



IAEA
International Atomic Energy Agency

NS Update



Issue No. 3, December 200-

ISSN 1996-4056

Current safety and security activities and developments taking place in the Department of Nuclear Safety and Security

<http://www.iaea.org/OurWork/ST/NS>

GC53 Highlights

The IAEA's 53rd General Conference was held in Vienna from 14 to 18 September, with over 1 400 delegates from IAEA Member States attending the event. Following discussion, the General Conference adopted resolutions on several items, including the IAEA's Programme and Budget for 2010-2011; measures to strengthen international cooperation in nuclear, radiation, transportation and waste safety; nuclear security; technical cooperation activities; and activities related to nuclear science, technology and applications.

Regarding the IAEA's Programme and Budget for 2010 and 2011, the resources major programme on nuclear safety and security were increased significantly. This clearly demonstrates the importance assigned by the Member States to nuclear safety and security. The majority of this increase has been marked for the IAEA's nuclear security and emergency preparedness and response activities.

General Conference resolutions, GC(53)/RES/10 and GC(53)/RES/11, on nuclear safety and security, respectively, supported the continued work of the IAEA in these areas and helped to set future direction. For the first time, the safety resolution included radioactive waste and transportation safety in an integrated manner, and the security resolution was broadened to include linkages with safeguards and disarmament. These resolutions demonstrate the Member States' strong support for these activities and reinforce the importance of the IAEA's contributions towards global nuclear safety and security. The full texts of the conference resolutions can be viewed at:

<http://www.iaea.org/About/Policy/GC/GC53/Resolutions/>

The General Conference provided many opportunities and meetings to interact with Member States about IAEA policies and programmes. Many Member States expressed high interest and expectations regarding the need for better

international cooperation in support of new and expanding nuclear power programmes, as well as for better control of radioactive materials and sources. These themes were also apparent during the Senior Regulators' Meeting. Additionally, the International Safety Group (INSAG) forum provided for constructive dialogue on many nuclear safety challenges, including vendor support for nuclear safety infrastructure and industrial standardization initiatives. The IAEA expects to further build upon these discussions at the International Conference on Effective Nuclear Regulatory Systems in Cape Town, South Africa, from 14 to 18 December.

Lastly, the Department of Nuclear Safety and Security hosted several side events and an exhibition during the General Conference. In particular, the events of the Asian Nuclear Safety Network, the FORO's Ibero American Nuclear and Radiation Safety Network and the African Regional Co-operative Agreement (AFRA) were highly attended.



Building, Testing and Using the Response Assistance Network (RANET)

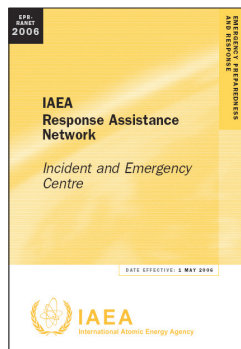
Background

RANET is a network of Competent Authorities capable and willing to provide, upon request, specialized assistance by appropriately trained, equipped and qualified personnel with the ability to respond quickly and effectively to radiation incidents and emergencies.

RANET is an integrated system for the provision of international assistance to minimize the actual or potential radiological consequences for health, the environment and property.

It also facilitates the harmonization of emergency assistance capabilities, exchange of relevant information and feedback of experience, and complements the IAEA initiatives to promote emergency preparedness and response in its Member States.

Member States are expected, within the limits of their capabilities and resources, to identify national assistance capabilities consisting of qualified experts, equipment and materials that could be made available to assist another State.



RANET: Current status

Registered	Registration Date	Aerial survey	Radiation Monitoring	Environmental measurements	Source search/recovery	Assessment and advice	Medical support	Public health protection	Biodosimetry	Internal dose assessment	Bioassay	Histopathology	Dose reconstruction
Argentina	26/09/2008								FAT/EBS				
Australia	19/03/2008		FAT		FAT	FAT							FAT
Czech Republic	15/04/2009	EBS	EBS	EBS	FAT/EBS	EBS			FAT/EBS	EBS	EBS		FAT/EBS
Egypt	11/08/2009		FAT	FAT/EBS		EBS	FAT/EBS						
Finland	17/12/2007								EBS				
France	19/08/2008		FAT	FAT/EBS	FAT	FAT/EBS	EBS		EBS	FAT/EBS	EBS		EBS
Hungary	09/06/2008		FAT	FAT/EBS	FAT	FAT/EBS	FAT	FAT	EBS	EBS	EBS		
Mexico	18/12/2007		FAT	FAT	FAT					FAT			
Nigeria	29/08/2008	FAT	FAT	FAT	FAT	FAT							FAT
Pakistan	11/02/2008		FAT/EBS	FAT/EBS	FAT/EBS	FAT/EBS							
Romania	16/05/2008	FAT	FAT/EBS	FAT/EBS		EBS				EBS			EBS
Slovenia	05/02/2008		FAT/EBS	FAT/EBS	FAT/EBS	FAT	FAT		FAT	FAT			FAT
Sri Lanka	13/12/2007		FAT	FAT	FAT								
Sweden	11/03/2008	FAT	FAT	FAT/EBS	FAT	FAT/EBS				EBS			
Turkey	11/03/2008		FAT/EBS	FAT/EBS	FAT/EBS				EBS				
USA	20/12/2007					EBS	FAT/EBS	FAT/EBS	FAT/EBS	FAT/EBS			

Future Directions of RANET

In order to forge strong regional networks within RANET, more Member States should register their national assistance capabilities as soon as possible. Sixteen Member States are currently registered and, while this is a good start, many more are encouraged to begin the process. RANET, as a tool to strengthen international nuclear safety and security, will be increasingly called on as more and more States embark on new nuclear energy programmes.

An Active Network

An accidental exposure to a 16 Ci Iridium industrial radiography source triggered the first activation of the IAEA's Response Assistance Network (RANET) earlier this year. In April 2009 in Ecuador, an individual suffered a radiation injury to his left thigh after finding the radioactive source and placing it in his pocket. Under the Convention on Assistance in the Case of a Nuclear Accident, Ecuador requested a biological assessment of the radiation dose received.

RANET, launched in 2008 following an invitation by the Director General to all Member States to register, facilitates the provision of international assistance in case of a nuclear or radiological incident or emergency. As more Member States register capabilities, regional networks are created, which facilitate the provision of assistance. In this case, Argentina's Nuclear Regulatory Authority (ARN) had registered biodosimetry as an assistance capability and this was a logical fit for the Ecuadorian request.

TYPE AND FORM OF ASSISTANCE

RANET teams can:

- Assess a radiological situation
- Predict a possible evolution
- Provide technical advice
- Initiate stabilization activities, including source recovery
- Provide medical advice/consultation, medical assistance or advice on public health
- Provide laboratory analysis, modelling and prognosis

Assistance may be provided in the form of field teams or delivered remotely from supporting State's offices and laboratories. The type and form of assistance is specified and agreed in an Assistance Action Plan that is prepared for requested assistance.

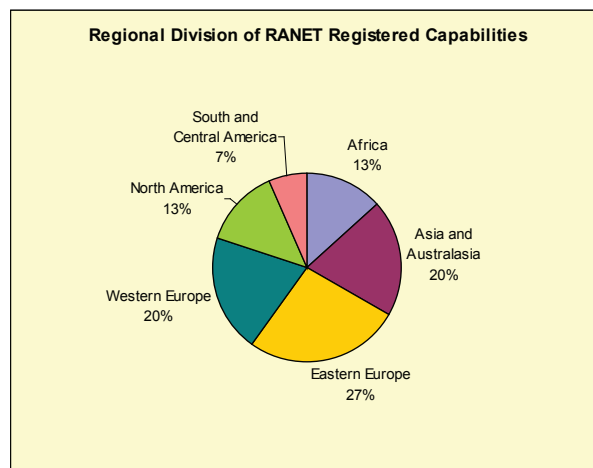
ShipEx-1 (2009)

In 2009, almost half of all RANET-registered Member States participated in ShipEx-1 (2009), which tested current existing capabilities for safe and expeditious international transport of blood samples subjected to biological dosimetry assessment. Samples were shipped from Peru – Instituto Peruano de Energía Nuclear, Biological Dosimetry Laboratory to participating laboratories in 13 countries within the Latin American Biological Dosimetry Network and RANET (Argentina, Brazil, Chile, Finland, France, Germany, Hungary, Japan, Mexico, Spain, Turkey, Uruguay, USA).

The means to evaluate the successful shipment of the samples were: a) the ability to timely send/ receive the samples, b) conformity or nonconformity of the sample conditions for biological dosimetry purpose at the time of its reception, and c) the mitotic index evaluation after 48 h of culture. Additionally, TLD badges and temperature data loggers provided by IAEA IEC were used to determine the adequacy of the transport conditions during the shipments. Financial support was also provided by PAHO and WHO.

The conclusions demonstrate that the temperature condition of the shipment is adequate for the type of package used as long as the shipping interval is less than 3 days:

- All samples were delivered and allowed for mitotic index evaluation
- More than half of the shipments took more than the planned 48 hours - from 56 hours (Spain) to 96 hours (Germany)
- Temperature of the samples at the receiving labs where in the range 2° C-8° C (13 out of 14 shipments), one shipment was delivered at 13.5° C
- Temperature span during shipment time was below 4° C for 11 out of the 14 shipments, the minimum variation interval was recorded for the shipment to Argentina (0.7° C), higher span intervals were recorded for Mexico (7.1° C), Germany 1 (6.3° C) and Spain (5.3° C)
- The shipment to Mexico and possibly the one to Spain might have been shortly opened during the transport
- In most cases the temperature stayed below 8° C for at least three days
- The minimum temperature recorded during the shipments occurred for the shipment to Spain (0.7° C)
- Due to a carrier mistake the shipment to Germany was delayed to 96 hours



10th Meeting of the ANSN Steering Committee

The 10th meeting of the ANSN Steering Committee was held in Singapore from 20-22 October 2009. Twenty eight participants from twelve ANSN participating countries and a representative from the Association of Southeast Asian Nations (ASEAN) attended the meeting, which was hosted by the National Environment Agency (NEA) of Singapore.

Each participating country made a brief presentation on its recent nuclear safety issues relevant to ANSN and their views of on-going and future ANSN activities. The steering committee recommended to further promote nationwide use of the ANSN website and to open more nuclear safety knowledge produced by the ANSN for enhancing public awareness.

In 2009, the Asian Nuclear Safety Network (ANSN) has developed a vision for the ANSN by the year 2020.

In particular, the ANSN is aiming to develop the three pillars of its Regional Capacity Building System, which will include: 1) a virtual centre for regional education and training, 2) a pool of qualified experts, and 3) a virtual technical support organization to provide technical advisory service for new and creative knowledge. ANSN participating countries have been actively working for the improvement of organizational and institutional infrastructure for nuclear safety to address the challenges in their capacity building, including human resource development. The third annual meeting of the ANSN Nuclear Safety Strategy Dialogue will be held in April 2010 in Indonesia.



International Physical Protection Advisory Service (IPPAS)

IPPAS was created by the IAEA to assist States in strengthening their national nuclear security regime. At the request of a Member State, IPPAS provides peer advice on implementing international instruments, and Agency guidance on the protection of nuclear and other radioactive material and associated facilities. During an IPPAS mission, the State's physical protection system is reviewed and compared with international guidelines and best practices. Based on this review, recommendations for improvements are provided including follow-up activities and assistance. Following IPPAS recommendations, actual upgrades of physical protection systems have been initiated in several Member States through bilateral support programmes.



IPPAS missions are conducted both on a nation-wide and facility-specific basis. For more information on IPPAS or the Agency's nuclear security programme, please contact NuclearSecurity@iaea.org.