

2

3

4

5

6

7

8

DEVELOPMENT OF THE UCTE SYNCHRONOUS AREA

During the last fifty years, UCTE has contributed to build one of the largest synchronous interconnected power systems in the world, supplying hundreds of millions of customers in a safe and reliable way. However, 2003 has seen some power outages around the world and in particular in the UCTE system which had dramatic consequences. This confirms that the main focus of UCTE is, must be and will remain the security and adequacy of the interconnected system.

This applies particularly to the issues of the extension of the UCTE synchronous zone. The maxim of UCTE in these matters, as it has been in the process of creation of the present system, is to investigate all possible consequences of an extension on the system. UCTE has always pursued its efforts to develop the synchronous area while observing objective criteria and procedures in order to maintain the whole system on the present high level of reliability and stability.

Bulgaria and Romania

Since May 2003, Bulgaria and Romania have been full UCTE members, connected to the second UCTE zone. This achievement is the result of a long process started in 1997. The technical committee UCTE/ Bulgaria-Romania was set up to supervise the studies and field tests necessary to check the behaviour of the two systems. In addition to the studies and tests, the two countries had to invest in their electric system, including power plants, in order to upgrade it so as to meet the UCTE criteria on frequency control and damping of oscillations between generators.

Turkey

The potential connection of Turkey to the UCTE system through lines between Turkey and Bulgaria and a future line between Turkey and Greece is following the same process with the same maxim observed by UCTE. In 2003, the Terms of Reference of the feasibility study have been finalized and a solution for funding of the study has been found between UCTE, the Euro-

pean Commission and the Turkish Ministry of Energy and natural Resources.

The study will be performed by a consortium of UCTE members led by RWE Transportnetz Strom for the stability study and by HTSO for the load-flow study. The preparation of the contract was well advanced at the end of 2003. The study will last 15 months, starting in 2004. In addition to the study, UCTE is reviewing its catalogue of measures in order to define the necessary provisions on field tests to check the behaviour of the Turkish electric system. Once again, the whole process is to guarantee that the connection of this new large system will not jeopardize the reliability and stability of the overall UCTE system.

UPS/IPS

In the context of the EU Russia dialogue on energy, UCTE has received a request from RAO UES acting on behalf of the Electric Power Council of the Commonwealth of Independent States and on behalf of the Baltic States, to study the possible synchronous interconnection with the UCTE system. Following its maxim in terms of the reliability and stability of the UCTE system, and taking into account the fact that the two systems are of comparable size and have developed independently of one another regarding the technical standards, UCTE has decided to proceed in two steps and carry out two different studies:

- a load-flow study on the UCTE side
- a feasibility study modelling the whole system



The results of the load-flow study were obtained at the beginning of 2003. According to the defined scenarios the study shows that:

- the UCTE system is already operated at its limits
- the flows from East to West will have to cross already congested borders
- the exchanges will have to be significantly lower than the physical capacity of the existing lines between the two systems.

For the second step, UCTE and the Electric Power Council of the Commonwealth of Independent States (CIS EPC) decided to set up a common project organization under the responsibility of UCTE. UCTE finalized the Terms of reference of the study; funding of the study will be guaranteed by the European Commission under the TEN guidelines, and by the Eastern partners of UCTE through experts who will contribute to the study. This feasibility study could start in the second half of 2004 and will last three years. The long duration of the study is attributable to the complexity of the problem as this connection will not follow the usual UCTE process, and also in view of the possible consequences it may have on both systems. Since EPC-CIS is the intergovernmental body, a new body named KOTK – the counterpart of UCTE – was established in the framework of EPC-CIS to carry out functions of the organizational structure in IPS/UPS.

This challenge is the biggest ever faced by UCTE since its creation. This is why UCTE and RAO UESR have decided to pay the utmost attention to this project.

Tunisia-Libya

The closure of the 220kV lines between Tunisia and Libya may lead to the connection of the five following countries: Libya, Egypt, Jordan, Lebanon and Syria (LEJSL), to the already synchronously connected countries Morocco, Algeria and Tunisia.

Although the total installed capacity of these eight countries represents roughly 40,000 MW only (approximately one third of the French capacity) UCTE pays great attention to the possible impact of this connection on the UCTE system. The main issue is related to potential inter-area oscillations between the generators of the two systems.

Taking account of the studies already implemented, UCTE decided to proceed to a series of measurements that will help UCTE to take a decision. These measurements, first on the LEJSL system alone, are under preparation and could start in 2004. After a two months' campaign, UCTE will decide whether a second three days' measurement campaign with the link closed can be envisaged. The in-depth analysis of the results will help to define the final UCTE position on this issue.

As regards these three projects, UCTE follows the same maxim motivated by the imperative to keep reliability and stability of the whole system at the high quality level known. As the last developments of the UCTE system have shown, this attitude is beneficial to all grid users both on the UCTE side and on the applicants' side. <<<