



IAEA efforts to promote cooperation and assistance on new reactor reviews

Regulatory Information Conference 2011

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Overview

- IAEA Safety standards
- IAEA Safety review services
- INPRO-International Project on Innovative Nuclear Reactors and Fuel Cycles
- Establishing the Safety Infrastructure for a Nuclear Power Programme-DS 424
- Generic reactor safety review GRSR
- Regulatory Cooperation Forum
- Conclusions

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IAEA and Nuclear Power



“The Agency has a key role to play in ensuring that this expansion in nuclear power takes place in an efficient, responsible and sustainable manner.

“...countries should be able to introduce nuclear power knowledgeably, profitably, safely and securely.”

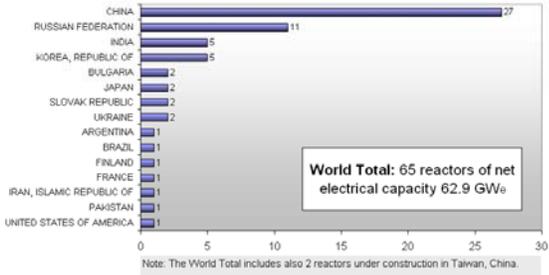
Yukiya Amano
Director General

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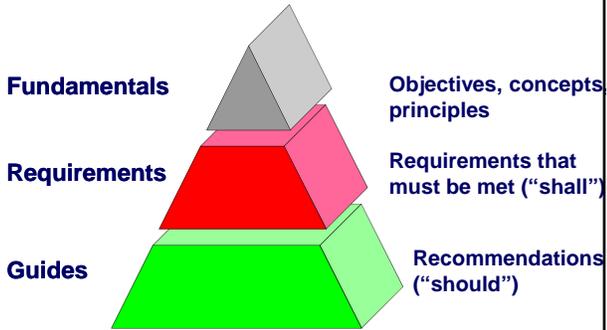
Worldwide Construction Activities

Number of Reactors under Construction Worldwide



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Safety Standards Series Hierarchy



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General Safety Requirements

- Part 1 Governmental and Regulatory Framework
- Part 2 Leadership and Management for Safety
- Part 3 Radiation Protection and Safety of Radiation Sources
- Part 4 Safety Assessment
- Part 5 Predisposal Management of Radioactive Waste
- Part 6 Decommissioning and Termination of Activities
- Part 7 Emergency Preparedness and Response

Specific Safety Requirements

- 1. Site Evaluation for Nuclear Installations
- 2. Safety of Nuclear Power Plants
 - 2.1 Design and Construction
 - 2.2 Commissioning and Operation
- 3. Safety of Research Reactors
- 4. Safety of Nuclear Fuel Cycle Facilities
- 5. Safety of Radioactive Waste Disposal Facilities
- 6. Safe Transport of Radioactive Material

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IAEA SAFETY REVIEW SERVICES (1)

- Peer reviews performed upon request of Member States
- Assess compliance with Safety Standards and provide recommendations for improvements
- Results publically available (unless formally requested by Member State)

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IAEA SAFETY REVIEW SERVICES (2)

- Integrated regulatory review service (IRRS)
- Safety assessment and design safety review services
- Generic reactor safety review (GRSR)
- International seismic safety centre services (ISSC)- site evaluation
- Operational safety review team (OSART)
Pre-OSART for commissioning stage

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Recent and planned Pre-OSARTs

COUNTRY	PLANT	YEAR
China	Ling-Ao Phase 2	2009
China	Hongyanhe Phase 1	2012
Finland	Olkiluoto 3	2012
France	Flamanville 3	2013

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INPRO Objectives

- To help to ensure that nuclear energy is available to contribute, in a sustainable manner, to meeting the energy needs of the 21st century;
- To bring together technology holders and users so that they can consider jointly the international and national actions required for achieving desired innovations in nuclear reactors and fuel cycles

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INPRO Membership 2011



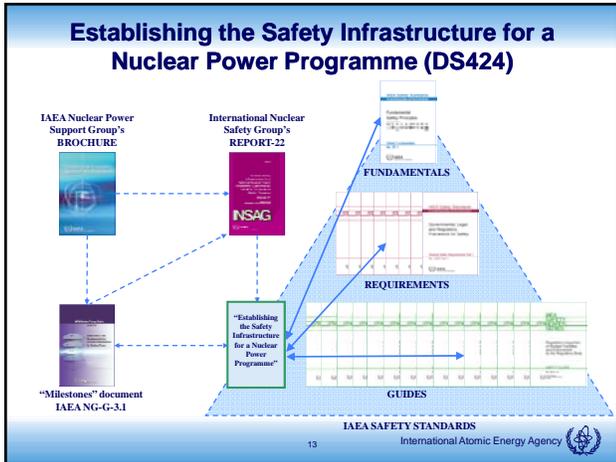
31 IAEA Member States and the European Commission

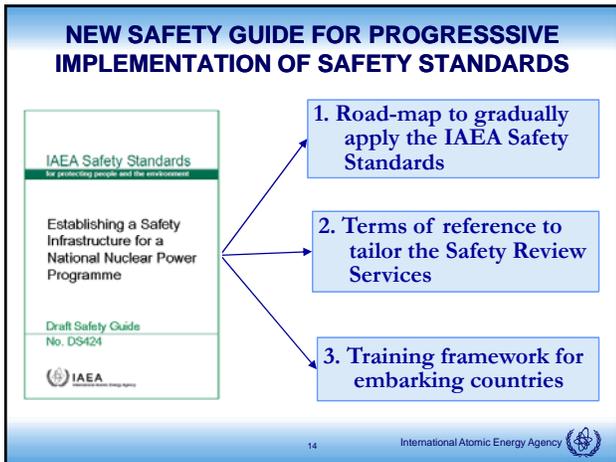
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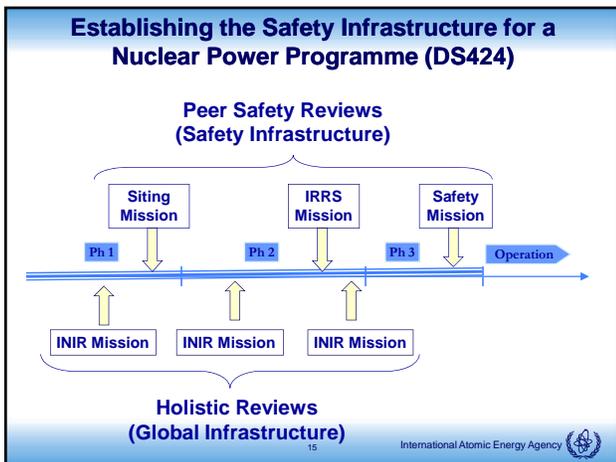
INPRO Programme Areas

- A: INPRO Assessments
- B: Global Vision
- C: Innovations in Nuclear Technology
- D: Innovations in Institutional Arrangements
- E: INPRO Dialogue Forum
- F: Policy, Coordination and Management

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Nuclear Installation Safety Generic Reactor Safety Reviews (GRSR)

The IAEA is assisting Member States in their new reactor design assessments by carrying out reviews of reactor design safety cases with focus on completeness and comprehensiveness of the safety case using selected and applicable IAEA Safety Fundamentals and Requirements.



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Generic Reactor Safety Review (GRSR)

Application of Safety Fundamentals and Safety Requirements:



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REACTOR DESIGNS REVIEWED SO FAR

- ACR 1000 - AECL
- AP1000 - Westinghouse
- EPR - AREVA
- ESBWR – GE Hitachi
- ATMEA 1 – AREVA – MHI
- APR1400 - KHPP - Korea

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IAEA Generic Reactor Safety Reviews Summary

- Support Member States in evaluation of new reactor safety.
- Form a solid basis for harmonization of safety approaches.
- Are based strictly on application of IAEA SS.
- Can be applied to mature designs as well as to concepts.
- Show potential for early evaluation of innovative reactors.
- Framework will be used for training decision-makers.



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RCF Objective

Optimize use of limited resources and promote harmonized use of international safety standards and best practices to result in **independent, effective and robust** regulators of NPP's.



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What is RCF?

- Regulator to regulator forum for **knowledge and experience sharing and mutual learning** between and among Member States including those:
 - ✓ wishing to expand existing nuclear programmes
 - ✓ **seriously** considering nuclear power for the first time
 - ✓ with advanced nuclear power programmes

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RCF Terms of Reference

- Limited to regulatory capacity building for nuclear safety for NPP's.
- Support for Security/Safeguards is not currently included.
- All efforts made to **avoid unnecessary duplication** of regulatory support.
- Participating Member States assume their own costs.
- Facilitated and promoted by IAEA

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RCF Core Group

- Represented by 7 recipients and 8 providers serving as RCF steering committee.
- Considers a **comprehensive approach to coordination and collaboration**, examining, specific needs of requesting Member States.
- Advises on **policies and strategies** to promote effective and sustainable regulatory infrastructure development.



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RCF Participation



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Keys to RCF Success

- Focus on regulatory body gaps referencing **international standards and best practices** to fill these gaps
- **Transparency** – open and frank discussions between recipients and providers
- Member State participation
- Provide the **right support to the right people at the right time**

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IAEA Support Services for Capacity Building



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Conclusions

- ✓ Member States need to assume full ownership and responsibility for their own capacity building
- ✓ Nuclear Power programme is a long term commitment
- ✓ Effective sharing of knowledge and experience is critical
- ✓ An independent, effective and robust regulatory body is essential
- ✓ IAEA is supporting Member States

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...Thank you for your attention
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