

Invited Technical Meeting

Expanding Nuclear Power to New States: Defining Needs and Exploring Paths to Success

10-14 June 2008
Villa del Grumello
Como, Italy



Organized by



International Working Group
Landau Network-Centro Volta (IWG-LNCV),
Como, Italy



Texas Engineering Experiment Station (TEES),
College Station, TX, USA

in cooperation with



World Nuclear
University (WNU),
London, UK



International Science
and Technology Centre
(ISTC), Moscow, Russia



US Civilian Research
and Development
Foundation (CRDF),
Washington DC, US



Chamber of Commerce of
Como, Italy



Insubria Center on
International Security
(ICIS), Como, Italy

and with the support of

Italian Ministry of Foreign Affairs (MFA), Rome, Italy

Rationale & Agenda

Expanding Nuclear Power to New States: Defining Needs and Exploring Paths to Success

Nuclear power is increasingly seen as an important alternative providing States with advantages in energy security, zero carbon emission electricity generation, and economic and social development. IAEA General Conference Resolution GC(51)/RES/14¹ recognized the interests of the international community in expanding nuclear power to new States under safe and secure arrangements and commended international initiatives seeking to encourage, facilitate, and stimulate this expansion.

Nuclear power is unlike any other energy production mechanism. It is uniquely global in character. Every national program derives benefits from the global nuclear community, and in turn, each national program affects the stability and well-being of the global community. As a result, it is often said that *a nuclear accident anywhere is an accident everywhere*. Moreover, just as safety is essential, so too are measures to prevent the proliferation of nuclear weapons and nuclear terrorism.

States seeking to acquire nuclear power or to expand existing fleets need access to nuclear technology, goods, and services; need to prepare their legal and technical infrastructure so as to purchase, build, operate, and maintain their nuclear power plants in a safe and secure manner; and need to finance their programs to ensure that they are reliable and profitable.

This Invited Technical Meeting (ITM) is aimed at matching the needs of the nuclear community, reflecting how buyers and sellers can best realize the promise of nuclear energy under the principles of responsible stewardship. It will bring together government and utility experts from States seeking to acquire or expand nuclear power capabilities with panels of experts from governments, the nuclear industry, and organizations including the IAEA. The ITM will aim to find common consensus on shaping the future nuclear enterprise.

Invited States (Argentina, Brazil, Mexico, Namibia, Nigeria, Jordan, Malaysia, Vietnam) will send experts from the responsible government authority and from the electrical utility that will undertake the first or expand nuclear power application within the State. Discussion leaders will represent a broad international selection of experts representing all aspects of nuclear power, including finance, national regulation, and IAEA safety, security and safeguards.

The setting will be Villa del Grumello on the shore of Lago di Como in northern Italy. The atmosphere will be informal, yet intense. The Conference will begin on Tuesday, June 10th, and conclude on Saturday, June 14th.

The International Working Group - Landau Network Centro Volta will organize the Invited Technical Meeting with the Texas Engineering Experiment Station and in cooperation with World Nuclear University, the International Science and Technology Centre, the US Civilian Research and Development Foundation, the Chamber of Commerce of Como, the Insubria Center on International Security, and with the support of the Italian Ministry of Foreign Affairs.

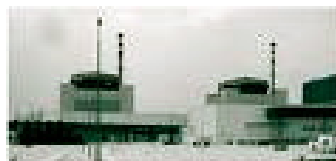
¹Conference Resolution GC(51)/RES/14, Strengthening the Agency's activities related to nuclear science, technology and applications, adopted on 21 September 2007.



Areva EPR Reactor, Olkiluoto, Finland
(Artist's concept)

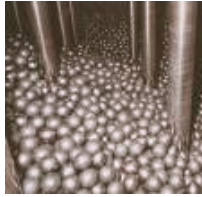
PROGRAM*

Day One: Tuesday, 10 June 2008		
09:30h	<i>Welcome Remarks and Introduction</i>	<i>Maurizio Martellini, Chair, Secretary General, LNCV Paolo Serpi, Italian Foreign Ministry David Boyle, Nuclear Security Science and Policy Institute (TEES) Thomas Shea, World Nuclear University (WNU) Waclaw Gudowski, Deputy Executive Director, International Science and Technology Center</i>
10:30h	<i>Introductions & Brief Presentations</i>	<i>Participants</i>
11:45h	<i>Keynote Speech</i>	<i>Robert Hawley, CBE, Vice Chancellor-WNU and former CEO, British Energy, "Hawley's Rules for Successful Nuclear Power"</i>
<i>12:30 - 13:45h: Lunch</i>		
<i>Address by Giorgio Conetti, Deputy Rector of University of Insubria</i>		
14:00h	<i>Panel 1: The Nuclear Showroom: Large-Scale Nuclear Power Reactors</i>	<i>Waclaw Gudowski, ISTC, Chair Chaim Braun, Stanford University: A Market Survey Adrian Collings, WNA: The Global Nuclear Renaissance: an Industry View Jukka Laaksonen, Radiation and Nuclear Safety Authority - STUK: Regulation of new nuclear build in Finland [to be presented by Roger Howsley, Krios Consulting Ltd]</i>
15:00h		<i>Q&A and Discussion</i>
<i>15:30h: Coffee Break</i>		
16:00h	<i>Panel 2: Low-Infrastructure, Limited Grid Reactors</i>	<i>Tom Shea, WNU, Chair Marco Ricotti, POLIMI: The IRIS Reactor David Wimpey, PBMR: The Pebble Bed Modular Reactor</i>
17:00h		<i>Q&A and Discussion</i>
17:30h	<i>Keynote Speech</i>	<i>H.E. Ambassador Dr. Mohamed Shaker: The NPT Regime: Challenges for Future Security</i>
18:15h	<i>Adjourn</i>	
20:00h	<i>Dinner</i>	



*Twin Unit VVER 1000 Station,
Temelin, Czech Republic*

* Speakers listed in alphabetical order



*South African Pebble Bed
Modular Reactor*



Day Two: Wednesday, 11 June 2008

09:30h	Panel 3: Critical Goods Services	Bob Hawley, Chair <i>Alexey Grigoriev, Texsnabexport: IUEC-Angarsk, Meeting the World's Enrichment Needs</i> <i>Maria Katsva, Ux Consulting: Nuclear Fuel Markets</i> <i>Charles McCombie, Arius: Nuclear Waste Management</i>
11:00h		<i>Q&A and Discussion</i>
12:00h	A Convention on Nuclear Power: Introduction & Reading Assignment	Maurizio Martellini, LNCV Tom Shea, WNU
		<i>Q&A and Discussion</i>
12:30 - 13:45h: Lunch		
14:00h	Panel 4: Nuclear Security: Preventing Terrorism and Proliferation	Roger Howsley, Chair <i>Roger Howsley, WINS: Best Practices / Physical Protection</i> <i>Heather Looney, U.S. National Nuclear Security Administration (NNSA): Reducing Proliferation Risks through National Programs of Cooperation</i> <i>Sonia Moreno, Argentina, Autoridad Regulatoria Nuclear (ARN), and Tom Shea: IAEA Safeguards</i>
15:30h		<i>Q&A and Discussion</i>
16:00h: Coffee Break		
16:15h	Keynote Speech: Tariq Rauf, IAEA	<i>The Future of Nuclear Fuel Assurances</i>
17:15h	Adjourn	
20:00h	Dinner	



*Advanced CANDU Reactor
(ACR-1000)
Artist's Concept*



*Westinghouse AP1000
Reactor*

Day Three: Thursday, 12 June 2008

9:30h	<i>Keynote Speech: Edward McGinnis, US DOE</i>	<i>The Global Nuclear Energy Partnership: From Vision to Reality</i>
10:15h	<i>Panel 5: Regional & International Initiatives Aimed at Global Expansion of Nuclear Power</i>	<i>Tariq Rauf, Chair Vladimir Kagramanyan, IPPE: Global Nuclear Power Challenges Charles McCombie, SAPIERR Fiona Simpson, NYU William Szymanski, US DOE: GNEP Reliable Fuel Services</i>
11:45h		<i>Q&A and Discussion</i>

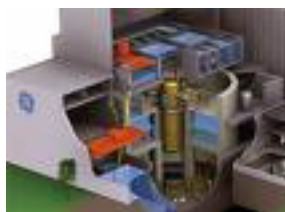
12:30 - 13:30h: Lunch

13:30h	<i>Panel 6: Brainstorming Session: Building the Nuclear Enterprise to Stimulate Nuclear Expansion while Preventing Accidents, Proliferation and Nuclear Terrorism</i>	<i>Maurizio Martellini, Chair Vladimir Kagramanyan, IPPE Margot Mininni, US NNSA Sonia Moreno, ARN Tariq Rauf, IAEA Tom Shea, WNU Fiona Simpson, NYU</i>
15:15h	<i>Adjourn</i>	

16:00 - 19:00h: Cruise on Lago di Como



20:30h	<i>Dinner</i>	
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*General Electric/Hitachi
Economically Simplified Boiling
Water Reactor
Cutaway illustration*

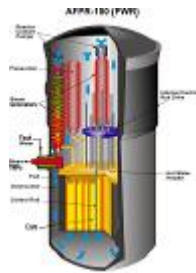


Toshiba 4S Reactor Concept
 10 MWe
 Core life: 30 years (w/o refueling)
 Fuel: MOX or 19.9% enriched U

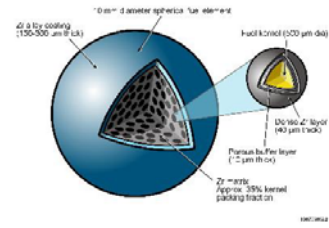
Day Four: Friday, 13 June 2008		
09:30h	<i>Panel 7: Infrastructure Building</i>	<i>David Boyle, Chair Fanny Bazile, CEA: French Perspective Chaim Braun, Stanford: Summary of Current Fuel Assurance Initiatives Anne Starz, IAEA: IAEA Programs to Prepare for Nuclear Power Craig Welling, US DOE: GNEP Infrastructure Development</i>
11:30h		<i>Q&A and Discussion</i>
<i>12:30 - 14:00h: Lunch</i>		
14:00h	<i>Keynote Speech: Holger Rogner, IAEA</i>	<i>Projecting costs, financial risks and novel financing possibilities</i>
14:45h	<i>Panel 8: Nuclear Economics</i>	<i>Holger Rogner, Chair Chaim Braun, Stanford University: Making nuclear power profitable Marco Ricotti, POLIMI: The Economics of Small Reactors</i>
16:00h		<i>Q&A and Discussion</i>
<i>16:30h: Coffee Break</i>		
17:00h	<i>The Questionnaire</i>	<i>Giulio Mancini, LNCV Danielle Peterson, PNNL</i>
18:00h	<i>Adjourn</i>	
20:00h	<i>Dinner</i>	



*Mitsubishi 1700 MWe
 Advanced Pressurized
 Water Reactor*

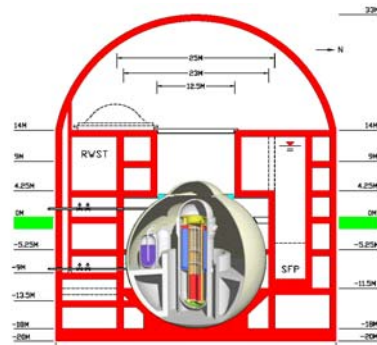


*PNNL Atoms for Peace
Reactor Concept
60 Years, 100MWe, No
Refueling*



Day Five: Saturday, 14 June 2008

09:30h	Priorities for Nuclear Power Initiatives: Questionnaire Results	Giulio Mancini, LNCV Danielle Peterson, PNNL
10:30h	Closing Statements	All
12:00h	Final Adjournment	Maurizio Martellini
12:30 - 13:30h: Lunch		



Westinghouse IRIS Reactor

List of Participants

Honored Guests

1. **Eng Ahmed ALDHONI**
Generation Planning Dept. National Electric Power Co. NEPCO, Jordan
2. **Dr Gustavo ALONSO**
Senior Scientist, Departamento de Sistemas Nucleares, Instituto Nacional de Investigaciones Nucleares Carretera, Mexico
3. **Mr Namulo ANDREAS**
Ministry of Mines and Energy, Namibia
4. **Dr Kamal ARAJ**
Commissioner for International Cooperation, Jordanian Atomic Energy Commission, Jordan
5. **Dr Paulo BARRETTO**
Former Advisor to the Brazilian Government, Advisor to the Nuclear Security Science and Policy Institute, College Station TX, United States
6. **Dr Le Chi DUNG**
Deputy Director General, Vietnam Agency for Radiation and Nuclear Safety (VARANSAC), Vietnam
7. **Mr Adnan Haji KHALID**
Senior Director (Management Programme), Malaysian Nuclear Agency (Nuclear Malaysia), Malaysia
8. **Mr David MBIDI**
Nampower, Namibia
9. **Ms Sonia FERNANDEZ MORENO**
*Senior Advisor, Nuclear Affairs and Institutional Communication Department
Autoridad Regulatoria Nuclear (ARN), Argentina*
10. **Dr Noramly bin MUSLIM**
Chairman, Malaysian Atomic Energy Licensing Board (AELB), Ministry of Science, Technology and Innovation (MOSTI), Malaysia
11. **Dr Mahmoud NASREDDINE**
Director General, Arab Atomic Energy Agency
12. **Mr Guillermo ORTEGA**
Comision Federal de Electricidad, Mexico
13. **Dr F. Erepamo OSAISAI**
Director General, Chief Executive, Nigeria Atomic Energy Commission, Nigeria
14. **Mr Pham Le PHU**
*Deputy Director, Nuclear Power and Renewable Energy Projects Pre-Investment Board
EVN (Electricity of Vietnam), Vietnam*

Speakers & Other Participants

1. **Ms Roberta BALLABIO**
Landau Network - Centro Volta, Como, Italy
2. **Dr Fanny BAZILE**
Forecast Director, Nuclear Energy Division, CEA, Gif Sur Yvette, France
3. **Dr David BOYLE**
Nuclear Security Science and Policy Institute, Texas Engineering Experiment Station, College Station, TX, United States
4. **Dr Chaim BRAUN**
Stanford University, Palo Alto CA, United States
5. **Dr Alexander BRYUSOV**
Institute of Physics and Power Engineering, Obninsk, Russian Federation
6. **Mr Adrian COLLINGS**
Director, Policy Development, World Nuclear Association, London, UK
7. **Prof Giorgio CONETTI**
Deputy Rector, University of Insubria, Como, Italy
8. **Dr Alexey GRIGORIEV**
Director General, Texsnabexport, Moscow, Russian Federation
9. **Dr Wacław GUDOWSKI**
Deputy Executive Director, International Science and Technology Center, Moscow, Russian Federation
10. **Dr Robert HAWLEY**
CBE, Vice Chancellor, World Nuclear University, London, UK, and former CEO, British Energy
11. **Dr Roger HOWSLEY**
Director, Krios Consulting Ltd, Wilmslow, UK
12. **Dr Vladimir KAGRAMANYAN**
Institute of Physics and Power Engineering, Obninsk, Russian Federation
13. **Dr Maria KATVA**
Ux Consulting, Washington DC, United States
14. **Ms Heather LOONEY**
U.S. National Nuclear Security Administration (NNSA), Washington DC, United States
15. **Mr Giulio MANCINI**
Landau Network - Centro Volta, Como, Italy
16. **Prof Dr Maurizio MARTELLINI**
Secretary General, Landau Network - Centro Volta, Como, Italy
17. **Dr Charles McCOMBIE**
Executive Director of the Arius Association, Switzerland
18. **Mr Edward McGINNIS**
Deputy Assistant Secretary, Corporate and Global Partnership Development, U. S. Department of Energy, Washington DC, United States
19. **Ms Margot MININNI**
U.S. National Nuclear Security Administration, Washington DC, United States

20. *Ms Danielle PETERSON*
Pacific Northwest National Laboratory, United States
21. *Prof Franco PORCELLI*
Scientific Attaché, Italian Embassy in Cairo, Egypt
22. *Dr Tariq RAUF*
Head, Verification & Security Policy Coordination, IAEA, Vienna, Austria
23. *Prof Dr Marco RICOTTI*
Polytechnic of Milan (POLIMI), Italy
24. *Mr Piero RISOLUTI*
Manager, Radioactive Waste Disposal, Nuclear Technology Department, ENEA, Italy
25. *Dr Hans-Holger ROGNER*
IAEA, Vienna, Austria
26. *Mr Paolo SERPI*
Minister and Special Envoy, Italian Ministry of Foreign Affairs
27. *H.E. Ambassador Dr. Mohamed SHAKER*
Egypt
28. *Dr Thomas SHEA*
Director, Global Nuclear Policy Forum, World Nuclear University, London, UK
29. *Dr Fiona SIMPSON*
New York University, New York NY, United States
30. *Ms Anne STARZ*
Nuclear Energy Department, IAEA, Vienna, Austria
31. *Mr William SZYMANSKI*
*Senior Program Manager, Office of Nuclear Energy, United States Department of Energy,
Washington DC, United States*
32. *Dr Craig WELLING*
United States Department of Energy, Washington DC, United States
33. *Dr David WIMPEY*
Divisional Manager: Plant Engineering, Pebble Bed Modular Reactor Ltd, Centurion, South Africa