







Dear colleagues,

For a long time, the world has been looking for a way to overcome the economic crisis, seeking a path of growth. This will not be possible without intensive development of the electric power industry. Two possibilities present themselves – either traditional energy generation or expensive innovation. The Czech Republic holds on to its tradition – nuclear energy. It is a part of the state concept; we emphasise education and support of its development, follow global trends. We have the support of the public, riding the wave of general favour. This obliges us to not make mistakes.

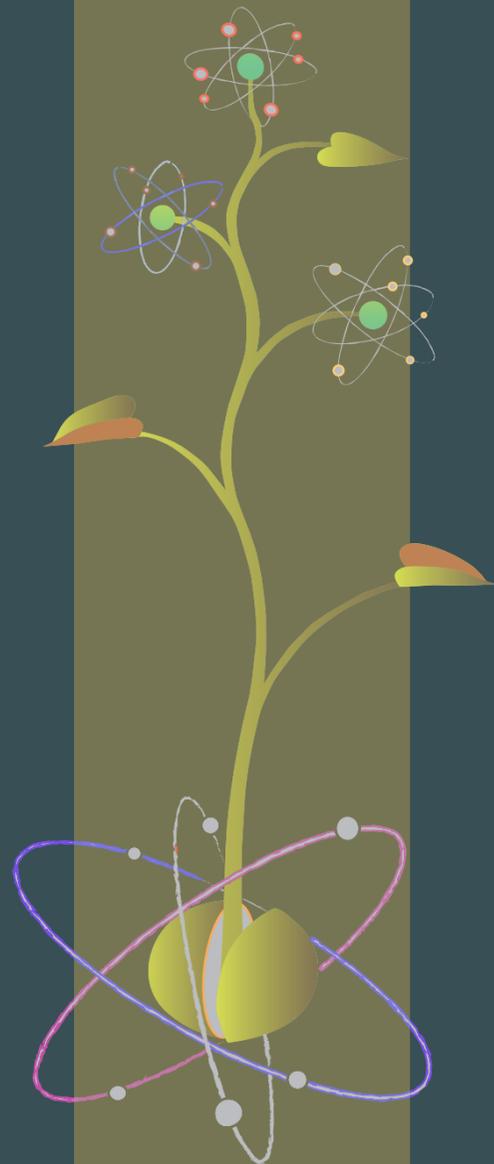
That is why we have prepared the programme of the 5<sup>th</sup> annual NERS 2012 conference as a response to all this. The Czech Republic remains on course, and I do believe that it will play its part in ensuring that the decisions on how energy needs should be met in developed technological societies will be made based on knowledge, skill and arguments instead of emotions. And that is what today's presentations and discussions have been about.

I believe that the NERS 2012 conference fulfilled your expectations, and we look forward to meeting you at the 6<sup>th</sup> Annual Conference on Nuclear Power NERS 2013 in Prague.



Jiří Marek  
NE-RS Chairman

Prague, November 7, 2012



# CONFERENCE PROGRAM

morning session

## conference opening and welcome address

**Aleš JOHN** Chairman of the Board of Directors and CEO, Nuclear Research Institute Řež, plc., Chairman of the Morning Session



Graduated from the Faculty of Electrical Engineering, Brno University of Technology (1972). In the year 1986 he finished his postgraduate studies at the Comenius University in Bratislava (Nuclear Energy and Ecology), and in 2003 he received MBA degree from the PIBS. His career in the energy sector began in 1982 at Dukovany NPP. There he held various management positions starting as a Chief Engineer for Radiation Protection, continuing as the Head of the Department of Radiation Safety, Deputy Director of Safety, to the Director of Dukovany NPP (1987–2002). During the years 2003–5 he was with ČEZ Division of NPP as the Director of the Management and External Relations. When the Division of Generation was established in ČEZ he became the Deputy Division Director for Foreign Affairs. In connection with this position he was associated with FORATOM in Brussels, where he acted till the end of 2007. In the period 1994–2010 he was the WANO Moscow Center Governing Board Chairman and a member of the Board of WANO. In April 2008 he was appointed as CEO and Chairman of Board of the Nuclear Research Institute Rež. A. John is a member of the Engineering Academy of the Czech Republic. He is publishing articles focused on nuclear energy, and often presents his views at conferences with themes Nuclear Energy, International Cooperation, Communication.

**• THE CZECH ROAD TO SUSTAINABLE ENERGY – POLITICAL AND PUBLIC CONSENSUS • CONTRIBUTION OF NUCLEAR POWER TO CURRENT TECHNOLOGICAL DEVELOPMENT AND TO THE DEVELOPMENT OF TECHNICAL EDUCATION • SMALL AND MIDSIZED REACTORS – THE 5<sup>TH</sup> GENERATION IS COMING IN • PROGRESS IN THE TRAVELING WAVE REACTOR PROJECT – IS COMMERCIAL DEPLOYMENT APPROACHING? • VIEWS OF WORLD LEADERS IN NUCLEAR TECHNOLOGY TOWARDS THE FUTURE AND INNOVATIONS OF NUCLEAR POWER**



## POLITICAL AND CIVIL CONSENSUS ON THE VISION OF ENERGY FUTURE AND ITS REFLECTION IN THE STATE ENERGY POLICY



**Radek ŠULA** Head of the Department of Nuclear Safety and Management of Nuclear Area, Ministry of Industry and Trade of the Czech Republic

After finishing his engineering degree at the Odessa Polytechnic Institute in Odessa, Ukraine, in the field of Nuclear Power Plants and Equipment (1993), Radek Šula joined ČEZ, a.s., where he worked as the operator of a unit control room at the Dukovany and Temelín NPPs, head of reactor unit in Temelín and manager of the Department of Planning and Implementing Outages in Temelín. Later, he became the Knowledge Manager at NPP Temelín and a manager of the Safe 15 Tera project, one of the key strategic projects of ČEZ, a.s. His work involved active international cooperation with IAEA and WANO and he took part in OSART and WANO Peer Review safety check-up missions at foreign nuclear power plants. Since 2011, he has been the head of the Department of Nuclear Safety and Management of the Nuclear Industry.

## DEVELOPMENT OF NUCLEAR POWER – AN OPPORTUNITY FOR THE SYSTEM OF TECHNICAL EDUCATION



**Pavel PUFF** Manager of Strategic Recruitment, ČEZ, a.s.

He is a graduate of the Technical University of Ostrava, Faculty of Economics. His whole professional career is connected with the human resource management. Since 1995, when he joined the North Moravian Distribution Company, he has working in energy sector; from 2005 to the present time he is an employee of CEZ. During his career he has worked in a number of executive positions, currently he manages the area of strategic recruitment of CEZ Group. Pavel Puff has completed a number of management courses, including the study of International Institute of Certified Studies in Strategic Management (Certified Strategic Manager). At present time he frequently is acting as a lecturer and conference speaker in the field of human resources.

**Jiří HAVLÍN, Antonín ŽIVNÝ, Jitka MATĚJKOVÁ, Ladislav SUK** students' think-tank

## **DEVELOPMENT AND A POSSIBLE APPLICATION OF SMALL AND MIDSEIZED REACTORS – THE 5<sup>th</sup> GENERATION IS COMING IN**

**Jiří HAVLÍN** representative of the students' think-tank (Czech Technical University in Prague, Brno University of Technology)

Jitka Matějková and Ladislav Suk reached their Master's degree from the Brno University Technology, Faculty of Mechanical Engineering, Energy Institute, where they now continue in doctoral studies. Regarding the interest in nuclear energy (their thesis concerned the boiling crisis) they have become members of the student think-tank, which is conducting a study on the development of small and medium-sized reactors (figuratively it is possible to call them "Generation V" reactors) and their possible applications. Jiří Havlín and Antonín Živný are students of the last year of master's degree study at the Czech Technical University in Prague, Faculty of Mechanical Engineering, study program 'Nuclear Power Plants'. Since the beginning of the study they are active in issues concerning energy and their thesis focused on the field of nuclear energy. Presentation summarizing the results of the work of think-tank was presented by Jiri Havlín.



### **think-tank guidance:**

Václav DOSTÁL | Department of Energy Engineering, Czech Technical University in Prague, Vice-President of CENEN

Karel KATOVSKÝ | Department of Electrical Power Engineering, Brno University of Technology, Secretary of CENEN

Jiří MARTINEC | Energy Institute, Brno University of Technology

## TWR PROJECT – PATH TO THE RENEWABLE NUCLEAR POWER

Contribution and Comments from Pavel Hejzlar, TerraPower, LLC are Highly Appreciated



**Václav DOSTÁL** Associate Professor, Department of Energy Engineering, Czech Technical University in Prague, Vice-President of CENEN (Czech Nuclear Education Network)

After graduation with Master's Degree from the Department Thermal and Nuclear Power Systems of the Faculty of Mechanical Engineering, Czech Technical University in Prague (2000), he joined the Massachusetts Institute of Technology for doctoral studies in nuclear engineering and graduated in 2004 (Ph.D. Degree). Then he worked in Japan at the Tokyo Institute of Technology, Research Laboratory for Nuclear Reactors with prof. Takahashi. His research topic was the fast direct contact boiling lead-bismuth cooled reactor. After his return to the Czech Republic in the summer of 2007, he strengthened an academic staff of the Department of Power Engineering of the FME CTU in Prague. He is also working as the researcher in the Division of Nuclear Safety of the ÚJV a.s. Since 2009 he has been Vice-President of the CENEN association (Czech Nuclear Education Network), which contributes to enhancement of the quality of the Czech nuclear education. Main focus of his pedagogical activities concerns of the lectures in study program 'Nuclear Power Plants'. His scientific interest includes nuclear reactors thermal hydraulics, boiling crisis, the safety of nuclear power facilities and their design.

## GEN IV REACTORS, AREVA'S PERSPECTIVES

**Stefan NIESSEN** Vice-President Research and Innovation, AREVA NP GmbH

Stefan Niessen has been working in the German electricity supply sector since 1994. He studied electrical engineering at Aachen University of Technology where he also obtained a PhD in Power Economics. He was part of the core team that set up the European Energy Exchange, today Europe's largest power exchange. In parallel to his work there, he obtained an MBA from Duke University (USA). After six years at the exchange he joined the AREVA group where he has been in charge of strategic marketing. Today he is responsible for AREVA's research and development in Germany.



## THE REVIEW OF THE EXISTING PROJECTS OF SMALL AND MEDIUM SIZED NUCLEAR REACTORS IN RUSSIA



**Larion A. LEBEDEV** Professor and Director General of the State Research and Development Center for Expertises of Projects and Technologies, Moscow, representative of MIR.1200 Consortium

Graduated from Moscow Physical-Engineering Institute – the Bachelor’s degree in 1979, the Master’s degree in 1981 and then reaching PhD in 1984. Completing his scientific career he obtained in 2000 a title of Doctor of Technical Sciences. Professor Lebedev acts as an expert of the International Atomic Energy Agency (IAEA). He actively participated in the elimination of impacts of the Chernobyl NPP accident - he worked in 1986 as the Head of Radiation Reconnaissance Group of US-605. During the years 1989–1990 he was the Head of Laboratory of Nuclear Science and Technology Centre of Tokyo University. Prof. Lebedev is the author of several monographs and more than hundred scientific articles and inventions. He was awarded a number of governmental prizes, among them the Order of Bravery, the Order of Honor, and seven governmental medals. He is the member of the Russian Ecological Academy, the Academy of Engineering of Russia, and the Russian Academy of Natural Sciences. From 2000 till now he is the Director General of State Research and Development Center for Expertises of Projects and Technologies.

## WESTINGHOUSE SMALL MODULAR REACTORS – DESIGN AND APPLICATION



**Christian SAUER** Customer Project Director for Switzerland, Czech Republic, Slovakia and Hungary, Westinghouse Electric Germany GmbH

Graduated from the Technical University of Karlsruhe (Germany) in 1976 with diplomas in Mechanical Engineering and Nuclear Engineering, he is since then working in the nuclear industry. Starting at Babcock-Brown Boveri Reaktor GmbH in Mannheim (Germany) in safety and operational analyses and control system optimization, he served as Integrated Testing and Acceptance Testing Manager during the start-up of a German PWR. Later assignments at now ABB Reaktor include Manager of Core Physics and Radiation Protection, and Program Manager for major projects in global contracts for Field Services (NDE and Repair of primary components), Engineering Services (simulators, system upgrades and modification projects) and Nuclear Automation. Since his company is part of the global Westinghouse organization, he is working as Customer Project Manager for representing all Westinghouse services and products; today his responsibility is Customer Project Director for Switzerland, Czech Republic, Slovakia and Hungary.

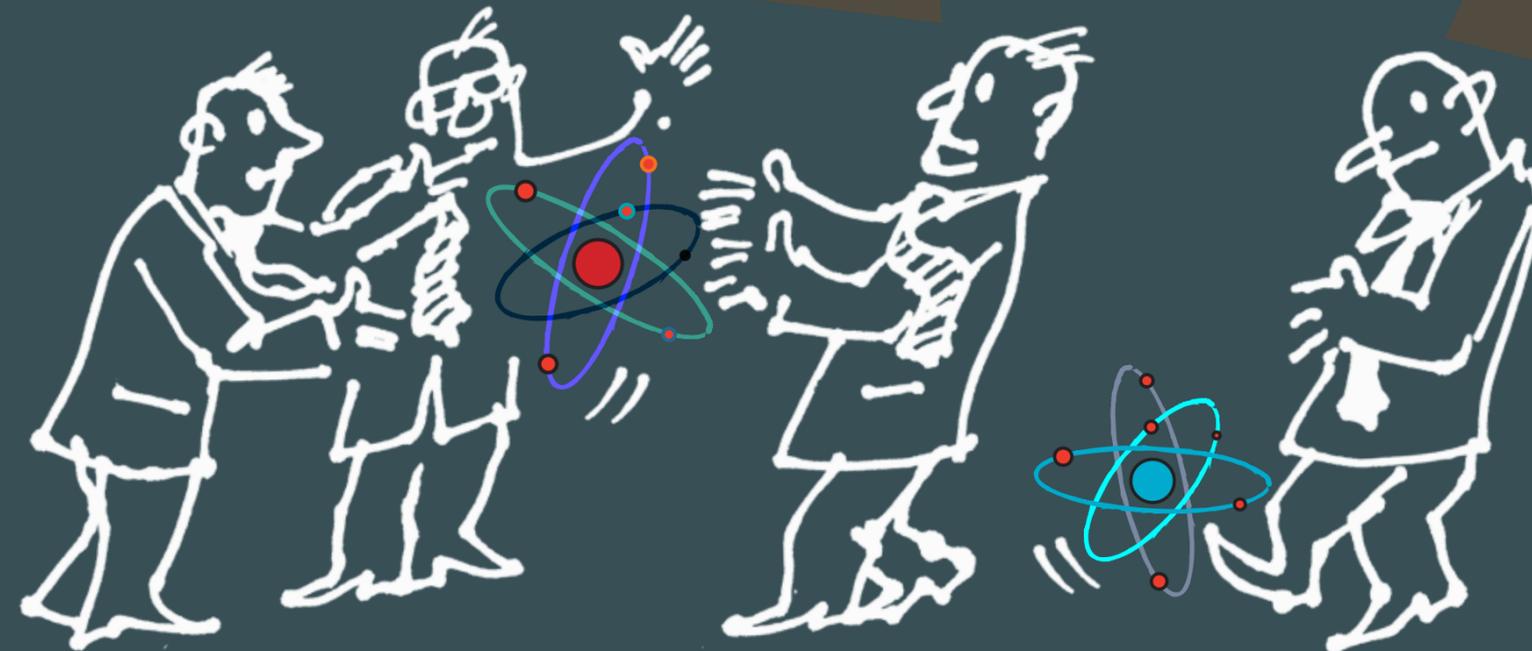
afternoon session

introducing of the topical theses of the panel discussion:

**HOW FRAGILE IS PUBLIC ACCEPTANCE OF NUCLEAR POWER AND WHERE DO WE HAVE TO FOCUS OUR ATTENTION AND CARE TO MAINTAIN ITS CURRENT POSITIVE LEVEL?**

**Jiří MAREK** NERS Chairman, Chairman of the Afternoon Session

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 eighteen 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.





**Marie DUFKOVÁ** PR Senior Consultant, Chairwoman of the ČEZ Education Project „World of Energy“, Section of Communication, ČEZ, a.s.

- nuclear energy as a part of the modern care about society

Graduated from the Czech Technical University of Prague, Faculty of Nuclear Science and Physical Engineering. Her career in communication she commenced in 1979 as a Head of Information Dept. of Nuclear Information Centre Prague, responsible for processing and evaluation of scientific information for the INIS (International Nuclear Information System) input data preparation and information retrieval. In the year 1993 she joined ČEZ company, where she works till now (with a short break in 1999, when she worked as a Project Manager of the European Union Information Centre to the Czech Republic). She worked in number of managerial position as Head of Information Programs Dept., Deputy Head of Communication and spokesperson. Currently as a Public Relations Senior Specialist she is responsible for the strategy and implementation of the long-term information and educational programs for public, as well as for the promotion and popularization of power industry (design and preparation of printed and audio-visual materials, exhibitions, seminars, coordination of NPP Information Centers etc.). Marie is a lecturer of IAEA for nuclear communication, member of the Czech Nuclear Society, represents the Czech Republic in the Nuclear Information Committee Europe, and is a founder of WiN Czech (Women in Nuclear).



**Jan HERZMANN** sociologist, Managing Partner, ppm factum research, Ltd.

- are we able to evaluate the public acceptance, even if the subject of research is technically complicated and unknowable?

Graduated from the Faculty of Mathematics and Physics, Charles University (1977). In 1984, he finished his postgraduate studies at the University of Economics in Prague (Statistics), and in 1993 studied management at Universität St. Gallen, Switzerland. His career began in 1977 at Public Opinion Research Institute, he specialized in polling methodology. In 1990, he headed a research team which restored election studies that were prohibited in Czechoslovakia in 1948 to 1989. Next year, he co-founded market and opinion research agency Factum and become its managing director in 1994. In 2005 to 2006, he participated in formation of an international network of market and opinion research agencies Factum Group and became its CEO. From 2009, he has been a managing partner of a newly established ppm factum group. As a visiting lecturer, he gives lectures at the University of Economics, Prague, Czech institute of advertisement and marketing communication and Brno International Business School. He was the president of the Czech marketing society from 2001 to 2005 and the national representative of the global market and opinion research professionals association ESOMAR in the Czech Republic from 2006 to 2012.



**Slavomil HUBÁLEK** psychologist and university teacher, ALEA – psychologie, Ltd.

- where a fear of the unknown is generated – is the power of communication based on technical knowledge strong enough to overcome this?

As a graduated glassblower he continued in university study of psychology at the Philosophical Faculty of the Charles University in Prague (graduated 1974). Next eight years he worked as a clinical psychologist at the Sexology Department of a Psychiatric Hospital in Horní Beřkovice. He is a co-author of the concept of complex adaptive therapy of the sexology patients. In those years he worked simultaneously in University Student’s Counseling Center. During the years 1982 to 1990 as a researcher at the Institute of Sexology, Charles University, Faculty of Medicine, he investigated a female sexual behavior, psychological diagnostics and psychotherapy. From 1990 to 1992 he was secretary and spokesman of the Ministry of Health. Since 1993 he is the director of consulting company ALEA-psychologie. The company deals with human resources recruitment and consulting services for companies. Slavomil acts as a court expert in the field of clinical psychology and sexology, the same as lecturer of psychotherapy trainings and is active in publishing both in psychology and human resources, as well as in the broader issues of civil society. He teaches the social psychology at the Faculty of Social Sciences of the Charles University and at the University of Economics in Prague. He has participated in the creation of several books of fiction, now he is publishing book called “Confessor of the Murderers”.



**Jakub KOUTEK** media analyst, smart-point.cz

- media are neither a friend nor an enemy of nuclear power - how to communicate with them?

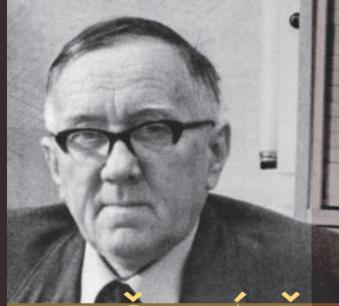
Jakub Koutek is a media consultant with focus on corporate communication, development of strategies and initiation of topics. After graduating from socio-economic faculty at UJEP University in Ústí nad Labem, Faculty of Multimedia Communications at Tomas Bata University and studies of economics, he began working in marketing communication and public relations. Jakub also completed a work & study stay in Dallas, USA and a study management program (ILAC executive) in Toronto, Canada. In last ten years, he is dedicated to media communication. He worked in managerial positions for several clients and as a strategic consultant in media relations (eg. NH Hoteles, HSBC, Lloyd Coils Europe, Škoda Auto, OBI or RETIA). He focuses on conceptual work with the media, developing his work-related contacts on different levels and maintains a global view of communication.



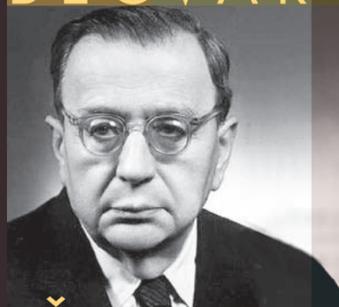
**Dalibor MATĚJŮ** Executive Head, VÚJE Česká republika Ltd., Dukovany

• trust in authorities and opinion leaders as an important factor of the public acceptance of nuclear power • how strong the economic benefits are?

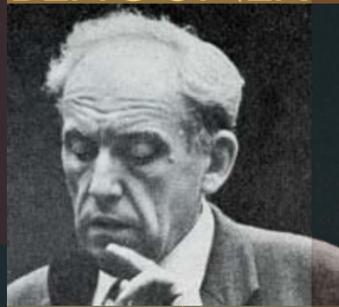
Dalibor Matějů graduated from the Faculty of the Electrical Engineering, Brno University of Technology. Thereafter he completed post-graduate studies in nuclear power plants operating at the Faculty of Mechanical Engineering, Brno University of Technology, and particular training for the reactor operator / shift engineer of the nuclear power plants. He started his professional career as an operative electrician in the combined heat and power plant Brno. Further he joined the staff of the new-built NPP Dukovany and became a chief technologist, continuing in various senior managing positions in ČEZ, including a Member of the Board of Directors. In the year 1996 he left to private practice as a senior adviser. He is especially focused on energy industry processes improvement. Among others he is working as an OPPI advisor for the CR MIT (Eco-energy Program). In July 2010 he was appointed the Executive Head of VUJE CR Ltd.



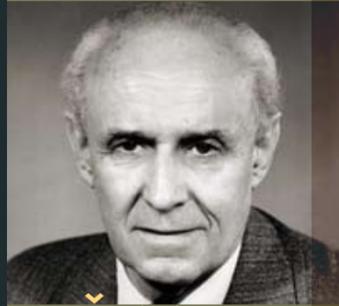
BEČVÁŘ



BĚHOUNEK



ŠIMÁNĚ

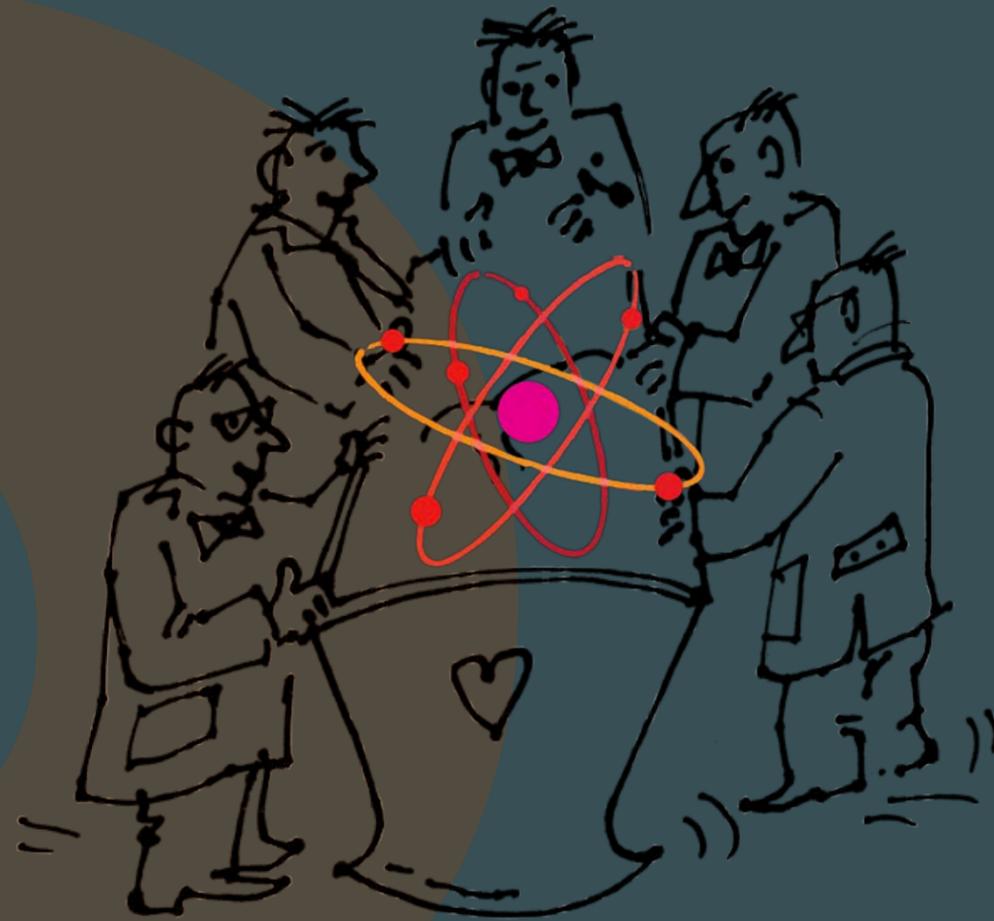


KUNZ



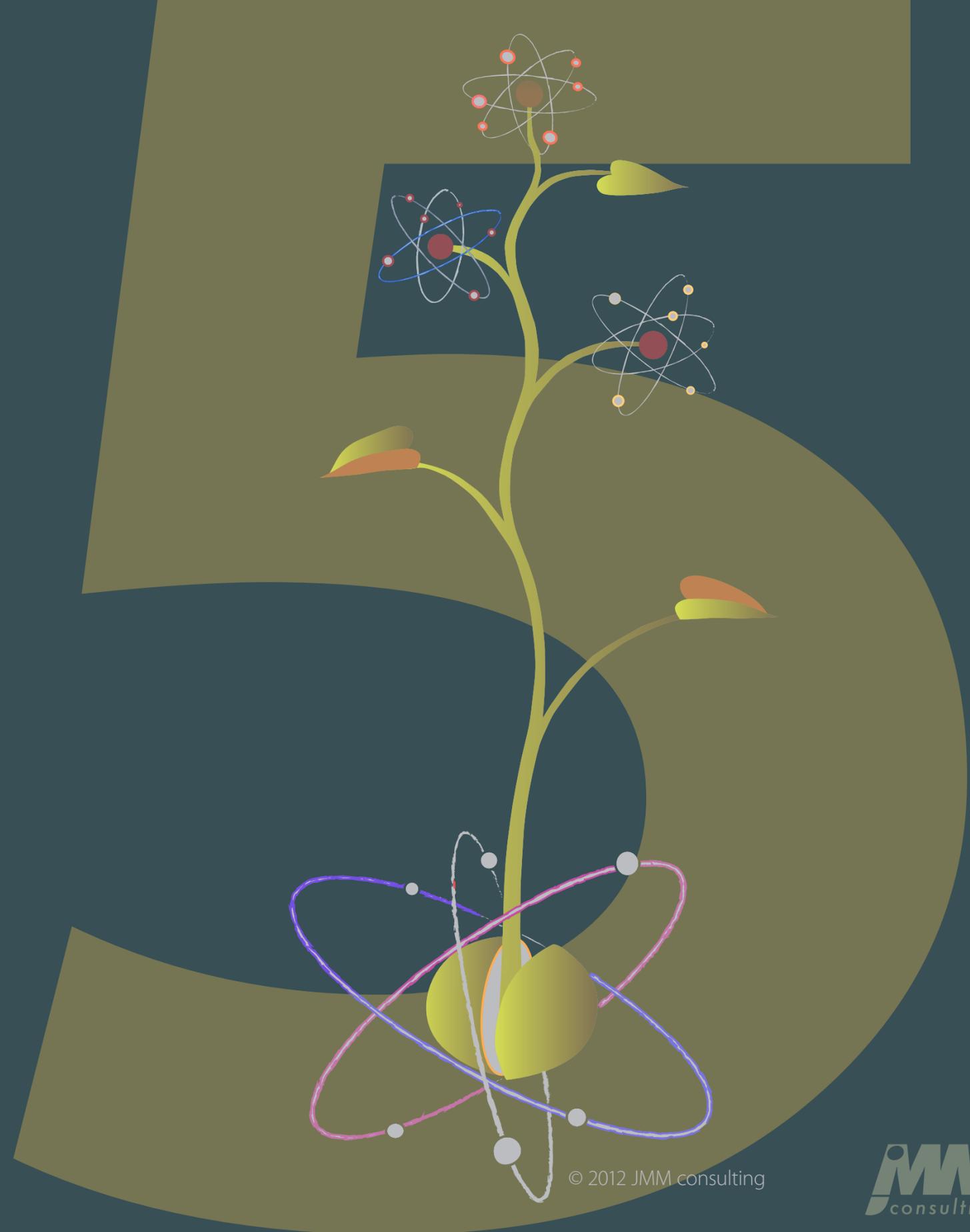
NĚMEC

Ceremony dedicated to commemorate the few of the important individualities of our nuclear history, who, through their work and life used to move the Czech nuclear development forward.



Meeting was opened and the publication including short profiles of professors J. Bečvář (nuclear engineering), F. Běhounek (dosimetry), Č. Šimáně (nuclear physics), E. Kunz (radiation protection) and J. Němec (materials), was introduced by **Dana DRÁBOVÁ**, the Chairwoman of the State Office for Nuclear Safety.

COURSE  
OF THE CONFERENCE  
IN PICTURES































LOOKING FORWARD TO SEEING YOU AT THE **NERS 2013** 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.kaiserstejnspalac.cz/Text/uvodni-stranka?MenuItemId=1>

#### VIEW FROM THE PALACE WINDOWS

