

# **IAEA Safety Standards for Management Systems**

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**IAEA**

International Atomic Energy Agency

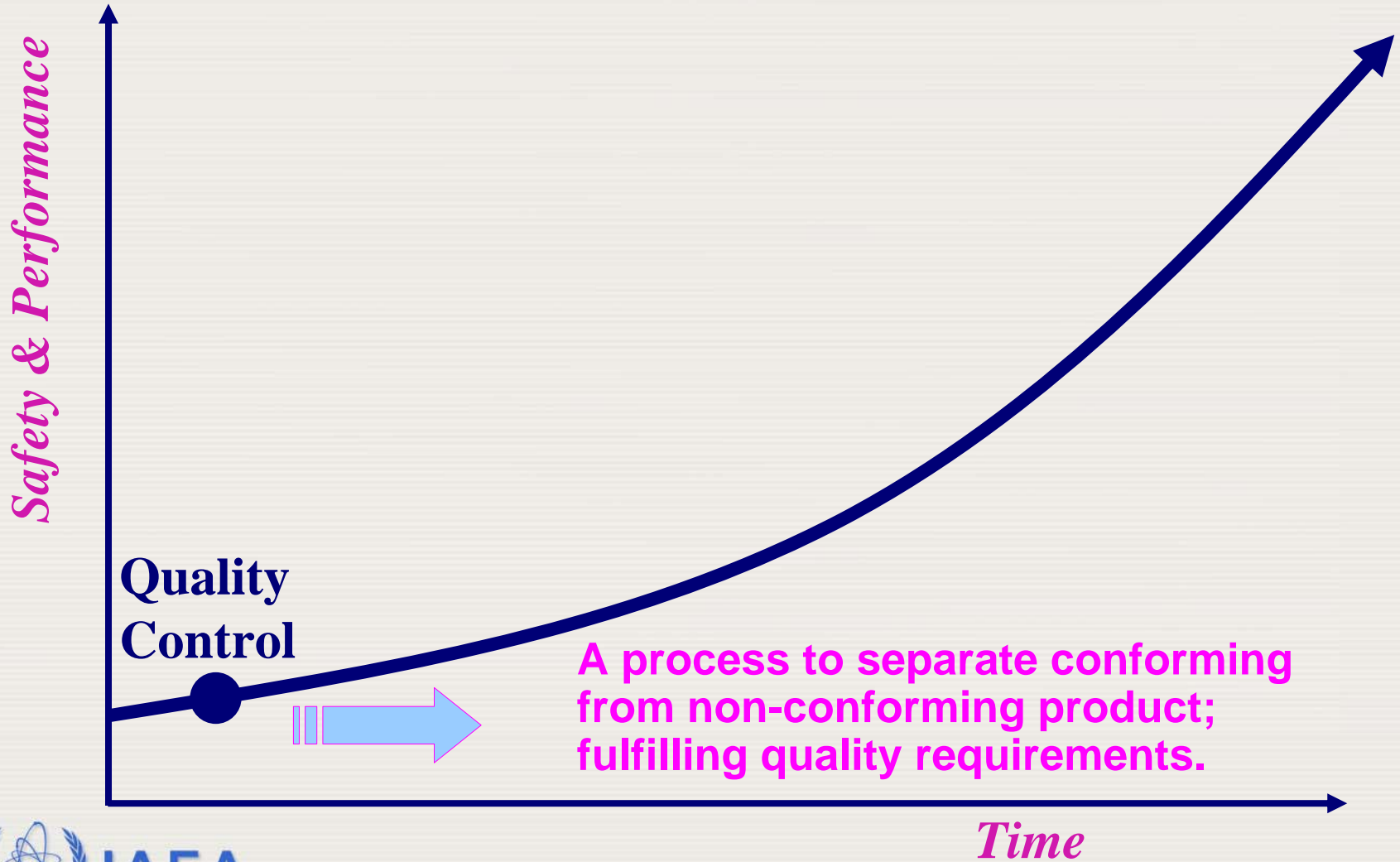
# Safety Fundamentals

- **The fundamental safety objective is to protect people and the environment from harmful effects of ionizing radiation.**
- **Principle 1 - The prime responsibility for safety must rest with the person or organization responsible for facilities or activities that give rise to radiation risks.**

# Safety Fundamentals

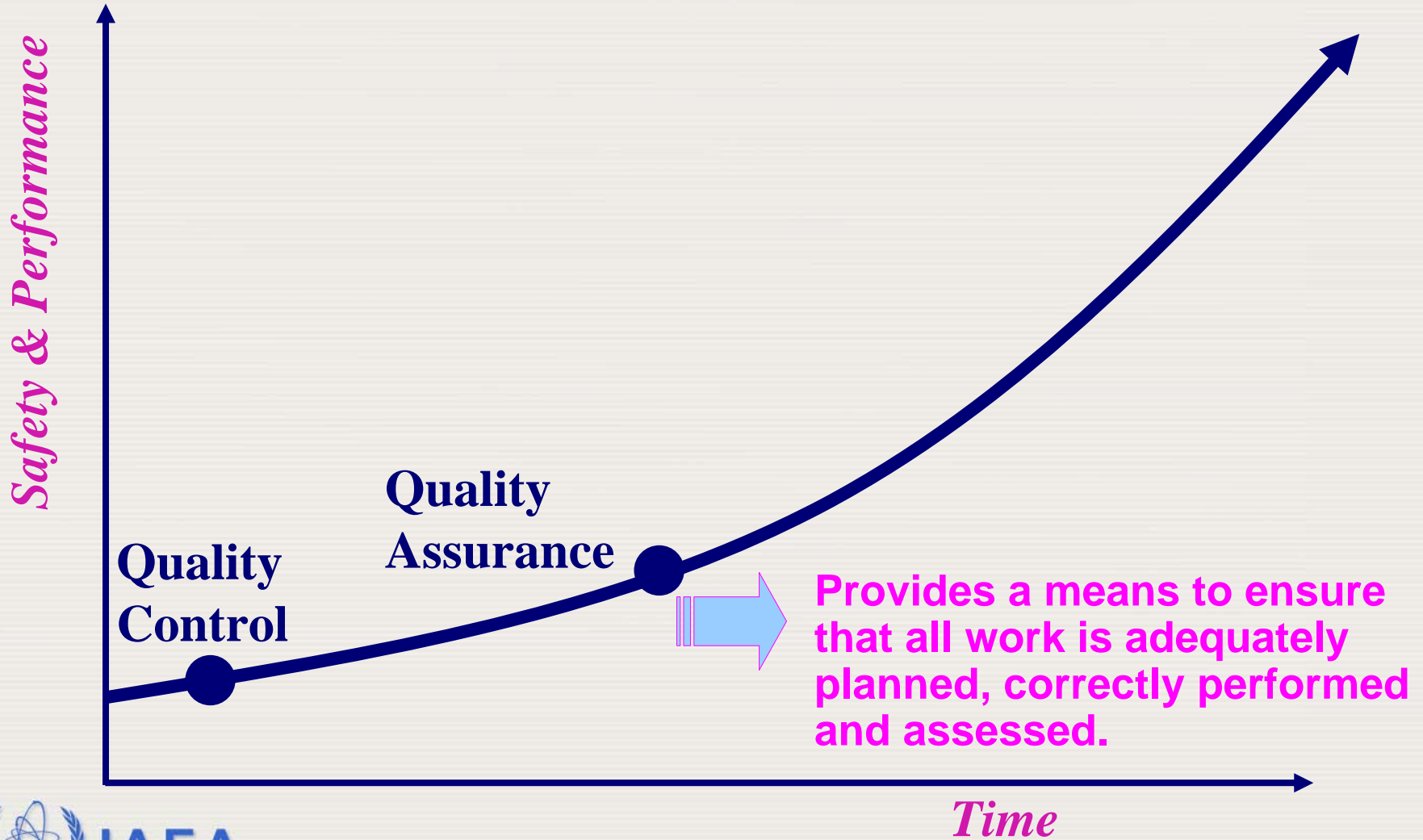
- **Principle 3 - Effective leadership and management for safety must be established and sustained in organizations concerned with, and facilities and activities that give rise to, radiation risks.**

# Evolution to Management Systems



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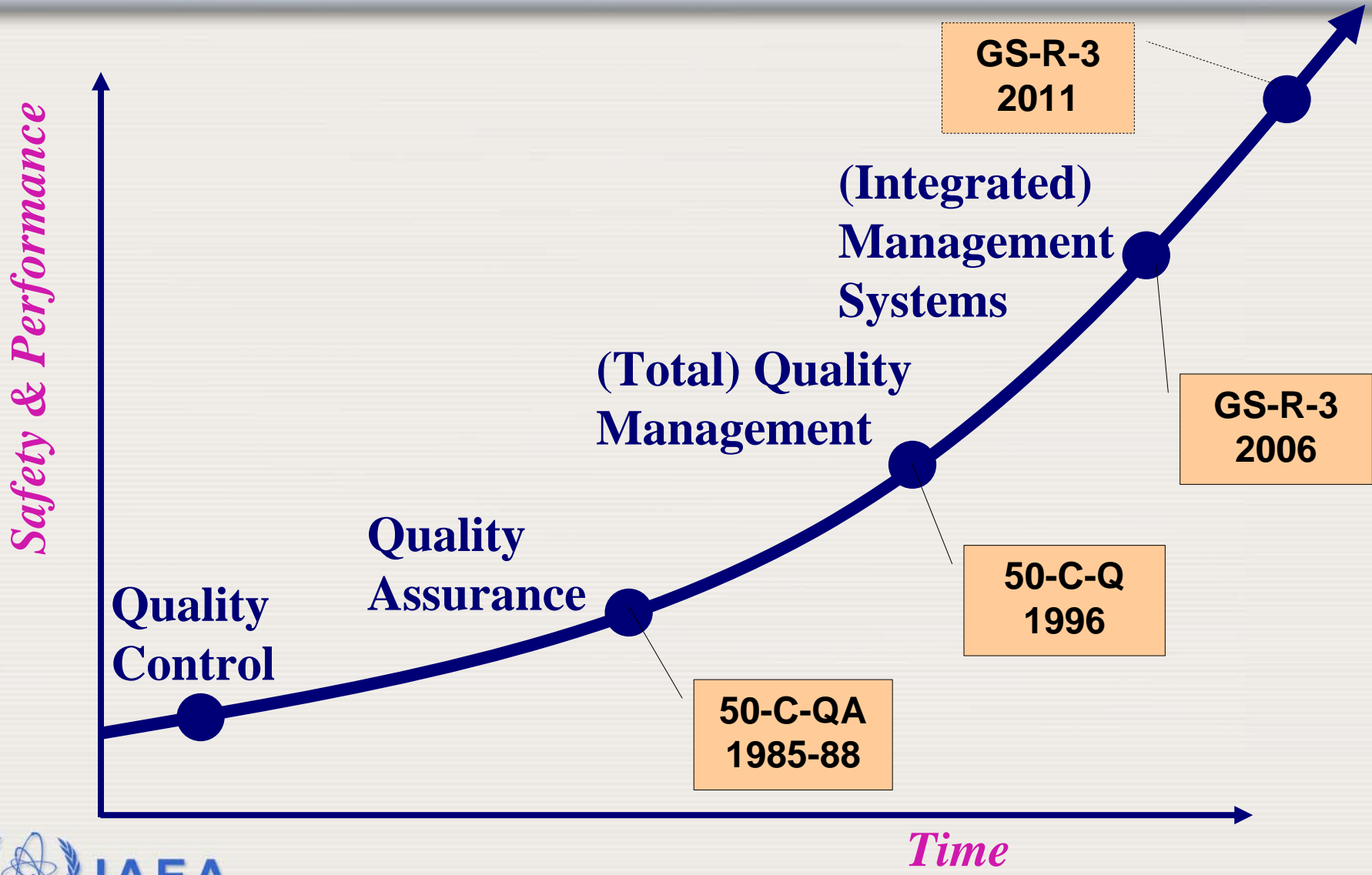
# Evolution to Management Systems

- **Quality Control – there are many related standards.**
- **Quality Assurance**
  - **IAEA Safety Series No. 50-C-QA (1985-88)**
  - **USNRC 10CFR Part 50, Appendix B (1970), Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants.**
  - **ANSI/ASME NQA-1, 2004 Quality Assurance Requirements for Nuclear Facility Applications.**

# Evolution to Management Systems

- **(Total) Quality Management**
  - **IAEA Safety Series No. 50-C-Q (1996), Quality Assurance for Safety in Nuclear Power Plants and other Nuclear Installations.**
  - **ISO 9000 and 14000 Family (2000-2004) – Generic management system standards for quality management and environmental management.**
- **(Integrated) Management System**
  - **IAEA Safety Requirements GS-R-3 (2006), The Management System for Facilities and Activities.**

# Evolution to Management Systems



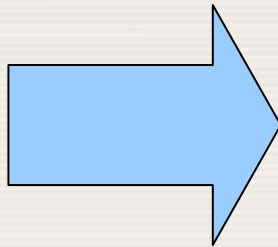
# Integrated Management System - Definition

- A single coherent management system in which all the component functions of an **organization** are integrated to enable the organization's objectives to be achieved:
  - All management areas: safety, quality, environment, health, security;
  - Personnel, equipment, culture, documented policies and processes;
  - Organizational structure and resources;
  - One set of organizational processes that address the **totality** of the objectives and requirements of the organization.



# Integrated

Parts combined to form a **whole**.



# Management

**Coordinated activities to direct and control an organization.**



# System

**A set of interrelated or interacting elements.**



**The most crucial factor  
determining organizational  
success is whether the elements  
interact well.**

# Safety Fundamentals - Principle 3

- Safety has to be achieved and maintained by means of an **effective** management system.
- It has to **integrate** all aspects of management so that requirements for safety are established and applied coherently with other requirements...
- An important factor in a management system is recognition of the entire range of interactions between **individuals** at all levels, **technology** and **organizations**.
- The management system also has to ensure promotion of **safety culture**.

# **Safety Standards on Management Systems - Integrated Management Systems**

**Consideration of requirements separately  
may introduce a negative impact on safety.**



**Therefore, it is necessary to integrate all elements of  
managing nuclear facilities and activities to  
ensure that inter-related economic, health,  
security, quality and environmental matters are  
not considered separately from safety matters.**

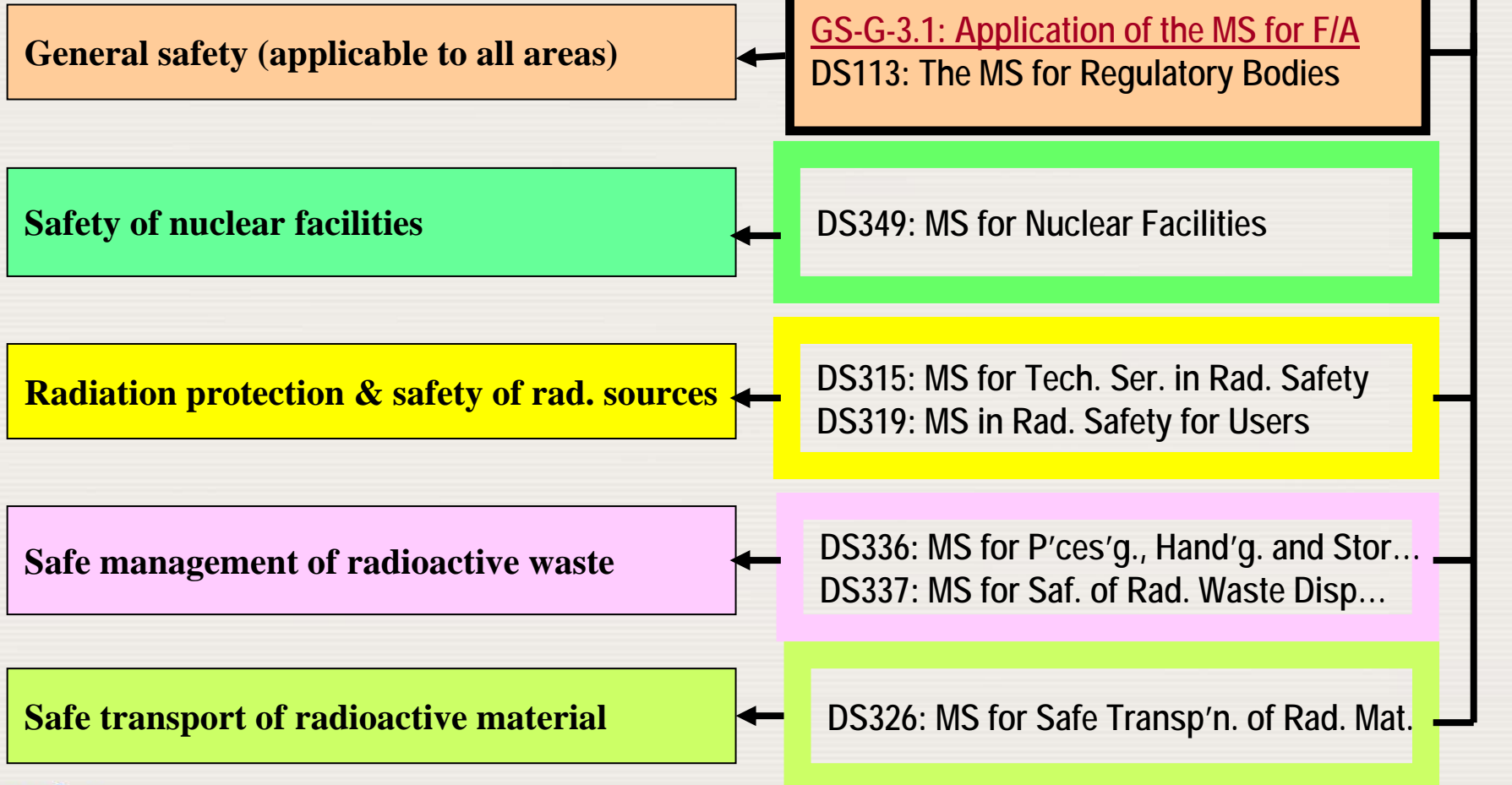
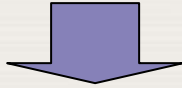
# Safety Standards for Management Systems

- **The structure follows the order, format and terminology of ISO 9001:2000.**
- **They include additional clauses relevant to safety not covered entirely by ISO 9001:2000, such as:**
  - **Grading of requirements;**
  - **Independent verification;**
  - **Human resource and knowledge management;**
  - **Safety culture;**
  - **Emergency preparedness;**
  - **Self-assessment...**
- **They are specific standards for the whole nuclear industry.**



# Structure of Safety Standards for Management Systems

SS five areas



# Users of Safety Standards for Management Systems

- **OPERATORS**

- The basis for the Management Systems to discharge their prime responsibility for safety.
- The basis for interaction with the other parties.

- **REGULATORS**

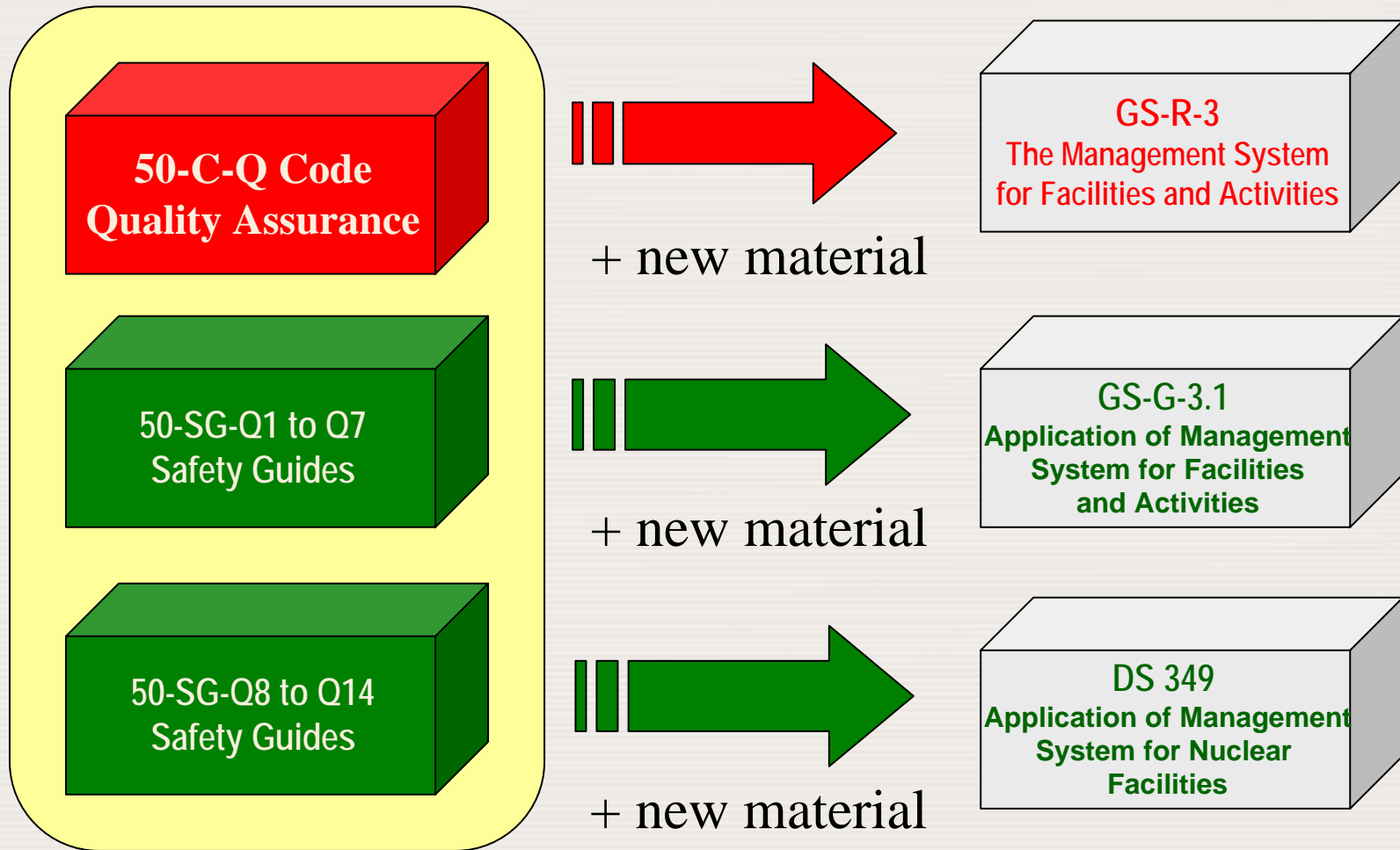
- The basis for licensing requirement for operators.
- The basis for their own management systems.

- **SUPPLIERS**

- The basis for additional safety requirements in contracts.
- The basis for introduction of additional requirements into their management systems.

# IAEA Source Material for GS-R-3, GS-G-3.1 and DS349

SS 50-C/SG-Q (1996)



# Comparison of GS-R-3 with SS 50-C-Q

- **GS-R-3 includes all the basic requirements of 50-C-Q.**
- **There is minor rewording of 50-C-Q clauses to:**
  - **Aid clarification;**
  - **Better align with ISO 9001:2000;**
  - **Reflect experience of using 50-C-Q;**
  - **Make the requirements relevant to all 5 areas covered by safety standards.**
- **GS-R-3 is more comprehensive to cover the broader subject of integrated management systems.**

# Expected Benefits of Using GS-R-3

- **Integrates the vision and strategy of the whole organization and promotes better understanding of the ‘big picture’;**
- **Aligns the organization to achieve its overall goals and objectives;**
- **Creates synergy and consistency, decreases bureaucracy and reduces administrative costs;**
- **Creates a more ‘user friendly’ and simplified management system with fewer procedures;**
- **Allows for faster reaction to change and challenges from outside or stakeholders;**

# Expected Benefits of Using GS-R-3

- **Promotes easier compliance with fewer violations, and greater staff participation and ownership in the organization's goals and objectives;**
- **Provides for better management and resolution of quality and risk issues and conflicts;**
- **Leads to reduction of barriers between organizational units and better “one house” culture throughout the organization.**

# Summary

- **The new IAEA safety standards provide recommendations to the Members States for integrated management systems.**
- **The new standards:**
  - **integrate safety, quality, security, economic, environmental and health requirements;**
  - **Have a similar structure to that of the generic ISO 9001:2000 standard, but includes safety requirements not available in ISO 9001:2000;**
  - **Can be applied to the whole nuclear industry;**
  - **Have a consistent concept, similar structure and format throughout the whole set.**
- **The IAEA provides support in their application.**