TEMELIN NPP COMMISSIONING EXPERIENCE

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Abstract of presentation

CONSTRUCTION HISTORY
The Building Permit for the Temelín NPP with four VVER 1000 units was issued in 1986, which is a long time ago. Since then, however, we have taken a route that is very different from what anybody imagined. I would like to present what has happened during that period and I will start with a summary of milestones of construction of the power plant in my presentation.

CONDITIONS OF CONSTRUCTION AND START-UP OF THE POWER PLANT

Period of change and its impacts
The construction started in 1980s, in conditions of growing problems of the centrally planned economy. Deadlines for completion were postponed in those times already, even in spite of constant pressure by political and state authorities on fulfillment of deadlines.

Political changes in 1989 marked a huge change not only for the whole society but also for the construction. They brought immense risks as well as big opportunities. These changes affected the power plant mostly in the following fields:

Change in the economic management system:
Central power pushing for completion of the power plant disappeared in a state with effectively no working market relationships. The investor found itself in an unclear business environment without any clear-cut rules and conditions for effective investments. At times, power engineering, including the process of completion of the Temelin NPP, was used as a kind of transformation cushion of the Czechoslovak and Czech economy for keeping large companies and employment in the country. It surely did not contribute to effective progress in completion of the Temelin NPP. Advantages of market economy for the Temelin NPP have started showing up only recently when new contractual relations are being established following completion and new companies are getting involved. There is simply a choice now. Although the division of Czechoslovakia did not principally affect the construction process, it had a certain negative impact.
Legislative changes:
Transformation from socialism to market economy required a real legislative revolution. The law in all fields changed, just like the judicial system (very slowly and with little effects, by the way). Construction of the Temelín NPP was mostly influenced by changes in the economic law and changes in nuclear legislation. The former resulted in changes of contractual relations in the process of construction (thus significantly affecting the price and deadlines for completion), the latter led to the necessity to perform changes of the Temelín NPP design in the course of construction (also with effects on prices and deadlines). It also resulted in changes of requirements of the state's regulatory bodies and increased their supervisory expertise.

Design changes:
Design changes resulted from modified legislation as well as from recommendations contained in audit reports prepared by international missions. They were primarily aimed at increasing safety, improving operational economy and increasing reliability. In my speech I will make a summary of implemented technical changes with comments.

Start-up period

This period was and still remains highly demanding due to several reasons:
1. We had to implement a very extensive testing and verification program to examine compatibility of all changes in Temelín and functionality of new solutions. It was necessary to eliminate inexperience in using new technology and their combinations.
2. Some significant problems with technology appeared during start-up and I would like to mention them briefly (governor valves for working steam on the turbine generator, turbine-generator oil management, damage to low-pressure part of the turbine generator, failure of the unit on February 7, 2002, generator – short circuit in Reactor Building 2)
3. Adverse actions of Austria and green activities against the Temelín NPP grew during start-up and with the accession of the Czech Republic to the EU drawing near. In my report I will mention this process that resulted in the Melk agreement and how it influenced start-up of the Temelín NPP and how we defended against it. I will also talk about the development of acceptance of the Temelín NPP in the Czech Republic and about wider circumstances of attacks that came from abroad.

CURRENT CONDITION OF THE POWER PLANT

It is certain at present that everything is moving towards successful completion. At the time I'm writing this abstract, the output of Unit 1 is 1,010 MW and Unit 2 is being prepared for repeated performance of tests at 30% output, tests with connecting the generator into the grid. I will also mention some information on incorporation of the Temelín NPP in the structure of resources of the Czech Republic and ÈEZ.

EVALUATION

Is everything we have gone through and created in Temelín for all the money and all the time success or lack of success? I will also try to count in some neglected but important facts and answer this question.