaking about interconnections. It should be clearly stated that this term does not mean single tie lines, but the totality of tie lines connecting the neighboring TSOs. This is because a misinterpretation would mean that the reliability margin should be calculated and published per single line – a method that is not only impractical, but also impossible in case of complex interconnections encompassing high number of tie lines which can be operated on different voltage levels.

6.2.4.1.	The methods for capacity calculation covering all time frames to be applied during one considered period (by default the following year) should be submitted for approval to the regulatory authorities not later than 6 months before the beginning of this period (only if methods change).	This seems to be a national standard. There are no rules and timeframe for proceedings in case the regulator does not accept the methods.
6.3.1.	Moreover, a high degree of coherence and co-ordination is necessary inside a synchronous areas and limited coordination between synchronous areas.	We think a high degree of coordination between synchronous areas is not necessary.
6.3.2.1.	Outage scheduling for the purpose of maintenance of network elements, ~~generators and significant consumption units~~ shall be agreed among involved TSOs. In this respect, all scheduled outages that influence two or more TSOs shall be considered. TSOs shall establish a joint scheduling process providing for long-term and short-term planning of outages. This process shall be settled at the level of synchronous areas and agreed between the areas accordingly.	In an unbundled market TSOs can't influence maintenance schedules of other market parties. Thus TSOs cannot coordinate maintenance of generators and significant consumption. TSOs can only influence the maintenance, if they pay money for postponement. This fact must be clear for the grid utilisation costs application.
6.3.2.2	(1) Beginning, end and duration of unavailability for each affected network element, and generation and consumption unit;	This may not be possible for reasons of confidentiality or depending on the prevailing market rules or national legislation.
6.3.2.2.	(4) Possible preventive and (in case of failures or unplanned disturbances) remedial measures based on the detected congestions of ~~an~~ analysis of probable/expected problem scenarios. These "scenario-based" analyses shall be based on operational experiences and especially on lessons learned from large disturbances that have occurred in the past.	We can't have remedial measures for each possible situation. We have remedial measures for the most probable situations.
6.3.2.6.	The yearly coordinated maintenance and revision plan shall be presented to the regulators for information and published for market participants.	The maintenance plan is changed by small maintenances every day. It makes no sense to publish this and send it to the regulator. Additionally publishing such an information might be risky from the security point of view.

6.3.3.1.	TSOs ~~must inform and~~ coordinate any commissioning and entering into operation of any network element, ~~generator or significant consumption unit~~ in their grid.	There is confusion in the meaning of "inform and coordinate". TSOs do not have the right to coordinate the commissioning of generators and significant consumption units.
6.3.4.4.	TSOs shall exchange all the necessary data and information required in order to accomplish the tasks mentioned in 5.3.4.1 and 5.3.4.2. In this respect, TSOs shall in particular agree on data format, protocols, communication infrastructure and media.	These references seem not correct.
6.4.2.1.	TSOs shall regularly perform (within a determined and mutually agreed time period): (1) Data collection and storage State estimation, filtering out all the faulty/wrong measurements; (2) Load flow calculation; ~~(3) Static and dynamic stability analysis;~~ (4) Reactive power and voltage analysis in order to be able to identify conditions for undertaking measures to prevent voltage collapse.	Dynamic stability analysis is very complex. We can't calculate it in a regular short time frame! In networks with no obvious critical stability problems dynamic studies are only performed on special occasion.
6.4.2.2	TSOs shall perform a contingency analysis (…) and before each switching action on any network element during the real time operation (including new network elements entering into operation).	We consider this as an excessive requirement because the announced switching actions are already checked by the program office and the system operator can well assess whether a particular switching action could be critical or not. The mandatory application of SCS would lead to significant delays in planned shutdowns and impede the maintenance work.
6.4.2.3.	The operational/on-line information on the actual outcome of the contingency analysis within the control areas shall be exchanged between the TSOs if affected. ~~Furthermore, TSOs shall cooperate whenever it is required to accomplish the tasks requested by 5.4.2.1.~~	1. Only an exchange between TSOs is necessary if the other TSO is affected. 2. The reference 5.4.2.1 does not exist.
6.4.2.4.	TSOs shall establish a common observing system ~~a system for monitoring and control of systems associated with the decision support systems for increased efficiency in disturbance prevention and system defence in cases of disturbed or critical system~~	A common control system is not possible because each TSO controls its grid itself. It is possible that the TSOs have a common observing system (UCTE is already working on it).

	~~conditions.~~ Such a system should ~~shall~~ enable the functions of wide area monitoring ~~and control as well as a range of preventive/remedy measures to be executed in real time~~.	We believe that expert systems assisting decision-making are currently not considered state of the art.
6.4.2.5.	If a violation of a security criterion is detected, the TSO concerned shall prepare and possibly activate appropriate measures. All the other TSOs concerned shall be informed without delay. ~~Any joint measure shall be agreed in advance.~~	Only most probable measures can be agreed in advance.
6.5.2.4.	In the case of disturbances, the TSO shall execute the remedial actions to restore the system to the normal operating state without delay. ~~Remedial actions are dependent on the nature of the disturbance and they shall accordingly be used to restore the state of the system to normal as efficiently as possible within a predefined time frame. Procedures for remedial actions shall be defined by TSOs.~~	To define in advance every possible remedial action is not possible. Furthermore every disturbance has other conditions. To solve a disturbance problem in a predefined timeframe is not possible.
6.5.2.6.	Automatic load shedding systems design shall be harmonised and co-ordinated across synchronous areas. In this respect, the DSOs involved shall cooperate with TSOs. Responsibilities regarding load shedding system installation and maintenance shall be clearly defined in each control area. The realization shall be in a non discrimination manner. ~~The efficiency of load shedding systems shall be regularly evaluated.~~	The real tests are not possible.
6.5.3.3.	Restoration plans must be coordinated among TSOs to allow the organised restoration of the whole synchronous area. ~~and shall be evaluated by regulatory authorities.~~	Restoration plan for the whole synchronous area does not come under the competency of one regulator.
6.5.3.4.	TSOs ~~shall~~ do everything in their power to maintain sufficient black start and islanding capability within their control area to ensure the efficient and fast restoration after power system blackouts. The black start capability shall be designed ~~to be reliable and to have real possibilities to generate voltage and power for the collapsed network~~	The TSO can't control where such generators will be build.

	~~or to the islanded part of the network.~~ to reenergize the grid.	
6.5.3.5.	To this end, the restoration plans are to be maintained by TSOs and their personnel trained to manage these exceptional incidents. ~~TSOs shall test these restoration plans regularly and shall make adjustments to these plans where appropriate.~~ The process for this shall be described transparently and communicated to all involved parties by TSOs.	A real-time test is not possible. Synthetic testing may not reveal valuable results.
6.5.3.6.	The restoration, after a blackout, of the affected part of the system shall be executed as soon as possible. ~~In the aftermath of the event, TSOs shall be able to determine the status of their network, particularly the presence of any faulty grid element. This status shall be used as an essential input to properly implement the restoration plan.~~ The application of restoration plan shall be coordinated among involved TSO if the help of neighbouring TSO is possible.	1. If all neighbouring TSOs have e.g. a blackout too, every TSO will apply the restoration itself. In this case coordination is not necessary. Only if a TSO gets help from a neighbouring TSO. 2. There are no means to determine all faulty grid elements remote controlled (e. g. damaged lines will not be visible in any control center)
6.6.2.5.	TSOs having interconnections to other synchronous systems shall ensure that operation of these interconnectors is compatible with interconnectors within a synchronous system and thus the secure system operation between synchronous areas is ensured. Effects of disturbances are not allowed to spread from one synchronous system to another. ~~Only disconnection of the interconnector joining the systems is allowed.~~	With a DC-Link it is possible to help with a coordinated power flow without a spreading of the disturbance. Allowing only the disconnection of the DC-link is too narrow.
Technical Framework for OS		
7.2.5.	~~The renewal of the certification shall be based on the dispatcher's participation in a continuous training programme and the assessment of the dispatcher's performance in the control room.~~	This is a contradiction to 7.2.3. There is regulated, that the TSO is authorised to regulate the process of certification.
Glossary		
8.	Alert (disturbed) state, critical state	These definitions are based on the current OH Policy 5 definitions which are being reviewed now. Other definitions require improvements too.