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Emergency Preparedness and Response at the 57th IAEA General Conference

Side event on Assessment and Prognosis during a Nuclear Power Plant Accident

On Tuesday 17 September 2013, on the second day of the IAEA 57th General Conference, the Incident and Emergency Centre (IEC) organized a side event entitled *Assessment and Prognosis during a Nuclear Power Plant Accident*. This event provided an opportunity for the Secretariat to present to Member States the work that has been undertaken to achieve the requirements of the new IAEA expanded mandate during a nuclear emergency.



*Side event on Assessment and Prognosis, Vienna International Centre, Austria, 17 September 2013.
(Photo Credit: S. Filion/ IAEA-IEC)*

The expanded mandate of the IAEA's role during a nuclear emergency is in line with a specific request from the IAEA Action Plan on Nuclear Safety, unanimously endorsed by IAEA Member States in 2011. The Action Plan requires the IAEA Secretariat "... to provide Member States, international organizations and the general public with timely, clear, factually correct, objective and easily understandable information during a nuclear emergency on its potential consequences, including analysis of available information and prognosis of possible scenarios based on evidence, scientific knowledge and the capabilities of Member States." For the last two years, the IAEA Secretariat, in cooperation with Member States and International Organizations, has been developing a comprehensive process to provide assessment and prognosis during a nuclear emergency.

After introductory remarks by IEC Centre Head E. Buglova, Incident and Emergency Assessment Officer J. Chaput presented specific details on the actions that were taken in the last 24 months by the Secretariat. The current direction and future

path were also discussed, including the importance of having significant cooperation and collaboration with Member States to achieve and maintain a truly robust process for assessment and prognosis during any type of nuclear emergency. The presentation also included the description of challenges, such as the need for availability of technical information and clear communication of any uncertainties. Finally, the potential use of the IAEA Response and Assistance Network (RANET) in this pro-

cess, as appropriate, was explained by RANET Officer P. Kenny.

The discussions demonstrated the importance of the efficient implementation of the IAEA's extended mandate in response to a nuclear emergency. The Secretariat will continue working in collaboration with Member States to further develop, maintain and implement this expanded mandate.

Other EPR-related Side Events during the General Conference

The IEC was invited by the United Kingdom to take part in a UK-hosted side event on *Nuclear Safety, Security and Emergency Planning: Enhancing Prevention and Response capabilities*.

The well-attended side event included presentations on emergency planning and response, the G8 emergency preparedness and response's (EPR) activities (notably the UK, the USA and France/UK collaboration), the Global Partnership and an introductory speech on the importance of EPR and partnerships by Baroness Verma, UK Parliamentary Under-Secretary of State for Energy and Climate Change.

IEC Centre Head, E. Buglova, gave a presentation on the IAEA-IEC's EPR activities. One of the objectives of the side event was to encourage Member States to participate in networks and initiatives such as RANET and the Global Partnership. The presentations were followed by a question and answer session.



UK-hosted GC side event panelists. From left to right: Ms. Ann Heinrich (USA), Ms. Sarah Swash (UK), Chairperson Ms. Susan leJeune d'Allegre (UK) and Ms. Elena Buglova (IEC) Vienna International Centre, 17 September 2013. (Photo Credit: W. Gruenwald/IAEA-IEC).

In addition, the IEC took part in the Integrated Nuclear Infrastructure Group (INIG) bilateral meeting with Member States to discuss strengthening national EPR capabilities. The IEC also participated in the Coastal and Shipping States Meeting and a meeting with the World Nuclear Transport Institute, both to discuss RANET capabilities and potential use of RANET in different emergency situations.

IEC Outreach during the 57th IAEA General Conference

The IEC's exhibition day during the 57th IAEA General Conference (16–20 September 2013) focused on EPR and was an opportunity for conference attendees to familiarize themselves with the IEC's activities. Outreach materials such as toolkits, information brochures, material detailing training courses offered by the IEC and information about operational tools such as the International Radiation Monitoring Information System (IRMIS) and RANET was available to Member States. In addition, the IEC introduced the new *Radiological Hazard Perspective Charts* (see page 8). These materials can be found online at iec.iaea.org.

The IEC also live-tweeted during the General Conference. IEC Twitter followers had the opportunity to see outreach materials available during the exhibition day, live pictures from our side events and were kept informed

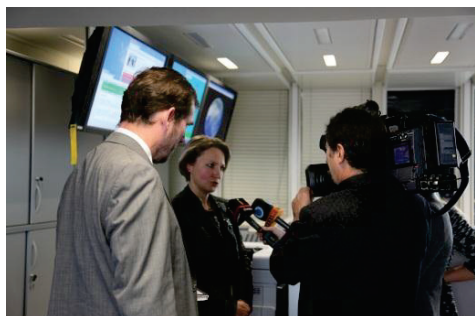


The IEC exhibition stand at the 57th IAEA General Conference. Vienna International Centre, 17 September 2013. (Photo Credit: S. Filion/IAEA-IEC)

about Conference outcomes and events. Follow the IEC on Twitter at @IAEAIEC.

Finally, visits to the IEC were organized during the General Conference. More than 30 delegates from 17 coun-

tries visited the Centre. Presentations on the IEC's EPR activities were followed by a tour of the Centre's operational arrangements. The IEC Centre Head also welcomed journalists to the Centre during the Conference.



From left to right: IEC Centre Head E. Buglova with journalists, Response System Coordinator F. Baciú giving a presentation to delegates, Emergency Preparedness Coordinator JF. Lafortune explaining the IEC operational arrangements to delegates. Vienna International Centre, 18–19 September 2013. (Photo Credit: W. Gruenwald/ IAEA-IEC).

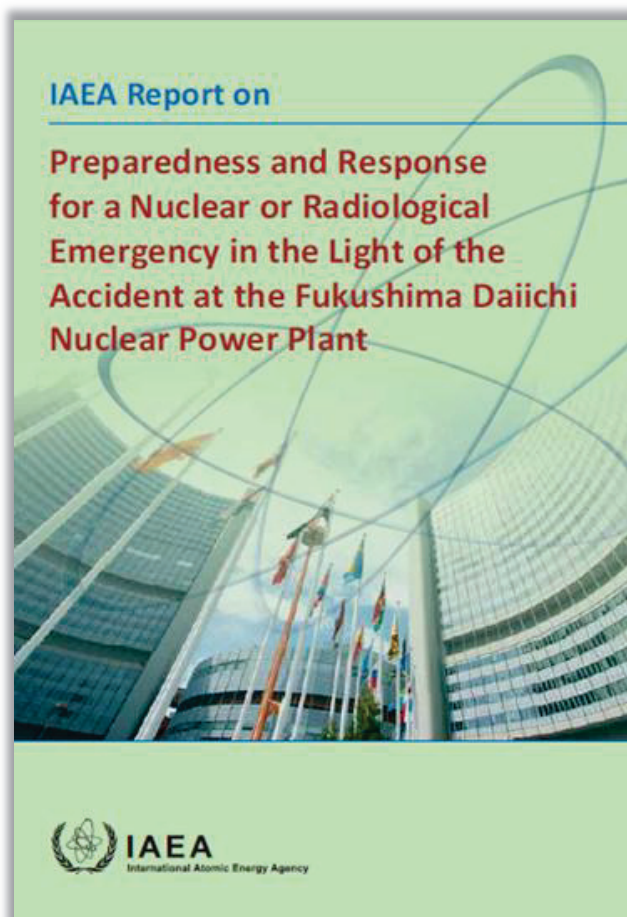
IAEA Report on Preparedness and Response for a Nuclear or Radiological Emergency in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant

The *IAEA Report on Preparedness and Response for a Nuclear or Radiological Emergency in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant* (Fukushima accident) was developed and published as part of a series of reports from the International Experts Meetings pursuant to the IAEA Action Plan on Nuclear Safety.

The report draws on information discussed at different IAEA meetings, and activities undertaken in the area of EPR since the Fukushima accident. The report highlights the lessons learned in emergency preparedness and response in the light of, but not limited to, the Fukushima accident and identifies the main actions needed for strengthening the emergency preparedness and response area at any level.

The report is expected to (1) serve as a reference for concerned government officials, emergency planners, technical experts, diplomats, the media and the general public and (2) contribute to ongoing efforts of the IAEA to assist Member States in strengthening their EPR arrangements.

The report was made available to Member States at the 57th IAEA General Conference. In electronic form, the report is available on the [IAEA Action Plan on Nuclear Safety website](#) and the [IEC website](#).



IEC Response to Recent Events

PERU – Continuation of medical treatment for an industrial gamma-graphy worker

In January 2012, Peru requested medical assistance under the Assistance Convention for the treatment of three overexposed radiographer workers involved in the Chilca accident. The IAEA launched a first assistance mission through RANET for the provision of specialized medical advice, in cooperation with French medical experts. The most overexposed Peruvian worker was then transferred to France as part of a second assistance mission in February 2012. Specialized medical treatments were administered in Percy Hospital with the financial support of the United States of America.

In June 2013, at the request of Peru under the Assistance Convention, a third assistance mission was organized by the IAEA for follow-up medical treatment of the same patient. The clinical course of the patient's hand injuries was severe and required medical follow-up. Chile met the specific conditions of this assistance mission, which also involved French medical experts from the 2012 assistance mission. The plan for the patient's treatment was elaborated by medical experts from Chile, France and the IAEA in Santiago, Chile.



Evaluation of mesenchymal stem cells (MSC), Laboratory of Stem Cells University Del Desarrollo (UDD. From left to right: Dr. Jean-Jacques Lataillade (Hôpital d'Instruction des Armées Percy, France), Ms Laetitia Boutin (France), Dr. Eduardo Herrera Reyes (IAEA). Santiago, August 201. (Photo Credit: Leslie Vironneau/CCHEN)

The treatment started in July 2013, involving medical teams from nine different institutions and consisted of the amputation of three fingers on both hands, the injection of mesenchymal stem cells and reconstructive therapy. Following this mission, an analysis of the patient's medical status was performed jointly with Chilean, Peruvian, French and IAEA medical experts and discussions took place for the organization of medical follow-up for the patient in the next ten years.

JAPAN – INES rating of events related to contaminated water leakages at TEPCO's Fukushima Daiichi Nuclear Power Station

A contaminated water leakage from a water tank at TEPCO's Fukushima Daiichi Nuclear Power Station was detected by TEPCO on 19 August 2013. The IAEA was asked by the Japanese Nuclear Regulation Authority (NRA) to provide an opinion on the applicability of the International Nuclear and Radiological Event Scale (INES) rating for this event. In consultation with the INES Advisory Committee, the IEC provided Japan with the IAEA viewpoints and on 28 August 2013, the NRA published a press release on the matter.

The IAEA Secretariat emphasized that the use of INES as a communication tool should be done as part of the broader communication strategy of the national authorities. It was mentioned in the press release that the INES scale can be used for this event. However, rather than using INES to rate each event in a series of

possible future similar events, the advised strategy is to elaborate and implement a communication plan in which frequent messages with clear content would be disseminated.

The INES scale is a tool for promptly communicating to the public, in consistent terms, the safety significance of reported nuclear or radiological events. The scale facilitates communication and understanding between the technical community, the media and the public.



Read the full Press Release: http://www.nsr.go.jp/english/e_news/2013/0828.html

INES: http://www-pub.iaea.org/MTCD/publications/PDF/INES2009_web.pdf

Second EPREG Meeting Convened

The second meeting of the IAEA Emergency Preparedness and Response Expert Group (EPREG) took place in Vienna, Austria, on 29–30 August 2013, at the invitation of the Deputy Director General, Head of the Department of Nuclear Safety and Security (DDG-NS), Mr Denis Flory. Twelve EPREG members attended the meeting.

The objectives of the meeting were to review and discuss numerous topics related to EPR. The EPREG members were presented with the IEC mission, vision and goals and reviewed the IEC's activities. They also discussed the cross-cutting nature of EPR, the proposal for the IAEA Secretariat's process for assessment of emergency consequences and prognosis of likely event progression, the agenda for the 2014 meeting of the Competent Authorities and the 2015 IAEA International Conference on EPR. The Group also discussed EPR self-assessment

methodology and EPREG priorities for the next two years.

During the meeting, EPREG members made eleven conclusions. For example, they (1) supported the proposed IEC mission, vision and goals for 2013–2018, (2) improved the provisional agenda for the 2014 Competent Authorities meeting, (3) will continue to follow the assessment and prognosis process developments and will contribute to its implementation, and (4) will contribute to the drafting of General Conference Safety Resolutions with harmonized proposals. EPREG members also made nine recommendations to the DDG-NS, notably for national self-assessment of EPR, the assessment and prognosis process, Competent Authorities meetings and the 2015 International Conference on EPR. The third EPREG meeting is scheduled for 26–28 May 2014.

ConvEx-1b Exercise – September 2013

On 26 September 2013, the IEC conducted a ConvEx-1b exercise, in accordance with its annual [exercise programme](#).

Based on descriptions from the [IEComm](#) manual, this exercise tested if National Warning Points (NWP) are continuously available and if the relevant National Competent Authority for Emergencies Abroad (NCA(A)) can be alerted in an adequate time frame for response. The NWP is designated to receive an initial notification/advisory/follow-up message and/or request for assistance, information or verification, and immediately act upon it on a 24/7 basis during a nuclear or radiological incident or emergency. The NCA(A) is expected to verify or arrange for the verification of any relevant information provided during a nuclear or radiological emergency originating in another State. For the ConvEx-1b Exercise, Contact Points had the option of sending confirma-

tions of receipt of the exercise message to the IEC by fax, email or direct confirmation on the IAEA Unified System for Information Exchange in Incidents and Emergencies ([USIE](#)) website. Contact Points with activated USIE Exercise alert channels also received exercise messages from the USIE Exercise website.

At the time of the exercise, there were 383 organizations with a primary fax number or primary email address on the IEC Contact Point list. The exercise evaluation showed that 90 organizations experienced delivery problems, and that the exercise message could not be delivered to 24 of those organizations. Therefore, 293 organizations received the exercise message through their primary fax number or primary email address. Of those 293, 108 organizations responded to the exercise message, and 84 organizations replied to the exercise message on the USIE Exercise website.

Below is the list of the fastest responding organizations:

By fax or email (10 entries):

Austria	Federal Alarm Centre
Belgium	Centre Gouvernemental de Crise et de Coordination
Croatia	National Protection and Rescue Centre
Denmark	Permanent Mission
Estonia	Environmental Board
Finland	Permanent Mission
Germany	World Meteorological Organization
Holy See	Permanent Mission
Israel	Israel Atomic Energy Commission
Latvia	Radiation Safety Centre

On the USIE website (10 entries):

Austria	BMLFUW
Belgium	Centre Gouvernemental de Crise et de Coordination
Croatia	National Protection and Rescue Centre
France	Autorité de Sûreté Nucléaire
Greece	Greek Atomic Energy Commission
Hungary	Directorate General for National Disaster Management
Korea, Republic of	Korea Institute of Nuclear Safety
Netherlands	Human Environment and Transport Inspectorate
Slovakia	Department of Civil Protection
Spain	Dirección General Protección Civil y Emergencias

Member State Preparedness

To assist Member States with applying IAEA guidance in the area of Emergency Preparedness and Response, 11 training events were conducted during the third quarter of 2013 at the interregional, regional, subregional and national levels:

Interregional level:

- Workshop on Notification, Reporting and Requesting Assistance (Austria, Vienna, 9–11 July);
- Training Course on First Response to a Radiation Emergency (Austria, Vienna, 22–26 July);
- Train the Trainers Workshop on Actions to Protect the Public in an Emergency at a Nuclear Power Plant (Austria, Vienna, 29 July–2 August).

Regional and subregional levels:

- Workshop for Egypt and Jordan on Notification, Reporting and Requesting Assistance (Austria, Vienna, 3–5 September);
- Workshop on Emergency Preparedness and Response (Morocco, Rabat, 9–13 September);
- Training in Connection with the Full Scale Exercise (Brazil, Rio de Janeiro and Angra, 9–13 September);
- Workshop on Exercising the Response to Radiation Emergencies (South Africa, Pretoria, 10–13 September);
- Workshop on Communication with the Public in a Nuclear or Radiological Emergency (Morocco, Rabat, 23–27 September);
- Workshop for Egypt and Jordan on Developing a National Radiation Emergency Plan (NREP) in Compliance with the IAEA Requirements and Guidance (Austria, Vienna, 24–27 September).

National level:

- Workshop on Radiation Emergencies Caused by Natural Disasters (Cuba, La Havana, 8–19 July);
- Workshop on EPR Fundamentals for Local Authorities (Islamic Republic of Iran, Tehran, 10–12 September).

In addition, the IEC participated in an Integrated Regulatory Review Service (IRRS) preparatory mission in the

Russian Federation (12–13 August) and assisted in the preparation of an IRRS preparatory mission in Indonesia (29–30 August).

The IEC, as the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE) Secretariat, organized and conducted the 3rd meeting of the IACRNE Working Group on Coordinated International Exercises (Morocco, 9–11 July). The meeting was organized in cooperation with Morocco as a host country for the ConvEx-3 (2013) exercise.

The IEC also participated in other expert missions and events related to EPR, including: an expert mission to support national threat assessment (Dominican Republic, 15–19 July), an expert mission on source term assessments (Vietnam, 17–19 July), a feasibility study on regional cooperation on emergency preparedness and response in South East Asia (Malaysia, 23 July–2 August), the XIV National Nuclear Medicine Meeting (Colombia, 16–18 August), an expert mission on the creation of a system of nuclear emergency crisis centres in Belarus (Belarus, 19–21 August), the Joint International Organization for Medical Physics/IAEA/World Health Organization Workshop during the 20th International Conference on Medical Physics (ICMP2013) (United Kingdom, 1–4 September), and the European Explosive Ordinance Disposal Network/Chemical, Biological, Radiological/Nuclear (EEODN/CBRN) Working Group Conference (Lithuania, 25 September).

Upcoming Activities

Information about upcoming activities for Member State Emergency Preparedness is available on the online calendar of events. Just click on 'Meeting Calendar' from the right side menu at ns.iaea.org.

Beyond the third quarter of 2013, the following peer review services are scheduled: IRRS missions in the Czech Republic, the United States of America and Belgium, as well as EPREV preparatory missions in South Africa and Kuwait.

IEC News

The IEC welcomes Mark Breiting (USA) as Emergency Preparedness Officer, and Vasily Kovtunov (Russian Federation), Bushra Nasim (Pakistan) and Mollie Rock Zuccato (USA) as consultants.

EPR-RANET, 2013 and New Translations

The 2013 *IAEA Response and Assistance Network* (EPR-RANET, 2013) operational manual became effective on 1 September 2013. This manual is primarily intended for the relevant Competent Authority or Authorities of a State (designated under the Early Notification and Assistance Conventions). It is also intended for organizations that have response capabilities that could be made available for international assistance in the event of a nuclear or radiological incident or emergency. Guidance on the actions to be performed by States requesting international assistance is provided. EPR-RANET, 2013 includes a new Functional Area for regis-

tering National Assistance Capabilities in RANET: Nuclear Installation, Assessment and Advice.

New translations

- The *Operations Manual for Incident and Emergency Communications* (EPR-IEComm, 2012) is available in French.
- *EPR-Embarking, 2012* is available in Russian.
- *EPR-Public Communications, 2012* is available in Chinese.

The new EPR-series translations are available at iec.iaea.org. Just click on 'Technical Tools' on the right hand menu.

For EPR-RANET, 2013 and EPR-IEComm, 2012, click the title 'International Response System' on the front page.

IEC Trains Trainers on Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor

The IEC hosted a regional Train the Trainers workshop in Vienna, 29 July–2 August, for countries with nuclear power plants or located near nuclear power plants. The workshop was attended by 13 participants, from 9 different Member States. The purpose of the workshop was to train participants as lecturers on the associated training material to the recently published *Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor* (EPR-NPP Public Protective Actions, 2013). The workshop consisted of a series of lectures, work sessions, a tabletop exercise and group discussions. It focused on a hands-on approach to the training material, which provided participants the opportunity to direct and facilitate the training course.

During the workshop, the participants were required to give presentations on the subject and received constructive feedback in order to help strengthen their presenting technique. In addition, participants were required to act as facilitators in the tabletop exercise and ran this module independently, with only minor support and input from IAEA staff members.



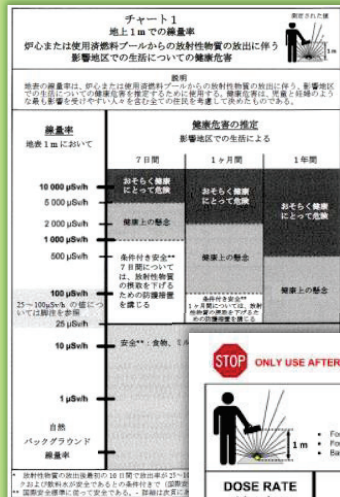
Trainers participating in the workshop (Photo Credit: J. Callen/IAEA-IEC)

After being trained on the material and on how to conduct the workshop, participants will be able to hold workshops in their respective countries. In addition, this Train the Trainers workshop has provided the opportunity to identify suitable participants for inclusion in the IEC's list of potential lecturers for future training events.

The IEC will be publishing the training material in English later this year and will be translating it into Russian and Spanish. The next workshop is planned for summer 2014.

Charts Placing the Radiological Health Hazard in Perspective

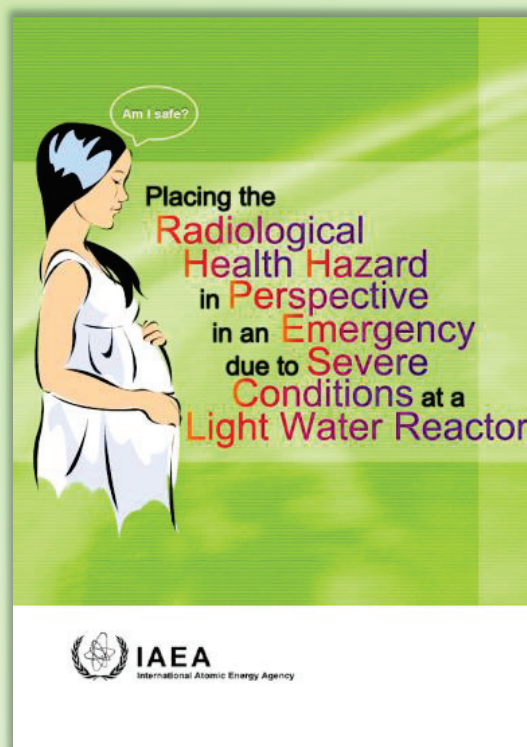
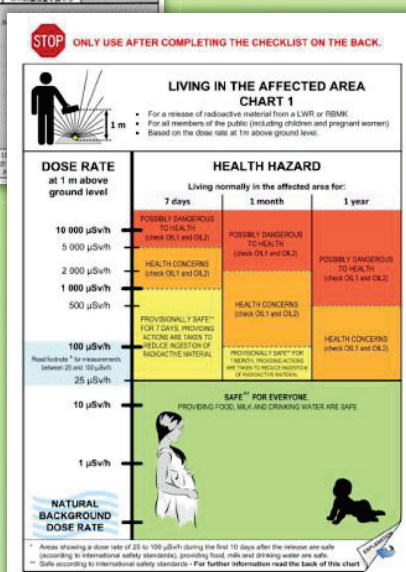
The IAEA has developed a series of charts to help improve communication during an emergency at a nuclear power plant or spent fuel pool. The charts are also designed to answer the primary concern of individual members of the public: “Am I safe?”



The charts act as ‘shortcuts’ cutting out the time consuming calculations for relating a measured quantity (e.g. dose rate in millisieverts per hour (mSv/h)) to a radiation-induced health effect.

The charts are currently being translated into Japanese, Russian and Spanish. The English version can be downloaded from the [IEC website](http://www-ns.iaea.org/downloads/iec/health-hazard-perspec-charts2013.pdf).

<http://www-ns.iaea.org/downloads/iec/health-hazard-perspec-charts2013.pdf>



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NOTE

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