IAEA
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Atoms for Peace and Development

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GSR Part 2
Leadership and Management for Safety

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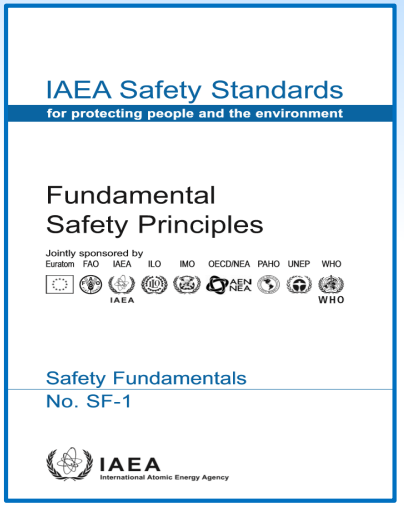
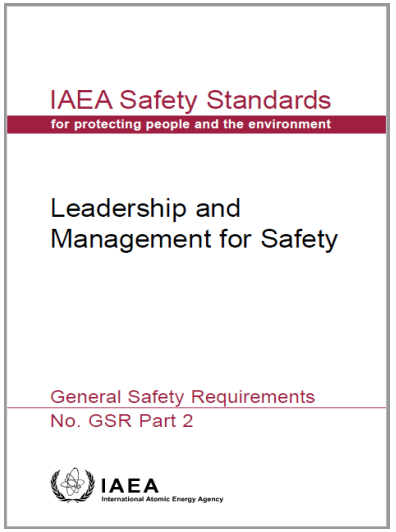
Learning Objectives

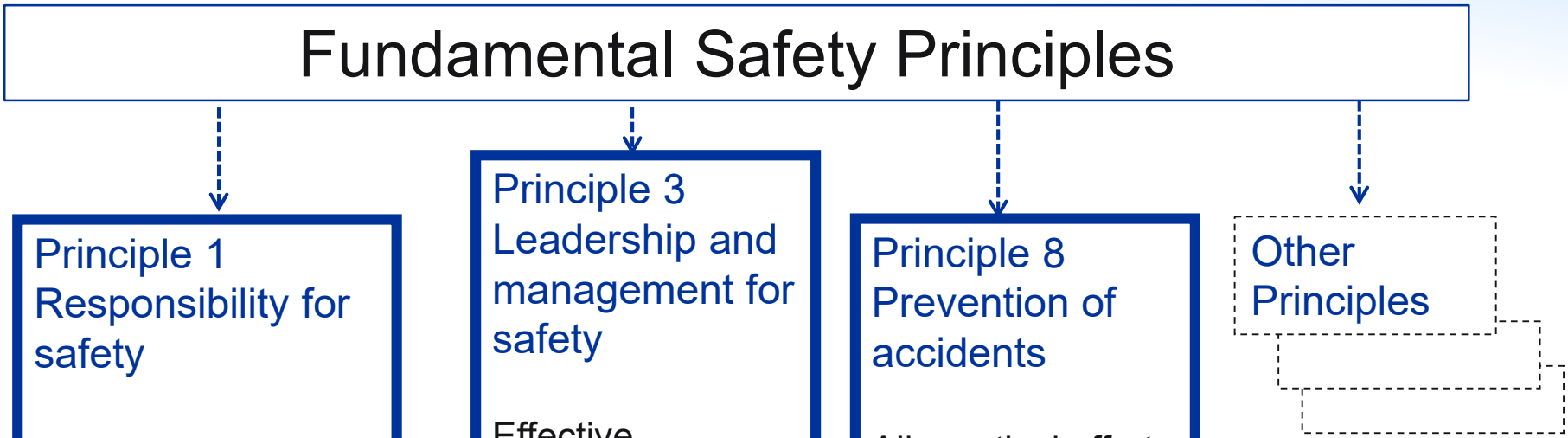
This presentation will enable participants to understand:

- The content of GSR Part 2 Leadership and Management for Safety
- The link of GSR Part 2 to Fundamental Safety Principles
- The applicability of GSR Part 2
- IAEA activities to provide further guidance to Member States





GSR Part 2
Leadership and Management for Safety



GSR Part 2
Leadership and Management for Safety

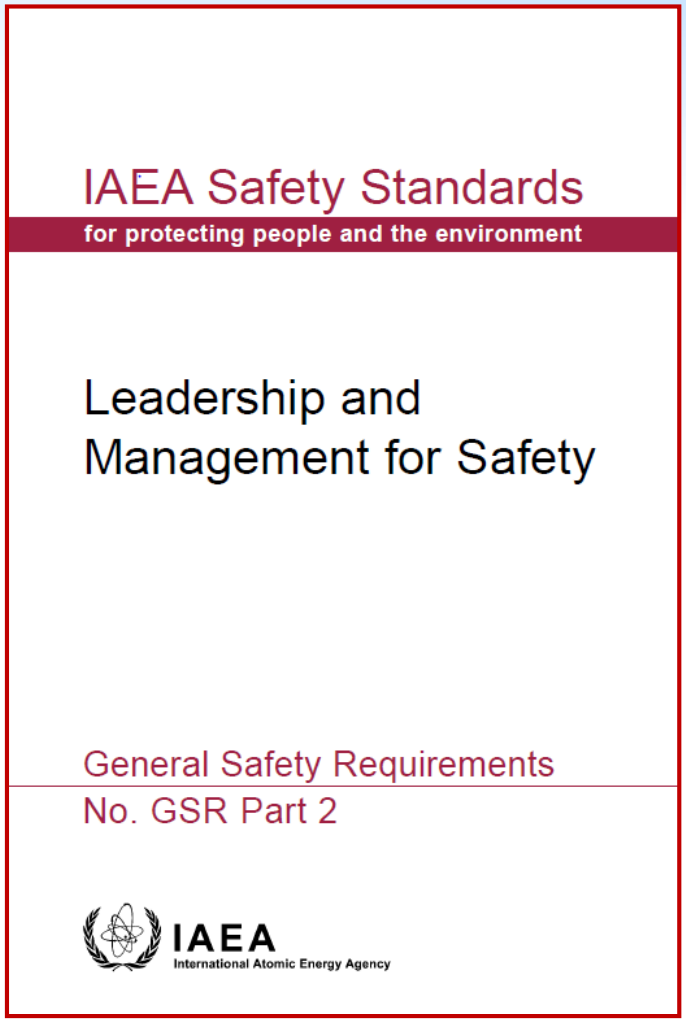
- Issued in 2016; it superseded GS-R-3 on the Management System for Facilities and Activities
- Applies to all types of facilities and activities that give rise to radiation risks
- Applies to all sizes of organizations
- Takes into account lessons drawn from experience in events that have occurred, including Fukushima-Daiichi accident

GSR Part 2

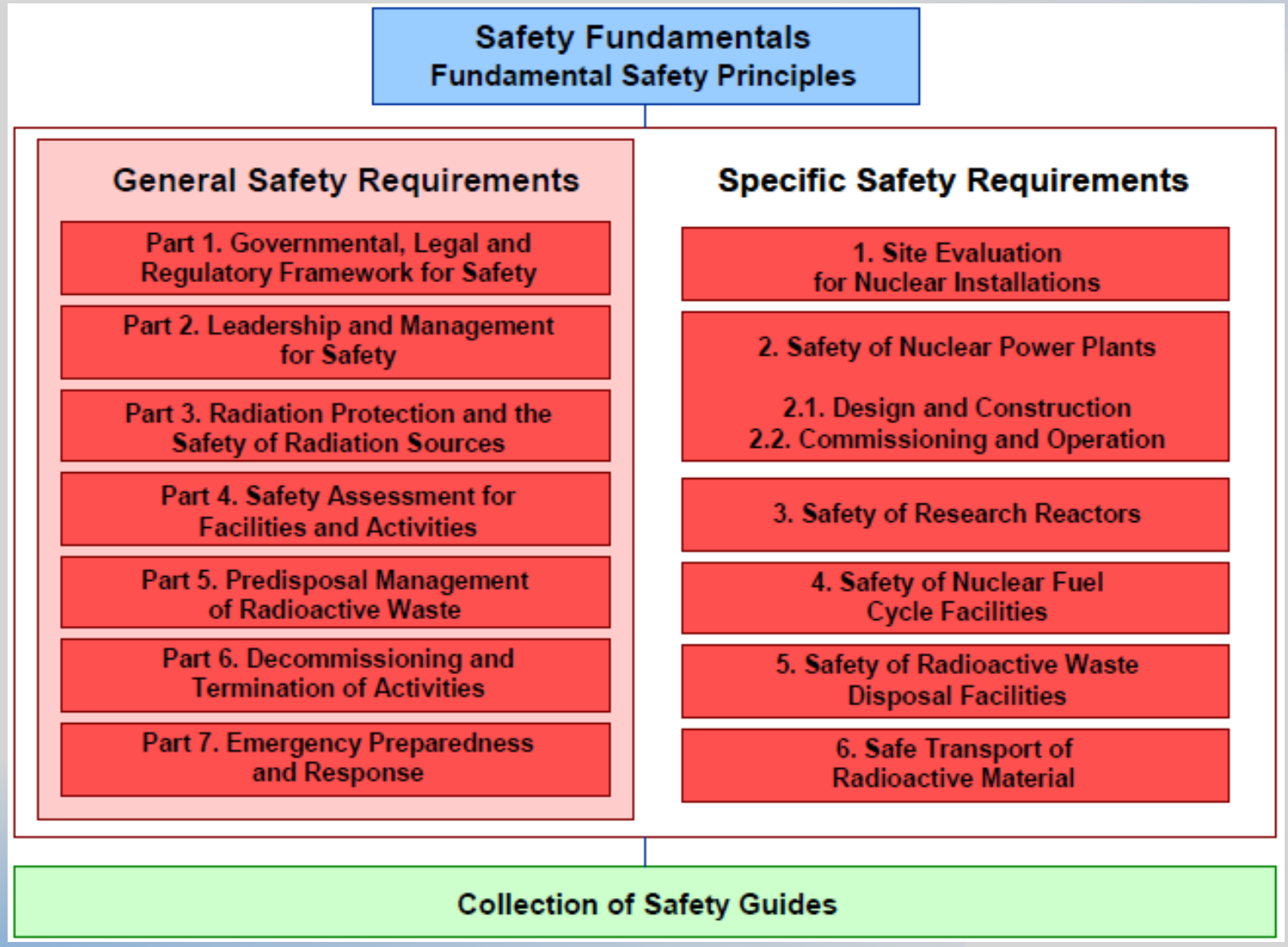
- Medical use of high and low hazard sources
- Industrial use of high and low hazard sources
- Radioactive Waste Management Facilities
- Users of radioactive sources
- Education and research use of radioactive sources
- Regulatory bodies
- Nuclear Power Plants
- Research reactors
- Mining, enrichment and fuel facilities
- Transport of Radioactive materials

Relevancy

Graded Approach



Comprehensive Collection of Safety Requirements



Definitions

"Safety" means the protection of people and the environment against radiation risks, and the safety of facilities and activities that give rise to radiation risks. "Safety" used in the IAEA safety standards includes the safety of nuclear installations, radiation safety, the safety of radioactive waste management and safety in the transport of radioactive material; it does not include non-radiation-related aspects of safety.

"Safety" is concerned with both radiation risks under normal circumstances and radiation risks as a consequence of incidents, as well as with other possible direct consequences of a loss of control over a nuclear reactor core, nuclear chain reaction, radioactive source or any other source of radiation. Safety measures include actions to prevent incidents and arrangements put in place to mitigate their consequences if they were to occur.

"Incidents" include initiating events, accident precursors, near misses, accidents and unauthorized acts (including malicious acts and non-malicious acts)."

Definitions

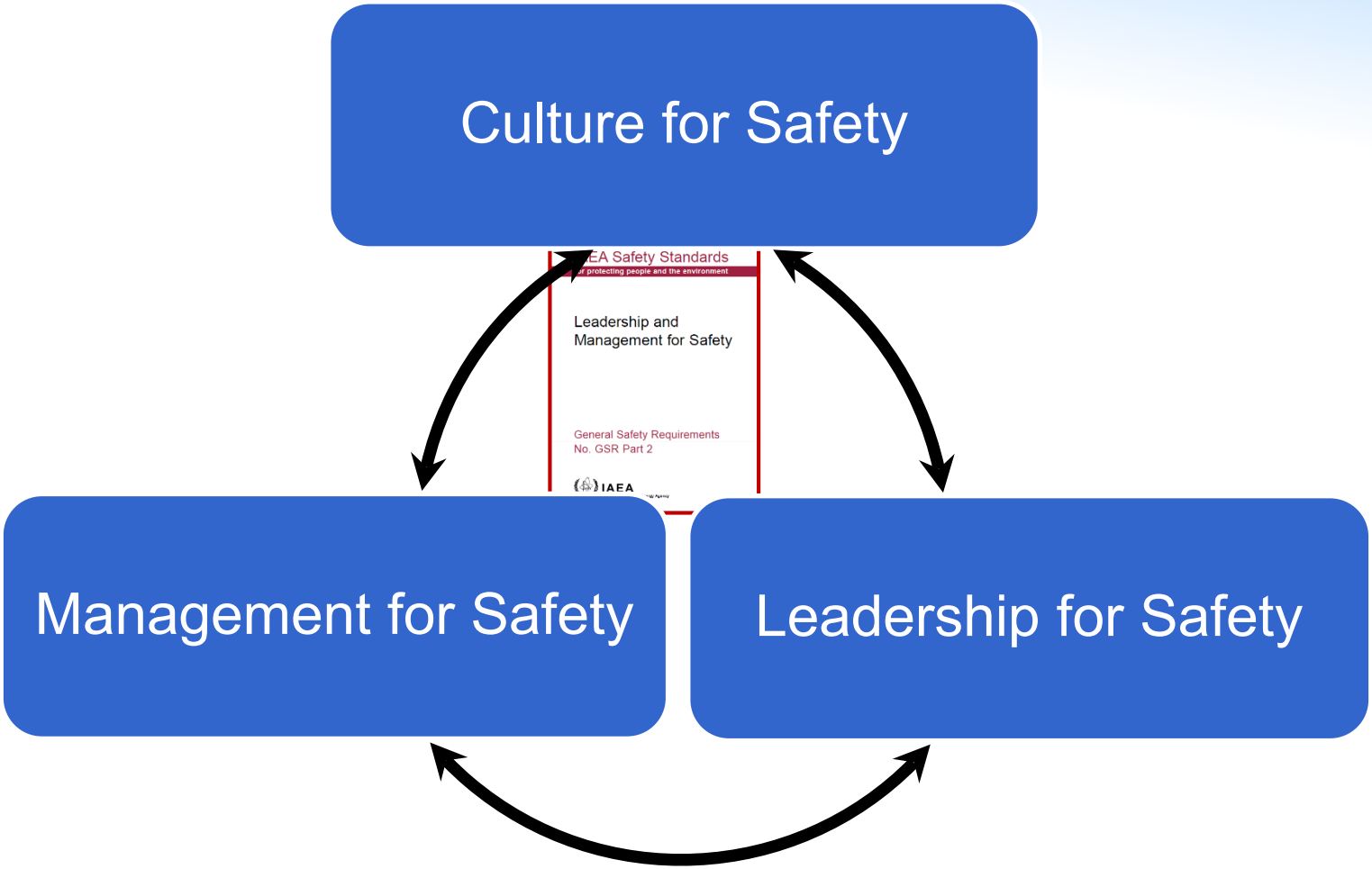
"Management" is a formal, authorized function for ensuring that an organization operates efficiently, and that work is completed in accordance with requirements, plans and resources.

"Leadership" is the use of an individual's capabilities and competences to give direction to individuals and groups and to influence their commitment to achieving the fundamental safety objective and to applying the fundamental safety principles, by means of shared goals, values and behaviour.

Everyone can be a leader for safety.

Managers at all levels need to be leaders for safety.

GSR Part 2 Balance of 3 elements



How is safety culture supported or captured in the management system?
How does leadership support safety culture?
How does leadership support the management system?

Overview of GSR Part 2 Requirements

14 requirements in 5 sections

1	**Responsibility for safety**
2	Leadership for safety
3,4,5,6,7,8, 9,10,11	**Management for safety**
12	Culture for safety
13,14	**Measurement, assessment and improvement**

Responsibility for safety

This section has one requirement

Requirement 1:
Achieving the fundamental safety objective

The registrant or licensee - starting with the senior management - shall ensure that the fundamental safety objective of protecting people and the environment from harmful effects of ionizing radiation is achieved.

Leadership for safety / 1

This section has one requirement

Requirement 2:
Demonstration of leadership for safety by managers

Managers shall demonstrate leadership for safety and commitment to safety.

Leadership for safety / 2

Requirement 2:
Demonstration of leadership for safety by managers

Key messages:

- ✓ issues relating to protection and safety receive the attention warranted by their significance
- ✓ safety encompasses interactions between people, technology and the organization
- ✓ strong safety culture is fostered
- ✓ personal accountability in relation to safety is fostered
- ✓ reporting of safety related problems is promoted
- ✓ learning and questioning attitude is promoted
- ✓ continuous improvement of safety performance is expected

Leadership for safety / 3

Requirement 2:
Demonstration of leadership for safety by managers

The senior management of the organization shall demonstrate leadership for safety by:

- (a) Establishing, advocating and adhering to an organizational approach to safety that stipulates that, as an overriding priority, issues relating to protection and safety receive the attention warranted by their significance
- (b) Acknowledging that safety encompasses interactions between people, technology and the organization
- (c) Establishing behavioural expectations and fostering a strong safety culture
- (d) Establishing the acceptance of personal accountability in relation to safety on the part of all individuals in the organization and establishing that decisions taken at all levels take account of the priorities and accountabilities for safety.

Question

(d) Establishing the acceptance of personal accountability in relation to safety on the part of all individuals in the organization and establishing that decisions taken at all levels take account of the priorities and accountabilities for safety.

What is,
in your opinion,
personal accountability?

Leadership for safety / 4

Requirement 2:
Demonstration of leadership for safety by managers

Managers at all levels in the organization, taking into account their duties, shall ensure that their leadership includes:

- (a) Setting goals for safety that are consistent with the organization's policy for safety, actively seeking information on safety performance within their area of responsibility and demonstrating commitment to improving safety performance
- (b) Development of individual and institutional values and expectations for safety throughout the organization by means of their decisions, statements and actions;
- (c) Ensuring that their actions serve to encourage the reporting of safety related problems, to develop questioning and learning attitudes, and to correct acts or conditions that are adverse to safety.

Question

(c) Ensuring that their actions serve to encourage the reporting of safety related problems, to develop questioning and learning attitudes, and to correct acts or conditions that are adverse to safety.

What is your experience with reporting of safety related problems?

Leadership for safety / 5

Requirement 2:
Demonstration of leadership for safety by managers

Managers at all levels in the organization:

- (a) Shall encourage and support all individuals in achieving safety goals and performing their tasks safely
- (b) Shall engage all individuals in enhancing safety performance
- (c) Shall communicate clearly the basis for decisions relevant to safety

Definitions

"Management System" is a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner.

- The component parts of the management system include the organizational structure, resources and organizational processes.
- Personnel, equipment and organizational culture as well as the documented policies and processes form parts of the management system.
- The organization's processes have to address the totality of the requirements on the organization as established in, for example, IAEA safety standards and other international codes and standards.

Management System

requirements

strong / efficient management
system administrator and watchdog

organizational
structure
responsibilities
authorities

objectives
KPIs
tasks

documentation
IT support

resources

processes

feedback,
continuous improvement

Question

Has your organization implemented management system?

Management for safety / 1

This section has nine requirements

Responsibility for integration of safety into the management system

Requirement 3:

Responsibility of senior management for the management system

Senior management shall be responsible for establishing, applying, sustaining and continuously improving a management system to ensure safety.

Management for safety / 2

This section has nine requirements

Responsibility for integration of safety into the management system

Requirement 4:

Goals, strategies, plans and objectives

Senior management shall establish goals, strategies, plans and objectives for the organization that are consistent with the organization's safety policy.

Management for safety / 3

This section has nine requirements

Responsibility for integration of safety into the management system

Requirement 5:

Interaction with interested parties

Senior management shall ensure that appropriate interaction with interested parties takes place.

Question

Senior management shall identify interested parties for their organization and shall define an appropriate strategy for interaction with them.

Who are interested parties for your organization?

Management for safety / 4

This section has nine requirements

The management system

Requirement 6:

Integration of the management system

The management system shall integrate its elements, including safety, health, environmental, security, quality, human-and-organizational-factor, societal and economic elements, so that safety is not compromised.

Management for safety / 5

This section has nine requirements

The management system

Requirement 7:

Application of the graded approach to the management system

The management system shall be developed and applied using a graded approach.

Management for safety / 6

This section has nine requirements

The management system

Requirement 8:

Documentation of the management system

The management system shall be documented. The documentation of the management system shall be controlled, usable, readable, clearly identified and readily available at the point of use.

Management for safety / 7

This section has nine requirements

Management of resources

Requirement 9:

Provision of resources

Senior management shall determine the competences and resources necessary to carry out the activities of the organization safely and shall provide them.

Question

Senior management shall determine which competences and resources the organization has to retain or has to develop internally, and which competences and resources may be obtained externally, for ensuring safety.

Can you provide some examples from your organization?

Management for safety / 8

This section has nine requirements

Management of processes and activities

Requirement 10:

Management of processes and activities

Processes and activities shall be developed and shall be effectively managed to achieve the organization's goals without compromising safety.

Management for safety / 9

This section has nine requirements

Management of processes and activities

Requirement 11:
Management of the supply chain

The organization shall put in place arrangements with vendors, contractors and suppliers for specifying, monitoring and managing the supply to it of items, products and services that may influence safety.

Definitions

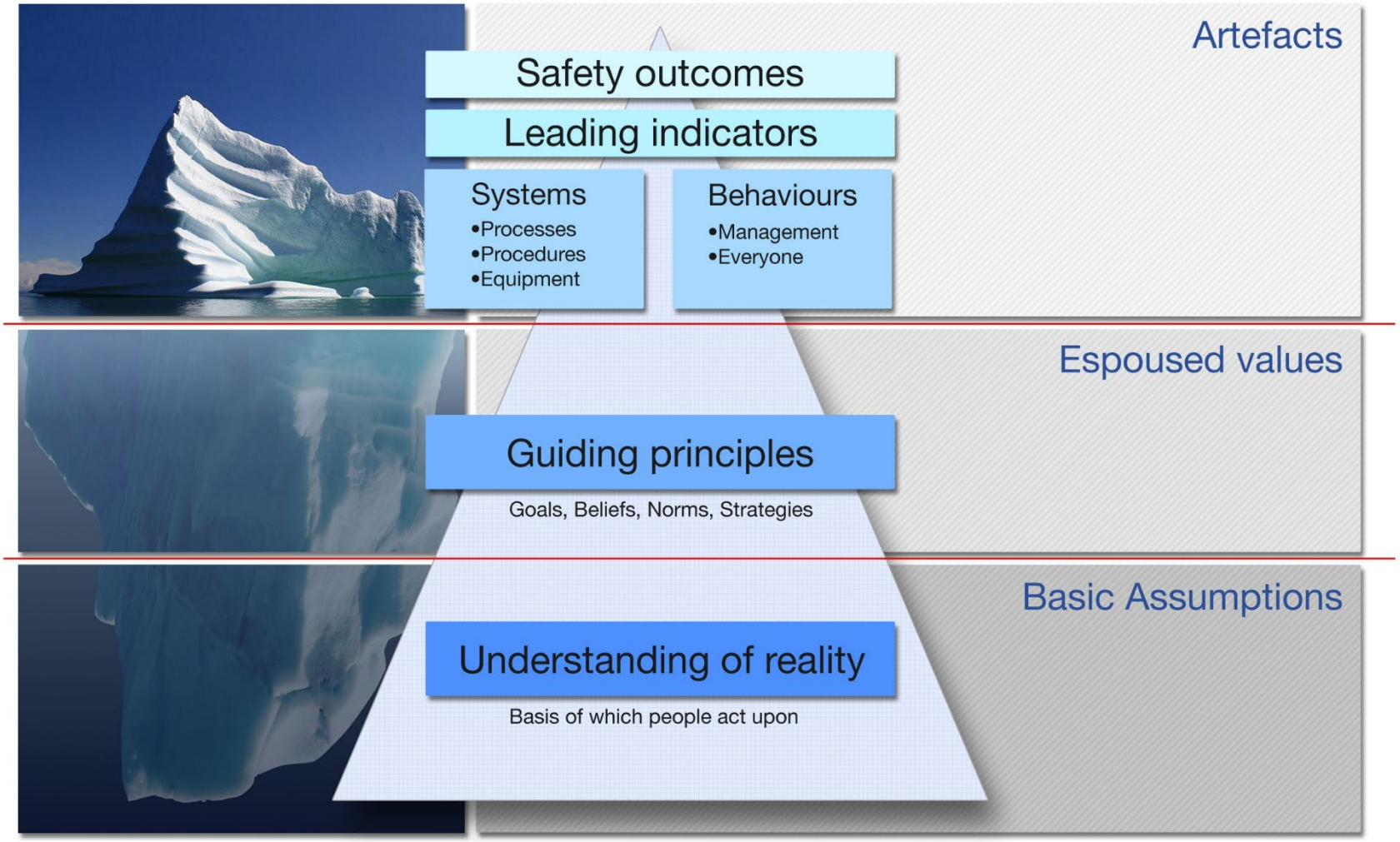
“Safety Culture” is the assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, protection and safety issues receive the attention warranted by their significance.

Safety Culture and Culture for Safety have the same meaning.

“Systemic Approach” is an approach relating to a system as a whole in which interactions between technical, human and organizational factors are duly considered.

Same concepts with different labels: systems view, holistic safety, system safety, socio-technical system.

Safety Culture Iceberg



Safety Reports Series No. 83 Performing Safety Culture Self-assessments

Culture for safety / 1

This section has one requirement

Requirement 12:
Fostering a culture for safety

Individuals in the organization, from senior managers downwards, shall foster a strong safety culture. The management system and leadership for safety shall be such as to foster and sustain a strong safety culture.

Culture for safety / 2

Requirement 12:
Fostering a culture for safety

Key messages:

- ✓ need for common understanding of safety and of safety culture, including awareness of radiation risks and hazards relating to work and to the working environment
- ✓ collective commitment to safety by teams and individuals is expected
- ✓ an organizational culture that supports and encourages trust, collaboration, consultation and communication is promoted
- ✓ the reporting of problems relating to technical, human and organizational factors is promoted
- ✓ a questioning and learning attitude at all levels in the organization is expected
- ✓ safety oriented decision making in all activities is fostered
- ✓ the exchange of ideas between, and the combination of, safety culture and security culture is expected

GSR Part 2 Culture for safety / 3

Requirement 12:
Fostering a culture for safety

All individuals in the organization shall contribute to fostering and sustaining a strong safety culture.

Senior managers and all other managers shall advocate and support the following:

(a) A common understanding of safety and of safety culture, including:

awareness of radiation risks and hazards relating to work and to the working environment; an understanding of the significance of radiation risks and hazards for safety; and a collective commitment to safety by teams and individuals

(b) Acceptance by individuals of personal accountability for their attitudes and conduct with regard to safety

(c) An organizational culture that supports and encourages trust, collaboration, consultation and communication

Question

Senior managers and all other managers shall advocate and support the following:

(c) An organizational culture that supports and encourages trust, collaboration, consultation and communication

What can be done practically to encourage trust, collaboration,…?

GSR Part 2 Culture for safety / 4

Requirement 12:
Fostering a culture for safety

(d) The reporting of problems relating to technical, human and organizational factors and reporting of any deficiencies in structures, systems and components to avoid degradation of safety, including the timely acknowledgement of, and reporting back of, actions taken

(e) Measures to encourage a questioning and learning attitude at all levels in the organization and to discourage complacency with regard to safety

(f) The means by which the organization seeks to enhance safety and to foster and sustain a strong safety culture, and using a systemic approach (i.e. an approach relating to the system as a whole in which the interactions between technical, human and organizational factors are duly considered)

(g) Safety oriented decision making in all activities

(h) The exchange of ideas between, and the combination of, safety culture and security culture

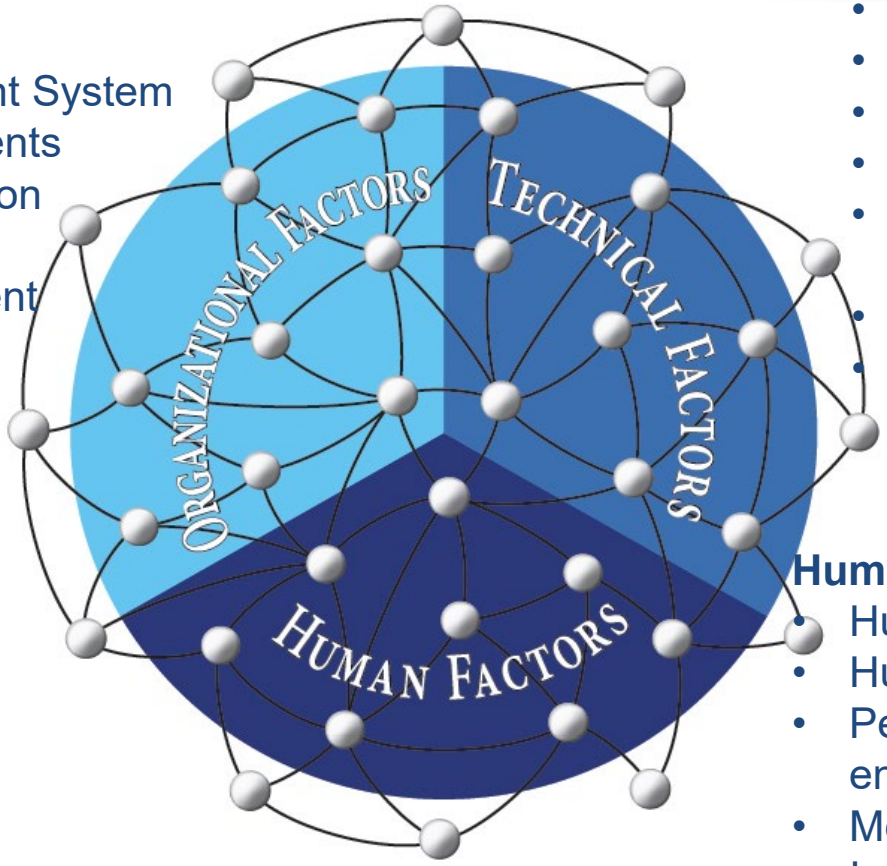
Current IAEA Safety Culture Model

IAEA Safety Culture Characteristics and Attributes (GS-G-3.1, GS-G-3.5)

Safety is a Clearly Recognized Value	Accountability for Safety is Clear	Safety is Learning Driven	Safety is Integrated into All Activities	Leadership for Safety is Clear
❑ High priority to safety shown in documentation, communications and decision- making ❑ Safety is a primary consideration in the allocation of resources ❑ The strategic business importance of safety is reflected in business plan ❑ Individuals are convinced that safety and production go 'hand in hand' ❑ A proactive and long-term approach to safety issues is shown in decision-making ❑ Safety conscious behavior is socially accepted and supported (both formally and informally)	❑ Appropriate relationship with the regulatory body exists, which ensures that the accountability for safety remains with the licensee ❑ Roles and responsibilities are clearly defined and understood ❑ There is a high level of compliance with regulations and procedures ❑ Management delegates responsibilities with appropriate authority to enable accountabilities ❑ Ownership for safety is evident at all organizational levels and by all individuals	❑ A questioning attitude prevails at all organizational levels ❑ An open reporting of deviations and errors is encouraged ❑ Internal and external assessments, including self-assessments are used ❑ Organizational and operating experience (both internal and external) is used ❑ Learning is enabled through the ability to recognize and diagnose deviations, formulate and implement solutions and monitor the corrective actions ❑ Safety performance indicators are tracked, trended, evaluated and acted upon ❑ There is a systematic development of staff	❑ Trust permeates the organization ❑ Consideration for all types of safety, security and others is evident ❑ Quality of documentation and procedures is good ❑ Quality of processes, from planning to implementation and review, is good ❑ Individuals have the necessary knowledge and understanding of the work processes ❑ Factors affecting motivation and job satisfaction are considered ❑ Good working conditions exist with regards to time pressures, workload and stress ❑ Cross-functional and interdisciplinary cooperation and teamwork are present ❑ Housekeeping is good	❑ Senior management is clearly committed to safety ❑ Commitment to safety is evident at all management levels ❑ Visible leadership showing involvement of management in safety related activities ❑ Leadership skills are systematically developed ❑ Management assures that there is sufficient and competent staff ❑ Management seeks the active involvement of staff in improving safety ❑ Safety implications are considered in planning and implementing changes ❑ Management shows a continuous effort to strive for openness and good communications ❑ Management has the ability to resolve conflicts as necessary ❑ Relationships between management and staff are built on trust

The Systemic Approach to Safety

Organizational Factors (OF)
- Vision and objectives
- Strategies
- Integrated Management System
- Continuous improvements
- 'Set to work' organization
- Priorities
- Knowledge management
- Communication
- Vendor and suppliers
- Work environment
- Culture



Technical Factors (TF)
- Existing technology
- Sciences
- Design
- PSA/DSA
- I/C
- Technical Specifications
- Quality of material
- Equipment reliability

Human Factors (HF)
- Human capabilities & Skills
- Human constraints
- Perceived work environment
- Motivation
- Individuals understanding
- Emotions
- Social environment

interactions important

Measurement, assessment and improvement / 1

This section has two requirements

Requirement 13:

Measurement, assessment and improvement of the management system

The effectiveness of the management system shall be measured, assessed and improved to enhance safety performance, including minimizing the occurrence of problems relating to safety.

Measurement, assessment and improvement / 2

This section has two requirements

Requirement 14:
Measurement, assessment and improvement of leadership for safety and of safety culture

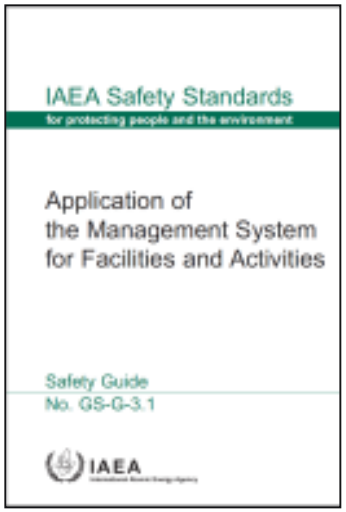
Senior management shall regularly commission assessments of leadership for safety and of safety culture in its own organization.

Question

The results of assessments of leadership for safety and of safety culture shall be communicated at all levels in the organization.

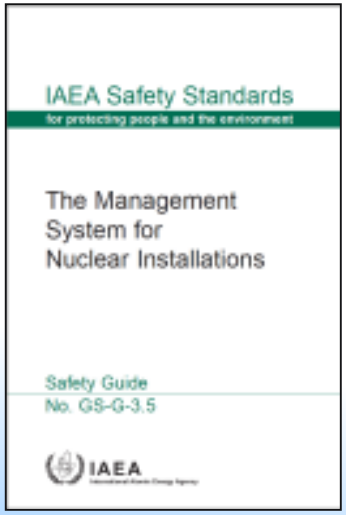
What is your experience – are results communicated in your organization in an appropriate way?

Safety Guides Supporting GSR Part 2



Under revision

DS513 “Leadership, Management and Culture for Safety”



Revision considered, no final decision.

Harmonized Safety Culture Model (Future IAEA Model) 10 Traits and 43 Attributes

Individual Responsibility ▪ Adherence ▪ Ownership ▪ Collaboration	**Questioning Attitude** ▪ Recognize Unique Risks ▪ Avoid Complacency ▪ Question Uncertainty ▪ Recognize and Question Assumptions	**Communication** ▪ Free flow of information ▪ Transparency ▪ Reasons for Decisions ▪ Expectations ▪ Workplace Communication	**Leader Responsibility** ▪ Strategic Alignment ▪ Leader Behavior ▪ Employee Engagement ▪ Resources ▪ Field Presence ▪ Rewards and Sanctions ▪ Change Management ▪ Authorities Roles and Responsibilities	**Decision Making** ▪ Systemic Approach ▪ Conservative Approach ▪ Clear Responsibility ▪ Resilience
Work Environment ▪ Respect is Evident ▪ Opinions are Valued ▪ Trust is Cultivated ▪ Conflicts are Resolved ▪ Facilities Reflect Respect	**Continuous Learning** ▪ Constant Evaluation ▪ Learning from Experience ▪ Training ▪ Leadership Development ▪ Benchmarking	**Problem Identification and Resolution** ▪ Identification ▪ Evaluation ▪ Resolution ▪ Trending	**Raising Concerns** ▪ Supportive Policies are Implemented ▪ Confidentiality is Possible	**Work Planning** ▪ Work Management ▪ Safety Margins ▪ Documentation and Procedures

GSR Part 2 Summary

- Published in June 2016
- Applies to all types of installations and facilities, and organisations of different sizes and complexity including nuclear regulators
- 14 requirements in Leadership, Management and Culture for Safety areas
- Supporting guide with recommendations how to apply GSR Part 2 is under development as DS513 “Leadership, Management and Culture for Safety”

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Thank you!