



**International Experts' Meeting**

**on**

**Severe Accident Management in the Light of the Accident  
at the Fukushima Daiichi Nuclear Power Plant**

Organized in connection with the implementation of the  
IAEA Action Plan on Nuclear Safety

# **PROGRAMME**

**17 – 20 March 2014**

**Vienna, Austria**



**Chairperson of the Meeting:** **Mohammad Anwar Habib (Pakistan Nuclear Regulatory Agency)**

**Programme Committee:** **Farouk Eltawila, Federal Authority for Nuclear Regulation, UAE**  
**Stuart Lewis, EPRI**  
**Yong Man Song, Korean Atomic Energy Research Institute**  
**Anthony Ulses, IAEA**  
**Jean-Francois Lafortune, IAEA**  
**Lyn Bevington, IAEA**

**IAEA Secretariat:**

**Scientific Secretaries:** **Jean-Francois Lafortune and Anthony Ulses**  
**Meeting Organizer:** **Martina Neuhold**  
**Administrative Support:** **Monica Garcia Montes and Jolanta Roch-Braeuer**

**Meeting Venue:** International Atomic Energy Agency  
Vienna International Centre (VIC)  
C Building, Board Room D, 4th floor  
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**Working Language:** English

**Resolutions:** No resolutions may be submitted for consideration on any subject; no votes will be taken.

## **Monday, 17 March 2014**

**11:00-16:00**            **On-site registration, Vienna International Centre, Gate 1**

**14:00-18:00**            **Opening Session**

**Chairperson:**            Mohammad Anwar Habib, (Pakistan Nuclear Regulatory Agency)

**Co-Chairpersons:**    Valery Bezzubstev, (Rosenergoatom)

**(Welcome address)** James Lyons, Director, Nuclear Installation Safety Division (IAEA)

**(Introductory comments)** Mohammad Anwar Habib, Chairperson of the Meeting

**(Keynote)** Toyoshi Fuketa, Commissioner, Nuclear Regulatory Authority of Japan, *Lessons Learned from the Fukushima Dai-ichi Accident and Responses in New Regulatory Requirements*

**(Keynote)** IAEA Activities under the Nuclear Safety Action Plan Gustavo Caruso, Special Coordinator, Nuclear Safety Action Team (IAEA)

**15:00-15:30**            *Coffee Break*

**15:30-16:00**            **(Keynote)** Roy Harter, Duane Arnold Energy Center (USA), *Severe Accident and Beyond Design Bases Event Response – An End-User Perspective*

**16:00-16:30**            **(Keynote)** Vasily Galkin, World Association of Nuclear Operators – WANO, *WANO Post-Fukushima Severe Accident Management Project*

**16:30-17:00**            **(Keynote)** Olivier Isnard, Institute for Radiological Protection and Nuclear Safety (France), *On-site/Off-site interface for an effective emergency management*

**17:00-17:30**            **(Keynote)** Naohiro Masuda, TEPCO, (Japan) *East Japan Earthquake on March 11, 2011 and Emergency Response at Fukushima Daini Nuclear Power Plant*

**17:30 – 18:00**            **Panel Discussion**

**18:00**                    **Adjourn**

**18:00-20:00**            **Welcome Reception, 4th Floor, C Building  
Hosted by the IAEA**

**Tuesday, 18 March 2014**

**09:00-12:30      Session 1: Improvements to Severe Accident Management Guides (SAMGs)**

**Session Chair**      Stuart Lewis, Electric Power Research Institute (USA)

**09:00-09:20**      **(Keynote)** Deb Mukhopadhyay, Bhabha Atomic Research Centre, (India),  
*Improvement of Severe Accident Management for Indian NPPs*

**09:20-09:35**      Lovell Gilbert (Canada), *Enhancements to Severe Accident Management Guidelines To Address Fukushima Daiichi Lessons Learned*

**09:35-09:50**      Hermann Plank (Germany), *SAMGs for German NPPs*

**09:50-10:05**      Jaewhan Kim (Republic of Korea), *Integrated Coping Strategies for Beyond Design Basis External Events*

**10:05-10:20**      George Vayssier (Netherlands), *Severe Accident Management – Lessons Still To Be Learned From Fukushima-Daiichi*

**10:20-10:35**      Andrew White (OECD/NEA), *Improving the Management of Severe Accidents – Initiatives being undertaken by the NEA following Fukushima*

**10:35–10:50**      Michael Hugon (EURATOM), *Euratom Research Activities On Severe Accident Management*

**10:50–11:05**      Michel Bieth (JRC-Petten), *JRC-IET Activities to Support Enhancement of Severe Accident Management Guidelines (SAMGs)*

**11:10-11:30**      *Coffee Break*

**11:30-12:30**      **Panel Discussion**

**12:30**      *Lunch Break*

**14:00-18:00      Session 2: Equipment and Training Needs for Severe Accident Response**

**Session Chair:**      Yong Man Song, Korean Atomic Energy Research Institute (Republic of Korea)

**14:00-14:30**      **(Keynote)** Bertrand L'Epinois, AREVA, (France), *Progress, perspectives and challenges in the field of design characteristics as regards severe accident management*

**14:30-14:45**      Dimtar Popov (Bulgaria), *KNPP Achievements Towards Mitigation of Severe Accidents*

<b>14:45-15:00</b>	Pascal Izydorczyk (France), <i>Groupe INTRA Development and Application of Equipment and Tools for Intervention After an Accident</i>
<b>15:00-15:15</b>	Chander Mohan Bhatia (India), <i>Accident Management Programme for Indian PHWRs</i>
<b>15:15-15:30</b>	Gábor Petofi (Hungary), <i>Fukushima Effect on SAM Requirements and Regulatory Oversight in Hungary</i>
<b>15:30-15:45</b>	Christopher Cole (Canada), <i>CNSC Severe Accident Management Regulatory Activities</i>
<b>15:45-16:30</b>	<i>Coffee Break and Poster Viewing</i>
<b>16:30-16:45</b>	Edward Fuller (USA), <i>Severe Accident Analyses to Support Filtering Strategies Rulemaking</i>
<b>16:45-17:00</b>	Ian Gordon (UK), <i>Application of Learning from Fukushima Daiichi to Severe Accident Management for a Major Fuel Cycle Facility</i>
<b>17:00-18:00</b>	<b>Panel Discussion</b>
<b>18:00</b>	<b>Adjourn</b>

### ***Wednesday, 19 March 2014***

<b>09:00-12:30</b>	<b>Session 3: Appropriate Regulatory Treatment of Severe Accident Management Measures</b>
<b>Session Chair</b>	Mohammad Anwar Habib, (Pakistan Nuclear Regulatory Agency)
<b>09:00-09:20</b>	<b>(Keynote)</b> Jennifer Uhle, United States Nuclear Regulatory Commission (USA), <i>Perspectives on Regulation of Severe Accident Management</i>
<b>09:20-09:35</b>	Abdel-Raouf Gadalla (Egypt), <i>Strengthening National Regulatory Capabilities in Countries Embarking on New Commercial Nuclear Power Programs Post Fukushima Accident</i>
<b>09:35-09:50</b>	Jagannathan Arunan (India), <i>Severe Accident Management – Regulatory Challenges and Fixing of Priorities</i>
<b>09:50 - 10:05</b>	Han-Chul Kim (Republic of Korea), <i>Inspection and Validation Activities on Severe Accident Management in Korea after the Fukushima Accident</i>
<b>10:05-10:20</b>	Muhammad Sufyan Khan (Pakistan), <i>Post Fukushima Lesson: Regulatory Model Development for the Validation of SAMGs</i>
<b>10:20- 10:35</b>	Kurt Couckuyt (Belgium), <i>Updating WENRA Reference Levels for existing reactors in the light of TEPCO Fukushima Daiichi accident lessons learned</i>

<b>10:35-10:50</b>	Nadezda Kozlova (Russian Federation), <i>Regulator and TSO activity in the area of severe accident management in the light of accident at Fukushima-Daiichi NPP</i>
<b>10:50-11:05</b>	Ali Tehrani (UK), <i>Beyond Design Basis Analysis: Developments in UK's Approach and Perspective</i>
<b>11:05-11:30</b>	<i>Coffee Break</i>
<b>11:30-12:30</b>	<b>Panel Discussion</b>
<b>12:30</b>	<i>Lunch Break</i>
<b>14:00-17:30</b>	<b>Session 4: Linkage between On-Site and Off-Site Response; Emergency Response Challenges in Severe Accidents in the Presence of Extreme Natural Events</b>
<b>Session Chair</b>	Raul Dos Santos (Brazil)
<b>14:00-14:20</b>	<b>(Keynote)</b> Masahiko Hamada, Shigematsu Works Co, Ltd , (Japan) <i>Fukushima and JSDF: Difficult communication between off-site and on-site</i>
<b>14:20-14:40</b>	<b>(Keynote)</b> Dave Nodwell, Ontario Ministry of Community Safety and Correctional Services, (Canada), <i>Organizational Interfaces in Offsite Nuclear Responses</i>
<b>14:40-14:55</b>	Miroslav Lipar (IAEA), <i>OSART results in the area of Accident Management</i>
<b>14:55-15:10</b>	Maria Itziar Grolleau, (France), <i>Post-Fukushima Development of Operating Reactor Severe Accident Management and ERO Guidelines</i>
<b>15:10-15:25</b>	Staffan Hennigor (Sweden), <i>Severe Accident Management Guidelines &amp; Emergency Preparedness Planning – Not One Without the Other</i>
<b>15:25-15:40</b>	Yoichi Watanabe, (IFRC), <i>Relief activities conducted by the Japanese Red Cross Society after the Fukushima Daiichi Nuclear Power Plant accident and the challenges for the future</i>
<b>15:40-15:55</b>	Alexander Kolevatykh, (Russian Federation), <i>Activities on Enhancing Preparedness to BDBA and Severe Accident Management</i>
<b>16:00–16:30</b>	<i>Coffee Break and Poster Viewing</i>
<b>16:30-17:30</b>	<b>Panel Discussion</b>
<b>17:30</b>	<b>Adjourn</b>

## **Thursday, 20 March 2014**

### **09:00-12:30      Session 5: On-Site Emergency Response: Challenges in Severe Accidents and Link with SAMGs**

**Session Chair**                      Olivier Isnard, Institut de Radioprotection et de Sûreté Nucleaire (France)

**09:00-09:20**                      **(Keynote)** David Wilson, Point Lepreau Generating Station (Canada), *On-Site emergency response planning and severe accident management*

**09:20-09:40**                      **(Keynote)** Lindley Perryman, Eskom (South Africa), *Koeberg NPP: Severe Accident Management Improvements*

**09:40-09:55**                      Fred Dermarkar (Canada), *Human and Organizational Performance Considerations in Severe Accident Management*

**09:55-10:10**                      Zhiyi Yang, (China), *Development of Severe Accident Management Guidelines and its Implementation in China*

**10:10-10:25**                      Babar Ghias (Pakistan), *KANUPP-Lessons from FUKUSHIMA*

**10:25-10:40**                      Vladivoj Reznik (Slovakia), *Implementation of the Severe Accident Management in Slovenské elektrárne*

**10:40-10:55**                      E. Anderson (USA), *ISOE Expert Group; Management of Worker Dose during Severe Accident Conditions*

**11:00-11:30**                      *Coffee Break*

**11:30-12:30**                      **Panel Discussion**

**12:30-14:00**                      *Lunch Break*

### **14:00-15:30      Closing Session**

**14:00-15:10**                      Session Summaries

**15:10-15:25**                      **Chairperson's summary** Anwar Habib

**15:25-15:30**                      **Closing remarks** Denis Flory, Deputy Director General,  
Head of the Department of Nuclear Safety and Security (IAEA)

**15:30**                                **Adjourn**

## ***Poster Sessions***

- IAEA-CN-233/1 Mohamed Abd El-Monem Ali Mostafa, *Regulatory Framework Reassessments and Considerations For Post-Fukushima Daiichi Accident* (Egypt)
- IAEA-CN-233/3 Jozef Baláž, *The Qualification Methodology for the systems dedicated to severe accident mitigation* (Slovakia)
- IAEA-CN-233/4 Cantemir Ciurea-Ercau, *Regulatory Actions post – Fukushima* (Romania)
- IAEA-CN-233/5 Rafael Martinez Fanegas, *GGAS: An Aid Tool for the Technical Support Center (TSC) in Severe Accident Management* (Spain)
- IAEA-CN-233/6 Likai Fang, *Severe accident management under lowpower and shutdown conditions* (China)
- IAEA-CN-233/7 Franck Guarnieri, *Engineering Thinking in Emergency Situation: A New Concept for Nuclear Safety* (France)
- IAEA-CN-233/9 Ibrahim Khamis, *SAMT: a new IAEA tool on severe accident management* (IAEA)
- IAEA-CN-233/10 Mark Kuznetsov, *Severe Accidents: Regulatory Requirements, Management Uncertainties, Defense of Containment* (Russian Federation)
- IAEA-CN-233/11 Shahid Naveed, *Analysis of LBLOCA Coincident with SBO for CHASHMA Nuclear Power Plant Unit-2 Using MELCOR 1.8.4 Computer Code* (Pakistan)
- IAEA-CN-233/12 Pedro Júlio Batista De Oliveira Nishiyama, *LOCA with Station Blackout at LABGENE Reactor* (Brazil)
- IAEA-CN-233/13 Jong Woon Park, *Analysis of Operator Response Times after Small Break Loss of Coolant under Shutdown Conditions for S-SAMG Development* (Republic of Korea)
- IAEA-CN-212/14 Robert Prior, *PWR Owners Group SAMG Developments in the U.S and Europe* (UK)
- IAEA-CN-212/15 Emmanuel Raimond, *What level of robustness shall be expected for NPPs severe accident management provisions and how to demonstrate it ? Some IRSN views based on recent experience.* (France)
- IAEA-CN-212/16 John Scott Robertson, *Canadian Off -Site Emergency Response Planning for Severe Accidents* (Canada)
- IAEA-CN-212/17 Antanas Romas, *An Effective Implementation Platform for Severe Accident Management Guidelines* (Sweden)
- IAEA-CN-212/18 Yong Mann Song, *Recent Findings for Enhanced SAM Measures against Fukushima Issues in Korean PHWR Plants* (Republic of Korea)
- IAEA-CN-212/19 Ole Ammon Staack, *Analysis and application of web-based technologies in the field of nuclear risk- and crisis-communication* (Germany)

- IAEA-CN-212/20      Alexander Tritonov, *Simulation and investigation of heat remove at cooling pond of NPP at different fuel rod array* (Belarus)
- IAEA-CN-212/21      George Vayssier, *Review of Accident Management at NPPs - A New Utility Oriented Service* (Netherlands)
- IAEA-CN-212/22      Yuriy Vorobyov, *Development of SAMGs for Ukrainian PWRs, results of analytical justifications review, main issues and future development needs* (Ukraine)