



# INTERNATIONAL WORKSHOP ON NUCLEAR SAFETY REGULATION

## *IAEA Safety Standards and Experiences*

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# Outline

- ✚ **Introduction**
- ✚ **IAEA Safety Standards**
- ✚ **Independence of Regulatory Bodies**
- ✚ **Experience on IRRS missions**
- ✚ **Analysis and Trends**
- ✚ **IRRS in Japan**
- ✚ **IAEA Action Plan**



# International Atomic Energy Agency



## **"Atoms for Peace"**

- **Nuclear Technology**
- **Safety and Security**
- **Safeguards**

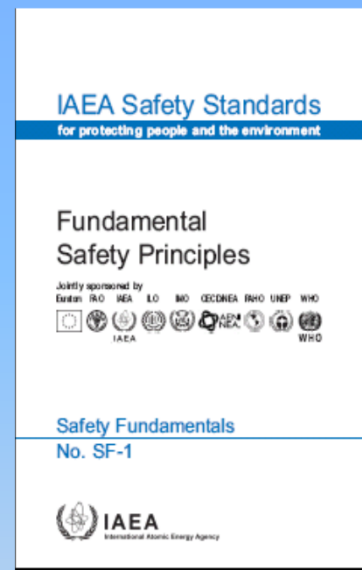
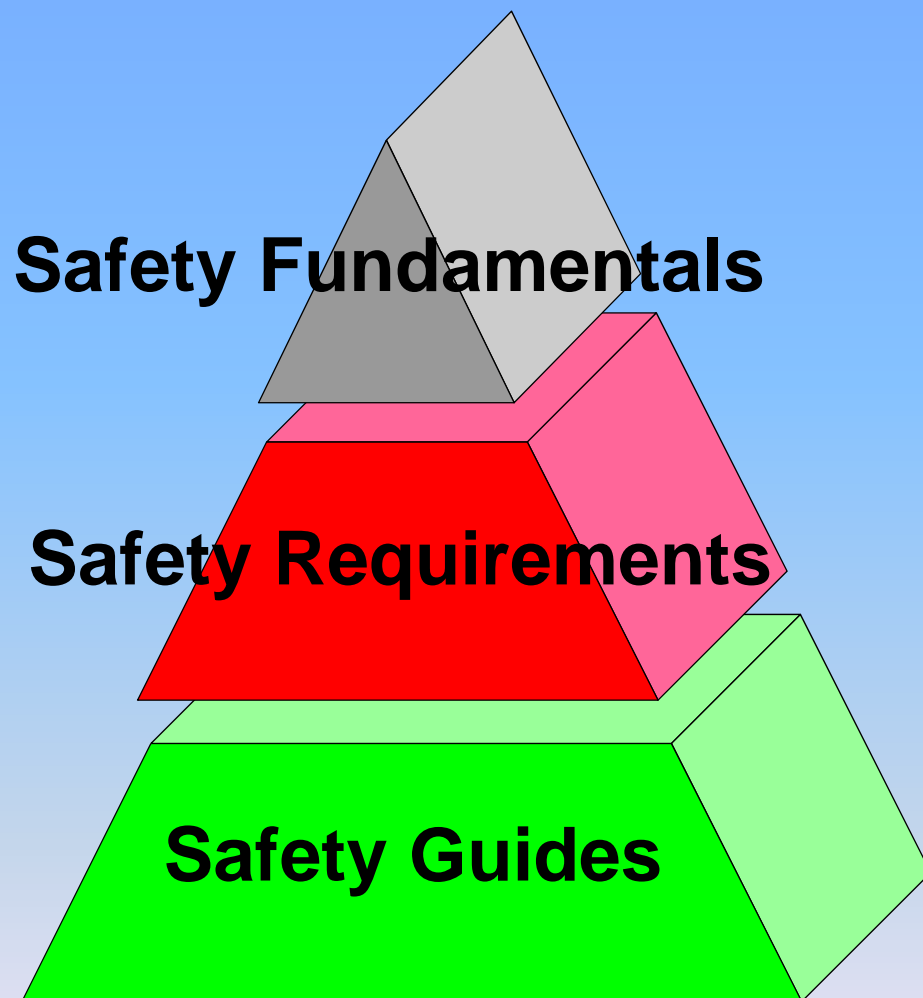


## IAEA Statute (Article III.A.6)

- “To establish or adopt... [in consultation with...] standards of safety for the protection of health and minimization of danger to life and property”
- “...and to provide for the application of these standards”



# SAFETY STANDARDS HIERARCHY



Global Reference Point  
for a High Level of  
Nuclear Safety



## Peer Review Services

- **Peer reviews performed upon request of Member States**
- **Assess compliance with Safety Standards**
- **Well established guidelines, based on best international practices and accumulated experience**



# Safety Review Services

## Governmental and Regulatory Framework

*IRRS – Integrated Regulatory Review Service*

## Site and Seismic Safety Review Services

*Site Evaluation Missions*

## Safety Assessment Activities

*DSR – Design Review Services*

*GRSR – Generic Reactor Safety Review*

## Operational Safety

*OSART – Operational Safety Review Team*



# Independence of the Regulatory Bodies established in the IAEA Safety Standards





# Governmental, Legal and Regulatory Framework for Safety: GSR – Part 1

## **R4: *Independence of the regulatory body***

**The government shall ensure that the regulatory body is effectively independent in its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly influence its decision making.**

- **To perform its functions without undue pressure or constraint**
- **Independent regulatory judgements and decisions free from political circumstances or economic conditions, or pressures from government departments or from other organizations**
- **Sufficient authority and sufficient staffing and shall have access to sufficient financial resources**



# Governmental, Legal and Regulatory Framework for Safety: GSR – Part 1

## **R17: Effective independence in the performance of regulatory functions**

**The regulatory body shall perform its functions in a manner that does not compromise its effective independence**

- **To discharge its responsibilities in such a way as to preserve its effective independence**
- **The competence of staff is a necessary element in achieving effective independence in decision making**
- **The liaison with interested parties, it has a clear separation from organizations or bodies that have been assigned responsibilities for facilities or for their promotion**
- **Authority to intervene in connection with any facilities that present significant radiation risks, irrespective of the possible costs to the licensee.**



# Elements of Regulatory Independence

## **Political Aspects:**

**The political system shall ensure clear and effective separation of responsibilities (duties) between the regulatory body and the licensee.**

**Accountable with regard to fulfilling its mission and it not interfere with the independence of the regulatory body in making specific safety decisions with neutrality and objectivity.**



# Elements of Regulatory Independence

## **Legislative Aspects:**

**In the legislative framework of a national regulatory system (e.g. atomic laws or decrees) the role, competence and independence of the regulatory body with respect to safety should be defined.**

**The regulatory body shall have the authority to adopt or develop safety regulations that implement laws passed by the legislature.**

**The regulatory body shall also have the authority to take decisions including enforcement actions.**



# Elements Of Regulatory Independence

## Financial Aspects:

The regulatory body shall be provided with adequate authority and power, and it shall be ensured that it has adequate staffing and financial resources to discharge its assigned responsibilities.

While it is recognized that the regulatory body is in principle subject to the same financial controls as the rest of government, the budget of the regulatory body should not be subject to review and approval by government agencies responsible for exploiting or promoting nuclear technologies.



# Elements of Regulatory Independence

## **Competence:**

**The regulatory body should have independent technical expertise in the areas relevant to its safety mission**

**Authority to recruit staff with the skills and technical expertise they consider necessary to carry out the regulatory functions**

**Access to outside technical expertise and advice (private or public organizations or persons) that is independent of operator or industry funding/support to support its regulatory decision-making**



# Elements of Regulatory Independence

## **Information to the Public:**

**To communicate independently its regulatory requirements, decisions and opinions and their basis to the public.**

**Since the public will only have confidence in the safe use of nuclear technology if the regulatory process and decisions are transparent, government should set up a system to allow independent experts and experts from major stakeholders to provide their views.**



# Elements of Regulatory Independence

## **International Aspects:**

**The regulatory body shall have the authority to liaise with regulatory bodies of other countries and with international organizations to promote co-operation and exchange of regulatory information**





# Lessons Learned from peer reviews

## **Three IRRS Lessons Learned Workshops**

The Objective of this Lessons Learned Workshops is to highlight the most important findings and issues identified during the IRRS Missions and Follow-ups performed since 2006 until today

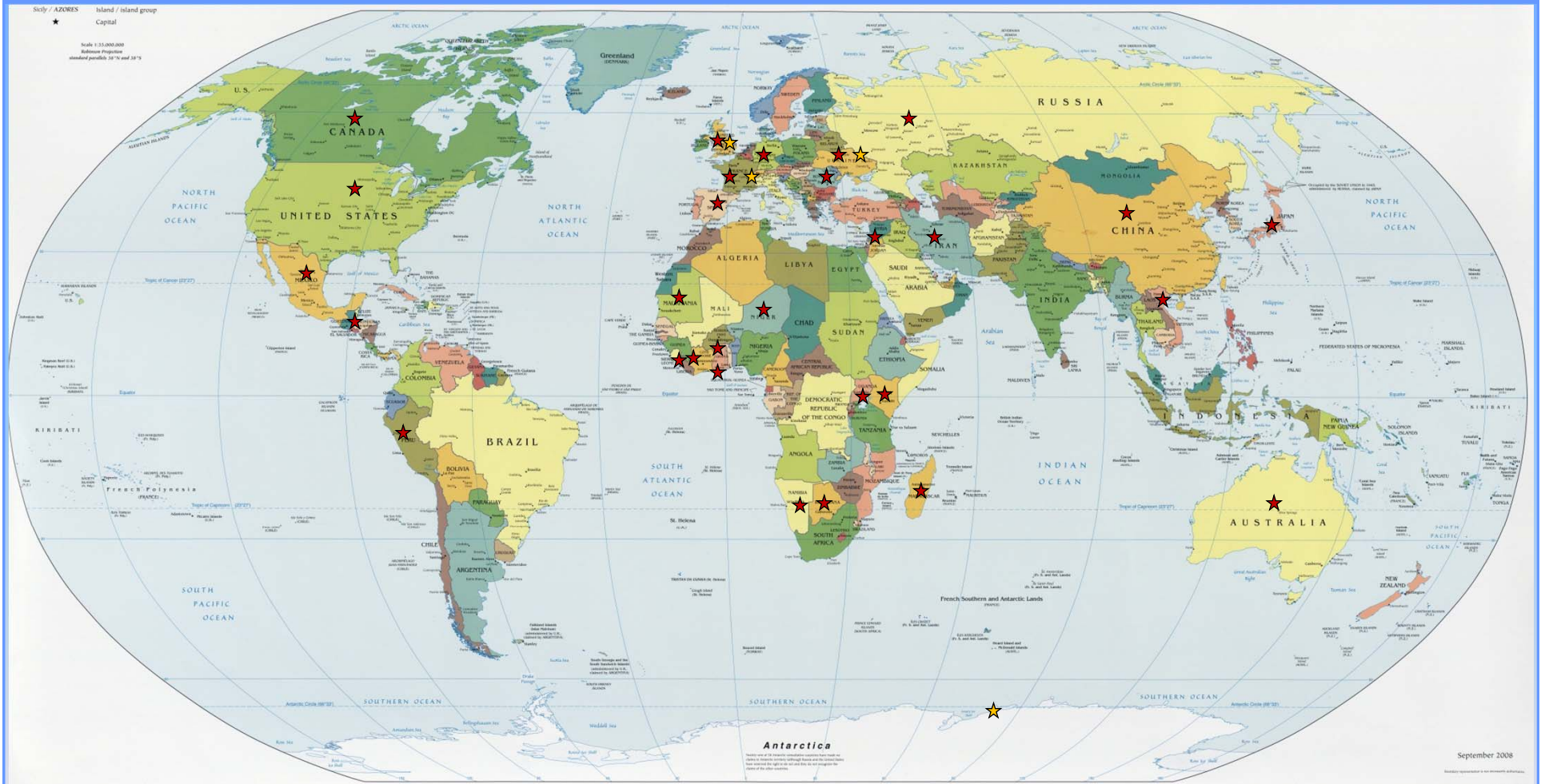
*Paris, France 22 to 23 March 2007*

*Seville, Spain 3 to 5 November 2008*

*Washington D.C., USA 26 to 28 October 2011*



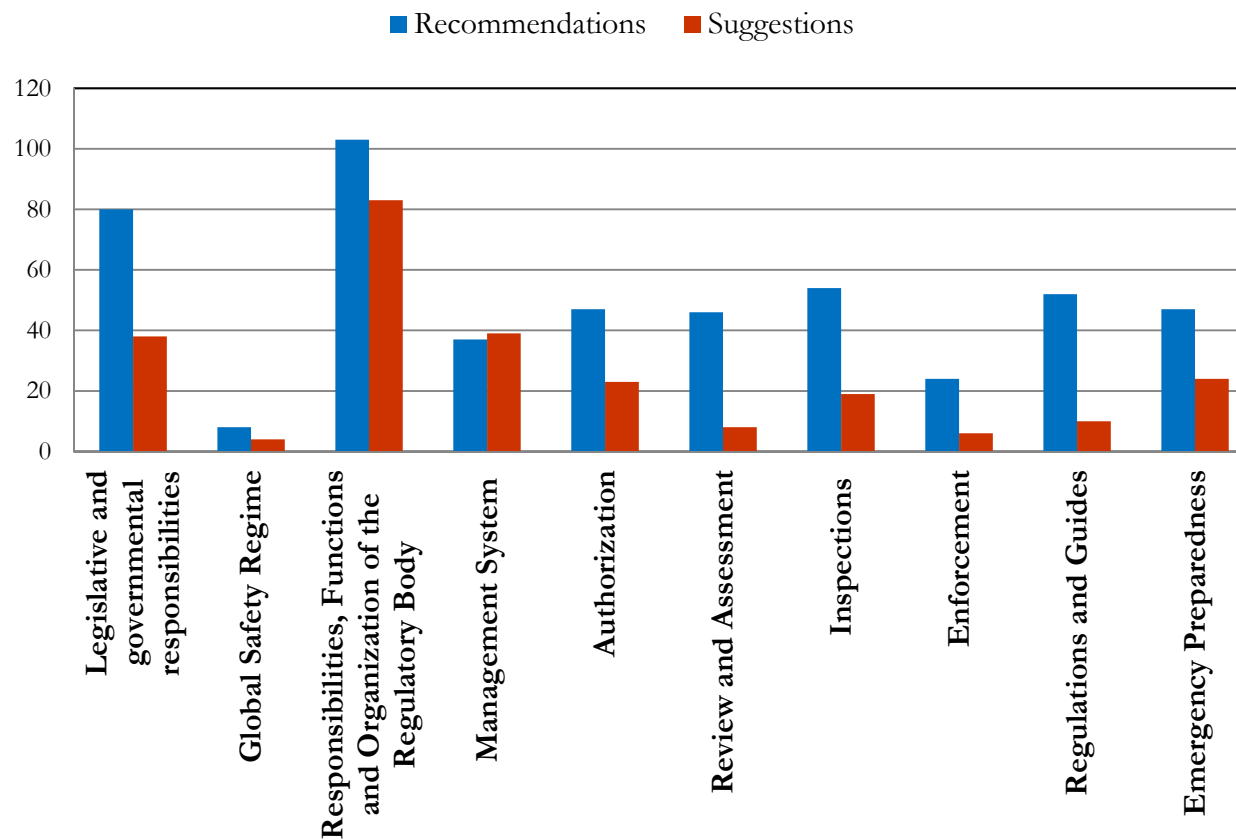
# IRRS Missions and Follow-ups 2006-2010





# Analysis and Trends from Recommendations and Suggestions for the Core Areas

## Recommendations and Suggestions for the Core Areas (Modules 1-10)





# Analysis and Trends for the Core Areas

## 1. LEGISLATIVE AND GOVERNMENTAL RESPONSIBILITIES

The following observations were identified as being common across several Member States :

### ***Scope of the law***

✚ The importance of considering the **IAEA Safety Standards** in the national Legislation

### ***Supporting legal instruments to implement the law***

✚ Implementation of the **powers and responsibilities** provided by national Law

### ***National strategies and policy***

✚ **National strategy for research and development** to improve safety

### ***Coordination and allocation of responsibilities within different government agencies***

✚ **Coordination** among all Governmental Agencies having relevant regulatory functions



## Analysis and Trends for the Core Areas (cont..)

### ***Prime responsibility for safety***

- ✦ Clear statement of the fundamental principle giving prime responsibility for safety to the operator

### ***Role of the Regulatory body***

- ✦ The **legislative framework** establishing a RB assigning **responsibilities and regulatory functions** to the RB
- ✦ The **independence** of the RB
- ✦ Sufficient and sustainable **resources**
- ✦ **Regulators empowered to communicate independently** and inform the public on any safety issues



### 2. THE GLOBAL SAFETY REGIME

- ✦ Commitment to undertake **international obligations** and make arrangements for international cooperation
- ✦ **Resources** to fulfil international obligations
- ✦ Appropriate **lines of communication** with IAEA and other Member States
- ✦ Use of international **operating experience**



### **3 RESPONSIBILITIES, FUNCTIONS AND ORGANIZATION OF THE REGULATORY BODY**

#### ***Staffing and Competence***

- ✦ **Number and competence of RB staff** for specific regulatory tasks
- ✦ **A strategic human resources management plan**
- ✦ **Systematic and comprehensive training programs**

#### ***Liaison with other government agencies that have defined roles with respect to safety***

- ✦ **Formal agreements and effective coordination and cooperation** among national institutions participating in the regulatory process



## Analysis and Trends for the Core Areas (cont..)

### ***Organizational structure and resources***

- ✦ **Lines of organizational responsibilities** within the RB and associated organisations and services.
- ✦ **Funding** to support fully the regulatory activities
- ✦ In MSs considering expanding their nuclear program, some RBs have been recommended to **reassess their existing organizational structures**

### ***Liaison with advisory bodies and support organizations***

- ✦ **Formal arrangements with TSO's** which also provide advice to the operating organizations
- ✦ **Sufficient competent staff** to guide, oversee and evaluate reviews and assessments performed by TSOs.
- ✦ Establishment of **independent advisory bodies**





### 4 MANAGEMENT SYSTEM

- ✦ The Management System is **missing** in most of the RBs of non-nuclear Member States .
- ✦ Alignment of the Management System **with IAEA Safety Standards**
- ✦ Development of **procedures or organizational documents**
- ✦ **Process for reviewing and improving** their management system



## IRRS MISSION TO JAPAN 2007

Main Findings: 17 Good Practices, 10 Suggestions, 18 Recommendations

### Recommendations of high priority

- The role of NISA as the regulatory body and that of NSC, especially in preparing safety guides, should be clarified;
- NISA should continue to develop its efforts to address the impacts of human and organizational factors on safety in operation;
- NISA should develop a strategic human resources management plan to face future challenges;
- NISA should continue to foster relations with industry that are frank and open yet formal and based on mutual understanding and respect; and
- NISA should continue the development of its comprehensive management system.



## IRRS MISSION TO JAPAN

### Significant Suggestions:

- NISA is effectively independent from ANRE, in correspondence with the GS-R-1. This situation could be reflected in the legislation more clearly in future.
- NISA should continue to develop the systematic approach to investigate the consideration of beyond design basis accidents, and the complementary use of PSA and severe accident management in the assessment process for risk reduction purposes



# IAEA Action Plan on Nuclear Safety

- **IAEA Ministerial Conference**
- **September Board of Governors**
- **Action Plan on Nuclear Safety**
- **General Conference**
- **Action Plan Implementation**
- **IAEA Activities – November 2011**





# IAEA Action Plan on Nuclear Safety

- **Plan focuses on initial lessons learned covering 12 areas for action with numerous sub-actions**
  - National safety assessments
  - IAEA peer reviews
  - Emergency preparedness and response (EPREV)
  - **National regulatory bodies (IRRS)**
  - Operating organizations (OSART)
  - IAEA Safety Standards
  - International legal framework
  - MS planning to embark on nuclear power programme
  - Capacity building
  - Protection of people and the environment from ionizing radiation
  - Communication and information dissemination
  - Research and development

Thank you

