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COMMON BINDING RELIABILITY STANDARDS AND SYSTEM DEVELOPMENT

UCTE's challenges in the changing TSO business environment

During the year 2002, UCTE has reaffirmed its clear commitment to its mission as facilitator of the European common Electricity Market in a fast changing business and regulatory framework. In this respect, UCTE is facing today three main challenges:

- to maintain the reliability of the electric system at its present high level; this will imply a.o. modifications and contractual enforcement of operational standards made necessary by the development of the electricity market and the emergence of new types of actors and products (such as traders, electricity-based financial products, etc.),
- to implement a coherent strategy for the further development of the UCTE synchronous area,
- to further develop the tools for monitoring system adequacy.

These three challenges are cross-linked with mutually interfering aspects:

- The development of the synchronous area will be based on contracts, to be set up on a case by case basis, with the operators of the concerned areas. Such contracts shall ensure compliance, as far as needed for the realization of the interconnection, with the reliability standards governing the interoperability of the member control areas.
- The UCTE activities concerning the monitoring of the system adequacy will be guided by the increased role of TSOs and UCTE with regard to this issue. This increased role results a.o. from the draft revised Electricity Directive, as is mentioned below. <<<

Institutional changes



On 25 November 2002, a political agreement was reached on the revision of the internal market Directive and on an accompanying regulation concerning the access to the network for cross-border trade.

The proposal amending Directive EC 96/92 refers to UCTE concerns on many issues, of which two deserve specific attention:

– *Article 4* addresses the problem of system adequacy by prescribing monitoring of the security of supply to the Member States.

It is to be expected that in most of the Member States this task will be assigned to Transmission System Operators (TSOs). UCTE has already a long-standing experience in producing system adequacy forecasts. Despite increasing difficulties to meet this task accurately in a liberalised and unbundled TSO environment, UCTE will extend the time horizon of its forecast to 10 years in order to comply with the expectations of its stakeholders.

– *Article 7.5* of the Proposal allows TSOs to play an active role in the tendering process for generation capacities when this is needed for security of supply.

With respect to security of supply, UCTE points out that the potential responsibility of TSOs for monitoring the security of supply or for organizing tenders, does not per se confer the responsibility for the security of supply itself to TSOs. Indeed, this results from the share of responsibilities between the various parties in the market, as defined in the national Grid Codes.

With respect to the Development of the synchronous area, other institutional aspects, often reaching beyond the European electricity market, are to be borne in mind. Indeed, the synchronous area is now composed of countries which are UCTE members and countries which are not or not yet UCTE members. Furthermore, UCTE has also to answer to requests for interconnections from countries or systems, which do not necessarily aim at becoming UCTE members nor want to comply with the full set of UCTE technical rules. <<<

Transforming rules and recommendations into reliability standards

In the past, voluntary compliance rules were adopted by »peer pressure« between vertically integrated regional utilities. The existing scheme of voluntary compliance with industry reliability rules is no longer adequate for today's Internal Electricity Market. The grid is now being used in ways for which it was not designed and there has been a steep rise in the number and complexity of electricity trade business. As a result, there has been a marked increase in the number and seriousness of violations of reliability rules. The users and operators of the transmission system, who used to co-operate voluntarily on reliability matters, are now competitors without the same incentives to co-operate with each other or to comply with voluntary reliability rules.

UCTE answers to these challenges by introducing a new set of standards – the first draft of the Operational Handbook – to the 9th European Electricity Regulatory Forum in Rome in October 2002. The Operational Handbook summarizes and updates all relevant existing UCTE rules and recommendations and transforms them into a stringent set of policies, which are intended to serve as a basis for the binding reliability standards. Such standards are needed, among others for the settlement of disputes, for the quantification of ancillary services and for the assessment of investment decisions, of congestion management tools, etc. in due respect of related reliability criteria.

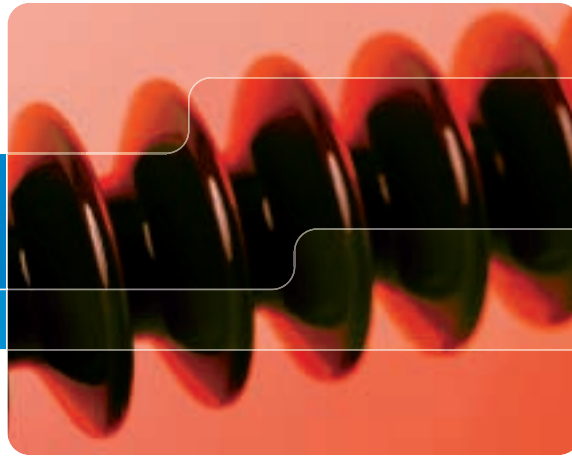
With regard to the enforceability of these standards, the legal experts of UCTE member companies investigated different possibilities to set up a binding legal framework. EU regulation might be considered as a basis for the EU countries.

For larger geographic perimeters, it remains to be examined whether the GATT or GATS rules are relevant, or if the framework of the Energy Charter Treaty should be taken into consideration.

At the last Steering Committee meeting of 2002, UCTE opted for the multilateral agreement amongst TSO parties as the preferred framework to achieve enforceability. All the members (which are the 31 TSOs of the UCTE synchronous area assuming responsibility for the operation of a control area and its inter-area interconnections) could undersign a multilateral agreement, by which they would be contractually committed and bound to observe the provisions indicated in the Operational Handbook. Such an agreement should clearly define responsibilities and liabilities between the TSOs concerned, and have a corresponding penalty system (possibly with liquidated damages) on a contractual basis. A dedicated Legal Experts Network has been set up to this aim, as commented further in this report.

Monitoring of system adequacy

The assessment of the medium-term adequacy between generation and load has been one of the main concerns of the UCTE. The control systems – no matter how technically advanced – can do little for reliability and security if generation is inadequate or transmission is weak. As a response to market expectations, from the next years on, the System Adequacy Forecast report will therefore cover a longer period (see »Working Group Statistics«, see page 22). This UCTE tool becomes more than ever a powerful instrument to fulfil the task of monitoring and early warning for stakeholders and market players. <<<



The UCTE Executive Team for the re-synchronisation of both UCTE zones

Since the early nineties, UCTE's top priority has been to reconnect the two synchronous zones that were separated by war events in the South-east of Europe.

An »Executive Team« was set up between all the TSOs involved with the main objective to sign a »Multilateral Re-synchronisation Program« and a »Multilateral Operational Coordination agreement«. This »Executive Team« is thus coordinat-

ing restoration works along the UCTE North-South interface, and defines technical procedures of resynchronisation incl. data acquisition, settlements of unintentional deviations, co-ordination of energy exchanges and maintenance of transmission lines. A major reconstruction project for the Ernestinovo substation was launched by HEP (Croatia), and other crucial projects for the region (*Mostar* and *Gacko* substations, Adriatic line) are in progress.

Development of the UCTE synchronous area

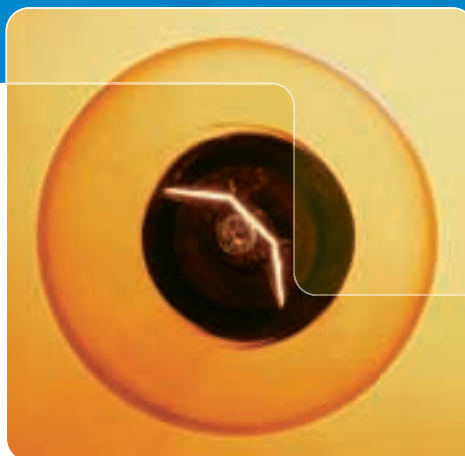
In the section on the Working Group System Development, further in this report, the various developments realized or under way in 2002, as well as the requests for further development, are commented.

We here address some general issues related to system development:

The nature of the technical problems has changed. Historically, the process involved a step-by-step integration of relatively small systems which were meshed in the synchronous area. This process is now challenged by, on the one hand, the request for a synchronous interconnection of systems which are in size comparable to the whole UCTE system (i.e. the UPS/IPS request) and, on the other hand, a demand for synchronization of a big system with other standards and relatively weak interconnection to UCTE (i.e. the Tunisia-Lybia interconnection).

Besides, more and more stakeholders are concerned by the interconnection of a new system to the present one, and more and more elements have to be taken into account.

Considering the requested interconnection with the UPS/IPS electric system, issues such as nuclear safety, environmental compliance, market reciprocity and cost-based pricing have been put forward by national and European authorities and stakeholders as prerequisites for interconnection. >>>



>>> With regard to the technical and operational aspects of potential interconnections, which are clearly within the UCTE competence, several organisational and institutional questions have arisen:

- Technical feasibility: Feasibility studies have to be performed relative to the various demands, arising the question of their financing;
- Necessary investments: To guarantee the technical feasibility and the security of the system, investments may be necessary on different parts of the system, and in particular on facilities like power plants (Power System Stabilizers – PSS, for example) which are not directly concerned by the new interconnection. Who takes the decision to make these investments, and again who will bear the related costs?
- Consequences on the present system: The connection of a new system may have an impact for example on transmission capacities inside the individual systems. This impact on the existing transmission capacities has to be agreed by the different market participants.
- Operational and commercial rules: The players partaking in the new system will have to agree on a minimum of operational and commercial rules. Moreover, as long as the contractual framework between UCTE and the other system and its organizational model have not been defined, it will often be impossible to make binding conclusions on the technical characteristics of a given interconnection. For example, the transfer capacity on a given interface depends on the organisation of ancillaries on either side and on the market models for capacity allocation.

This list is certainly not exhaustive but it shows that the connection of a new system involves many stakeholders.

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Which relationships can be developed with areas neighbouring the UCTE system?

In the case of existing High Voltage Direct Current (HVDC) interconnections, the relation between UCTE and the adjacent areas is managed by agreements between the respective TSOs and neighbouring UCTE members.

In the case of new HVDC interconnections, UCTE governing bodies may decide, on grounds of interoperability and/or security, that the interconnection concerned shall be submitted to an approval procedure. In accordance with this procedure, such HVDC interconnection shall in principle be governed by an Interface Agreement, signed on the UCTE side by one or more members.

In the case of new AC interconnections, possible formulas to be considered for the relation between UCTE and other synchronously connected areas are: Inter-Area Cooperation Agreements and, as an alternative solution, Interface Cooperation Agreements.

1. Inter-Area Cooperation Agreements between the UCTE members and the TSO (or group of TSOs) of a synchronously connected non-UCTE area will define the operational and system conditions of the respective areas which are necessary to ensure a well-functioning synchronous interconnection (comprising a.o. control characteristics and parameters, stability issues, etc.). Such an Inter-Area Cooperation Agreement is the basic option for cooperation between UCTE and the TSOs of the interconnected areas.
2. Interface Cooperation Agreements might be developed in the future between UCTE members and the TSO (or group of TSOs) at the other side of the interface, defining operation rules and disconnection criteria at the interface.

The choice between the two types of agreements shall be based on criteria such as: the strength of mutual interaction between the systems, the possibility of system decoupling without jeopardizing system security, the responsibilities assumed by the UCTE member(s) adjacent to the extension.

On a case-by-case basis, the Steering Committee will decide on which procedure to follow. <<<