



STANE SE JADERNÁ ENERGIE OBNOVITELNÝM ZDROJEM ?
WILL NUCLEAR ENERGY BECOME A RENEWABLE SOURCE ?
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The conference is supported from the State Program „EFEKT 2010 MPO ČR“



AUSPICES



Ministerstvo životního prostředí České republiky

WHAT FACTORS CAN LIMIT THE INCOMING RENAISSANCE OF NUCLEAR POWER, AND WHAT IS OUR ABILITY TO DEAL WITH THEM?

November 10, 2010

Kaiserštejnský Palace, Prague, Malostranské Square

3rd Annual Conference held under auspices of the Ministry of the Environment of the Czech Republic and Ministry of Industry and Trade of the Czech Republic





He is the consultant in the field of power industry and is the Head Executive of JMM Consulting, Ltd. – a company focused on advisory services and organization of professional activities. After graduating from the Czech Technical University, Faculty of Technical and Nuclear Physics, he worked in research; he has been working in the power industry field since 1974 (until 1996 in ČEZ). For the last seventeen years, he was the advisor of the Minister of Industry and Trade, chairman and vice-chairman of the Supervisory Board of ČEZ, a member of supervisory boards in several energy distribution companies and an advisor of Deputy Ministers of Finance. In these positions, he was dealing with the reorganization of state administration in power industry, the development of state energy policy, the establishment of the State Office for Nuclear Safety and with the preparation of the privatization of Czech power industry. He is occupied by publication activities, mainly in the field of nuclear power industry and has wide experience in organizing of international and specialized professional conferences and meetings. His positions are quoted on TV, radio and in economic periodicals..

Dear colleagues,

Nuclear energy has entered its renaissance. It is reflected in the increased interest by all who are concerned with the energy future. Czech Republic has answered the nuclear challenge. There is a significant change in the view of nuclear energy. We have a better understanding of possible nuclear energy future. We have a better feeling of the “renewability” (breeder reactors). We can answer the demand for the sustainable clean and quality energy. However, enthusiasm has to be thoroughly and critically checked. That is why the limits and critical points of the nuclear power development have to be identified.

All of that resulted into the question: “What factors can limit the incoming renaissance of nuclear power, and what is our ability to deal with them?” Potential problems have to be identified and their solutions have to be found. Feedback during the nuclear power development is necessary. Our expectations embedded in the nuclear energy are huge. That is why we have prepared a program that tries to open all of these issues. We believe that the presentations held by the top and competent speakers and discussion of selected topics will meet your expectations. All of this was discussed at the NERS 2010 conference.

I am personally very pleased that we succeed to prepare a program involving up to date issues and to obtain a top and competent speakers for their presentation; and generate the necessary discussion of all concerned as well. I believe that the conference NERS 2010 met your expectations, and we look forward to meeting you on the next the 4th Annual Conference on Nuclear Power NERS 2011 in Prague.

Jiří Marek
NE•RS Chairman

Prague, November 10, 2010

PROGRAMME

morning session

welcome address on behalf of Martin Kocourek, Minister of Industry and Trade of the Czech Republic

Roman PORTUŽÁK Director, Department of Energy and Power of the Ministry of Industry and Trade of the Czech Republic

After graduating from VŠB Technical University of Ostrava (Faculty of Mechanical and Electrical Engineering, Dept. of Electrical Power, 1986) continued his scientific training, and in 1992 he was awarded the academic degree (PhD.). Then he joined the North Moravian Power Company, where he held various managing positions including commercial director and section manager of strategic information; simultaneously he acted in the management of several subsidiaries. At that time, he attended many management courses including Certified International Institute of Strategic Studies in Management (Certified Strategic Manager, 1999 - 2002). From the end of 2003, he worked as an independent consultant in the electricity sector, and since September 2008 he has leading the Department of Energy and Power of the Ministry of Industry and Trade of the Czech Republic.





IMPORTANCE OF THE LICENCING PROCEDURES AND THE ROLE OF REGULATORY AUTHORITIES IN THE NEW NUCLEAR ERA, AND OUTPUTS AIMED AT THE PUBLIC AND POLITICAL SPHERE

- what can limit the nuclear power development
- what has not to become
- what kind of positive role the regulatory authority can and must play
- risks of the licensing procedures
- regulatory body, its power, its responsibility, guaranty of the rule that authority has not to be omitted
- resistance to the political influences
- how to inform the public

Dana DRÁBOVÁ Chairwoman of the State Office for Nuclear Safety and Member of the Board of Governors of the International Atomic Energy Agency

After graduating from the Faculty of Nuclear Science and Physical Engineering (FJFI) of the Czech Technical University (1985), she worked in the field of natural sources of radiation. After the Chernobyl nuclear power plant accident she dealt with issue of radiation monitoring, internal contamination and the preparedness of the state in the event of a radiological accident. Later on she engaged in solving the general issue of protection against ionizing radiation and participated in drafting legislation in this area. Since May 1996 as Director she managed the National Radiation Protection Institute. On the November 1, 1999 she was appointed Chairwoman of the State Office for Nuclear Safety. She participated in a number of IAEA expert missions aimed on improving the regulatory framework for radiation protection and nuclear safety in developing countries. Academic degree awarded in 2002. She is a member of scientific councils of VŠB – TU Ostrava, NRI Řež, and Research Center Řež. Ms. Drábová represents the Czech Republic in the IAEA Director General Advisory Committee for Nuclear Safety, and she is Chair of the Western European Nuclear Regulators Association (WENRA). At the IAEA General Conference in September 2010 she was elected a member of the IAEA Board of Governors.



NUCLEAR POWER DEVELOPMENT = THE FUTURE OF OUR CIVILIZATION

- limits and risks of the nuclear power development
- international strategies, geopolitical influences, competition of different sources and energies, solution for Euro-Atlantic region and the rest of world
- risks and limitations of the political decisions

Mirek TOPOLÁNEK consultant, Ex-Prime Minister of the Government of the Czech Republic

He graduated from the Faculty of Mechanical Engineering, Brno University of Technology, and Corporate Management in the Management Center Čelákovice. Professional career he started as a designer in the Automation and Mechanization OKD Ostrava, later as a leading designer of Energoprojekt in Ostrava. Afterwards he worked in VAE gradually as the Executive Director, CEO and Chairman of the Board.

In 1996 he was elected to the Senate of Parliament of the Czech Republic for the ODS (Civic Democratic Party), where he served for two terms (until 2004). During his Senate period he held a number of functions, as the Chairman of the ODS Senate Fraction (1998 – 2002), member and Deputy Chairman of the Committee on National Economy, Agriculture and Transport, a member of the Organizing Committee, and Chairman of the Subcommittee on Energy, in the period of 2002-2004 he was elected by Vice-Chairman of the Senate. In 2000 – 2002, he was the shadow trade and industry minister, then the chairman of the shadow government of the ODS. From 2002 to spring 2010, he was Chairman of the ODS. In 2006 he led the ODS to winning the election to the Chamber of Deputies of the Parliament, became a Deputy and was subsequently appointed Prime Minister of the Government.

As a Prime Minister he enforced the constituting of the European Nuclear Energy Forum Prague / Bratislava, as well as the initialization of the EIA of the NPP Temelín Units 3&4. During the Czech presidency of the EU (2009) he became the President of the European Council, and he actively solved the gas crisis, and he held the 1th Southern Corridor Summit. The coalition government he led till the April 2009. After retiring from high politics, he is acting as a consultant and university lecturer.



BET ON NUCLEAR POWER – WIL IT SUCCEED OR IS IT POSSIBLE FOR THE NUCLEAR POWER DEVELOPMENT TO FAIL ?

- nuclear renaissance – setting of development limits • political and psychological aspects influencing the nuclear power development
- capacity limits – production and quality in nuclear industry, a human resources • nuclear fuel, new technologies, Generation IV
- non-proliferation of fissile materials

Petra NETOPILOVÁ & Vít BRABEC, Jakub JANÍČEK, Stanislav ŠTEFÁNEK, Tomáš POTMĚŠIL

student's "think-tank", Energy Institute of the Faculty of Mechanical Engineering, Brno University of Technology

Petra Netopilová has been studying at Brno University of Technology, Faculty of Mechanical Engineering, Energy Institute, since 2006. She is graduating in 2011 (M.Sc. degree), and her dissertation is focused on the reactor systems of Generation IV. Gained information and knowledge of nuclear power predetermines her to become a leader of the student's "think-tank"; results of which she is presenting on the conference.

think-tank guidance:

Jan FIEDLER	Deputy Director, Energy Institute of the Faculty of Mechanical Engineering, Brno University of Technology
Karel KATOVSKÝ	Secretary, Czech Nuclear Education Network (CENEN)
Jiří MAREK	consultant



Don't worry daddy, we are building generation IV right away!



RECYCLING FOR A SUSTAINABLE WASTE MANAGEMENT OF THE NUCLEAR FUEL CYCLE

- the recycling process • benefits of recycling • experience with MOX and ERU recycling
- the French Case • development and trends in upcoming decades

Stefanie Alki DELICHATSIOS Business Manager, Recycling Business Unit, AREVA

Alki Delichatsios joined AREVA at the Logistics Business Unit. As Product Manager for used fuel and high-level waste transports and transport casks (TN12/2, TN17/2, TN28, ...), she handled key international projects such as HLW return to Germany using the TN28 cask, management of the TN17/2 fleet for SKB, and cask logistics for EPZ (Borssele NPP operator). Since 2009, Alki has been with AREVA's Recycling Business Unit, responsible for proposal preparation and technical-economical studies for international clients involving treatment and recycling services at the La Hague and Melox plants. She is also responsible for treatment and recycling contracts for RTR (Research and Test Reactor) fuel.

Prior to joining AREVA, Alki Delichatsios received her Bachelor's and Master's degrees from MIT (Cambridge, Massachusetts) in Electrical Engineering and then pursued an MBA at the College des Ingénieurs in Paris.



QUALITY AND MATERIAL REQUIREMENTS OF THE ADVANCED NUCLEAR POWER – THE INSPIRATION OF THE SUPPLIER OF NUCLEAR ISLAND DEVELOPMENT VISIONS

- development of new and advanced reactors brings the increased demands on quality and materials • future and the possibility of meeting the requirements of development • supplier of technology and its capacity potential in the light of the development visions

Roman ZDEBOR Temelín NPP 3&4 Completion Project Manager, Škoda JS a.s.

Roman Zdebor graduated at West-Bohemian University, Mechanical Faculty, Specialization Thermal and Nuclear Appliances (1992), and holds certificates in management, quality management and marketing from the respected training institutions. The whole Roman's professional life is connected with Škoda JS Company, where he started in marketing and strategy department, and reaching the number of management position. Since 2003 year he holds the position of Quality Management Director. Since 2005 he participated on the bid for NPP Belene Completion, finally as Bid Manager. In September 2009 Roman was appointed as Consortium Bid Project Manager for the Temelín NPP 3&4 Completion.



GENERATION III+ REACTORS AND STAKEHOLDER ACCEPTANCE OF NUCLEAR POWER: A CASE STUDY

- ways and instructions how to convince the public and authorities on the acceptance of the NPP construction and on the need of new orders (new orders in U. S. and over the world)
- delicate matter of confidence and the need to sustain it
- responsibility of the supplier towards the nuclear power trouble-free development

Rene BASTIEN Customer Project Manager, Westinghouse Electric Company

Rene Bastien has more than 29 years of experience in the nuclear industry with Westinghouse Electric Belgium, including work in fluid system design, emergency operating procedure development, training, project management and marketing. He holds a master's degree in engineering in Physics from the Liege University (ULg) and an engineering degree in industrial management from the Catholic University of Louvain (UCL). He managed the Safety & Systems Analysis group of the Belgian Westinghouse engineering department for more than 10 years and has been Customer Project Manager for Belgium, Czech Republic, Slovakia, Bulgaria, Romania and Ukraine for the last two years.



afternoon session

welcome address

Petr OTČENÁŠEK consultant and Session Chairman

In 1962 he graduated from the Faculty of Applied and Nuclear Physics of the Czech Technical University, where he further obtained a Ph.D. and was appointed Associate Professor in Applied Nuclear Physics. The longest and most important part of his professional carrier he spent as a university lecturer and scientist; during the period of 1976 – 1980, he held the position of the Chair of the Applied Nuclear Physics Dept. He is the author of approx. 200 publications (including 12 textbooks for university students). In parallel he has working as a consultant in a number of projects in the field of nuclear technologies and energy strategies for Czech and foreign institutions, bodies and companies. He was a member of the Governmental Independent Energy Commission, which creates the basis for the actual energy strategy of the Czech Republic.





ENERGY, NUCLEAR POWER, RESEARCH – VISIONS – ISSUES AND MILESTONES ON THE ROAD TO THE SELF-SUFFICIENT SOCIETY

- perception of nuclear power as a phenomenon of the changing energy sector and all-society climate
- the need for flexibility and consistency throughout the chain including research, development and implementation will take effect at reaching of both, a substantial progress and expected goals of sustainable development in the energy sector
- challenges based on the conclusions of the Independent Energy Commission
- current deficiency of qualified professionals in the chain from research to operations, may threaten the development of nuclear power

Václav PAČES Chairman of the Czech Energy Society, Chairman of The Learned Society of the Czech Republic, Ex-Chairman of the Academy of Sciences of the Czech Republic

Václav Pačes is a professor of biochemistry, which he studied at the Faculty of Natural Sciences of the Charles University in Prague. In 1968 he defended his doctoral thesis at the Institute of Organic Chemistry and Biochemistry and the next two years he spent at the University of Chicago and the McMaster University in Hamilton. Since 1976, he has working in the field of genomics, a discipline dealing with the “reading” the genetic information; in the Institute of Molecular Genetics (several years as director). He worked in several foreign universities and institutions (e.g. Yale University). In 1992 – 1996 he was Vice Chairman of the Academy of Sciences, and in the period of 2005 – 2009 he acted as its Chairman. He is chairman of the Czech Society for Biochemistry and Molecular Biology, a member of the prestigious European Molecular Biology Organization and a member of scientific councils of Charles University and the University of Chemical Technology in Prague.

He has published more than 100 original papers and participated to 5 books. He popularizes his topic of interest and development of science in the press, radio, TV and the internet. In 1989 he was awarded the State Prize for Science, and further the Prize for the Popularization of Science of the Czechoslovak Academy of Sciences. He was elected a Member of the European Academy of Sciences and Arts; he co-founded and leads the Learned Society of the CR.

In 2007, the Government of the Czech Republic appointed him by the Chairman of the Independent Commission for assessing the energy needs of the Czech Republic in the long term, which laid the conceptual solutions of future energy development. He continues to use his experience as the Chairman of the Czech Energy Society.



PUBLIC CONFIDENCE – LIMITING, FRAGILE AND EXPLOITABLE FACTOR OF NUCLEAR ENERGY DEVELOPMENT

- is PR well managed by us and over the world; does a reasonable consideration of the public exist?
- fundamental risks of the nuclear energy development in terms of environmental protection, and political responsibility
- what are the challenges for the advocate of nuclear energy, where the public is most sensitive, what may threaten the future development

Vítězslav DUDA Director, Radioactive Waste Repository Authority

He was graduated from the Faculty of Electrical Engineering of the Czech Technical University in Prague (M.Sc., 1985), and Sheffield Hallam University (MBA, 1999). In 1985 he joined the company ČEZ, where he worked as operator and head of reactor unit in Dukovany NPP. Since 1992, he worked as a specialist at Section of the nuclear fuel cycle of the ČEZ Headquarters, and in 1995 he became the assistant to the director of the Division of NPP Temelín construction, dealing with construction and commissioning. In 1998 he was elected as the Director of the Radioactive Waste Repository Authority. Mr. Duda is a member of several committees and expert groups at the EU level dealing with radioactive waste management and decommissioning.



MANAGING OF THE ORGANIZATIONAL CHANGES AT NUCLEAR POWER PLANTS – COMPLEX ROAD TO SAFE NPP OPERATION AND GAINING PUBLIC CONFIDENCE

- the need for change - reasons: difficulties of management, experience, feedback, culture of safety • nuclear and technical safety includes the culture of safety, technical and human quality of the staff • competitiveness of nuclear energy and guarantee of its favorable perception in the public sector

František HEZOUČKÝ consultant, former chief person for commissioning of all Czechoslovak and Czech NPPs

He is a graduate of the Faculty of Mechanical Engineering at the Czech Technical University (specialization in thermal and power facilities) as well as at the Slovak Technical University (field of nuclear technique). He has long-term experience with commissioning of the nuclear power plants in Jaslovské Bohunice where he gradually held number of various positions from the Primary Circuit Operator up to Department of Operational Modes Head. In Dukovany Nuclear Power Plant he worked as the Chief Commissioning Engineer of all four units. During 1987 - 1993, he worked in the Temelín NPP as a Deputy Director for Operation Preparation and as a Deputy Director for Commissioning. In the following years he worked for Westinghouse as advisory engineer for Temelin completion project, and for consulting company Colenco, too. In January 1999, he was elected the Vice-Chairman of the Board of Directors of ČEZ, and on June 10, 1999, he became Managing Director of the Temelín NPP Construction Division. Under his leadership there has been a fundamental change in the timing of construction rate. After the Temelin NPP completion in April 2003 he left ČEZ to work for IAEA in Vienna as Senior Nuclear Engineer. Since the end of this mission he provides consulting services and holds lectures at several technical universities.



LONG TERM SUSTAINABLE NUCLEAR ENERGY

- review of development trends and challenges, which may limit its large scale implementation in adequate quality, availability and sustainability
- opportunity of new technologies • nuclear fuel availability, what to do with spent fuel and role of international cooperation
- only with awareness of all potential challenges the investor may properly plan

František PAZDERA Deputy Director for R&D, Division of Power Generation, ČEZ, a.s.

He was graduated from the Faculty of Mechanical Engineering, Technical University in Plzeň, majoring in Nuclear power plant design in 1972. He joined the Nuclear Research Institute, Řež in 1972, and worked on the optimisation of Fast Breeder Reactors, computer modelling of LWR fuel rod behaviour and many other projects. In 1985, he received his PhD from the Faculty of Nuclear and Physical Engineering, Technical University in Prague. Since 1983, he coordinated Project "LWR Core Safety". Since 1990, he was Director of the Nuclear Power and Safety Division of the Nuclear Research Institute, Řež, and from 1993 until April 2008, CEO and Chairman of the Board of Nuclear Research Institute Řež a.s. Now, he is member of its Supervisory Board. Results of his technical and scientific activities were published in many reports, conferences and journals. Under his leadership, the Nuclear Research Institute Řež a.s. has become an important research company (1 000 employees and 1 600 MCZK turnover), performing research, services and architect engineering mainly in the field of nuclear and fossil energy and special production for healthcare and other branches. He participated also on several IAEA studies. In 2003 and 2008, he was EC Committee member for Five-Year Assessment of the EC Joint Research Centre. From 2002 until 2006, he was member of Advisory Group on Energy for FP 6, EC, DG Research. Currently, he is member of the following bodies: SG SET Plan EU, SAGNE (since May 2010) an advisory group of DG IAEA etc. Since September 2010, he is Chairman of Sustainable Nuclear Energy Technology Platform Governing Board.



TWO RELEVANT CONDITIONS ENABLING THE REAL NUCLEAR POWER RENAISSANCE

- nuclear power as a phenomenon affecting the global geopolitical and military strategy
- what is renaissance and what is relapse of nuclear power
- how to convince the banks and private investors
- how to tame the fear of the fissile materials proliferation

Ivan BENEŠ Chief Executive Officer, CityPlan Ltd.

Ivan Beneš held Master of Science degree in power engineering from the Czech Technical University (CTU), and held the post-gradual courses on the Faculty of Nuclear Science and Physical Engineering of CTU, and the University of Economics, Prague. He has more than 35 years of experience in the engineering, economy and crisis management. From 1971 to 1990 he worked in Energoprojekt Praha. In 1992 he has established CityPlan Ltd., and has acted till now as its Chairman and Managing Director. He was a co-founder of the Czech Association of Energy Economics (CZAEE), which is an affiliate of IAEE. In March 2008 in Brussels he was elected by a head of the topical sub-group WG2.2 Distributed Network Security (in the framework of the ESRIF WG2 Security of Critical Infrastructure). The goal of ESRIF (European Security Research and Innovation Forum) is to facilitate the dialogue between the private and public sector, which is necessary to increase the safety of infrastructure and overcome possible crises. Currently he is dealing with the security research in the field of critical infrastructure, energy economics and the impacts of energy use on a sustainable development.

Mr. Beneš holds lectures at the Institute of Emergency Management of the University of Economics; and he has published more than 60 articles in professional journals.



COURSE OF THE CONFERENCE
IN PICTURES

NE·RS 2010

















VIEW FROM THE PALACE WINDOWS

LOOKING FORWARD TO SEEING YOU AT THE **NE•RS 2010** CONFERENCE



HISTORY OF KAISERSTEJNSKY PALACE

1699–1720 Baroque reconstruction initiated by Sir Kaiserstein but completed by Petr Radecký. 1859 Monument of marshal Radecký was built on the square. Until 1918 the square carried his name.

1866 Václav Petzold, a hotelier, buys the palace and opens an exclusive restaurant. For the next hundred years it is called „U Petzoldů“.

1904–8 Famous opera singer Emmy Destinn, a partner of Enrico Caruso, rents an apartment here.

1977 Total reconstruction begins under the architects Zdeněk Pokorný and Jaroslav Bělský.

1981 The palace is registered as a UNESCO heritage site.

1997 Restitution procedures are completed and the palace is returned to its original owners.

<http://www.kaiserstejnypalac.cz/Text/uvodni-stranka?MenuItemId=1>

