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IEC Newsletter



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Peer Review of UAE's Emergency Plans for Barakah Nuclear Power Plant

An Emergency Preparedness Review (EPREV) of the emergency preparations and response arrangements for the Barakah Nuclear Power Plant (NPP) in the United Arab Emirates (UAE) commented favourably on the UAE's emergency and preparedness response programme. The review team also found various aspects of the emergency plans for the plant, currently under construction, to be highly commendable.

Conducted from 21 to 31 March and led by Raoul Awad, Director General of Security and Safeguards of the Canadian

Nuclear Safety Commission, the EPREV mission team included experts from Brazil, Canada, France, Morocco, the United States and the IAEA. At the mission's closing meeting, Mr. Awad pointed out that "the UAE has built its nuclear emergency preparedness and response programme in an effective way on the basis of an already strong national infrastructure for crisis and emergency management." He emphasized that "the partnership between the National Emergency, Crisis and Disasters Management Authority, the Ministry of Interior, the Federal Authority for Nuclear Regulation and the Emirates Nuclear Energy Corporation is key to the success achieved thus far."

The EPREV mission team found that, in two areas in particular, the UAE has demonstrated the kind of excellence that should be shared with the international emergency preparedness and response community:

- The co-location of the emergency operations centres for the management of on-site and off-site response at Al Ruwais is a unique feature of the UAE nuclear emergency management framework. It can greatly enhance the effectiveness of the cooperation between the operator and the off-site emergency management authorities, which is key to the success of any emergency response.

As a member of the Gulf Cooperation Council's Regional Nuclear and Radiological Emergency Preparedness and



Construction work at the Barakah NPP, August 2014
(Photo Credit: Emirates Nuclear Energy Corporation/IAEA)

Response Plan, the UAE can achieve a high degree of harmonization and coordination with its neighbours during a nuclear emergency, another important element for the success of a global emergency response.

The EPREV team appreciated the excellent cooperation of all organizations involved in the review mission. In particular, the team discerned a commitment to excellence displayed by all parties that were met during the mission.

“By inviting this mission, the UAE demonstrated its dedication to continuous improvement in nuclear safety,” said Denis Flory, IAEA Deputy Director General, Head of the Department of Nuclear Safety and Security. International peer review missions, he pointed out, “are designed to identify strengths and opportunities for improvements in a spirit of transparency and quest for excellence,” and he emphasized that this mission was one of many conducted by the IAEA to assist Member States achieve a safe, reliable and sustainable nuclear power programme.

IEM 9: Assessment and Prognosis in Response to a Nuclear or Radiological Emergency

From 20 to 24 April 2015, the IAEA hosted the International Experts Meeting (IEM) on Assessment and Prognosis in Response to a Nuclear or Radiological Emergency at its Headquarters in Vienna as the ninth such meeting organized under the [IAEA Action Plan on Nuclear Safety](#) (the Action Plan). The importance of the subject matter was emphasized by the fact that IEM 9 was attended by more than 200 participants from 70 Member States and five international organizations. In addition, an effort was made, within the



*Ninth International Experts Meeting (IEM) at the IAEA's Headquarters in Vienna
(Photo Credit: A. Scalia/IAEA)*

context of the IAEA's capacity building programme, to involve as many young professionals as possible in the meeting.

A particular focus of IEM 9 was the expanded role which the IAEA has recently assumed in assessment and prognosis during a nuclear or radiological emergency. The experience during the Fukushima Daiichi accident showed that many different messages were being disseminated to the public and to governments. Information concerning the assessment and prognosis of the accident was provided by various parties, and this information was not always consistent or correct. There was no clear international mechanism for the harmonization of messages or the dissemination of key information that could serve as the basis for assessments and prognoses. Nor was there a source for an authoritative global view of the results of assessments and prognoses.

The IAEA's expanded response role during a nuclear or radiological emergency, as agreed to by the Member States in the Action Plan, has been intended to improve this situation. As the global focal point during a nuclear or radiological emergency, the IAEA is in a unique position to facilitate both the provision of technical data to the technical institutes performing assessment and prognosis within Member States and to coordinate requests for additional technical data from the 'Accident State'. While the relevant authorities in the 'Accident State' are best placed to provide a detailed assessment and prognosis of the on-site and off-site situation, the participants of the IEM agreed that the IAEA can complement longstanding national responsibilities.

During this process the IAEA can facilitate the harmonization of Member States' assessment and prognosis results with those of the 'Accident State', other Member States and the IAEA. It can provide a global forum where results can be shared, information be discussed and a globally harmonized, consistent message be prepared before being released to the public.

IEM 9 provided an important forum for the discussion of technical issues, communication policies, international guidance and capacity building efforts with regard to assessment and prognosis during nuclear or radiological emergencies, including those caused by security events.

IEC Staff News

The IEC welcomes Patrick Meschenmoser (Germany) as Crisis Communication Adviser, Herdís Helgadóttir (Iceland) as a Team Assistant and Antonia Boemeke (USA/Germany) as an Intern.

Tabletop exercise simulating maritime transport emergency

Radioactive cargo, such as irradiated nuclear fuel and radioactive waste, is often shipped by sea for long haul destinations. Maritime shipping is a safe and effective mode of transport and an emergency at sea is highly unlikely. Although both Coastal and Shipping States were becoming increasingly aware of the need to be prepared for even such a low probability event, until the late 1990s, Coastal States were given little information about the nature of the cargo crossing their waters. Nevertheless, they were expected to meet international standards the safety of life at sea and, if necessary, to assist any vessel in their proximity, regardless of its cargo.

As a result, in the early 2000s, the so-called Coastal State-Shipping State Dialogue (the Dialogue) was established as an informal consultation mechanism for the purpose of information exchange, in particular by providing advance notification of the shipment of nuclear material. In recent years, the members of the Dialogue have jointly developed voluntary guidelines and best practices related to the potential transboundary effects of a maritime transport emergency.

The implementation of some of these guidelines and best practices, especially those relating to the exchange of information and international cooperation during a nuclear emergency at sea, was tested by international experts during a tabletop exercise at the IAEA on 17 June 2015. Participants, as players and observers, included representatives from Argentina, Australia, Chile, Colombia, Dominican Republic, France, Ireland, Japan, Malta, New Zealand, Norway, Portugal, the Russian Federation, Spain, Turkey, the UK and



*Participants in tabletop exercise simulating maritime transport emergency
(Photo Credit: W. Grünwald/IAEA-IEC)*

the USA. Representatives from the World Nuclear Transport Institute (WNTI) were also present.

“This exercise contributes to the main objective of the informal Dialogue between Coastal and Shipping States, which is to build confidence and promote transparency among our countries”, said Ambassador Armin Andereya, Permanent Representative of the Republic of Chile to the International Organizations in Vienna and Chairman of the Dialogue.

The scenario that was played out at the IAEA’s Incidence and Emergency Centre involved an incident during the transport of vitrified radioactive waste from France to Japan by sea on a United Kingdom vessel. A diplomatic demarche prior to the shipment was simulated following the best practices agreed on by the Dialogue, and the incident initiated a series of response actions and communications by and between the respective States.

“I am encouraged by the positive evolution of the informal Dialogue between Coastal and Shipping States in the last couple of years, enhancing mutual understanding, information sharing and practical arrangements for transport”, said Ambassador Mitsuru Kitano, Permanent Representative of Japan to the International Organizations in Vienna and prospective Chair of the Dialogue. “I cannot emphasize enough the benefits of the exercise in testing the effectiveness of Government to Government communications in response to unexpected events, and I am confident that valuable lessons will be drawn from it.”

One of the major objectives of the Dialogue is to ensure that the best international practices are employed in every circumstance, thereby helping to raise confidence among the stakeholders. During the concluding discussion, participants and observers agreed that the tabletop exercise contributed substantially to this objective, and that they would continue to reflect on the lessons learned from the drill.

Establishment of EPR Standards Committee

A standing Safety Standards Review committee in the area of emergency preparedness and response (EPR) under the Commission on Safety Standards (CSS) was established in June 2015 by the Deputy Director General, Head of the Department of Nuclear Safety and Security of the IAEA.

The Emergency Preparedness and Response Standards Committee (EPRReSC) will complement the work of the existing safety standards committees. EPRReSC will provide advice and guidance on the strategy, priorities and programme for the development of EPR related safety standards issued in the IAEA Safety Standards Series and

promote activities aimed at supporting their use and application in Member States.

Membership in EPRESC is open to all IAEA Member States. Member States have already been invited to nominate for membership in EPRESC a senior expert, a representative of the organization designated as a Competent Authority under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, or a representative of the organization coordinating emergency preparedness and response at the national level.

Relevant international organizations, such as members of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE), have also been invited to attend the meetings of EPRESC as observers.

The constitution of EPRESC is expected for September 2015 on the basis of nominations received by the IAEA Secretariat. The first meeting of EPRESC has been scheduled for 30 November to 2 December 2015 at IAEA Headquarters.

With the establishment of EPRESC, the role and integration of EPR subject matter experts in the overall process of developing IAEA safety standards has been significantly strengthened. Consequently, an increase in quality, transparency and consistency of EPR aspects within the IAEA safety standards and an improved coordination of EPR among various publications is expected to be achieved.

Annual ConvEx-1c

Exercises conducted within the Incident and Emergency System are named ConvEx exercises (Convention Exercises). ConvEx-1 are designed to test emergency communication links with contact points in Member States that need to be available 24 hours a day, 7 days a week, and to test response times of the contact points.

On 14 April, the IEC launched the ConvEx-1c 2015 exercise, which is conducted once a year with the aim of verifying that user registrations, contact details and alert settings are up to date on the USIE website. A total of 356 USIE Administrators (representing 165 Emergency Contact Points, 73 INES National Officers and 61 Permanent Missions) were contacted and requested to confirm their relevant details.

Of the 313 Administrators who had responded within six weeks after the start of the exercise, only two were reported to be outdated. At the same time, 15 user accounts were removed by Administrators (representing about 1.7% of all registered user accounts). The IEC also noted about 30 updates to contact details in the USIE Address Book as a consequence of the exercise.

Advisory mission to Kuwait on medical aspects of EPR

Building and sustaining an adequate capacity capable of responding to nuclear and radiological emergencies is a national strategic objective to which the Government of Kuwait has accorded the highest attention. Within the framework of its cooperation with the IAEA, Kuwait requested that an advisory mission review its preparedness and response arrangements for managing its medical response to a radiation emergency.

In response to this request, the IAEA carried out a five-day mission in May 2015, which was led by the IEC's Eduardo Herrera Reyes and included senior medical experts from France and Hungary, as well as a senior observer from the World Health Organization.

The advisory mission team visited several medical institutions and worked with national experts to evaluate the national capacity to manage the medical needs of an emergency involving radiation exposure, and to formulate recommendations for the enhancement of Kuwait's ability to respond to emergencies. The team identified a well-established framework for the medical preparedness and response to radiation emergencies, found a good infrastructure to support the medical response and noted the professionalism and motivation of the individuals charged with carrying out the responsibilities. Regarding the regulatory aspects of EPR, the team advised the Kuwait national authorities to continue working in three main areas related to the medical response.

The IEC continues to work with Kuwait to build on and improve the existing capabilities in emergency preparedness and response.

EPR self-assessment for Arab Member States

The Arab Atomic Energy Agency invited the IEC to participate in the 12th Arab Conference on the Peaceful Uses of Atomic Energy, which took place in Egypt from 16 to 20 May.

Jeff Lafortune, Emergency Preparedness Coordinator, presented the concept of a joint project for all Arab Member States to complete a self-assessment of their national emergency preparedness and response capabilities. "Such a

coordinated assessment can help countries identify their individual strengths and needs”, Lafortune pointed out. “It can also provide a basis for the enhancement of emergency preparedness and response capabilities based on synergies across the region”. The issues discussed at the conference included: basic nuclear sciences, accelerators, nuclear reactors, applications of radioisotopes, material sciences, environmental studies and nuclear safety and security.

Event at Cattenom NPP

On 28 May 2015, an event occurred at Unit 1 of the Cattenom Nuclear Power Plant (NPP) in France, when a valve opened unexpectedly in the secondary circuit, which resulted in a release of steam. The reactor was automatically shut down according to procedures. There was no radioactive release to the environment, and all safety systems were operational. This event, which was rated at Level 1 on the INES scale, led the operator to implement its on-site emergency plan to manage to bring the reactor to a safe condition.

The IEC became aware of this event through an email exchange and phone conversations held with the Autorité de Sûreté Nucléaire (ASN), which at the day of the event was carrying out an exercise at the Chinon NPP. The exercise was interrupted, and the ASN emergency was immediately operational. In order to prepare a media statement in case inquiries would be received at the IAEA about the Cattenom event, the ASN was asked whether the reactor was currently operated in normal operation procedures or in emergency operation procedures. The IAEA also inquired about the pressure and temperature in the reactor vessel, the activation of safety systems, the current mode of cooling the reactor and the status of electrical power at the station.

There was a prompt and detailed reply from the ASN to these technical questions, which showed that water in the core was not boiling, reactivity was under control and the actions to get the plant to a safe condition were timely and adequate. This brief analysis based on the answer to the technical questions allowed the IEC to augment the initial media line statement with the sentence “according to the information provided, the power plant is in a safe condition”, thus setting in plain language a clear message by the IAEA about this event. As usual, and following the established practice, the media line statement was shared and agreed with the ASN.

The interaction with the French counterpart regarding this event was quick and effective. The IEC sees this interaction as a positive example of dealing with such type of events and will make use of it in internal training events related to the assessment process and the process of communicating with counterparts in early stage events at nuclear power reactors.

The IEC would like to thank the ASN for its contribution to this article.

Train the Trainers Workshop for first responders in Vienna

The IEC continues its efforts to enhance first responder training for nuclear and radiological emergencies worldwide. In April 2015, it conducted an Interregional Train the Trainers workshop in Vienna with 20 participants to identify the best practices for instructing first responders. The workshop included classroom discussions and field exercises to assess the effectiveness of various teaching methods



A participant searches for radioactive material during a practical session

(Photo Credit: A. Scalia/IAEA-IEC)

The IEC incorporated the lessons learned from this workshop in a regional Train the Trainers Course held in Khartoum, Sudan, in May 2015. The course was conducted through the IAEA’s Department of Technical Cooperation (TC) and included 27 senior officials from diverse backgrounds.

The IEC and TC are planning up to five additional national courses in 2015 and ten in 2016 in response to Member State requests. Additionally, in 2015, national courses were conducted in Sudan and Honduras and are in the final planning stages in Qatar and Bolivia. For more information on first responder training, please contact Mark Breitingger at m.n.breitingger@iaea.org.

Member States Preparedness

To assist Member States with applying IAEA safety standards in the area of EPR, six training events at regional and national levels, as well as two expert missions at the national level were conducted during the second quarter of 2015.

Regional Level:

- ANSN Regional Workshop on roles and responsibilities of operators, regulators and other stakeholders, and coordination of emergency response activities (Bangladesh, 6–9 April)
- Workshop on roles and responsibilities of operators, regulators and other stakeholders, and coordination of emergency response activities (Indonesia, 13–16 April)
- Train the Trainers Workshop on First Response to a Radiation Emergency (Austria, 13–17 April)
- Regional Workshop to Develop National Radiation Emergency Plans (Morocco, 8–19 June)

National Level:

- National Training Course on First Response to Radiological Emergencies (Bahrain, 6–9 April)

In addition, the IEC carried out Emergency Preparedness Review (EPREV) Missions to Ghana (Accra, 31 May–9 June) and Nigeria (Abuja and Lagos, 14–23 June), and participated in the Integrated Regulatory Review Service (IRRS) mission to Croatia (Zagreb, 7–17 June). The IEC took part in various missions and events related to EPR, including: an expert mission for the development of the National Emergency Preparedness and Response Plan—Version 0.2 for Oman (Muscat, 24–28 May), and an expert mission for the “Online Monitoring System” in Rio de Janeiro (Brazil, 18–22 May).

The IEC attended the Workshop of the Working Group on Emergencies of the Heads of European Radiological Protection Competent Authorities (HERCA WG-E) on the implementation of the Council Directive 2013/59/Euratom in the field of emergency planning and response (Germany, 13–14 April). The IEC also took part in the Latin American IRPA Regional Congress on Radiation Protection and Safety in Buenos Aires (16–17 April), and attended the Conference on Normal Tissue Radiation Effects and Countermeasures (CONTREC) in Morrilton (United States, 6–9 May). In addition, the IEC participated in the conduct of the Train the Trainers Workshop on Medical Physics Support for Nuclear or Radiological Emergencies in Fukushima (Japan, 22–26 June), which was the first workshop organized by the IAEA (in cooperation with Japanese authorities) to train medical physicists in response to radiation emergencies.

Upcoming Activities

Upcoming activities in the area of Member State Emergency Preparedness can be found on the online calendar of events: <http://www-ns.iaea.org/training/calendar.asp?rg=&aoe=er&yr=2015&lg=&s=9&l=73&submit.x=16&submit.y=14>

Republic of Korea joins RANET – USA registers new capabilities

The IEC is pleased to announce that, in April 2015, the Republic of Korea registered its National Assistance Capabilities (NACs) in the IAEA Response and Assistance Network (RANET), increasing the States registered to 28.

In May, the United States increased its registered National Assistance Capabilities (NACs), with the Nuclear Regulatory Commission (NRC) registering capabilities in the Nuclear Installation and Advice functional area.

The IAEA thanks all States that have registered their NACs in RANET and encourages all Member States to review their NACs to assess if they are suitably prepared to provide international assistance. If so, they are requested to register their NACs in RANET.

Workshop on Emergency Radiation Monitoring

The IAEA's Response and Assistance Network (RANET) Capacity Building Centre in Fukushima hosted a Workshop on Monitoring during a Nuclear or Radiological Emergency from 13 to 17 April. The workshop, which was part of the IEC's work to strengthen emergency preparedness and response capabilities of Member States, was designed to help countries build capacity in preparation for a nuclear or radiological emergency.

Experts from RANET counterparts in France and Japan trained and advised participants from eight countries (Bahrain, Bolivia, Cuba, Jordan, Oman, Qatar, the Republic of South Korea and Ukraine) in planning and performing radiological monitoring and environmental sampling and analysis tasks. The participants were also trained on how to develop data and mapping products for radiological monitoring and environmental sampling and analysis to support the decision-making process for protection of the public. They also performed field exercises in uninhabited areas that were evacuated following the 2011 Fukushima Daiichi accident. These exercises ensured a mix of theory and hands-on training and allowed attendees to practice various methods for emergency monitoring of radiation and environmental sample collection at different sites.



*A member of the Institut de Radioprotection et Sûreté Nucléaire (IRSN) prepares to carry out in-situ gamma spectrometry measurement exercises during the Fukushima workshop
(Photo Credit: P. Kenny/IAEA-IEC)*

The IEC wishes to acknowledge the continued support of Fukushima Prefecture and the Ministry of Foreign Affairs of Japan for the conduct of activities in the IAEA RANET Capacity Building Centre in Fukushima.

#EPR15: International Conference on Global EPR

Preparations continue for the International Conference on Global Emergency Preparedness and Response that will be hosted by the IAEA from 19 to 23 October 2015 at IAEA Headquarters in Vienna.

Over 150 synopses have been received for the conference, from which the International Conference Programme Committee selected those proposals that would be featured in oral or poster presentations. Topics covered will include: emergency management, protection strategies, communications, public health and medical response, waste, international cooperation, education and training and past experiences.

Currently, 290 participants have registered to attend the conference, fifteen private companies and international organizations will exhibit the latest in EPR technology and management during the conference.

More information is available at: goto.iaea.org/EPR15.

Recent Events

In the second quarter of 2015, 18 incidents were communicated by counterparts via the IEC's USIE information exchange website. The following is a brief account of selected events.

Overexposure of workers (INES Level 3) was reported by Australia on USIE in April 2015, but had actually occurred in the beginning of 2014. During well-logging activities, a well-logging source (IAEA Category 3) got detached from its shielding container, and a team of four workers was exposed to the unshielded source. According to the INES report, three workers received non-severe doses, but one operator received a high dose and developed a burn on his leg (local dose estimated to about 15 Gray). The IEC encourages the sharing of information via USIE on such relatively rare overexposure events, including the experiences from the medical follow-up,

wherever possible.

In April 2015, Mexico reported an event involving the theft of an industrial radiography source. As in previous cases, it is suspected that it is not the source that is the target, but the vehicle on which the source happened to be transported. In accordance with the IECComm reporting guidelines, the Mexican Contact Point posted an advisory message on USIE, and in a follow-up message posted a week later, the device containing the source was reported as intact. There was no suspicion of people being exposed to the source. The event did attract some international media attention, and the IEC received and responded to questions both from Contact Points and the media.

The IEC was also following an event reported by Portugal in May, where elevated radiation levels of Cs-137 were detected in a container arriving at Lisbon harbour from Casablanca, Morocco. The IEC informed the Moroccan Contact Point, who engaged with the Portuguese authorities in the investigation and tracing of the origin of the contamination.

Finally, in the second quarter of 2015, the IEC took note of six "national" exercises, in which countries exercised their communications with the IEC and utilized the IEC's USIE Exercise website. The countries were: Armenia, Belarus (two exercises), France, Spain and Ukraine. The IEC encourages all countries to exercise their communications with the IEC when running their national exercises. The IEC would also like to thank those countries who offered to serve as "accident countries" in the IEC's internal exercises, as well as its quarterly regular exercises with the World Meteorological Organization (WMO).

2015

2014

2013

2012

2011

2010

2009

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2005

The IAEA Incident and Emergency Centre proudly celebrates 10 years of service to its Member States

Impressum

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