Role of the IAEA in Strengthening International Cooperation for Nuclear and Radiation Safety and Nuclear Security

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Beneficial Uses of Nuclear and Radiation Technology

Food & Agriculture
Promoting food security and sustainable agricultural development

Human Health
Improving the diagnosis and treatment of diseases and nutrition

Science & Industry
Providing knowledge & expertise for science & industry

Water Resources
Making cleaner water accessible to more people

Environment
Understanding and protecting the environment

Energy
Providing 1/3 of the world’s low carbon electricity
Nuclear Safety and Security

Both Are National Responsibilities

International Legal Instruments

**Binding instruments**
Conventions: Early Notification and Assistance Conventions, Joint Convention, Convention on Nuclear Safety and Convention on the Physical Protection of Nuclear Material as Amended

**Non-binding instruments**
Codes of Conduct: Safety and Security of Radioactive Sources and Safety of Research Reactors

IAEA – A Resource and Partner

- Safety Standards
- Nuclear Security Guidance

Capacity Building

- Peer Reviews
- Advisory Services
IAEA Role in International Cooperation

• International cooperation is important in supporting Member States' efforts to fulfil their responsibilities for safety and security.

• Role of IAEA reaffirmed by Ministerial Declarations
  – Ministerial Conference on Nuclear Safety (2011)

• Ministerial Declarations in both Conferences recognised the central role of IAEA in strengthening nuclear safety and nuclear security globally, and of promoting international cooperation and coordination of international activities.
Promoting Cooperation with International Bodies

IAEA Safety Standards
for protecting people and the environment

Preparedness and Response for a Nuclear or Radiological Emergency

Jointly sponsored by the
FAO, IAEA, ICAO, ILO, IMO, INTERPOL, OECD/NEA, PAHO, CTBTO, UNEP, OCHA, WHO, WMO

General Safety Requirements
No. GSR Part 7

• OECD/NEA
  – Publication on Nuclear Power Plant Operating Experience.
  – Upgrading spent fuel and radioactive waste inventory database (along with EC).

• European Commission (EC)
  – Workshop on EPR requirements in GSR Part 7 and in EU legislation.
  – Joint meeting on status and trends in spent fuel and radioactive waste management (along with OECD/NEA).

• World Health Organization (WHO)
  – A programme of webinars to provide information on radon-related topics was initiated (along with the European Radon Association).

• World Association of Nuclear Operators (WANO)
  – Memorandum of Understanding with WANO to further enhance cooperation for OSART missions to substitute for WANO follow-up reviews.

• INTERPOL
  – Revised and updated training materials for courses in radiological crime scene management in cooperation with INTERPOL.
Peer Review and Advisory Services

• Nearly 20 Peer Review and Advisory Services
  – Both the General and Technical Level
Global Nuclear Safety and Security Network

• Learning opportunities
• Professional growth
• Bigger impact on safety and security

Since 2011:
Over 500 regional and national activities
Over 5000 experts involved in GNSSN activities
GNSSN

- **Global Level**
  - Comprehensive and robust framework for coordination and harmonization of global strategies and policies pertaining to nuclear safety and security;
  - Building strategic partnerships and linkages between governmental entities;
  - Promoting and implementing the Global Nuclear Safety and Security Framework.

- **Regional Level**
  - Support the development of regional platforms for sharing and managing technical knowledge and enhancing competence in nuclear safety and security;
  - Implement activities to build capacity and competence in nuclear safety and security;
  - Support the development of IT platforms for efficient collaboration in nuclear safety and security.

- **National level**
  - Facilitate the development of National Nuclear Safety knowledge Management Platforms “Safety Platforms”;
  - Harmonize national approaches to Nuclear Safety knowledge management using the National Nuclear Regulatory Portals;
  - Facilitate stakeholders involvement and cooperation.
Regional Networks and Associations

Asian Nuclear Safety Network (ANSN)
Arab Network of Nuclear Regulators (ANNuR)
European and Central Asian Safety Network (EuCAS)
Forum of Nuclear Regulatory Bodies in Africa (FNRBA)
Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO)
IAEA Collaborating Centres

- Mechanism for Member State institutions to assist the IAEA in implementing its regular budget programme through R&D and capacity building in a relevant nuclear technology;

- Workplan is linked to existing IAEA projects approved through the P&B;

- Designation endorsed by the relevant PM;

- Legally binding document signed by both parties.
IAEA Collaborating Centres – cont’

- 40 active Collaborating Centres;
- Nuclear safety and security examples:
  - Argentina – Comisión Nacional de Energía Atómica (CNEA)
  - Costa Rica – Centro de Investigación en Contaminación Ambiental (CICA);
  - Hungary – Hungarian Academy of Sciences Centre for Energy Research (MTA EK);
  - Japan – Fukushima Prefecture – Capacity Building EPR
  - Mexico – National Institute of Nuclear Research (ININ);
  - Republic of Korea – Korea Institute of Nuclear Safety (KINS);
  - Spain – Centro de Adiestramientos en Desactivación de Explosivos y Defensa NRBQ (CADEX-NRBQ).
Benefits to Member States

• MS institutions benefit from **IAEA recognition**;

• Sharing resources with other MS through **access to knowledge, expertise, technology and facilities**;

• **Enhanced capacity** of participating organizations to address issues of common interest (e.g. ageing and long-term operation, safety assessment capacity);

• **Networking**: excellent forum for sharing safety knowledge and information;

• **Publications**: benefiting the whole community: Safety reports, TECDOCs, databases (measured data-free access to the whole community);

• Helps MS strive towards achieving the targets identified in the **UN Sustainable Development Goals**.
Coordinated Research Projects (CRPs) – Results

- Networks established;
- Reports and databases;
- Scientific and technical publications;
- Proven techniques tested and ready to be transferred;
- CRPs leading to TC Projects.
CRPs per Major Programme in 2018

- Nuclear Techniques for Development and Environmental Protection: 44 (36%)
- Nuclear Power, Fuel Cycle and Nuclear Science: 74 (61%)
- Nuclear Safety and Security: 4 (3%)
IAEA Schools

International School of Nuclear and Radiological Leadership for Safety

School for Drafting Regulations on Nuclear and Radiation Safety

School on Nuclear Security

School of Radiation Emergency Management
Master’s Degree Programme in Nuclear Safety and Security

Assist and provide guidance to universities, academic institutions, nuclear safety and security’s trainers, human resources managers at organizations and institutions responsible for E&T in nuclear safety and security in MS, for the development of a curriculum of a Master’s Degree programme responding to their national needs in these two areas;

Scope

Nuclear radiation
Waste
Transport
Safety
EPR
Nuclear Security

Each academic institution to develop its own unique programme tailored to suit the State’s needs for E&T in nuclear safety and security.

Enhancing the ownership of the national E&T in nuclear safety and security by MS and strengthen the partnership with IAEA.
Further Activities to Strengthen Cooperation

- **Trends highlighted in recent IAEA Nuclear Safety Reviews:**
  - Around 75-80% of MSs still need additional support to develop a national regulatory infrastructure consistent with the Agency’s safety standards.

- **The approach to the provision of assistance to Member States in safety** was reviewed taking into account experience and lessons learned from:
  - Integrated Nuclear Security Support Plans (INSSP);
  - Integrated Work Plan (IWP) for embarking countries.

- **Objective:** To enhance the coordination between the TC and NS departments for strengthening the safety infrastructure in Member States.

- **Response:** The development of the Consolidated Plan for Safety (CPS).
  - Provides consistent, coherent and result oriented assistance to Member States.
CPS Concept

Under this new harmonized and integrated approach, a Consolidated Plan for Safety (CPS) covering all interdependent areas relating to nuclear, radiation, transport, waste safety and EPR is based on NEEDS/ANALYSIS of MSs, and will include tasks identifying the responsibility of the different stakeholders in Member States and tasks that are of the responsibility of the Agency, with an agreeable timetable.

CPS will include all activities funded by the agency either by RB, EB or TC for its implementation.
CPS: The Way Forward

First phase Q4 2019

CPS to be implemented in accordance with IAEA established procedure and processes

Extended to All MS receiving IAEA ‘s assistance in safety

CPS will be instrumental for monitoring the progress and continuous improvement of safety infrastructure in Member States
CPS Structure

• National framework for safety;
• Global safety regime;
• Regulatory infrastructure;
• Occupational radiation protection;
• Radiation protection in medical exposure;
• Public and environmental radiation protection, radioactive waste management, spent fuel management and decommissioning;
• Education and training;
• Transport safety;
• Emergency preparedness and response;
• Nuclear installation safety.
International Cooperation - Chernobyl

• “The first lesson that emerged from Chernobyl was the direct relevance of international cooperation to nuclear safety”;

• “International cooperation should be strengthened. It is advisable to improve the national and international coordination of such researches”;

• “Lack of coordination of international efforts”;

• “Since that time, international cooperation has become a hallmark of nuclear safety, resulting in innumerable peer reviews, safety upgrades, bilateral and multilateral assistance efforts, safety conventions, and the body of globally recognized IAEA safety standards”.
“The Fukushima Daiichi accident underlined the vital importance of effective international cooperation. The IAEA is where most of that cooperation takes place”;

“Ministerial Conference in Fukushima Prefecture, co-sponsored by the IAEA, discussed the progress of international efforts aimed at strengthening nuclear safety and emphasized the need of enhancing international cooperation”;

International Cooperation Challenge: 1.5°C Challenge

**TODAY**

70% of electricity comes from burning fossil fuels

**2050**

≈ 80% of electricity will need to be low carbon
Thank you!