



IAEA

International Atomic Energy Agency

Update on IAEA EP&R activities

**Fifth General NERIS Workshop
5 April 2019, Roskilde, Denmark**

**Department of Nuclear Safety and Security
Incident and Emergency Centre**

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Update on Recent and Planned Activities



- Preparedness:
 - Development of **Safety Standards and Technical Guidance**
 - **Capacity Building Activities** (Training, EPRIMS, EPREV)
- Response:
 - **Notification and official information exchange** (USIE, EPR IECComm)
 - **Assessment** of potential emergency consequences **and prognosis** of possible emergency progression

Safety Standards and Guidance

Development of Safety Standards



- **DS475** (*Safety Guide on Public Communication*):
 - Expected to be approved in April 2019 and published by this summer
- **DS469** (*Safety Guide on EPR in Transport, revision of TS-G-1.2*):
 - Expected to be approved by December this year and published in 2020
- **DS504** (*Safety Guide on EPR, revision of GS-G-2.1*):
 - Expected completion and approval: 2021
- **DS505** (*Safety Guide on Source, environmental and individual monitoring, revision on RS-G-1.8*):
 - Expected completion: 2021

Development of Technical Guidance (1)



- **EPR Protection Strategy:**
 - Expected approval in Q2 2019, to be published in 2019
 - **Pilot training** already delivered in November 2018
- **EPR- On-site plan for NPP:**
 - Approved in November 2018, to be published this year
 - Pilot training scheduled in Ljubljana, Slovenia, June 3-7 2019
- **Revision of INES User's Manual:**
 - **Technical Meeting:** 23-27 April 2018, Vienna

Development of Technical Guidance (2)



- **EPR-NPP Assessment (Revision of TECDOC 955)**
 - Approved in September 2018, to be published this year
 - Pilot training implemented in March 2018
- **EPR Combined Emergencies**
 - Almost completed. To be approved by beginning Q2 2019 and published this year
 - Pilot training to take place in Q4 2019
- **EPR Radiation Monitoring (Revision of TECDOC 1092)**
 - Almost completed. To be approved in Q2
 - Pilot training to take place in Q4 2019

Development of Technical Guidance (3)



- **Revision of EPR First Responders**
 - Almost completed. To be approved in Q2 and published this year
 - Pilot training (Train the trainers) to be implemented in July 2019
- **EPR Radiological OIL's**
 - In advanced degree of completion. To be approved by Q3 2019
 - Pilot training to take place in Q4 2019
- **EPR Series in the medical field**
 - **EPR Series Internal Contamination.** Published July 2018
 - **EPR Series Medical Physicist and Pocket Book.** Approved in November 2018, to be published in 2019
 - **Revision of EPR Medical 2005.** To be approved in Q2 2019
 - **EPR Medical Follow up.** To be approved in Q2 2019

Capacity Building

Capacity Building: Training and Workshops (1)

School of Radiation Emergency Management:

- 3-week training course, to provide a comprehensive training to MS officials involved at mid managerial level in EPR
- **3 Schools** held in 2018
 - 82 experts from 46 MSs trained
- **3 Schools** planned for **3Q-4Q 2019**:
 - Brazil (for MSs in the **Latin America** Region), August 26 to September 13
 - China (TBC) (for MSs in the **Asia & Pacific** Region)
 - TBD (for **Small Island of the Pacific** MS)



Capacity Building: Webinars



Whenever possible to be jointly organized by international organizations, co-sponsors of GSR Part 7 and other interested organizations

- One organized in October 2018 (jointly with FAO):
 - Food control during nuclear or radiological emergencies
- Next (2019, IAEA/Interpol):
 - Nuclear or Radiological Emergencies triggered by nuclear security events

EPREV Missions

- One of the peer reviews offered by the IAEA
- To strengthen nuclear safety in Member States
- Focus on the arrangements and capabilities to prepare for, and respond to, N/R emergencies
- Based on IAEA Safety Standards in EP&R

- 46 EPREV missions conducted in 41 MS since 1999
- EPREV Guidelines published in October 2018
- Two EPREV implemented in 2018:
 - Belarus (October)
 - Cuba (November)
- Two already in the pipeline for 2019:
 - Canada (June)
 - UAE Follow-up (September)

Unified System for Information Exchange in Incidents and Emergencies

USIE

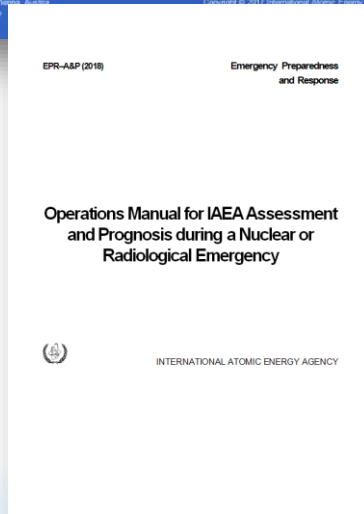
- **USIE 7.1** made available in October 2018

Highlights of some of the new features:

- Possibility for short messages
 - Adding information to already published EMERCON forms
 - **Encryption possibility** – within the forms
 - Other improvements: display of various forms, form suggestion wizard etc.
-
- **5 Webinars** on USIE 7.1 held in 2018

Assessment and Prognosis

Assessment and prognosis: Operations Manual



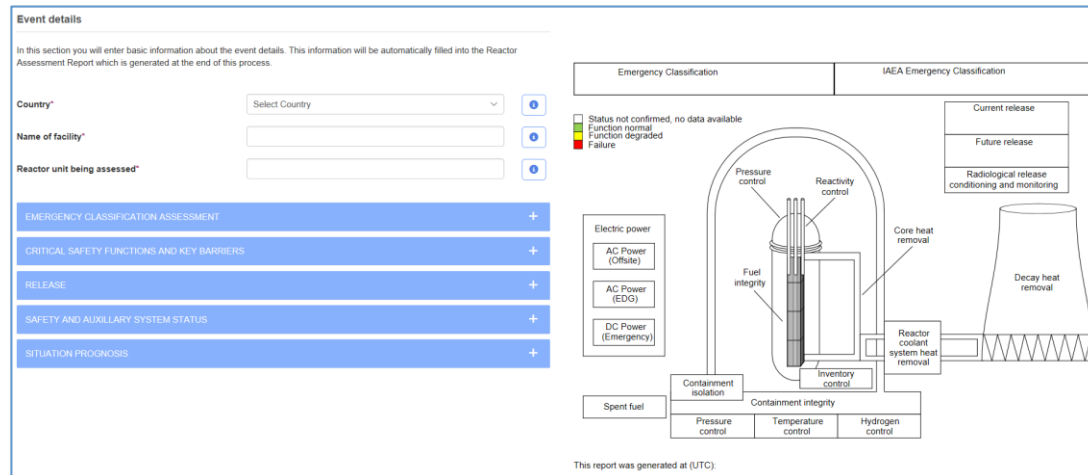
- **EPR – A&P manual** to be published soon
 - Elaborates the IAEA and Accident State assessment and prognosis process
 - Provides objectives, expected timing, information sharing processes and review process with the AS
- To be complemented with a **supporting guide** that provides technical basis for process
 - To be available online on assessment tool website

Overview of the Reactor Assessment Tools

- Assessment and Prognosis (A&P)
 - new IAEA role requested by Member States in September 2011 -

Assessment of potential emergency consequences and a prognosis of possible emergency progression

- RAT provides a clear and efficient workflow for the study of the status of the barriers of containment and their critical safety functions



The screenshot displays the RAT interface, divided into two main sections: 'Event details' and a reactor schematic diagram.

Event details section:

- Event details:** A header section with a sub-instruction: "In this section you will enter basic information about the event details. This information will be automatically filled into the Reactor Assessment Report which is generated at the end of this process."
- Country*:** A dropdown menu labeled "Select Country" with a blue circular icon to its right.
- Name of facility*:** A text input field with a blue circular icon to its right.
- Reactor unit being assessed*:** A text input field with a blue circular icon to its right.
- Assessment workflow:** A vertical list of blue buttons with white text and a "+" icon on the right:
 - EMERGENCY CLASSIFICATION ASSESSMENT
 - CRITICAL SAFETY FUNCTIONS AND KEY BARRIERS
 - RELEASE
 - SAFETY AND AUXILIARY SYSTEM STATUS
 - SITUATION PROGNOSIS

Reactor schematic diagram:

- Emergency Classification:** A box at the top left of the diagram area.
- IAEA Emergency Classification:** A box at the top right of the diagram area.
- Legend:** A color-coded key:
 - Green: Status not confirmed, no data available
 - Yellow: Function normal
 - Orange: Function degraded
 - Red: Failure
- Reactor Core:** A central vertical structure with labels for "Pressure control", "Reactivity control", and "Fuel integrity".
- Containment System:** A large dome-shaped structure surrounding the core, with labels for "Containment isolation", "Inventory control", and "Containment integrity".
- Power and Cooling Systems:** Various boxes and lines representing systems like "Electric power" (AC Power (Offsite), AC Power (EDG), DC Power (Emergency)), "Core heat removal", "Reactor coolant system heat removal", and "Spent fuel".
- Release and Monitoring:** Labels for "Current release", "Future release", and "Radiological release conditioning and monitoring" are shown on the right side.
- Bottom Controls:** A row of boxes at the bottom labeled "Pressure control", "Temperature control", and "Hydrogen control".
- Footer:** The text "This report was generated at (UTC):" is located at the bottom right of the diagram area.

Overview of the Reactor Assessment Tools

- Provides a mechanism for exchanging technical expertise

Figure 1: Current assessment tool for reactor stress test 1

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IAEA
International Atomic Energy Agency
Incident and Emergency Centre
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Status of the Dukovany Nuclear Power Plant

The IAEA receives information updates from a variety of office sources which include the State Office for Nuclear Energy of the Czech Republic, the Nuclear Safety Institute of the Czech Republic, and the Ministry of Emergency Management of the Czech Republic.

The IAEA assesses the emergency classification in Category 3 (Severe). The notice justification for the assessment is based on the existing data and information on the site.

Declared emergency classification level at Unit 1

The currently declared emergency classification is Category 3 (Severe). The notice justification for the assessment is based on the existing data and information on the site.

Declared emergency classification level at Unit 1

The IAEA assesses the emergency classification level at Unit 1

Based on the information which has been viewed, the IAEA judgement is Table 1's, which is in the "Severe" and "Emergency" Category. The IAEA judgement is based on the information available to the IAEA, which includes the current assessment of the site.

Category	Area	Current Status	Technical performance
Reactivity	Reactivity Control	Function	Control of reactivity and stay within
Fuel	Core Condition	Function	The core is in a stable state
	Fuel Element	Function	The fuel elements are in a stable state
Safety	Containment	Function	Containment is intact
	Emergency Preparedness	Function	Emergency procedures are being followed
Spent Fuel	Spent Fuel Management	Function	Spent fuel is being managed safely
Stability	Stability	Function	Stability is being maintained
Outdoor	Outdoor	Function	Outdoor environment is being monitored
Baseline	Baseline	Function	Baseline data is being collected
Containment Leakage	Containment	Function	Containment is intact

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Status of reactor units at Dukovany NPP site

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Stability	Stability	Function	Stability is being maintained
Outdoor	Outdoor	Function	Outdoor environment is being monitored
Baseline	Baseline	Function	Baseline data is being collected
Containment Leakage	Containment	Function	Containment is intact

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Area	Current Status	Technical performance
Reactivity	Function	Control of reactivity and stay within
Fuel	Function	The core is in a stable state
	Function	The fuel elements are in a stable state
Safety	Function	Containment is intact
	Function	Emergency procedures are being followed
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Stability	Function	Stability is being maintained
Outdoor	Function	Outdoor environment is being monitored
Baseline	Function	Baseline data is being collected
Containment Leakage	Function	Containment is intact

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Baseline	Baseline	Function	Baseline data is being collected
Containment Leakage	Containment	Function	Containment is intact

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Table 1: Current emergency classification assessment at Unit 1

Category	Area	Current Status	Technical performance
Reactivity	Reactivity Control	Function	Control of reactivity and stay within
Fuel	Core Condition	Function	The core is in a stable state
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Outdoor	Outdoor	Function	Outdoor environment is being monitored
Baseline	Baseline	Function	Baseline data is being collected
Containment Leakage	Containment	Function	Containment is intact

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Figure 2: Current assessment tool for reactor stress test 2

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Area	Current Status	Technical performance
Reactivity	Function	Control of reactivity and stay within
Fuel	Function	The core is in a stable state
	Function	The fuel elements are in a stable state
Safety	Function	Containment is intact
	Function	Emergency procedures are being followed
Spent Fuel	Function	Spent fuel is being managed safely
Stability	Function	Stability is being maintained
Outdoor	Function	Outdoor environment is being monitored
Baseline	Function	Baseline data is being collected
Containment Leakage	Function	Containment is intact

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Declared emergency classification level at Unit 1

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Fuel	Core Condition	Function	The core is in a stable state
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Safety	Containment	Function	Containment is intact
	Emergency Preparedness	Function	Emergency procedures are being followed
Spent Fuel	Spent Fuel Management	Function	Spent fuel is being managed safely
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Outdoor	Outdoor	Function	Outdoor environment is being monitored
Baseline	Baseline	Function	Baseline data is being collected
Containment Leakage	Containment	Function	Containment is intact

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EXERCISE EXERCISE EXERCISE EXERCISE

Development of the Reactor Assessment Tools



Current RAT – several modules

<p>Pressurized Water Reactor</p> <p>The PWR module of the Reactor Assessment Tool is intended to be used with the most commonly available PWR technologies (except for VVER based which have their own module).</p> <p>PWR Instructions</p>	<p>Boiling Water Reactor</p> <p>The BWR module of the Reactor Assessment Tool is intended to be used with the most commonly available BWR technologies.</p> <p>BWR Instructions</p>	<p>Pressurized Heavy Water Reactor</p> <p>The PHWR module of the Reactor Assessment Tool is intended to be used with the most commonly available PHWR technologies including CANDU (CANada Deuterium Uranium) reactors.</p> <p>PHWR/CANDU Instructions</p>
<p>Water-Water Energetic Reactor</p> <p>The WVER (WVER) module of the Reactor Assessment Tool is a modified version of the PWR module intended for use when assessing any WVER technology.</p> <p>WVER Instructions</p>	<p>Generic Reactor</p> <p>The Generic Reactor module of the Reactor Assessment Tool is intended to be used for the assessment of nuclear reactor technology is not properly covered by the other modules. If you are evaluating a reactor and are unsure which module to select, this should be chosen.</p> <p>Generic Reactor Instructions</p>	<p>Research Reactor</p> <p>The Research Reactor module of the Reactor Assessment Tool is intended for use when assessing any Research Reactor. Due to the variability between the different designs, this module has been deliberately made to be generic and applicable to most designs.</p> <p>Research Reactor Instructions</p>
<p>EPRIMS</p> <p>The Emergency Preparedness and Response Information Management System (EPRIMS) contains a Reactor Technical Information database which is used as a reference for technical specifications of nuclear power reactors during an emergency.</p> <p>EPRIMS</p>	<p>Research Reactor Database</p> <p>The Research Reactor Database (RRDB) provides extensive information on research reactors all over the world. This database contains technical specifications and utilization information which may be useful.</p> <p>RRDB</p>	

A new module created in 2019 for the Advanced Gas-Cooled reactor (AGR)

Event details

In this section you will enter basic information about the event details. This information will be automatically filled into the Reactor Assessment Report which is generated at the end of this process.

Country*

Name of facility*

Reactor unit being assessed*

EMERGENCY CLASSIFICATION ASSESSMENT +

CRITICAL SAFETY FUNCTIONS AND KEY BARRIERS +

RELEASE +

SAFETY AND AUXILIARY SYSTEM STATUS +

SITUATION PROGNOSIS +

The diagram shows a cross-section of a reactor core within a containment vessel. Key components and systems are labeled:

- Core:** Fuel integrity, Reactivity control, Pressure control.
- Containment Vessel:** Containment isolation, Containment integrity, Inventory control.
- External Systems:** Electric power (AC Power (Offsite), AC Power (EDG), DC Power (Emergency)), Spent fuel, Reactor coolant system heat removal, Core heat removal, Decay heat removal.
- Control Systems:** Pressure control, Temperature control, Hydrogen control.
- Emergency Classification:** IAEA Emergency Classification, Current release, Future release, Radiological release conditioning and monitoring.

Legend: Status not confirmed, no data available (grey); Function normal (green); Function degraded (yellow); Failure (red).

This report was generated at (UTC):

Development of the Reactor Assessment Tools

Improving the current assessment

Re-arranging the workflow:

- Barrier of containment #1
 - Critical safety function #1-1
 - Critical safety function #1-2
 - Sub-critical safety function i
 - Sub-critical safety function ii
- Barrier of containment #2
- ...
- Barrier of containment #3
- ...



[Links to EPRIMS](#) > Reactor Technical Information



Country: Argentina

Unit: ATUCHA-1

All

Expand All

Collapse All

- > Primary Systems
- > Secondary systems
- > Spent fuel storage
- > Non-electrical applications
- > Basic Information
- > Other data
- > Emergency mitigating equipment
- > Monitoring instrumentation

Other suggested improvements

New developments for the Reactor Assessment Tools

Reactor unit being assessed*

- EMERGENCY CLASSIFICATION ASSESSMENT +
- CRITICAL SAFETY FUNCTIONS AND KEY BARRIERS +
- RELEASE +
- SAFETY AND AUXILIARY SYSTEM STATUS -

The purpose of this section is to focus the Technical Team to consider the current status of safety and auxiliary systems. The evaluation of the technical team in this section should support and complement the evaluation of the critical safety functions. Once this section is complete, the Technical Team should consider if their answers support the answers provided in the next section and the previous section.

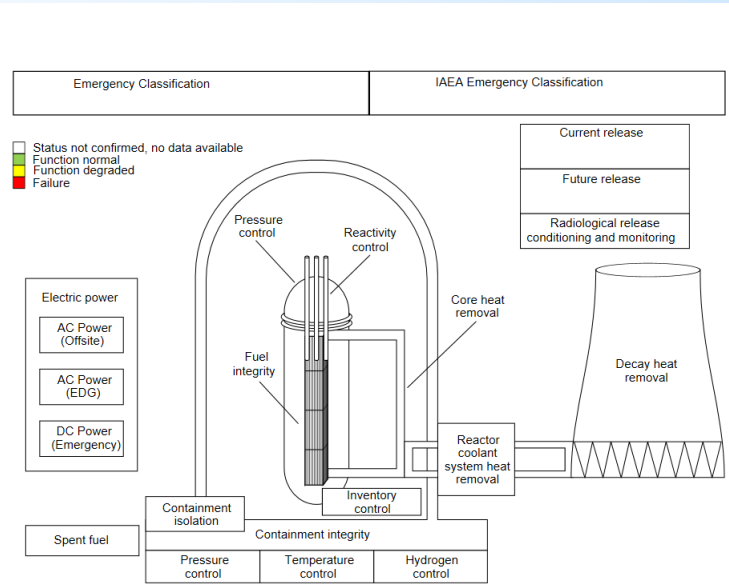
Is there power available? Justification (Optional)

ELECTRIC POWER *(click here for more questions)* +

Spent fuel conditions Justification (Optional)

Radiological release conditioning and monitoring Justification (Optional)

SITUATION PROGNOSIS +



This report was generated at (UTC):

To be covered by two new dedicated tools

SITUATION PROGNOSIS -

The purpose of this section is to evaluate the potential for release and to consider the possible evolution of the event. The answers to the previous questions and assessments should support the answers provided in this section.

If the Technical Team believes core damage is possible and a release is a real potential re-evaluate the emergency classification. It should be a General Emergency in this case.

Is this outlook relatively stable or volatile? Justification (Optional)

Describe how the situation is expected to change in the next 12-48 hours. Justification (Optional)

Describe any potential for release Justification (Optional)

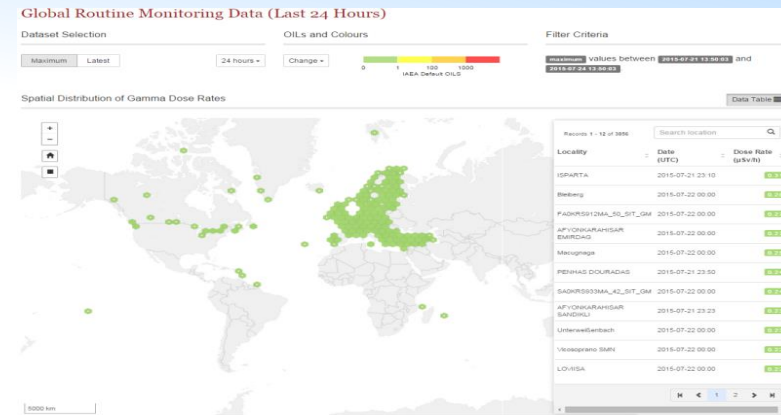
International Radiation Monitoring Information System

IRMIS

Overview of IRMIS (1/2)



- Supports implementation of the Early Notification Convention
- Provides a mechanism for the global exchange of large quantities of radiation monitoring data
- Gamma dose rates, isotope specific ground deposition and air concentration from fixed monitoring stations



Global Routine Monitoring data

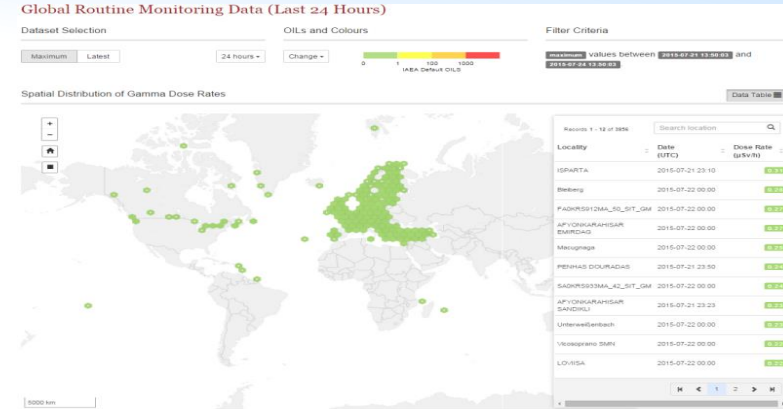


Emergency Monitoring Data

Overview of IRMIS (2/2)



- Data in Visualization page are color coded in terms of user defined Operational Intervention Levels (OILs) to assist in the decision making process to protect the public during an emergency

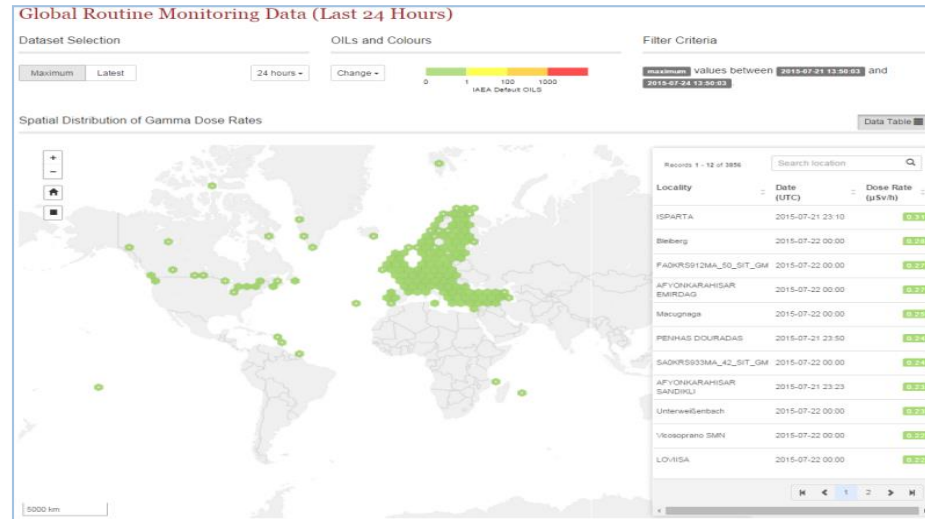


Global Routine Monitoring data



Emergency Monitoring Data

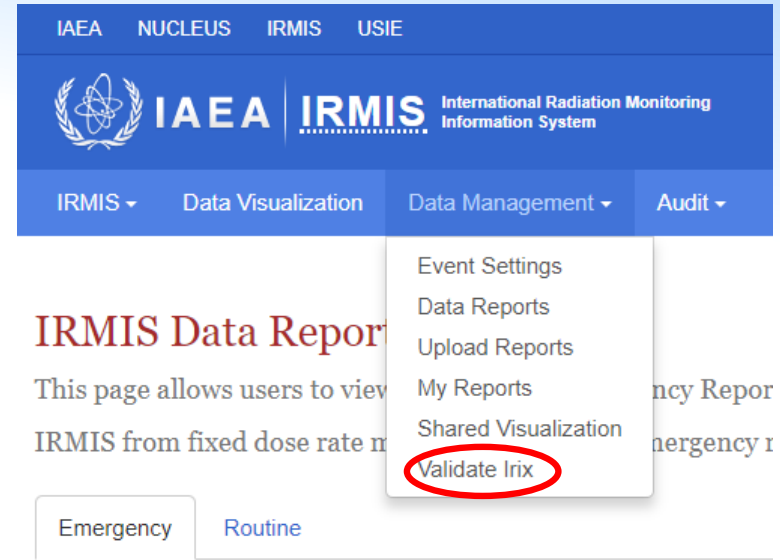
Countries providing IRMIS Routine Monitoring Data: 39



Countries who established Contact Points or Data Providers for IRMIS: 42

New features and tools in IRMIS

- Validation of user developed IRIX formatted data reports from IRMIS before submission from Data Management

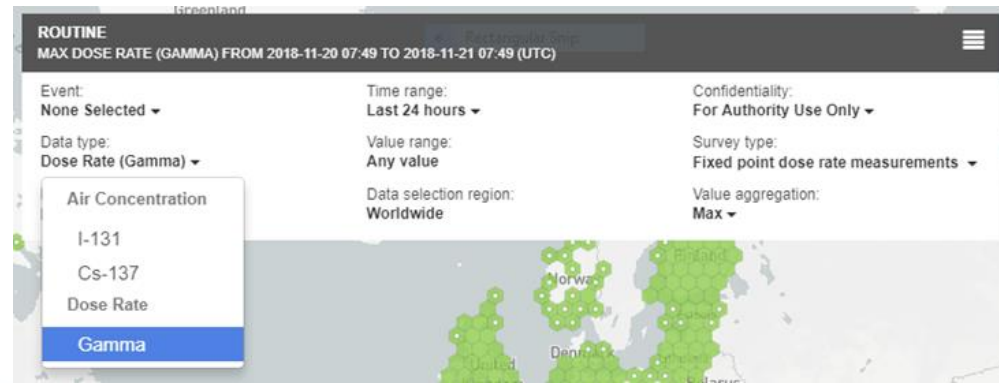


- Drawing Tools

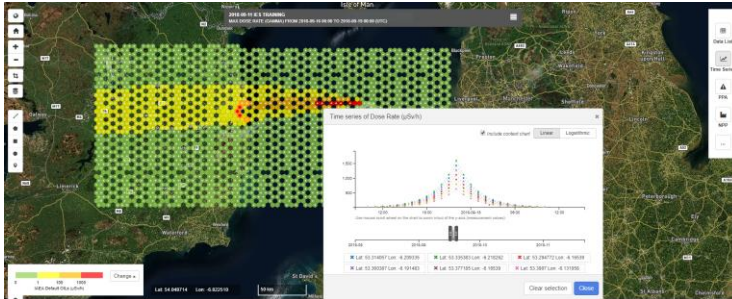


- Environmental Monitoring Data

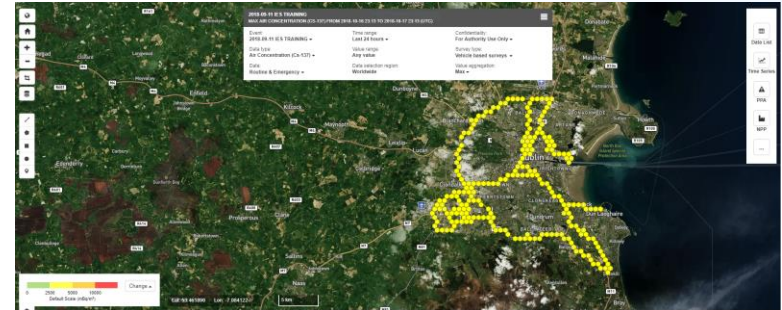
- Air Concentration (Cs-137 & I-131)
- Ground Deposition (Cs-137 & I-131)



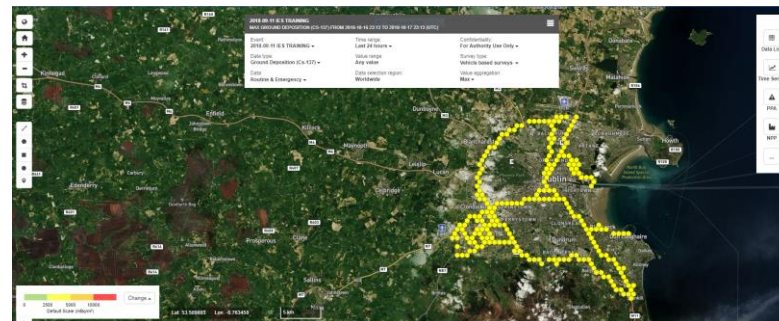
Examples of simulated Gamma dose rate data, deposition data, air concentration data used in exercises



Combination of Aerial & Fixed Station simulated Gamma dose rate data

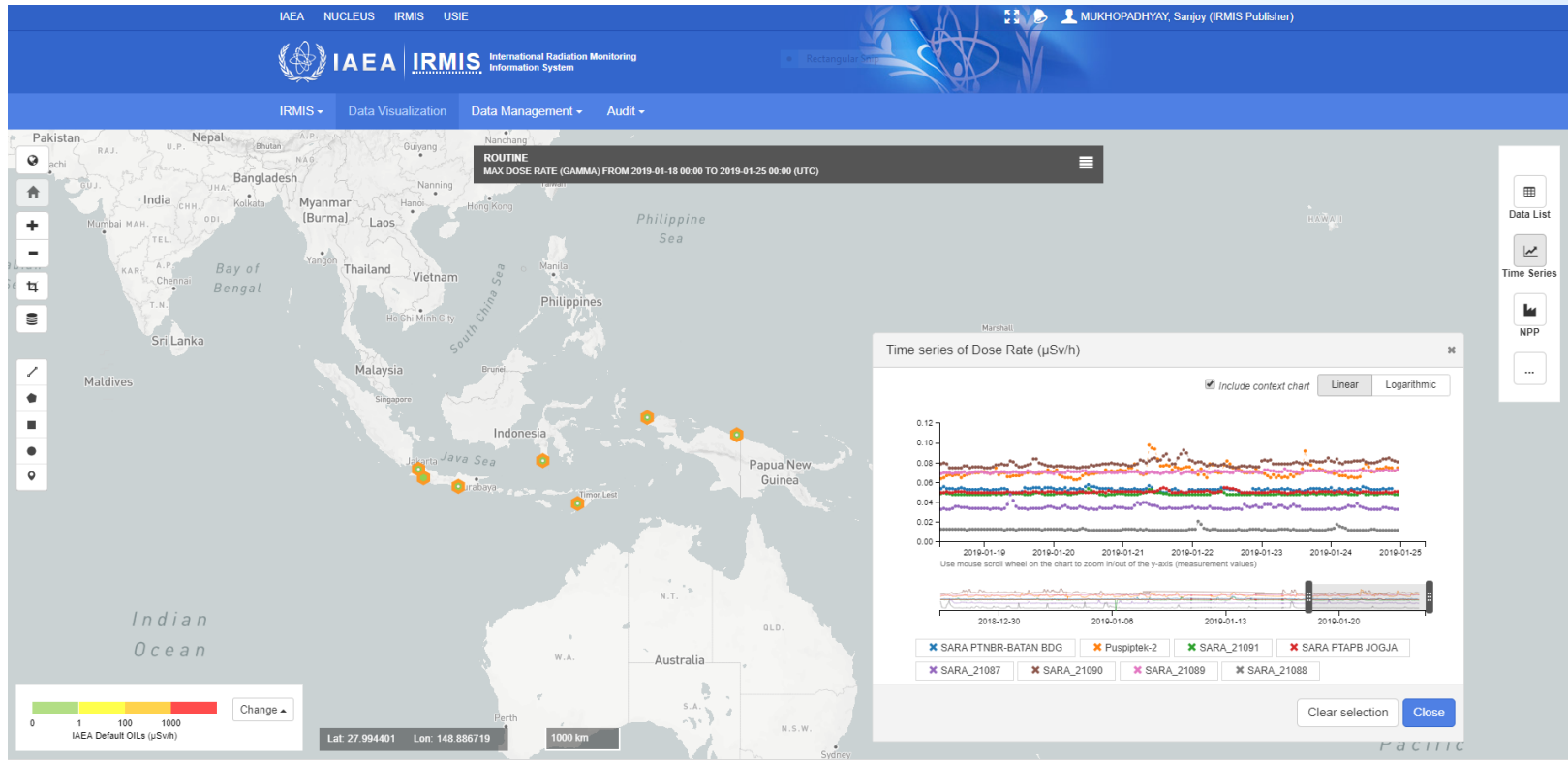


Simulated air concentration data, Cs-137



Simulated ground deposition data, Cs-137

Example of Routine Monitoring Data - Indonesia

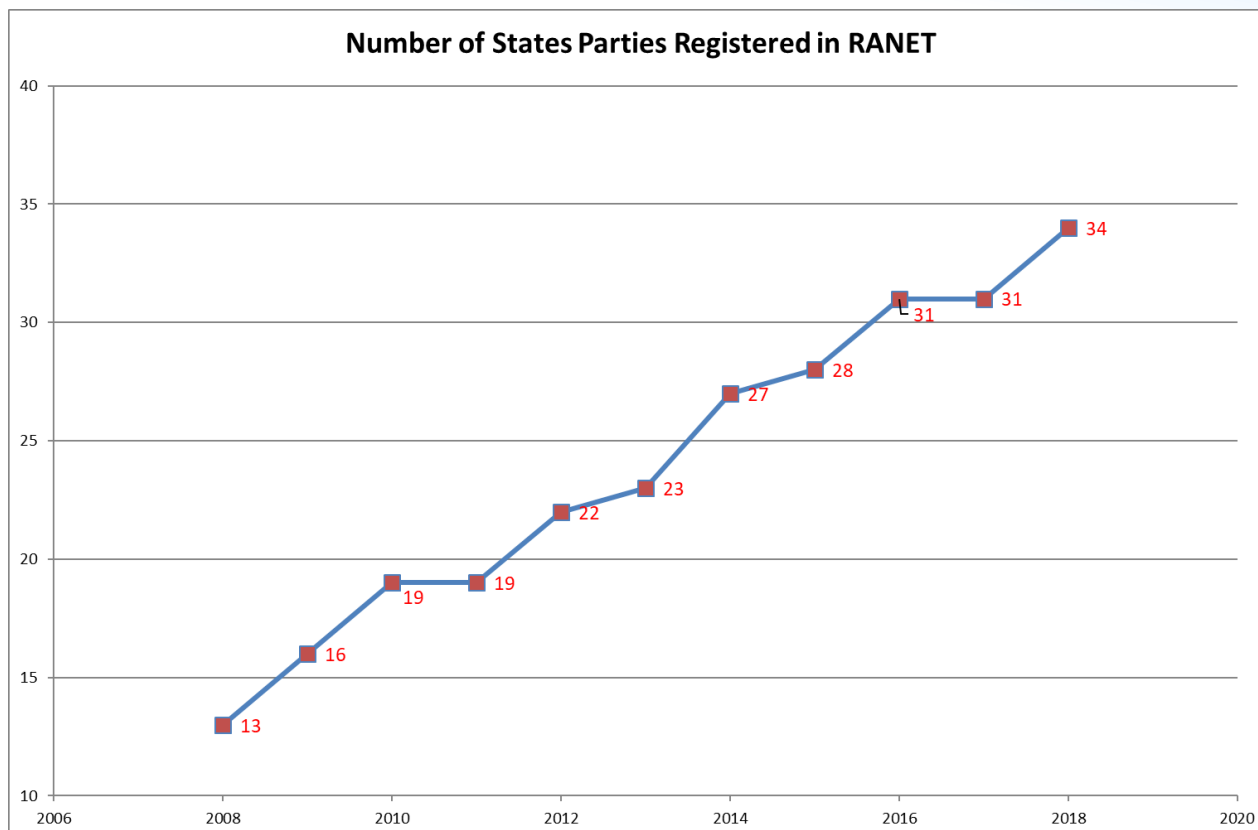


Home > Data Visualization

Response and Assistance Network

RANET

RANET Registrations



State Parties Registered in RANET



Country	Radiation Survey	Sampling and Analysis	Source Search and Recovery	Radiological Assessment and Advice	Medical Support	Dose Assessment	Decontamination	Nuclear Installation Assessment and Advice
Argentina						FAT EBS		
Australia	FAT EBS	FAT	FAT				FAT	
Austria	FAT EBS		FAT EBS					
Belarus, Republic of	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	EBS
Belgium	FAT	FAT	FAT					
Bulgaria	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS
Canada						EBS		EBS
China	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	
Czech Republic		EBS		EBS		EBS		
Denmark	FAT EBS		FAT EBS	EBS				
Egypt	FAT EBS	FAT EBS	FAT EBS	EBS	EBS		EBS	
Finland	FAT	EBS		EBS		EBS	EBS	
France	FAT	FAT EBS	FAT	EBS	FAT EBS	FAT EBS		
Germany	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT	
Hungary	FAT	FAT EBS	FAT	FAT EBS	FAT	EBS	EBS	
Ireland		EBS		EBS				
Israel	FAT EBS	FAT EBS	FAT	EBS		EBS		
Japan	EBS	EBS		EBS	EBS	EBS		FAT EBS
Korea, Republic of	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	EBS
Mexico	FAT	FAT	FAT			FAT		
Nigeria	FAT	FAT	FAT	FAT			FAT	
Norway	FAT	FAT EBS	FAT					
Pakistan	FAT EBS	FAT EBS	FAT EBS	EBS	EBS	EBS		FAT EBS
Romania	FAT EBS	FAT EBS	FAT	FAT EBS		EBS	FAT	
Russian Federation	EBS	EBS		EBS	FAT EBS	FAT EBS		
Slovenia	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	EBS
Spain				EBS				FAT EBS
Sri Lanka	FAT	FAT	FAT					
Sweden	FAT	FAT EBS	FAT	EBS				
Switzerland	FAT EBS	FAT EBS	FAT EBS			EBS		
Turkey	FAT EBS	FAT EBS	FAT EBS	EBS		EBS		
Ukraine	FAT EBS	FAT EBS	FAT EBS	EBS			FAT EBS	FAT EBS
United Kingdom		EBS		EBS		EBS		
United States of America	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS	FAT EBS		EBS

Field Assistance Team External Based Support

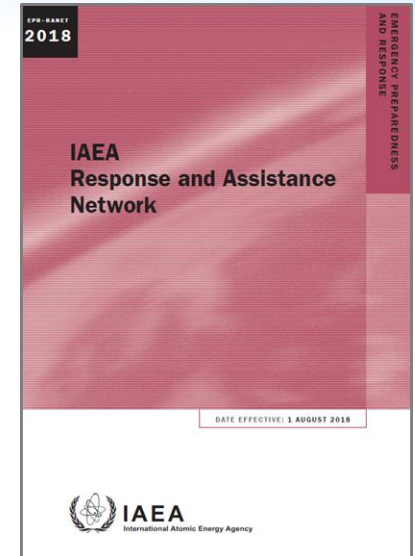
EPR-RANET through the years

- 8 Functional Areas
 - Defines 46 NAC
 - Covers wide range of response and assistance capabilities
- EPR-RANET 2018



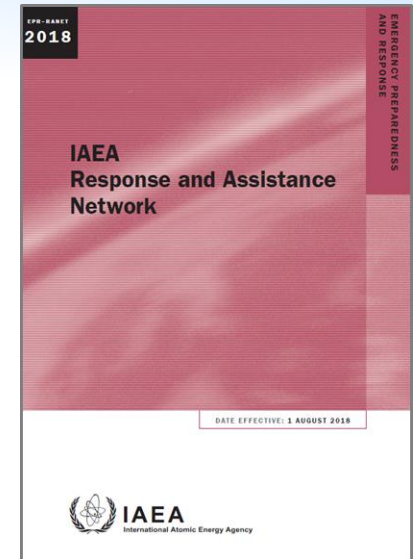
Changes in EPR-RANET 2018 (1/3)

- Addition of new National Assistance Capability to address:
 - assistance and advice on **geographic data mapping** in nuclear or radiological emergencies regardless of their origin
 - provision of requested assistance in nuclear or radiological emergencies, regardless of their origin
- Updated (Sample) RANET **Assistance Action Plan** (Appendix B)



Changes in EPR-RANET 2018 (2/3)

- Changes to the registration form to reflect the recent developments in RANET
- Three new appendices:
 - International ATA Carnet document for customs equipment documentation
 - an example request for assistance
 - an example offer of assistance



Changes in EPR-RANET 2018 (3/3)



4. NAC to be registered

For each NAC being registered please check the function and include a description of the expertise and resources. The attached checklists should be completed to provide additional information about available expertise and resources. Text descriptions of the specific capabilities should be attached.

RS Radiation Survey	
FAT FAT B EBS	RS-1 Foot/manual/ground based survey
FAT A FAT B EBS	RS-2 In-situ gamma spectrometry
FAT A FAT B EBS	RS-3 Vehicle based survey
FAT EBS	RS-4 Aerial based survey
FAT A FAT B EBS	RS-5 Scene control
SSR Source Search and Recovery	
FAT EBS	SSR-1 Foot/manual/ground based search
FAT EBS	SSR-2 Vehicle based search
FAT EBS	SSR-3 Aerial search
FAT EBS	SSR-4 Maritime search
FAT EBS	SSR-5 Source recovery
RAA Radiological Assessment and Advice	
FAT EBS	RAA-1 Atmospheric dispersion
FAT EBS	RAA-2 Hydrospheric dispersion
FAT EBS	RAA-3 Radioecological models
FAT EBS	RAA-4 Dose predictions
FAT EBS	RAA-5 Public health protection
FAT EBS	RAA-6 Remediation and recovery
FAT EBS	RAA-7 Geographic data mapping
FAT A FAT B EBS	RAA-8 Hazard and threat assessment
DE Decontamination	
FAT EBS	DE-1 Expertise in decontamination
FAT EBS	DE-2 Support in decontamination
SA Sampling and Analysis	
FAT EBS	SA-1 Environmental sampling
FAT EBS	SA-2 Gamma spectrometry
FAT EBS	SA-3 Alpha spectrometry
FAT EBS	SA-4 Beta counting
FAT EBS	SA-5 Evidence Management
FAT EBS	SA-6 Advanced Nuclear Analysis
MS Medical Support	
FAT EBS	MS-1 Medical triage
FAT EBS	MS-2 Support in treatment
FAT EBS	MS-3 Emergency treatment
FAT EBS	MS-4 Psychological support
DA Dose Assessment	
FAT EBS	DA-1 Cytogenetics-based biodosimetry
FAT EBS	DA-2 Electron Paramagnetic Resonance
FAT EBS	DA-3 Optical Stimulated Luminescence/EPR
FAT EBS	DA-4 Activation Analysis
FAT EBS	DA-5 In vivo/direct bioassay
FAT EBS	DA-6 In vitro/indirect bioassay
FAT EBS	DA-7 Internal dose calculation
FAT EBS	DA-8 Dose Reconstruction

FAT – Field Assistance Team
EBS – External Based Support

National Assistance Capabilities:

Field Assistance Team (FAT) expertise applicable in the case of (an) actual or suspected malicious act(s) may be registered as 'FAT-B' under some NACs.

Practical arrangements with other IOs

- EPR-JPLAN - Framework for coordinated and harmonized inter-agency EPR
- Practical arrangements (PA's) between the IAEA and International organizations (IO's) co-sponsors of the EPR-JPLAN (18 organizations)

- Cosponsors of this EPR-JPALN are the **IACRNE*** (Inter-Agency Committee on Radiological and Nuclear Emergencies):

- Participating organizations
- Corresponding organizations



- Other organizations, not in EPR-JPLAN: IFRC, UNSCEAR, WANO

- **Regular 24th IACRNE meeting proposal (2014):**
 - to initiate revisions and/or development of agreements between IAEA and other IACRNE organizations in a form of Practical Arrangements
- **Purpose of the PA's:**
 - to establish the framework for non-exclusive cooperation between the IAEA and IO's in the area of response to nuclear and radiological emergencies
- **Latest status of the PA's:**
 - Signed and in force: CTBTO, PAHO (General PA), WANO, WMO, WHO (General PA)
 - Under extension: ICAO
 - Draft PA's sent to all of the rest IO's for coordination – feedback is expected

To conclude

Mark the calendar - 2019



- *Technical Meeting on Advances in Emergency Preparedness and Response Technology and Arrangements*
8-12 April 2019, Vienna

- *Technical Meeting to Review the Revision of the IAEA Safety Standards Series No. GS-G-2.1*
25-29 November 2019, Vienna



IAEA

International Atomic Energy Agency

Thank you!

