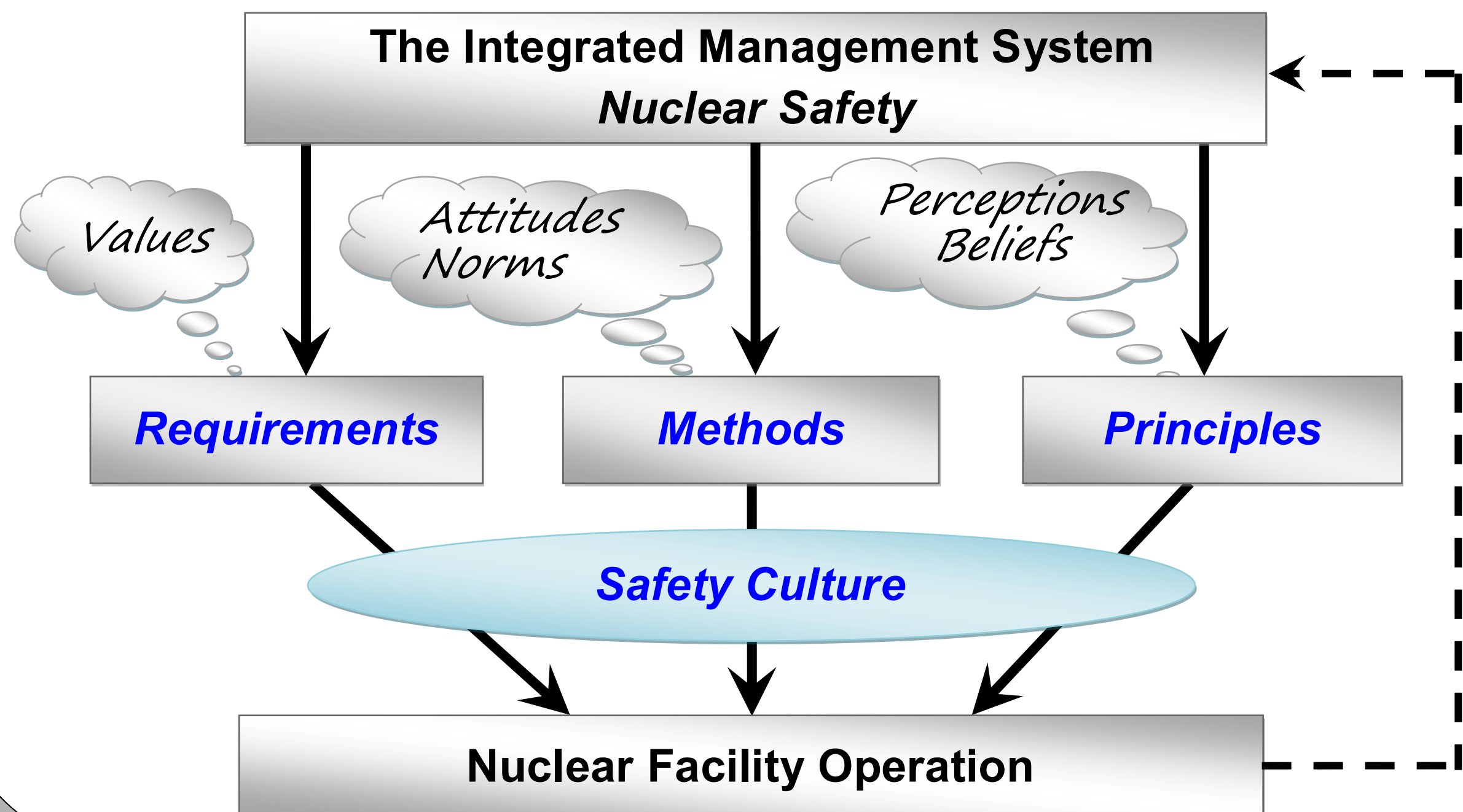


The Modern Principles of Safety Culture Formation and Development: RMP Approach

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1. Safety Culture: The basic concepts



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Safety culture is determined by how the organization complying with the **Requirements**, **Methods** and **Principles** that provide an adequate level of safety in the planning, organization and execution of works as well as in the analysis of the results obtained.

The Requirements

The requirements are determined by normative-technical documentation in accordance with which the organization operates and which regulates the activities of its staff, for instance:

- The General Safety Provisions for the Design, Construction and Operation of NPPs
- The Radiation Safety Standards
- Nuclear Safety Regulations
- Requirements of QMS, OHSAS, EMS, OES, HPI system

The Methods

The methods (work practices) define the way in which staff perform established requirements and follow accepted principles in their activities, for instance (HPI system):

- Task Preview / Pre-Job Briefing
- Self-checking / Peer-Checking
- Questioning Attitude
- Rigorous and prudent approach
- Communicative
- Conservative approach

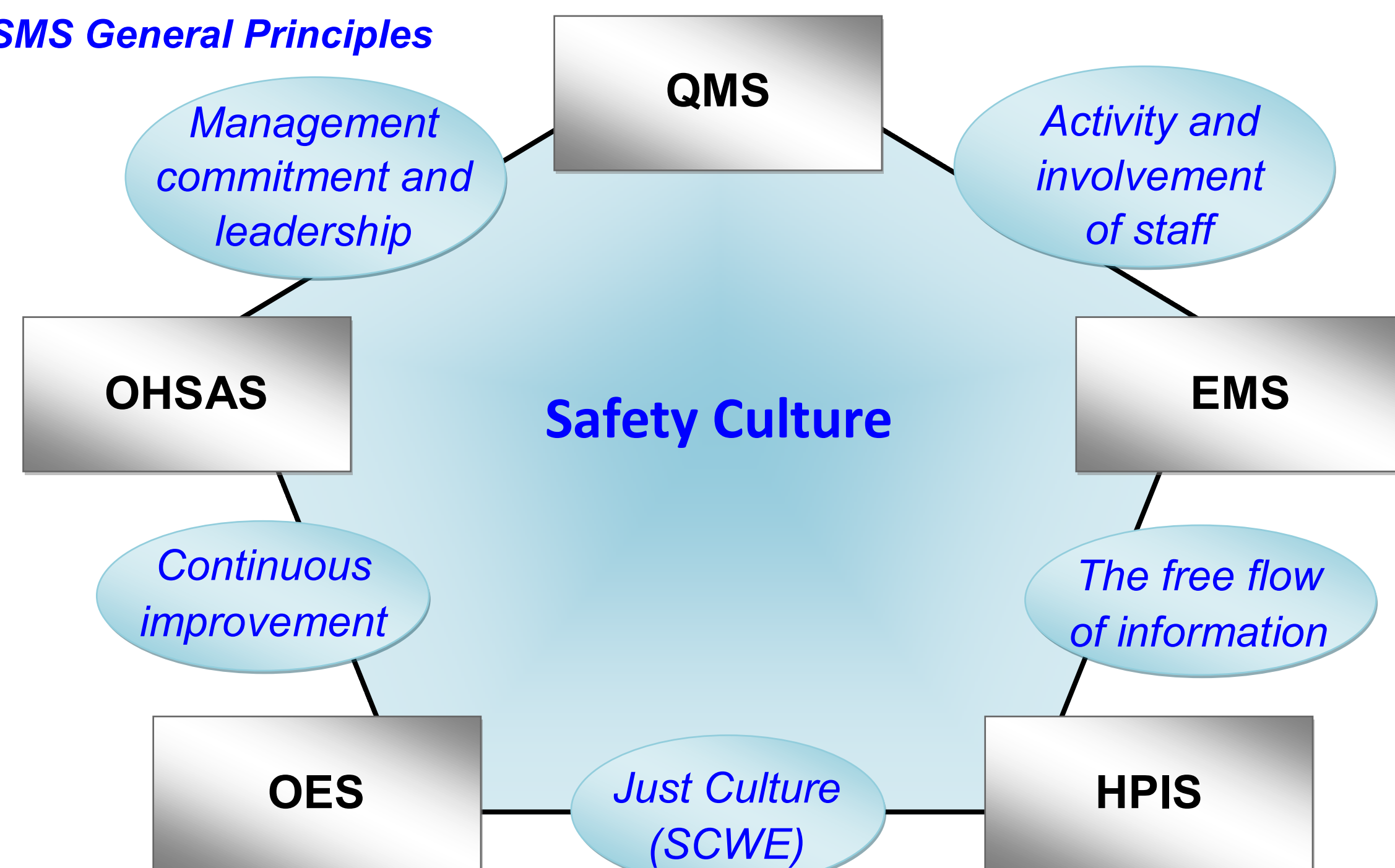
The Principles

The principles play an important role in ensuring the formation and enhancement of an appropriate level of Safety Culture that guide staff in their activities, for instance (HPI system):

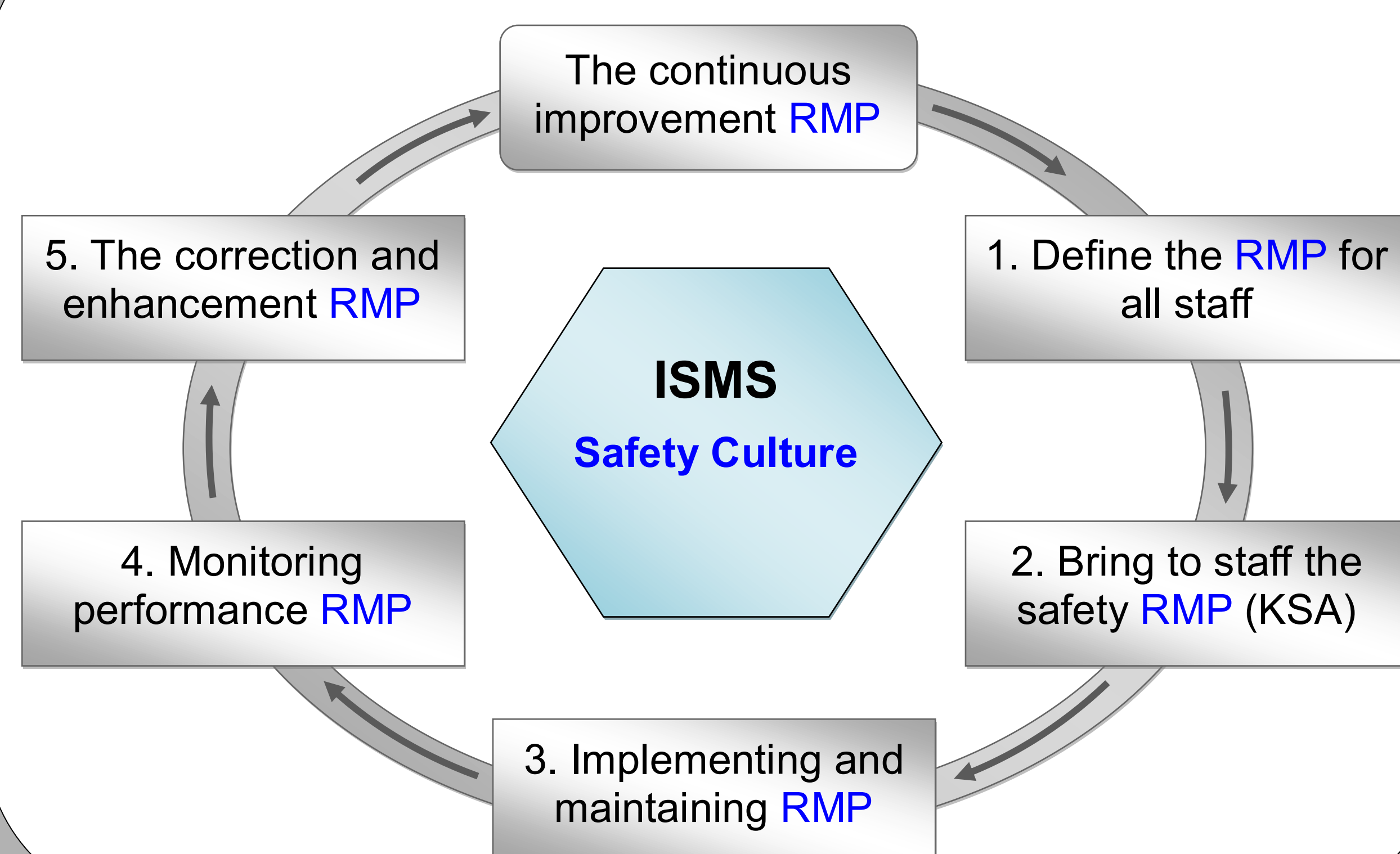
- People are fallible, and even the best make mistakes.
- Error-likely situations are predictable, manageable, and preventable.
- Individual behavior is influenced by organisational processes and values.
- People achieve high levels of performance based largely on the encouragement and reinforcement received from leaders, peers, and subordinates.
- Events can be avoided by understanding the reasons mistakes occur and applying the lessons learned from past events.

2. The Integrated Safety Management System (ISMS)

ISMS General Principles



3. The formation and development of Safety Culture



2. The Integrated Safety Management System (The System approach)

ISMS is the basis for the formation and enhancement of Safety Culture. Safety Culture reflects the efficiency of the functioning ISMS in the organization. The formation and development of Safety Culture is based directly on the RMP that are defined and complied within the basic elements of the ISMS:

- QMS - Quality Management System
- OHSAS - Occupational Health and Safety Management System
- EMS - Environmental Management System
- OES - Operating Experience Feedback System
- HPIS - Human Performance Improvement System (Human and Organizational Factors)

3. The formation and development of Safety Culture (The Process approach)

1. Define the safety RMP to be complied and followed by both managers and employees;
2. Bring to staff the safety RMP forming the desired knowledge and skills;
3. Enforce the safety RMP by staff in their activity;
4. Monitor compliance with the safety RMP of staff for the timely detection of weaknesses;
5. Correct weaknesses in compliance with the safety RMP by staff in their activity.

4. An example of the Chernobyl accident analysis: RMP approach

The Requirements

Must be determined

- "A plant which fell well short of the safety standards in effect when it was designed, and even incorporated unsafe features".
- "Inadequate safety analysis".
- "Insufficient attention to independent safety review".
- "Operating procedures not founded satisfactorily in safety analysis".

Must be communicated

- "Inadequate understanding by operators of the safety aspects of their plant".

Must be enforced

- "Insufficient respect on the part of the operators for the formal requirements of operational and test procedures".

Must be controlled

- "An insufficiently effective regulatory regime that was unable to counter pressures for production".

Must be corrected

- Proper lessons have not been learned, corrective measures have not been accepted.

The Methods

Operating experience

- The operating staff at Chernobyl were not aware of the nature and causes of the accident at Leningrad Unit 1 (1975), had already indicated major weaknesses in the characteristics and operation of RBMK units.
- The operating staff at Chernobyl were not aware of the faulty design of the rods, the nature of which had been discovered at the Ignalina NPP in 1983.

The Principles

The free exchange of information

- "Inadequate and ineffective exchange of important safety information both between operators and between operators and designers".

(On materials of the report by INSAG-7, IAEA, 1992)

