MEETING WITH VIETNAMESE GOVERNMENT OFFICIALS

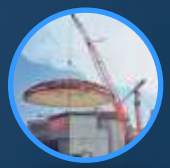
International Requirements and Guidance on Effective Independence and Competences of Nuclear Regulatory Bodies

HANOI, VIETNAM
26 JUNE 2012

Denis Flory
Deputy Director General

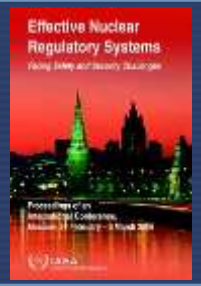
Department of Nuclear Safety and Security
International Atomic Energy Agency


IAEA
International Atomic Energy Agency



Regulatory Body Challenges for Embarking Countries

- Timely responses to initial nuclear programme needs
- Aggressive schedules for NPP development
- Timely development of the regulatory body
- Adequate financial resources for staffing and needed external support
- Achieving sufficient knowledge to develop regulations, guides and procedures
- Development of an effective quality management system
- Proper planning to ensure timeliness of human resource development and training required to attain regulatory body competences



IAEA

Global Nuclear Safety and Security Framework

Conventions: NSC,JC, CPPNM, UNSCR 1540…etc

International Instruments

CoCs: RRs & S&S of RSs

IAEA Safety Standards & Security Guidance

IAEA Safety & Security Peer Reviews & Advisory Services

Global Knowledge Network

Regulations & enforcements

National & Regional Nuclear Safety & Security Infrastructure

Research, Education & Training

Operation & use

National Commitment to the Global Nuclear Safety and Security Framework

- Safety is an enabling condition for a sustainable and successful nuclear power programme
- A commitment to launch a NPP needs to be based upon a commitment to a strong nuclear safety infrastructure
- Safety is integral in all infrastructure issues
- Embarking on a NPP is joining the Global Nuclear Safety and Security Framework and committing to its components



Convention on Nuclear Safety

Adopted in Vienna on 17 June 1994 and entered into force on 24 October 1996

- Legally binding and an incentive instrument
- 74 Contracting Parties to the Convention and 10 Signatory States (not ratified)

OBJECTIVES

- To achieve and maintain a high level of nuclear safety worldwide through the enhancement of national measures and international cooperation including, where appropriate, safety related technical co-operation;
- To establish and maintain effective defences in nuclear installations against potential radiological hazards in order to protect individuals, society and the environment from harmful effects of ionizing radiation from such installations;
- To prevent accidents with radiological consequences and to mitigate such consequences should they occur

2nd Extraordinary Meeting will be held 27-31 August 2012 to enhance safety through reviewing and sharing lessons learned from the Fukushima Accident

IAEA

IAEA Nuclear Safety Standards

IAEA Safety Functions (Article III.A.6)

Facilitate and service international conventions and other undertakings

"To establish or adopt… [in consultation …] standards of safety for protection of health & minimization of danger to life and property"

"…and to provide for the application of these standards…"

IAEA

Safety Standards and Security Guidelines—Development and Approval

Process takes between 3 to 5 years from start to publication

Outline and work plan
Prepared by the Secretariat
Review by the Committees

Drafting or revising
by the Secretariat and consultants

Review by Committee(s) ⇄ **Member States**

Endorsement

IAEA

Safety Standards Hierarchy

Safety Fundamentals

"…basic objectives, concepts, and principles of safety and protection in the development and application of nuclear energy for peaceful purposes…"

Safety Requirements

"…establish the requirements that must be met to ensure safety. Expressed as 'shall' statements" and governed by Safety Fundamentals…"

Safety Guides

*"…recommend procedures for meeting safety requirements. expressed as 'should' statements, to comply with the **Safety Requirements**…"*

IAEA

Fundamental Safety Objective

To protect people, society and the environment from the harmful effects of ionizing radiation

"…Radioactivity does not respect national boundaries, or national sovereignties. Rules ensuring the safe use of large-scale nuclear activities should therefore be worked out internationally and accepted to apply everywhere…."

Hans Blix,
former IAEA Director General

IAEA

Principles of Safety

- **Principle 1:** Responsibility for safety
- **Principle 2:** Role of government
- **Principle 3:** Leadership and management for safety
- **Principle 4:** Justification of facilities and activities
- **Principle 5:** Optimization of protection
- **Principle 6:** Limitations of risks to individuals
- **Principle 7:** Protection of present and future generations
- **Principle 8:** Prevention of accidents
- **Principle 9:** Emergency preparedness and response
- **Principle 10:** Protective actions to reduce existing or unregulated radiations risks must be justified and optimized

Ten safety principles form the basis on which safety requirements are developed and safety measures are implemented to achieve the primary safety objective.

Safety Principle to Address Effective Independence and Competence

Principle 2: Role of Government – An effective legal and governmental framework for safety, including an independent regulatory body, must be established and sustained.

Strong and early governmental support is required to facilitate the establishment of this framework

Selected Safety Requirements

GSR Part 1 *Governmental, Legal and Regulatory Framework for Safety*

Requirement 1: National policy and strategy for safety

Requirement 2: Establishment of a framework for safety

Requirement 3: Establishment of a regulatory body

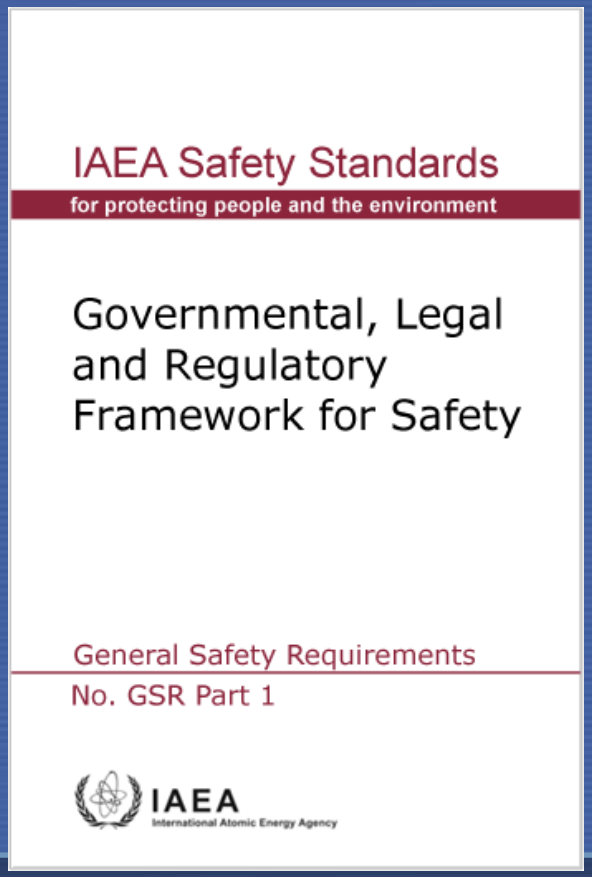
Requirement 4: Independence of the regulatory body

Requirement 5: Prime responsibility for safety

Requirement 11: Competence for safety

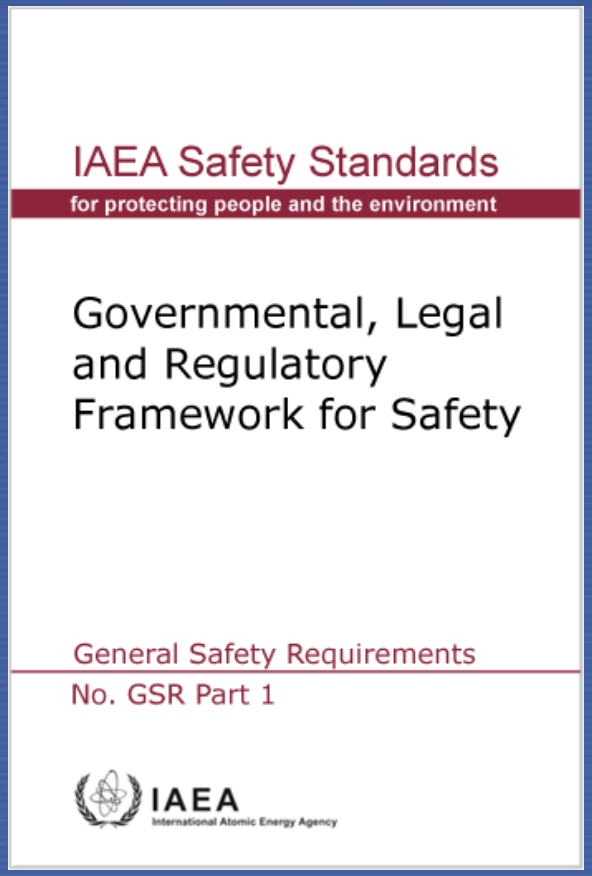
Requirement 17: Effective independence in the performance of regulatory functions

Requirement 18: Staffing and competence of the regulatory body



IAEA

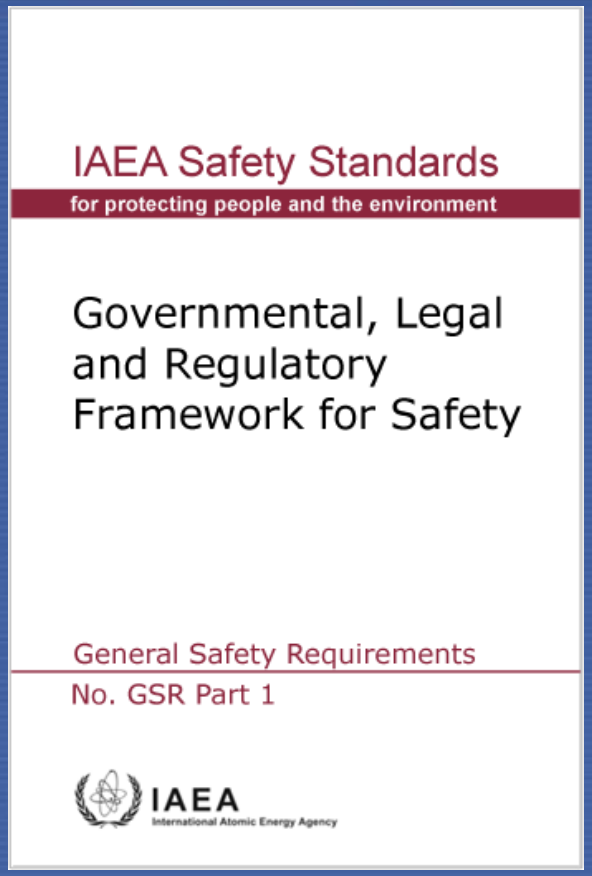
Establishment of a Framework for Safety



Requirement 2:

The government shall establish and maintain an appropriate governmental, legal and regulatory framework for safety within which responsibilities are clearly allocated.

Independence of the Regulatory Body

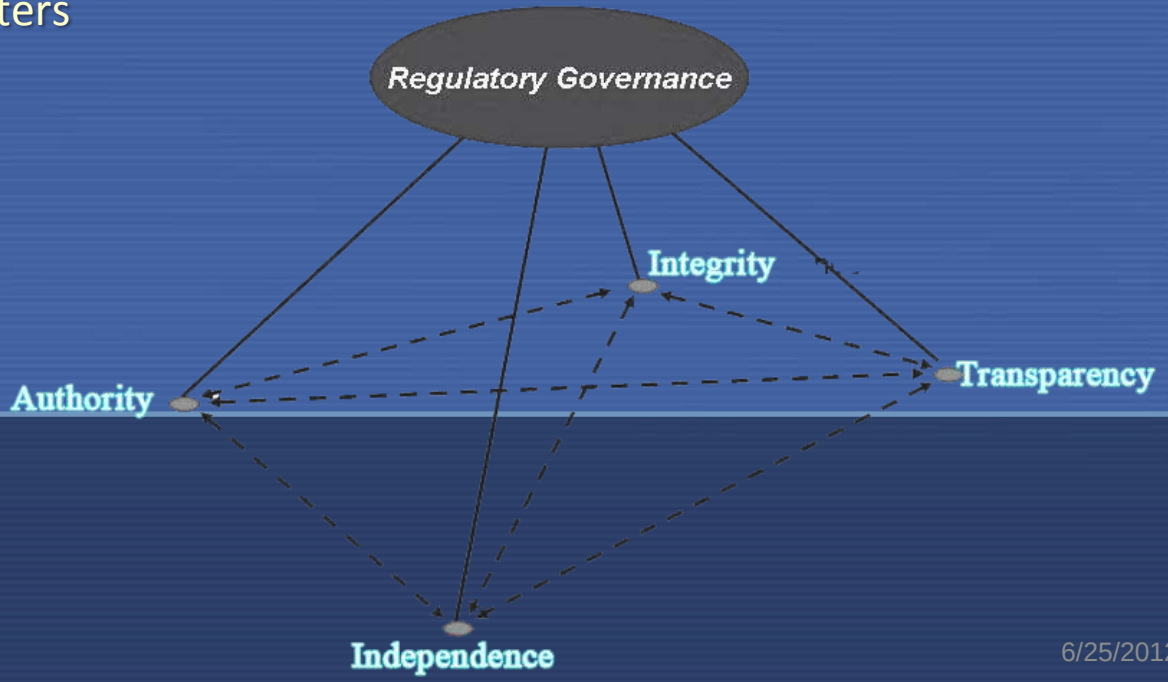


Requirement 4:

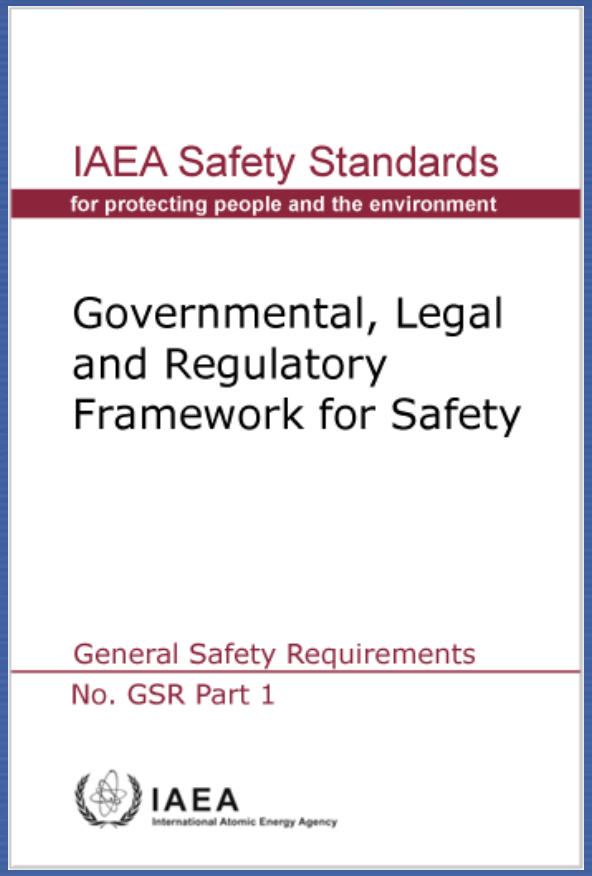
"The government shall ensure that the regulatory body is effectively independent in its safety related decision making and that it has functional separation from entities having responsibilities or interests that could unduly influence its decision making."

Effective Independence of the Regulatory Body

- **REQUIREMENTS:**
  - Freedom to make independent regulatory judgements and decisions
  - Sufficient authority, staffing and financial resources to carry out its responsibilities
  - Freedom from undue influences that might compromise safety (e.g., political pressures, economic conditions, stakeholder obstructions…etc.)
  - Ability to provide independent advice to government bodies on all facility safety-related matters



Staffing and Competence of the Regulatory Body



Requirement 18:

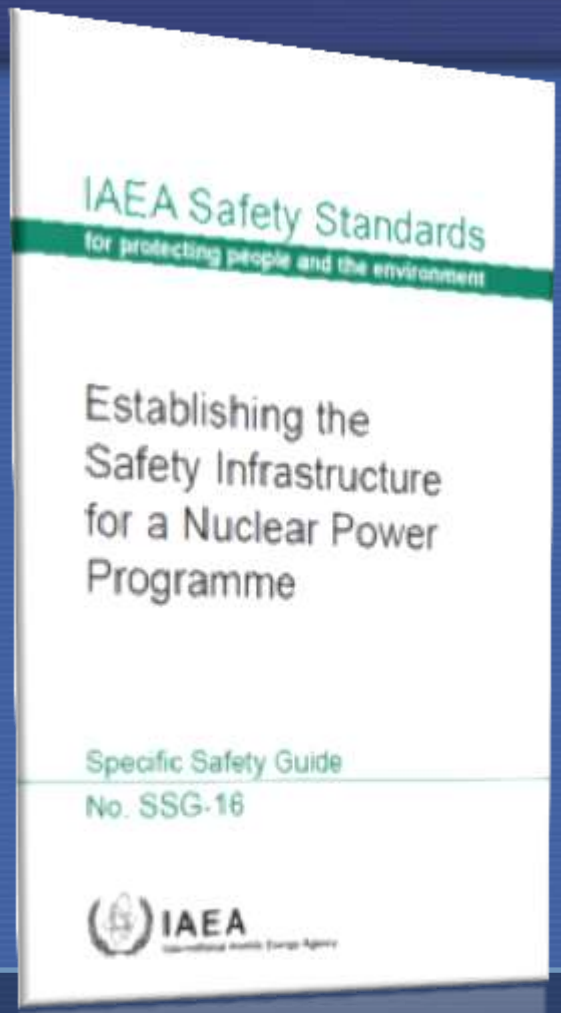
"The regulatory body shall employ a sufficient number of qualified and competent staff, commensurate with the nature and the number of facilities and activities to be regulated, to perform its functions and to discharge its responsibilities."

Human Resource Development of National Regulatory Bodies

Creation and implementation of a Human Resource Development Plan (HRP)

- Specifies essential staff numbers, roles, responsibilities and competences required
- Covers staff recruitment , rotation and departure
- Defines a training programme derived from a systematic approach and designed to help meet the training and qualifications required for application authorization, inspection and enforcement

What is SSG-16?



Establishing the Safety Infrastructure for a Nuclear Power Programme—Specific Safety Guide 16

- Provides guidance on how to apply the IAEA Safety Standards in the development of a nuclear power programme
- Provides recommendations, presented in the form of sequential actions, on meeting safety requirements progressively during Phases 1, 2 and 3 of the development of the safety infrastructure (Road-map)

IAEA

Establishing the Safety Infrastructure for a Nuclear Power Programme—Specific Safety Guide 16

- IAEA's single resource currently for regulatory body development
- Covers 200 actions to be taken by the government, regulatory body and the operating organization for NPP development

Central Role of SSG-16

IAEA Nuclear Power Support Brochure

International Nuclear Safety Report-22

IAEA publication NG-G-3.1

SSG-16 Establishing the Safety Infrastructure for a Nuclear Power Programme

FUNDAMENTALS

REQUIREMENTS

GUIDES

IAEA SAFETY STANDARDS

IAEA

Main Phases of Safety Infrastructure Development

Phase 1

Safety infrastructure **before deciding to launch** a nuclear power programme

1~3 years

Negative decision

The safety-related elements of the rationale for the negative decision have to be clearly identified and stated.

Positive decision

Phase 2

Safety infrastructure **before bidding process**

3~7 years

Phase 3

Safety infrastructure **before commissioning and operation**

7~10 years

Phase 4

Safety infrastructure **during operation** of the NPP

40~60 years

Phase 5

Safety infrastructure during **decommissioning and waste management** phases of a NPP

20~100+ years

SSG-16 contains actions to apply the IAEA safety principles and requirements progressively during Phases 1, 2 and 3 of the implementation of a nuclear power programme. (Phases based on Milestones and INSAG-22)

IAEA

Involvement of the Main Entities

Ready to make a knowledgeable decision on whether or not to introduce nuclear power

Ready to invite bids

Ready to commission and operate the first NPP

Phase 1 *1~3 years*

Phase 2 *3~7 years*

Phase 3 *7~10 years*

Involvement of the Government

Involvement of the Regulatory Body

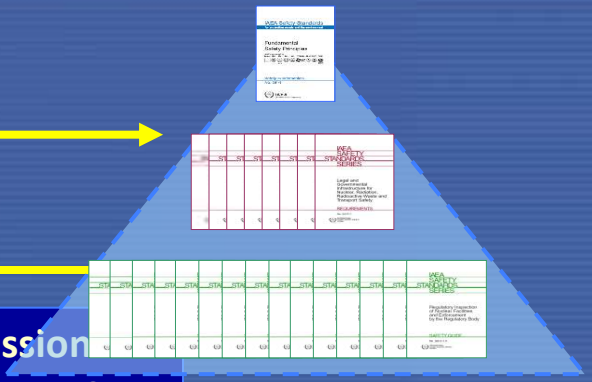
establishment

Involvement of the Operating Organization

establishment

Safety reviews (NS) and holistic reviews (NE)

Safety peer reviews using the IAEA Safety Standards
(to address the safety-related infrastructure)



Siting Mission

IRRS Mission

Safety Mission
pre-OSART, IRRS…

Ph 1

Ph 2

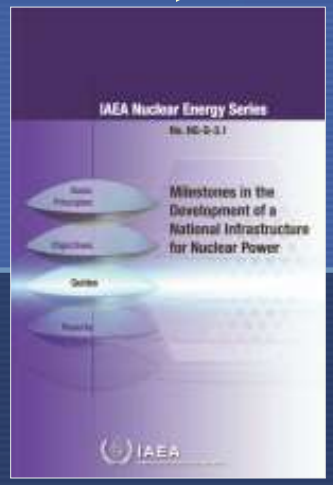
Ph 3

Operation

INIR Mission

INIR Mission

Holistic reviews using the Milestones
(Integrated Nuclear Infrastructure Review)



IAEA

Self Assessment for Safety Infrastructure

- IAEA encourages Member States to implement IAEA safety standards as an integral part of its nuclear programme's management system for measuring, assessing and improving safety performance
- Use SSG-16 self-assessment tool
- Self assessment facilitates planned and progressive improvement of legislative / governmental safety infrastructure, which strengthens nuclear safety

Fukushima One Year Later - Safety Standards and the IAEA Action Plan on Nuclear Safety

- Unanimously endorsed by 154 Member States
- Addresses 12 main actions, including Safety Standards and the National Regulatory Bodies
  - **Safety Standards** – review and strengthen to improve their implementation
  - **National Regulatory Bodies** – strengthen the effectiveness of national regulatory bodies

IAEA Action Plan on Nuclear Safety

12 Point Plan

1. Safety Vulnerabilities
2. Peer Reviews
3. Emergency Preparedness and Response
4. Regulatory Bodies
5. Operating Organisations
6. IAEA Safety Standards
7. Legal Framework
8. Embarking countries
9. Capacity Building
10. Protection of People and Environment
11. Communication
12. Research and Development

✓ ***Strengthen*** ✓ ***Enhance Effectiveness***

Actions for:

IAEA Secretariat

Member States

Other Relevant Stakeholders

IAEA

Conclusion

An **independent, effective** and **robust** regulatory body is essential to ensure a safe and secure nuclear power programme.

Thank you!

IAEA