Regulatory Safety Culture: International Perspective

NEA/CNRA/CSNI/CRPPH Workshop on Challenges and Enhancements of the Safety Culture of the Regulatory Body

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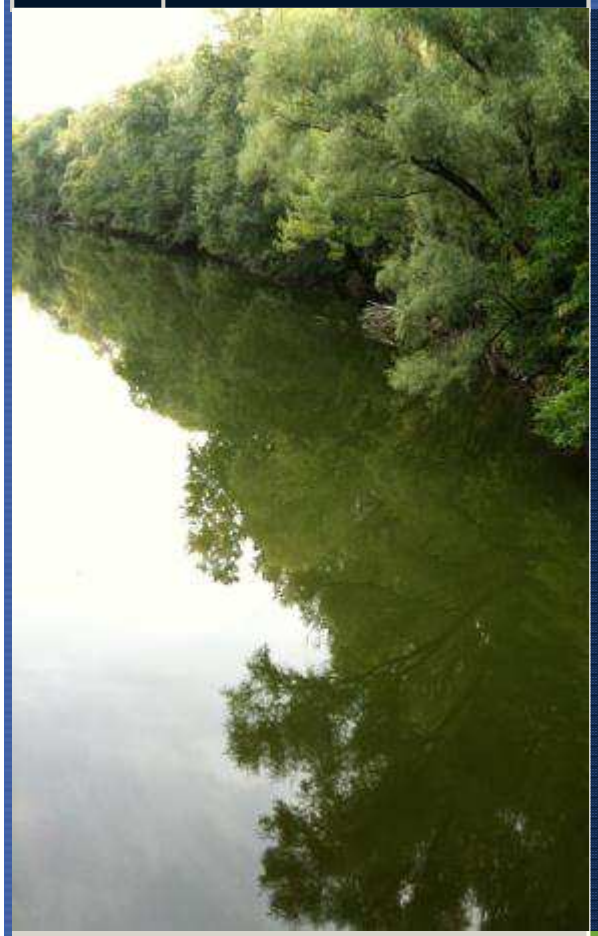
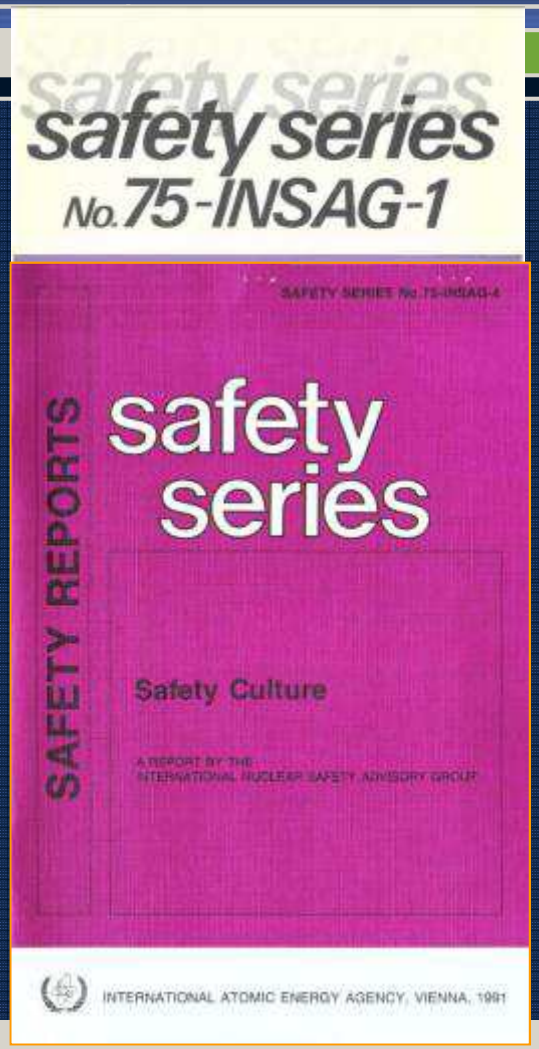
Outline



- Evolution of Definition of Safety Culture
- Safety Culture in IAEA Safety Documents
  - Safety Standards and TECDOCs
  - IAEA Reports
  - Key Massages
- Safety Culture as reflected in Integrated Regulatory Review Services missions
  - The IRRS Process
  - IRRS Observations
- Conclusions

EVOLUTION OF SAFETY CULTURE DEFINITION

Introduction of the notion of SC



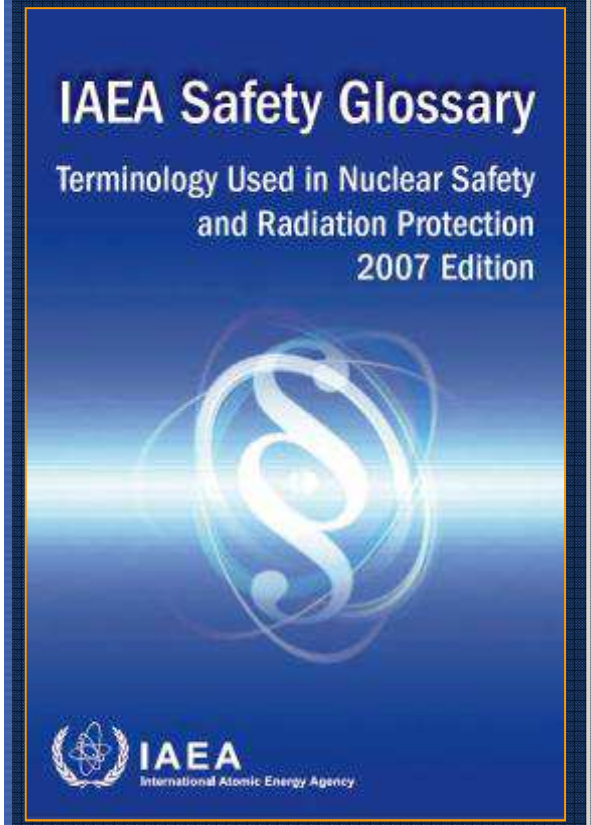
INSAG-1 (1986)

- *" … formal procedures must be properly reviewed and approved and must be supplemented by the creation and maintenance of a 'nuclear safety culture' "*

INSAG-4 (1991)

- *"Safety Culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance".*

IAEA Glossary (2007)



"Safety Culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, protection and safety issues receives the attention warranted by their significance"

SAFETY CULTURE IN IAEA SAFETY DOCUMENTS

Hierarchy of related IAEA safety standards

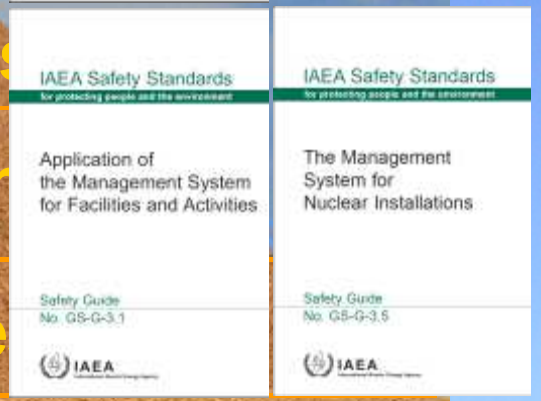
Principles for protecting people and environment

Safety Fundamentals

Safety Requirements

Safety Guides

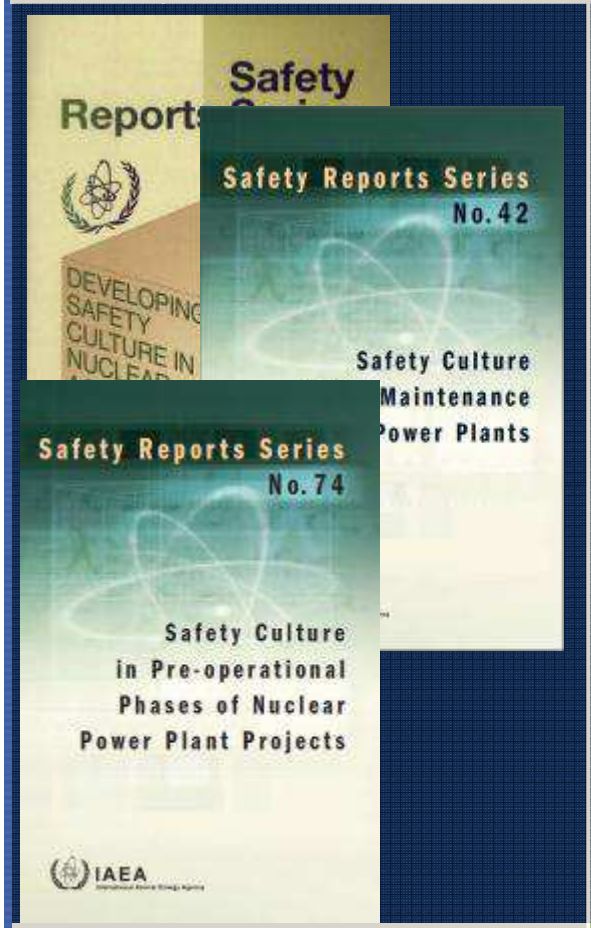
Safety reports, TECDOCs ...



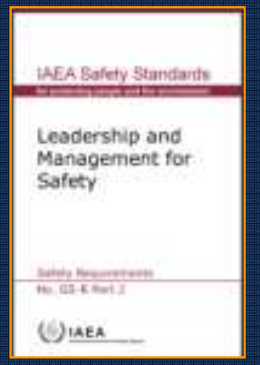
Requirements to be applied to meet the principles (shall)

Recommended ways of meeting the requirements (should)

IAEA Standards and Documents on SC



- **GSR Part 2:** *Leadership of Management for Safety* – to replace GS-R-3 (under approval)
- **Safety Reports**
- **TECDOCs**



- Under development:
  - Safety Culture in The Regulatory Body
  - Guidelines on Safety Culture Self-Assessment for the Regulatory Body

IAEA Reports

Strengthening Nuclear Regulatory Effectiveness in the light of the Accident at the Fukushima Daiichi NPP (2013)

SC-related conclusions:

- The establishment of an enduring safety culture remains essential and regulatory bodies should take the necessary actions in this direction.
- The high level commitment of Member States to peer reviews … has to be maintained and enhanced.
- Regulatory bodies should foster an environment that encourages licensees to invest in improvements beyond national requirements

Executive Summary of Fukushima Report*

- In order to ensure effective regulatory oversight of the safety of nuclear installations, it is essential that the regulatory body is independent and possesses legal authority, technical competence and a strong safety culture
- In order to promote and strengthen safety culture, individuals and organizations need to continuously challenge or re-examine the prevailing assumptions about nuclear safety and the implications of decisions and actions that could affect nuclear safety
- A systemic approach to safety needs to consider the interactions between human, organizational and technical factors. This approach needs to be taken through the entire life cycle of nuclear installations

* The Fukushima Daiichi Accident, *Report by the Director General*, GOV/2015/26

Key Messages

Safety culture is a subset of the culture of the whole organization, comprising the mix of shared values, attitudes and patterns of behaviour.

Organizations typically go through a number of phases in developing and strengthening safety culture:

- First, safety is compliance driven and is based mainly on rules and regulations (compliance with externally imposed rules and regulations considered adequate for safety).
- Next, good safety performance becomes an organizational goal and is dealt with primarily in terms of safety targets or goals.
- Lastly, safety is seen as a continuing process of improvement to which everyone can contribute.

The systemic approach to safety addresses the whole system by considering the dynamic interactions within and among all relevant factors (individual, technical and organizational).

SAFETY CULTURE IN IRRS MISSIONS

Goal and objectives of IRRS

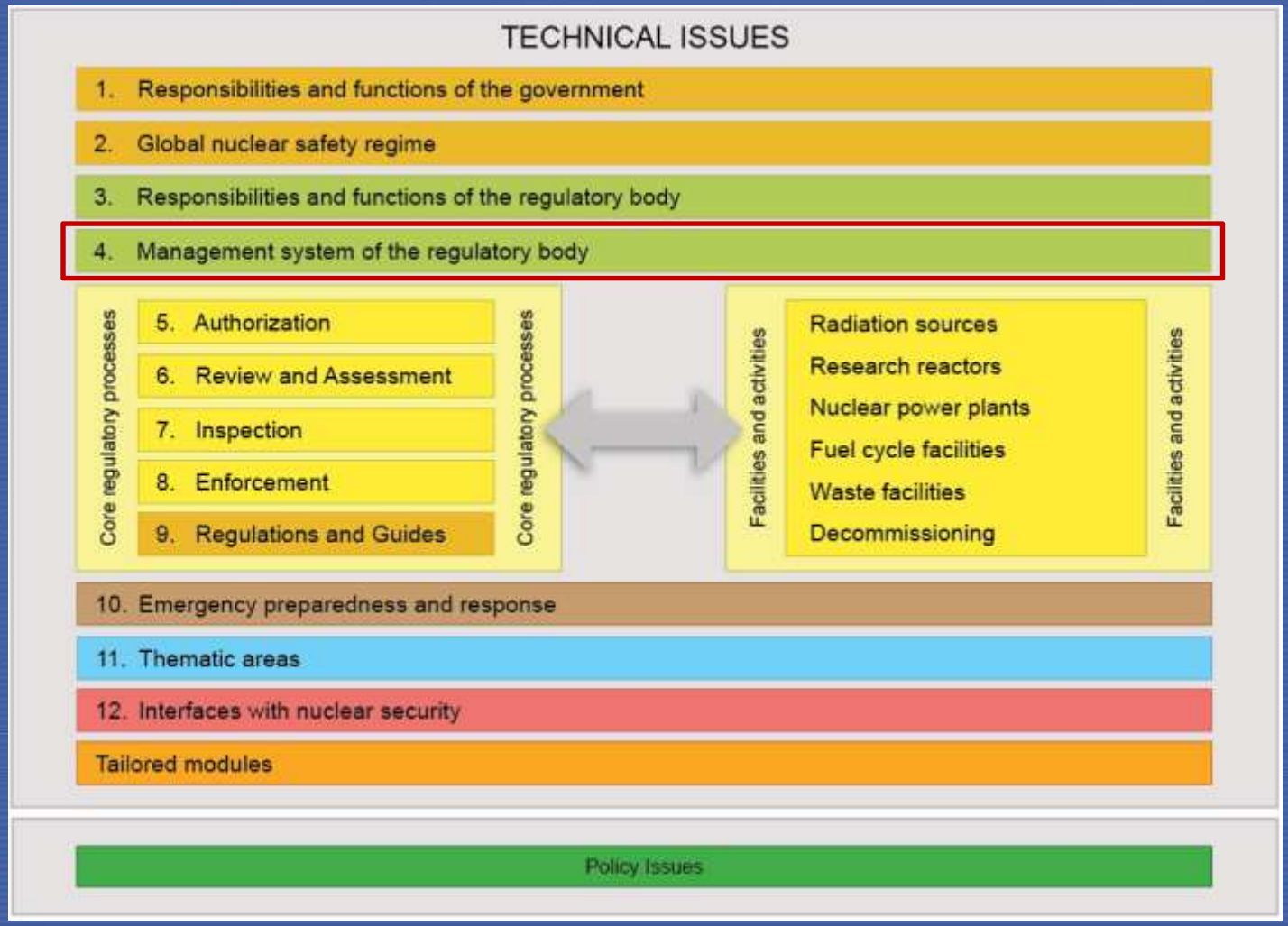
Overall goal:

To improve nuclear and radiation safety and thereby to reduce the possibility of any safety related harm to people or environment

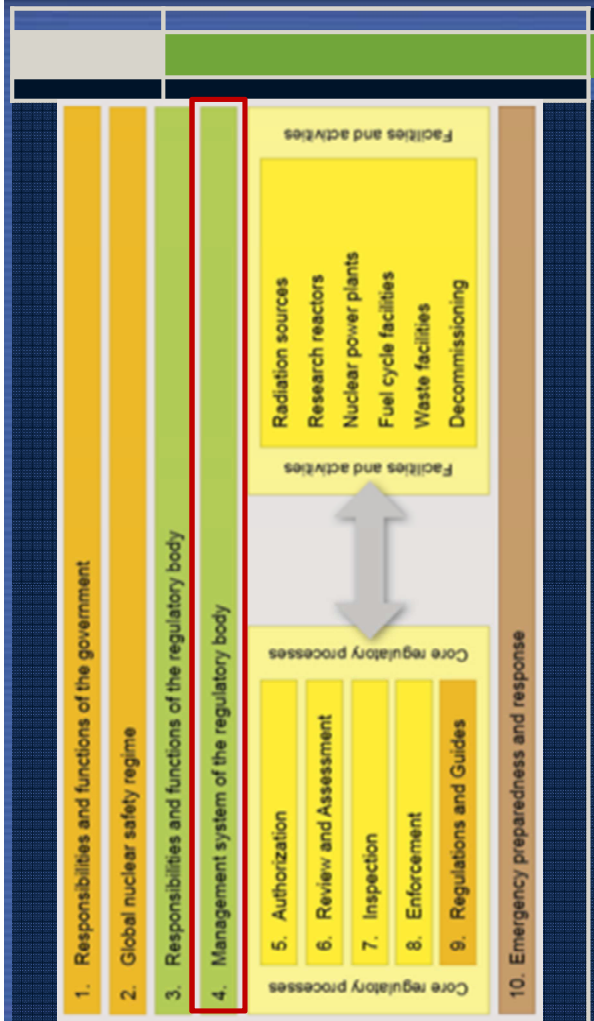
Main objectives

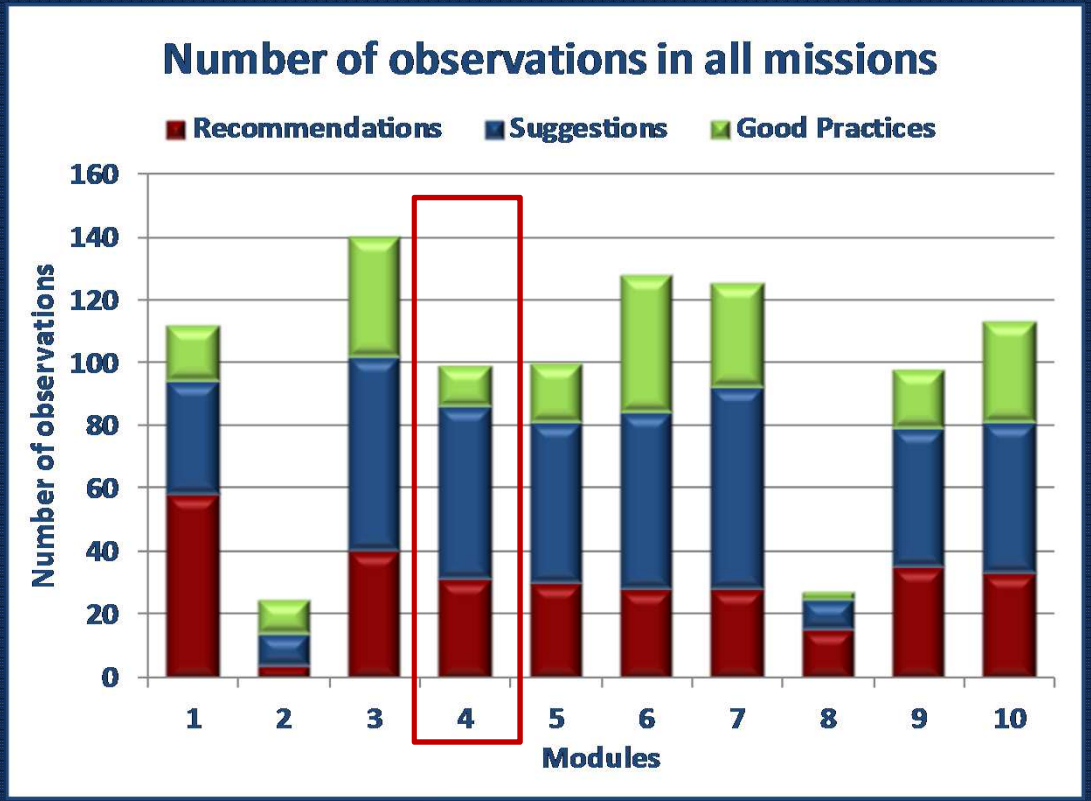
- providing an opportunity for continuous improvement of national regulatory bodies through an integrated process of self-assessment and peer review;
- providing the host country with an objective evaluation of its regulatory infrastructure with respect to IAEA safety standards;
- providing the host country with recommendations and suggestions for improvement;
- promoting the sharing of experience and exchange of lessons learned among senior regulators;

Structure of an IRRS mission



Observations in IRRS Missions in countries with Nuclear Power Plants





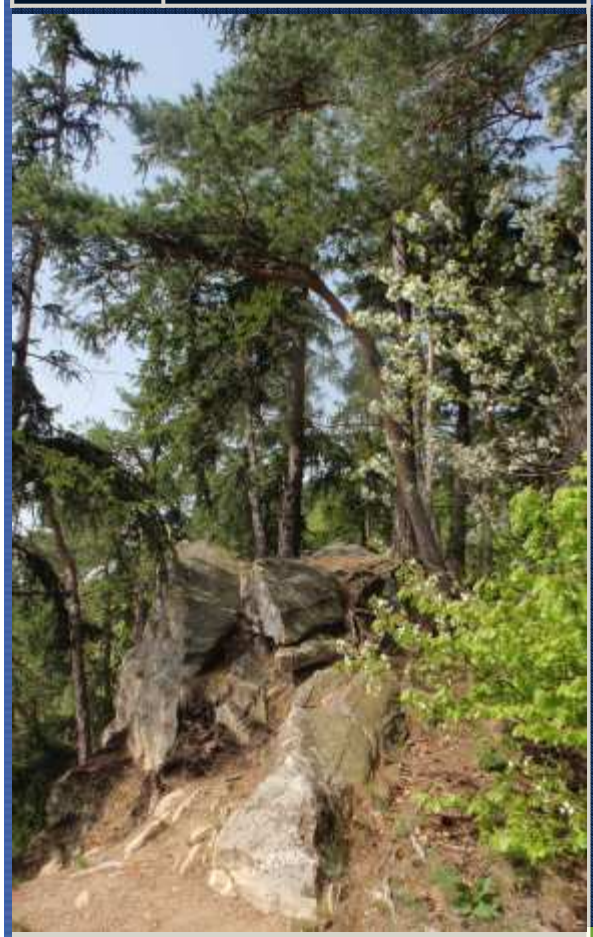
IRRS Observations related to SC


Photo: V. Friedrich

In the 60 missions held in 2006-2014

- 22 findings (Recommendation or Suggestion) and 9 Good Practices are related to SC
- 15 findings relate to the SC of the RB, 7 findings to the oversight of the licensees' SC
- In GPs 5 relate to the RB, 4 to the licensees
- The observations were offered in missions to 16 nuclear countries and to 2 non-nuclear countries

Examples of observations



Findings

- The RB management system (MS) should address SC
- The RB MS should promote and support a strong SC
- Develop and implement SC policy

Good Practices

- Management promotes SC by positive incentives
- Open Door Policy, Non Concurrence Process, Differing Professional Opinions
- SC training sessions

Conclusions

- *Safety Culture mainly assessed as an organizational factor (Management System and supporting processes and procedures).*
- *Integration of Safety Culture into Regulatory Practices and Decision Making to enhance safety performance is not clearly demonstrated.*
- *Self-assessments of Safety Culture are not performed.*


IAEA Safety Standards
Classification of Radioactive Waste
CAUTION
MAKING NUCLEAR POWER
SAFER
The IAEA Action Plan