



UCTE LIFE

EDITORIAL

UCTE Issues System Adequacy Forecast 2004-2010

UCTE released today its *System Adequacy Forecast 2004-2010*

For the first time in the history of the UCTE system adequacy reports (formerly power balance reports), the present report includes forecast data up to seven years ahead, four years more than in the past. This is a first step towards the extension of the time horizon of UCTE forecasts up to ten years ahead in the future.

Generation adequacy assessment is based on the estimation of the so-called "Remaining capacity" which can be interpreted as the capacity that the system needs to cover the difference between the peak load of each country and the load at the UCTE synchronous reference time (so-called "margin against peak load"), and, at the same time, to cope with exceptional demand variations and longer term unplanned outages which the power plant operators are responsible to cover with additional reserves.

After the generation adequacy assessment has shown how each country could satisfy its interior load with the available national capacity, transmission adequacy assessment consists in investigating whether the transmission system is sufficiently dimensioned in order to carry the potential imports and exports resulting from the various national power balances, thus improving the reliability of the European power system.

The reliability of the UCTE system as a whole is likely to be maintained at an acceptable level over the **2004-2006** period, due to both the expected new generating capacity and some developments of the national and international transmission grids.

According to the information available to the TSOs, a sensible decrease in remaining capacity is expected between 2008 and 2010. There is a potential deficit in generation unless additional firm investment decisions are taken soon.

The CENTREL block seems to be the only one that is in a position to remain a structural exporter. But future environmental legislation could affect this position.

The UCTE main block, which represents a major part of the installed capacity and was until now exporting towards the surrounding areas, is facing until 2010 a decrease in the remaining capacity below the indicative adequacy margin. In 2010, this block could become a net importer in situations when the temperature drops 5°C below normal.

The reliability of the Iberian and Italian blocks is expected to improve thanks to strong programs leading to the commissioning of many GW of new generating plants. The ability of these countries to effectively reach these goals has to be monitored in the next system adequacy forecasts.

Serbia and Montenegro, FYROM and Greece are in a weak position concerning generation adequacy; the reconnection of the second UCTE zone expected for mid-2004 will be of utmost importance for the reliability of this region. This reconnection will also play an important role for Romania and Bulgaria whose margins are decreasing all along the period concerned.

It is also important to note the increasing role of renewable energy sources, mainly wind power, in the generation mix of the UCTE system. This development is likely to create some new problems concerning the availability of sufficient balancing power especially since substantial decommissioning of conventional thermal plants is expected in this decade and in the next. This important role of wind power is also likely to give rise to large short-term variations of flows across the international transmission system. It can also be observed that in the countries where the share of wind power is already high (Spain and Germany), a significant development of the 400kV transmission network is necessary.

The projects concerning the development of the international interconnections should help to improve the reliability of the surrounding blocks and of deficit areas.

Nevertheless, the number of projects is limited; this reflects the difficulties encountered by the TSOs to get these projects accepted by local people.

To download a copy of the *UCTE System Adequacy Forecast 2004-2010*, go to <http://www.ucte.org>.

MEMBER NEWS

UCTE AGENDA

UCTE STEERING COMMITTEES

January 22, 2004 in FYROM
March 25, 2004 in Germany
May 12, 2004 in Hungary
June 24, 2004 in Poland
September 23, 2004 in Bosnia-Herzegovina
November 25, 2004 in Bulgaria

UCTE GENERAL ASSEMBLY

May 13, 2004 in Hungary

COMMON WG MEETING

September 10, 2004 in Slovenia

RTE



Gestionnaire
du Réseau de Transport d'Electricité

RTE – early warning role for the security of supply

On 7th November 2003, Mrs Nicole Fontaine, Delegate Minister for Industry, has presented a White Paper on energy policy, the main lines of which set out balanced preparations for French energy in the future. The White Paper adheres closely to the spirit of dialogue and openness that characterised the national energy debate, in which RTE played an active role.

RTE warmly welcomed the fact that the security of power supply occupies a prominent place in the text of the paper. Security of power supply is a crucial element for guaranteeing to the people and to the companies that they have secure and sustainable access to energy, which is both a factor of competitiveness and a source of social cohesion. Equal access to electricity across the country is not just a question of price. It is also a question of quality of the electric current supplied. It is therefore quite appropriate for the law to establish the pre-conditions for ensuring that, in the future, this level of quality is the same for all. This is something to which RTE will continue to contribute in the years ahead.

RTE is also pleased with the early-warning role it is to be charged with concerning the security of supply. At all times, it will have the task of assessing the outlook for the next 5 years, and monitoring the risks of failure in the power system. By providing this "early-warning" service, it will enable the State to launch the calls for tender required in time to avoid shortfalls in the capacity of generating facilities. In this respect, the studies carried out by RTE show that new capacities will have to be developed by 2008 for peak facilities, and by 2017-2020 for base facilities, so that France can cover its total demand, even where this demand is controlled.

REN S.A.



Portuguese Transmission Grid: refurbishment as a way to avoid new relevant environmental constraints

The growth in demand in the Lisbon region required to increase the power in "Alto de Mira" substation, 10 km northwest from the capital of Portugal. So, the 400 kV lines need to come closer to the city. The project was launched more than ten years ago with a lot of environmental studies as well as with long and difficult talks with the local authorities and the local population representatives because some people have built, illegally, houses under the five existing 220 kV lines.

With the agreement reached among the parties, one of the actual five 220 kV lines has been replaced by two 400 kV lines of about 18.3 km, built as a double-circuit line. Three 220 kV lines have been slightly modified in order to comply with noise and EMF levels. The towers of the new 400 kV lines are 50 meters high, and a special structure with about 45 meters high has been erected in the substation to hang the conductors.

As "Alto de Mira" was a substation only with one VHV level (220 kV) a big refurbishment has taken place to allow the coexistence of those two levels (400 kV and 220 kV) plus the 60 kV, needed to feed the distributors. Among others, new transformers 400/220 kV and 400/60 kV have been installed as well as reactive compensation. Meanwhile, a 28-year-old gas turbine power station (six 22.5 MW generators), close to "Alto de Mira" substation, was definitively decommissioned. This was part of the agreement and represents a relevant improvement in the environmental conditions of the region. The sustainability principles followed by REN give preference to the uprating and upgrading of old VHV lines and substations instead of building new ones, or to the use of the same VHV corridors, in an integral upgrading. This type of works had been concluded in one line in the northeast part of Portugal ("Chafariz-Vila Chã"), another in the centre ("Batalha-Rio Maior") and another in the south ("Ourique-Tunes"). Also the 52-year-old Zêzere substation, built to the 150 kV level, is receiving, after a big refurbishment, the 220 kV level, and the remaining part of the 150 kV is being transferred to a GIS. Simultaneously, the former 150 kV lines interconnecting the north and the south of Portugal are being upgraded to 220 kV. This becomes an important alternative to the biggest Portuguese 400 / 220 kV substation of "Rio Maior", where the main north-south interconnections of 400 kV and 220 kV are linked.

The first generator (324 MW) of "Ribatejo" NGCC Power Plant, 30 km north of Lisbon, erected after the liberalization of the market, has been connected to the grid for commissioning purposes on 12 September 2003 (it is scheduled for industrial service early in 2004). The reservoir of the dam of "Alqueva", the biggest multipurpose artificial lake in Europe, has received its first 400 kV line from the substation of "Ferreira do Alentejo". This substation, a former 150/60 kV one, has been refurbished to allow this new level. From now on, Portugal will be crossed, from "Sines" (near the coast) to "Ferreira do Alentejo" with a 400 kV line which, in a near future, will continue to Spain being the sixth interconnection with this country at transmission levels (the third at 400 kV) and a very strategic one in terms of security of supply due to its location in the middle of the south part of Portugal.



MEMBER NEWS

CEPS, a.s.



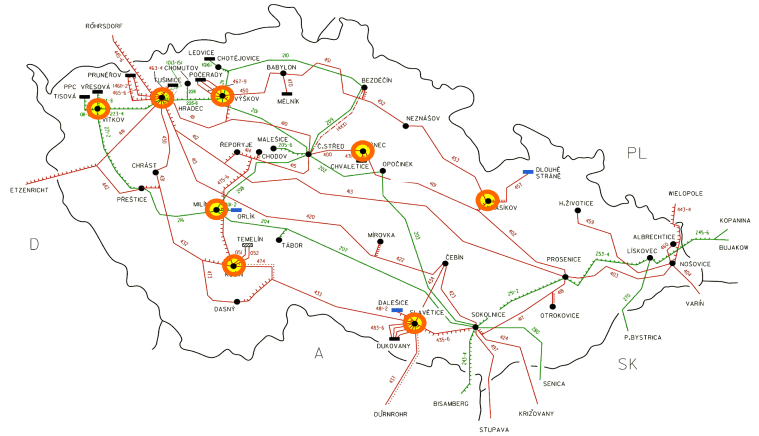
Voltage and reactive power control as an ancillary service

Voltage and reactive power control at transmission system level, as a paid ancillary service, has a influence on the quality of transmission services but also on secure operation and stability of the whole power system.

A complex system of automatic secondary voltage control in the CEPS system has been completed last year. Its main task is to co-ordinate correct actions at about 45 generators, distributed to eight pilot nodes in the Czech transmission system (see diagram), with the help of a tertiary voltage control. The secondary voltage control, provided by producers through a corresponding reactive power range of their power plants, has been classified as a measured and evaluated ancillary service. The rules are simple and motivating. Besides the reactive power range ($\pm Q$), which must be certified by a special certification authority, the availability and location of the generators were also included in the criteria used for this ancillary service evaluation. This methodology helps to give the producers at each location a positive signal showing that the provision of a quality service "pays-back", and that not only the operation costs are covered but also new investments or improvements of the provided service can be well optimised. CEPS, the TSO in the Czech republic, is planning to spend about 3,000,000,- EUR for this service in the year 2004.

Tertiary voltage control, which is under the responsibility of the TSO, is being automatized now. It is based on central real-time optimization with resulting optimal pre-set voltages in the pilot nodes. It also recommends the dispatcher to switch on/off compensation reactors or to change taps on 400/220 kV transformers (most of other transformers – 400/110 kV and 220/110 kV – are under local automatic control, which is part of the substation control system). Experience gained to date with tertiary control confirmed a decrease in active power losses on the transmission system (of about 3%) with respecting constraints, as maximal level of voltages or reactive flows on tie-lines, and above all – better distribution of generated reactive power with influence on active power losses in alternators, it means proper use of the ancillary service of providers and system services of TSO as well.

Pavel Svejnar, Karel Witner,
CEPS,a.s in Prague, 2004

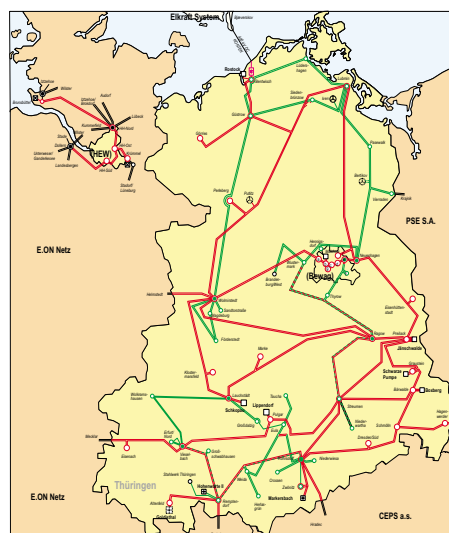


PILOT NODES OF AUTOMATIC VOLTAGE CONTROL IN TRANSMISSION NETWORK OF CZECH REPUBLIC

Vattenfall Europe Transmission GmbH

Vattenfall Europe Transmission GmbH is the transmission system operator (TSO) of Vattenfall Europe, Germany's third largest energy company. Founded in 2002, it runs the whole transmission network of Vattenfall Europe at the 380 kV and 220 kV levels in the North-East of Germany.

Current and future challenges for Vattenfall Europe Transmission include the increasing cross-border energy trade and also the increasing wind energy injection according to the Renewable Energy Sources Act (German abbreviation: EEG) that requires the TSOs to connect wind plants to their network and to give priority to purchase and payment of the wind-generated electricity input. The law has a strong impact on the management of the system, the investment strategy, the company's financial situation, and calls for substantial investments in Vattenfall Europe Transmission's grid in the near future.



- Schaltanlage 380 kV
- Schaltanlage 220 kV
- Schaltanlage mit 380-/220-kV-Umspannung
- Fremdeigentümer
- Leitung 380 kV
- Leitung 220 kV
- Leitung 380 kV mit 220-kV-Betrieb
- Leitung 220 kV mit 110-kV-Betrieb
- Nachbarnetze 380 kV
- Nachbarnetze 220 kV
- Kohlekraftwerk
- ▣ Wasserkraftwerk (PSW)
- ⊠ Kernkraftwerk
- ⊞ HGÜ
- ⊙ Windpark
- ⊞ Planung/Bau
- a Teufelsbruch
- b Reuter
- c Mitte
- d Friedrichshain
- e Marzahn
- f Wuhlheide
- g Charlottenburg

MEMBER NEWS

PSE SA



Two new lines commissioned

A new 400 kV double circuit line Dobrzen – Wielopole has been commissioned in November. The Polish Power Grid Company started to build this line in 1999.

As a consequence of related network reconfiguration close to the Wielopole substation, one circuit of that line goes directly to the Albrechtice substation (CZ) with the use of the former Wielopole – Albrechtice line. The other circuit connects the Dobrzen and Wielopole substations. At the same time, the 400 / 220 kV transformation in the Dobrzen substation was abandoned and the relevant 500 MVA transformer was disconnected. The new lines, Dobrzen – Wielopole 400 kV and Dobrzen – Albrechtice 400 kV, will strengthen the security of the Polish power grid operation and improve the transmission of energy between Poland and the Czech Republic. The new billing point has been set up in station of Albrechtice. The construction of lines and basic technical tests were completed in November 2003. Now, the measurements of electromagnetic fields and noise emissions are going on.



SEPS, a.s.



Development of the Slovak Transmission System with EU and EBRD Support

Being the national transmission system operator of the Slovak Republic, Slovenská elektrizačná prenosová sústava, a. s. (SEPS, a. s.) intends to respond to new requirements placed upon electricity transmission systems in 2004 and the following years. The company plays an essential role with regard to international electricity trade, mostly by ensuring an adequate development of the transmission system and using new advanced technologies. One of the significant development activities of SEPS, a. s. is the project of reconstruction of the 400/220/110 kV Križovany substation, which is directly linked to the scheduled untimely decommissioning of two units of the nuclear power plant V1 Jaslovské Bohunice in the years 2006 - 2008. The process of the reconstruction, worth 31 million EUR in total, is divided into four subsequent phases. The first phase of the project is being financed by SEPS, a. s. company from its own funds; the costs will amount to 7 million EUR.

To make up for the financing of the next phases, a Grant Agreement of 24 million EUR was concluded with the European Bank for Reconstruction and Development (EBRD) on 10 December 2003. The Grant was approved by the Assembly of Contributors of the Bohunice International Decommissioning Support Fund (BIDSF), established in 2000 upon an Agreement between the European Commission and the EBRD.

The reconstruction of the Križovany substation represents the most efficient solution as to the impact of the aforementioned V1 decommissioning on the transmission system of the Slovak Republic. Within the reconstruction process, two fields of the existing substation will be replaced by four space-saving new ones, with pipe bus-bars, thus establishing conditions for direct 400/110 kV transformation in the Križovany substation. As part of the project, a new control and information system will be put in place, which will enable operator-free operation. The overall reconstruction of the Križovany substation is scheduled to be completed by 2009, within the full operation of the substation.



UCTE NEWSGRID - N.6

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

Boulevard Saint Michel, 15 B-1040 Brussels - Belgium

Tel +32 2 741 6940 - Fax +32 2 741 6949

Internet: www.ucte.org

Contributors: UCTE Communication Correspondents

Editor: Vattenfall Europe Information Services

Internet: www.is-vattenfall.de