

UCTE LIFE

EDITORIAL

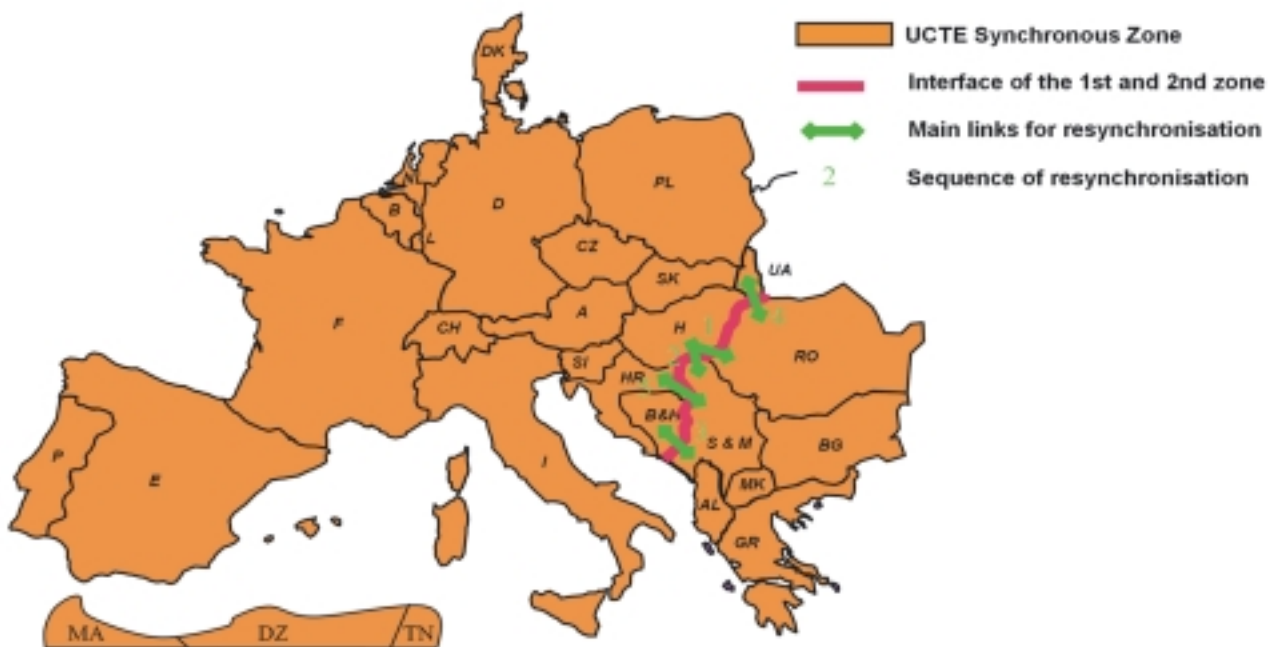
Resynchronization of the UCTE area: accomplished!

The resynchronisation of the two UCTE zones was successfully achieved on 10 October 2004 at 11:00. This historic step means that after 13 years of separation due to war events in ex-Yugoslavia, the electricity grid is physically connected from Zagreb to Beograd and Sarajevo, from Budapest and Mukachevo to Bucharest.

After the UCTE Steering Committee had established the UCTE Executive Team for Reconnection (ET) in 2002, the representatives from Bosnia-Herzegovina, Bulgaria, Croatia, FYR of Macedonia, Greece, Hungary, Romania, Slovakia, Slovenia, Serbia & Montenegro and Ukraine were co-operating closely within the ET under the leadership of I. Toljan (HEP), and J. Feist (CEPS) who was succeeded in August this year by M. Jevsenak (ELES). The representatives from the UCTE co-ordination centres "North" and "South" closely cooperated in the project, too.

Following the completion of extensive reconstruction programs of grid infrastructure carried out by HEP in Croatia and JPCC in Bosnia-Herzegovina, all other previously agreed mandatory technical and organisational conditions - such as functionality and readiness of control blocks, measures to preserve steady-state and dynamic stability of the whole reconnected system - were fulfilled on the eve of resynchronisation.

The Multilateral Resynchronisation Program (MRP) prepared by the ET comprises procedures followed before the day of resynchronisation, on the day itself and for the monitoring period afterwards.



MEMBER NEWS

UCTE AGENDA

UCTE STEERING COMMITTEES

November 25, 2004 in Bulgaria
 January 20, 2005 in Romania
 March 17, 2005 in Serbia/Montenegro
 May 11, 2005 in Italy
 June 23, 2005 in the Czech Republic

ASSEMBLY

May 12, 2005 in Italy

UCTE



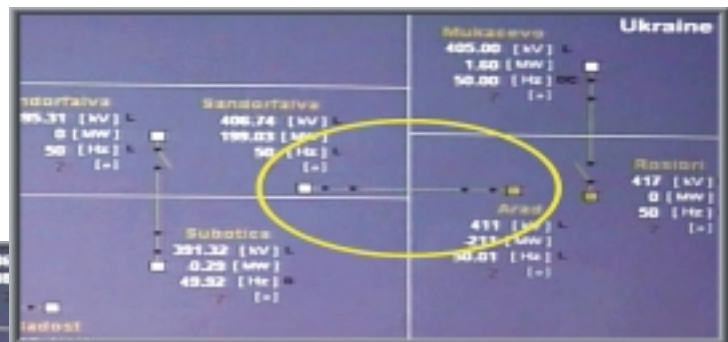
The sequence of synchronisation on 10 October 2004

The resynchronisation procedure was coordinated by I.Toljan and M.Jevsenak from the HEP control centre in Zagreb on 10 October 2004 in direct communication with national coordinators along resynchronisation interface (Bosnia-Herzegovina, Croatia, Hungary, Montenegro, Romania, Serbia and Ukraine), as well as contact persons of control blocks in 2nd UCTE synchronous zone (JIEL, Bulgaria and Greece).

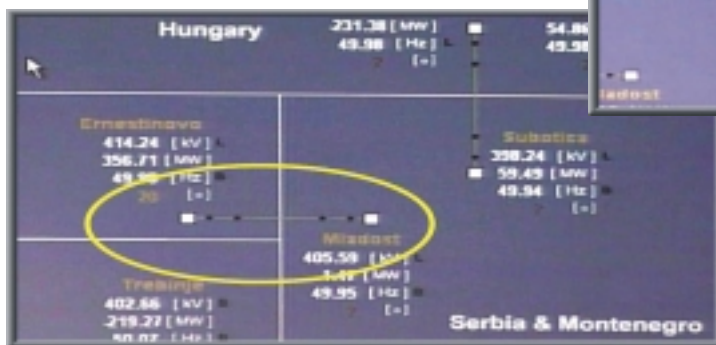
The physical re-synchronization of the 2nd UCTE synchronous zone to the main UCTE grid took place at 9.34 a.m. by switching the circuit-breaker of the Sandorfalva line in the Arad substation (1).

After necessary steps of confirmation and fulfilling the conditions set for the next switching, the line Sandorfalva-Subotica was energized at 9.41 a.m. by switching the circuit breaker in the Sandorfalva substation (2). It was observed that the power oscillations here were more significant than on the first line, though only transiently (as expected according to preliminary steady-state analysis) so that the continuation of the switching sequence was not endangered.

at 9:34, Sandorfalva line in Arad substation



at 10:20, Mladost line in Ernestinovo substation



The switching of the circuit-breaker of the Podgorica line in Trebinje (3) at 9.58 a.m. was considered to be the most critical part of the sequence due to the significant voltage difference between the Podgorica and Trebinje substations. But thanks to well-coordinated series of operational activities on both sides including help of neighbouring TSOs, this voltage difference was reduced within a rather short time without a negative influence upon other conditions required for switching.

Afterwards, at 10.07 a.m., the line Mukachevo-Rosiori (4) was switched on by switching the circuit-breaker of the Mukachevo line in the Rosiori substation.

The switching sequence of five 400 kV lines was concluded at 10.20 a.m. by the line Ernestinovo-Mladost (5). In conformity with the previous load-flow analysis, major power flows (300 – 400 MW) were observed on this line as a consequence of loop-flows from both former synchronous zones.

Although the 220 kV (Visegrad – Pozega and Trebinje-Perucica) and 110 kV lines (Trebinje – Herceg Novi) between Bosnia-Herzegovina and Serbia & Montenegro are rather of local importance, the main coordinators waited for the implementation of order to the national coordinator of Bosnia-Herzegovina to switch them on. The last of these three lines was successfully switched on at 10.58 a.m., taking over some of the loop-flows in the southern part of the former resynchronisation interface (i. e. from the Trebinje-Podgorica line).

Consequently, it could be stated that the reconnection sequence was successfully accomplished and that full trial operation of the reconnected system started from 11.00 a.m.. The TSOs involved and the UCTE Executive Team will closely monitor the test period and, after its positive evaluation, a statement will be issued by 1st November 2004. It will specify the exact date for the start of exchanges over the former interface and provide information on how to gradually increase such exchanges up to the full NTC values.

MEMBER NEWS

HTSO



Blackout of the Hellenic System on 12 July 2004

On 12 July 2004 at 12:39 (time used throughout the text is Greek time: CET + 1) the south part of the Greek Interconnected Transmission System was split from the rest of the system and collapsed driving consumers with a total load of 4500 MW into blackout. A special committee was appointed by the ministry of development in order to investigate the incident.

Technical analysis of the event

At 12:00 the load of the south part was around 4300 MW and the total local production about 2300 MW (not including Megalopolis 1 - 115 MW and Lavrio 2 - 285 MW which were out of service because of forced outage). The transfer power from the north to south was 2000 MW. From 12:15 (after the unsuccessful synchronization of Lavrio 2) the units started decreasing load rapidly because of the low voltages at the area and so the transferred power increased to 2400 MW deteriorating the voltage more and more. The system was near its voltage instability limit, because highly needed transmission reinforcements in the region could not have been deployed by that day. The voltage could not be supported and collapsed driving to the splitting of the system.

Proposals

The main proposals of the Investigation Committee are:

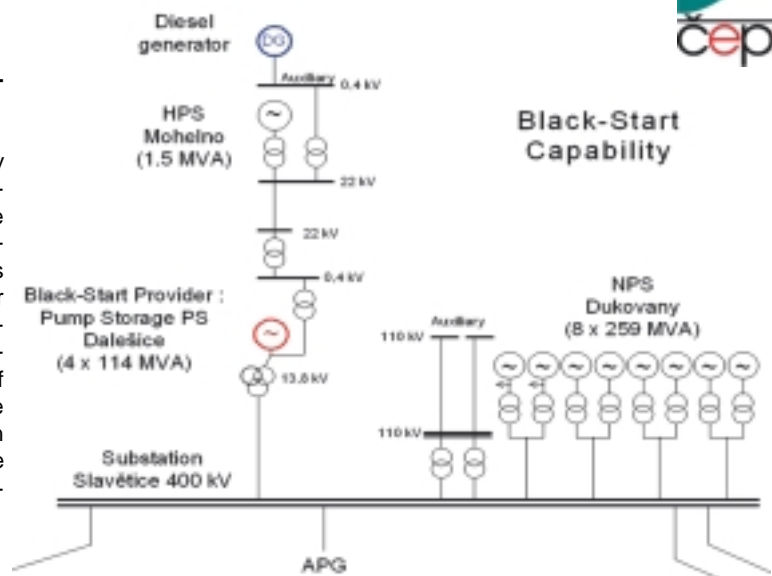
- Installing new generation units in the south.
- Redress the 150 kV HV S/S Argyroupoli to 400/150kV S/S.
- Schedule for
 - Reinforcement of weak points of the network, which do not fulfill the N-1 criterion, also extension of the 400 KV network to Peloponnese.
 - Further increase of reactive power balancing near high demand areas.
- Development of an automatic system of load shedding based on low tension criteria eliminating manual intervention.
- Speed up commissioning of new capacity that is under construction (IPP 390 MW in Thessaloniki and PPC 400 MW in Lavrion).
- Develop a motivation system for demand side management.
- Improve communication with public to explain the need for system reinforcements.
- Investigate a wider range of voltage control means to optimize voltage stability of the system.

CEPS, a.s.



Units island operation and black-start capability as ancillary services.

To ensure the readiness of CEPS to the preferably smooth rolling over from possible large system disturbance to normal operation, CEPS will start to procure the above-mentioned ancillary services on a commercial basis. This procurement is based on business contracts between CEPS and "Island operation" or "Black-start" providers. The payment covers the operational cost as well as capital cost repayment including profit, and is conditioned by the working out of the special Certificate of Quality according to the method presented in the Grid Code. The certification authority carries out the certification periodically. The goal is to motivate producers to provide these services, and to have assured tools for the restoration plan.



MEMBER NEWS

RTE



Gestionnaire
du Réseau de Transport d'électricité

RTE has just published the French Power System Reliability Report 2003.

The publication of an annual reliability report, since 2001, responds to RTE's goal to promote the follow-up through time of the evolution of reliability in its various dimensions. RTE thus aims to contribute to the development of the reliability culture by encouraging an improved assessment by the different players (both RTE and network users) of their role in the construction of reliability, and by promoting the consideration of reliability and benchmarking issues in the international organisations of Transmission System Operators. In 2003, the reliability of the French power system was controlled despite the occurrence of unusual events. However, the reliability report shows that some of the ingredients that led to the incident occurrences in many countries in 2003 also exist in France. This means that we should not rest on the progress made, but maintain the high level of attention focused on reliability.

Also to be noted in 2004 is the re-edition of the Power System Reliability Memento which describes all of the measures taken by RTE. Like the annual Reliability Report, this document can be consulted on the RTE site at the address <http://www.rte-france.com>.

The major electric networks gather in Paris

From 29 August to 3 September, Paris hosted the 40th session of CIGRÉ (Conseil International des Grands Réseaux Électriques – International Council on Large Electric Systems). Since 1921, CIGRÉ, a permanent non-governmental, non-profit-making association, has gathered every two years the major players of the world of electricity from about 80 countries: researchers, academics, power producers, manufacturers, system operators, suppliers, regulation authorities, bringing together technical innovation, requirements and feedback from the operators. About 2,500 delegates, including RTE representatives, gathered to debate current subjects on large electric systems: the participants thus had the opportunity to pool their experiences and thoughts as concerns the lessons to be drawn from the major electrical incidents, the way to ensure power supply within the framework of the opening up of markets to competition, the need to adapt and maintain skills and expertise in the power field, as well as the role of CIGRÉ to cope with technical and technological developments and appropriately orient current research. These subjects all represent economic, political and social stakes, and constitute real challenges for large electric systems.



TenneT

Tennet

Decision for Dutch - Norwegian HVDC-link

The Dutch TSO TenneT has filed a definitive application with the Dutch regulator (Dte) for a high-voltage interconnection open to all market players to enable electricity imports and exports to be carried out between Norway and the Netherlands. Both TenneT and the Norwegian-based Statnett have confidence in the project in terms of exploitation. As soon as Norwegian and Dutch authorities have given the go-ahead, cable construction can start on the basis of existing permits and contracts. The submarine cable (length 580 kilometres) will boost the Dutch import and export capacity by 600 MW. Construction will take three to four years so that operation is likely to start by 2008.

Early this year, TenneT and Statnett picked up an old cable plan between the two countries. They consider that there is considerable scope for profitable exploitation provided the cable would be available to all market players. Hydro power accounts for 99% of power generation in Norway whereas the Netherlands relies mostly on fossil power generation. The cable would enable better use to be made of Dutch generation resources at night whereas during the day Norwegian hydro power could be deployed during peak hours.

The Norwegian and Dutch power markets are to be linked using the Power Exchanges APX and Nord Pool Spot. The expected revenue owing to price differences between the two markets should ensure cost absorption, and additionally lead to lower and steadier power prices in the Netherlands and enhance the reliability of supply in both countries. Furthermore, it could benefit the market mechanism and liquidity of the Dutch market.

The project is in line with EU-policy of linking markets and enhancing market liquidity. In a similar development, TenneT and the UK-based National Grid Transco are currently studying the financial feasibility of an Anglo-Dutch transmission cable.

UCTE NEWSGRID - N.9

Quarterly Newsletter from Union for the Co-ordination of Transmission of Electricity (UCTE)
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