

Operational HOF Practices in the AREVA Group to Face New Challenges

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Thierry COYE DE BRUNELIS

thierry.coye-de-brunelis@areva.com

AREVA, SQE Dept.

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Safety,
Health,
Security,
Quality,
Environment
Department

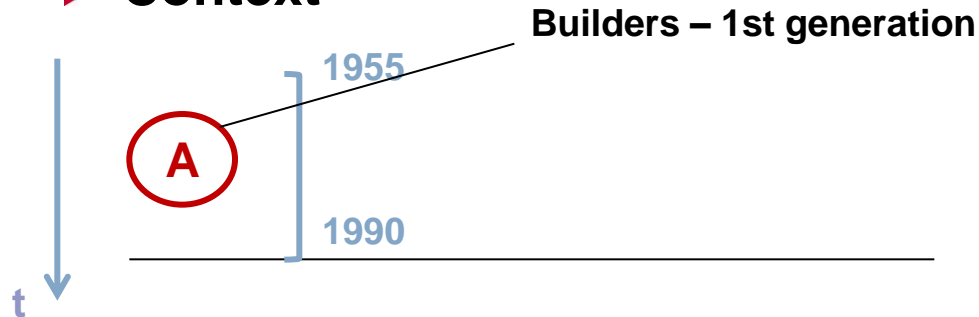


Summary

- ▶ **Part 1: Tools to meet the challenge raised by generational renewal**
- ▶ **Part 2: Future challenges for safety and safety governance**

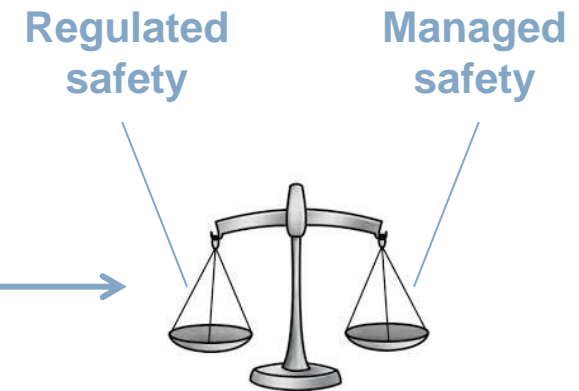
Part 1: Tools to meet the challenge raised by generational renewal

► Context



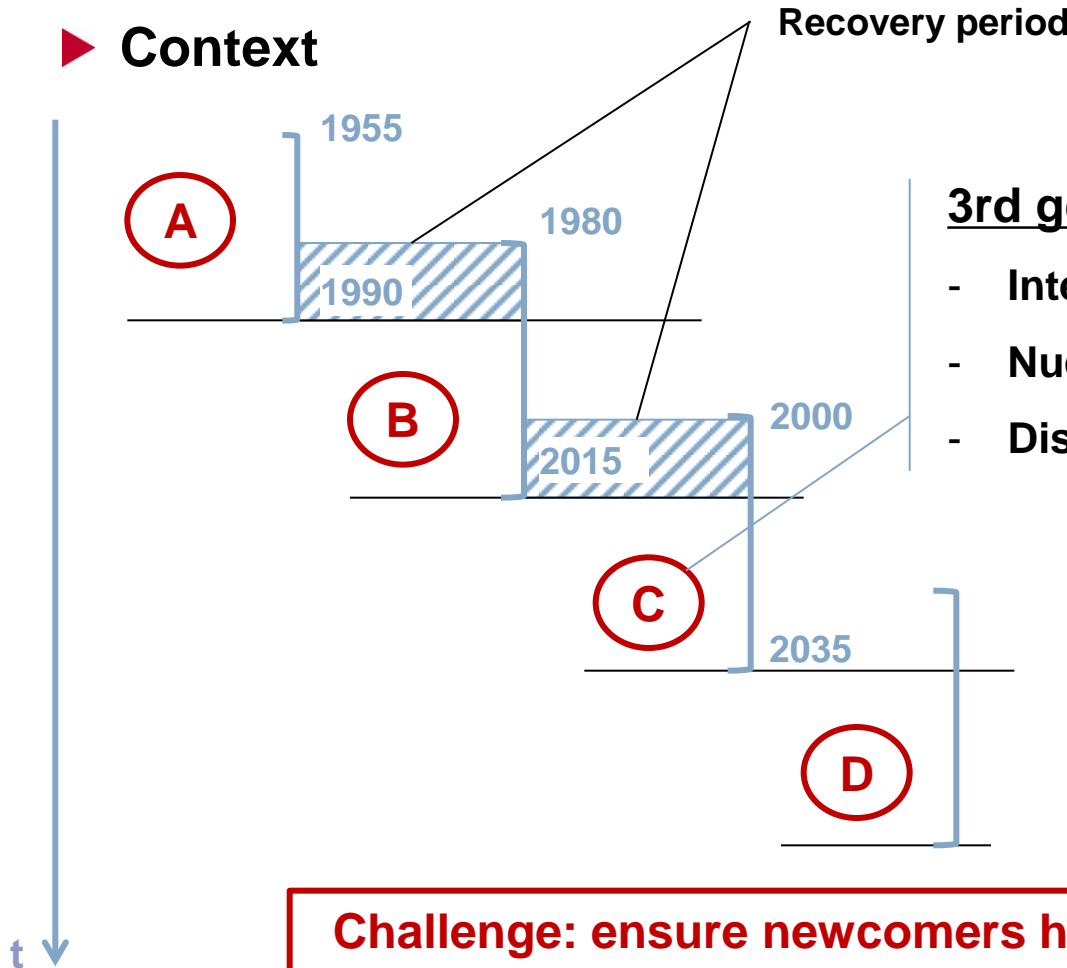
1st generation's features

- Started up the facilities
- Better understanding of operations and limits
- Tangible and directly perceptible safety challenges
- Adequate perception of risks



Part 1: Tools to meet the challenge raised by generational renewal

► Context



3rd generation's features

- Interactions with virtual worlds
- Nuclear generally perceived as very safe
- Distance to the risks

Challenge: ensure newcomers have adequate safety knowledge and safety culture

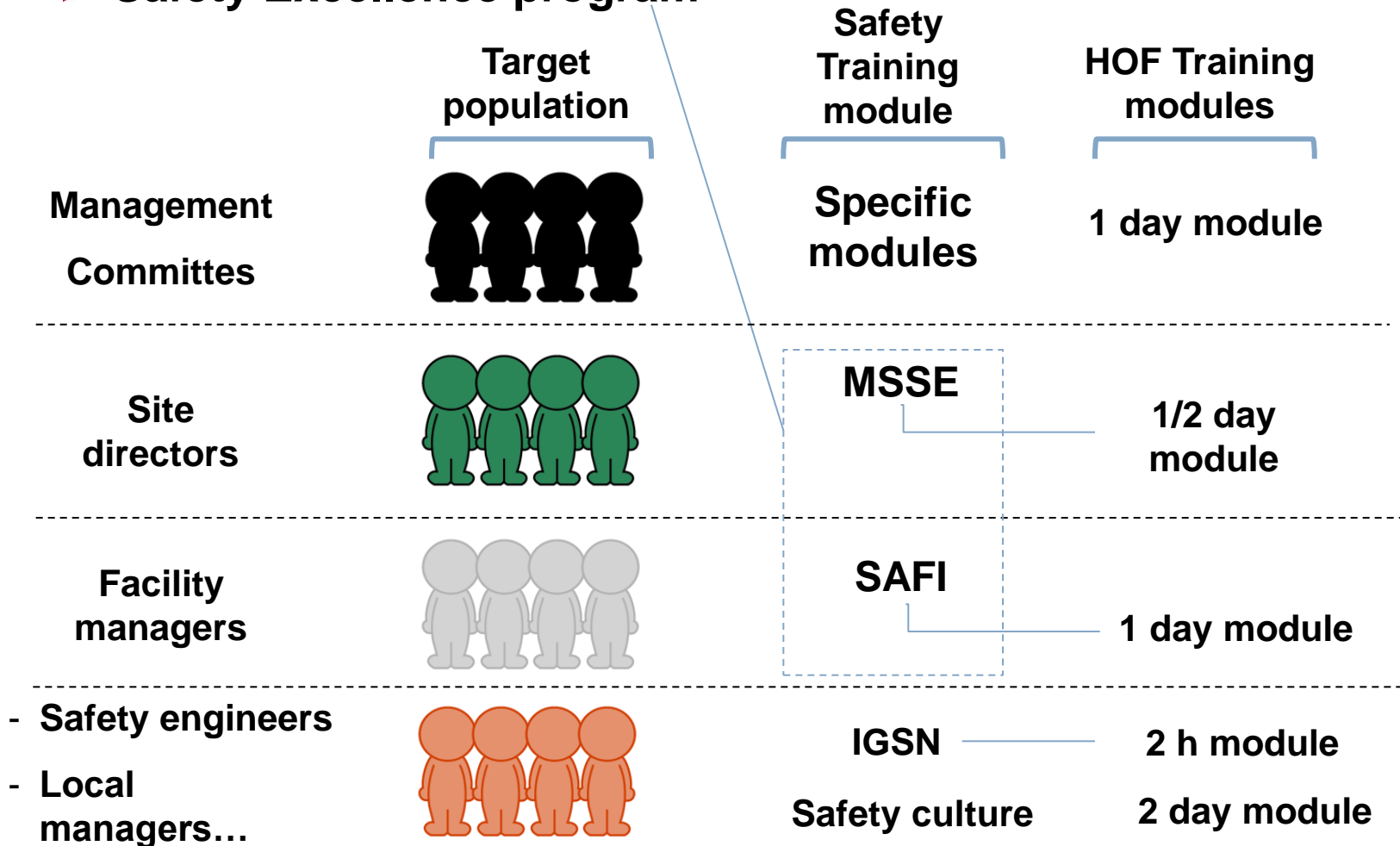
Part 1: Tools to meet the challenge raised by generational renewal

► Safety Excellence program

- ◆ Set up in early 2012**
- ◆ “work on a comprehensive inventory, by operational level, of the skills of managers involved in safety-health-security-environment (SHSE) implementation in the facilities”**
- ◆ Target population:**
 - Site directors
 - Production directors
 - Duty officers
 - Facility managers
 - Project manager
 - SHSE managers of the sites

Part 1: Tools to meet the challenge raised by generational renewal

► Safety Excellence program



Part 2: Future challenges for safety and safety governance

► Context and issues

- ◆ 2014 annual report of the Inspector General of AREVA

“The number of regulatory requirements has seen unparalleled growth since the beginning of 2012. This situation is accompanied by real challenges associated with their proper operational implementation and their appropriation by the operators...”

- ◆ Chronic situation: growth of the prescriptive safety configuration program
- ◆ Proceduralization of safety governance
- ◆ Growing difficulties to apply an evolving safety configuration program

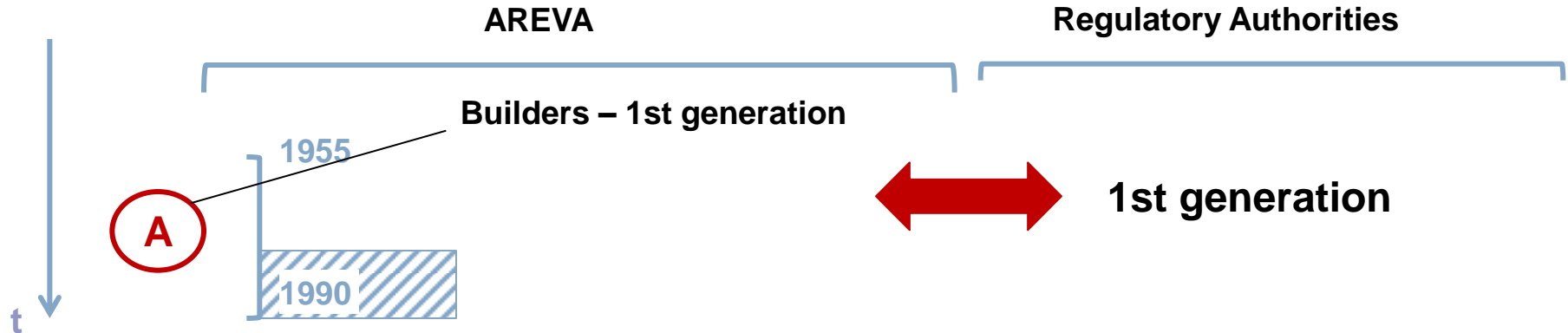
► How can be explained the reinforced proceduralization ?

Hypothesis: part of the explanation lies in generational renewal

Part 2: Future challenges for safety and safety governance

► Generational renewal

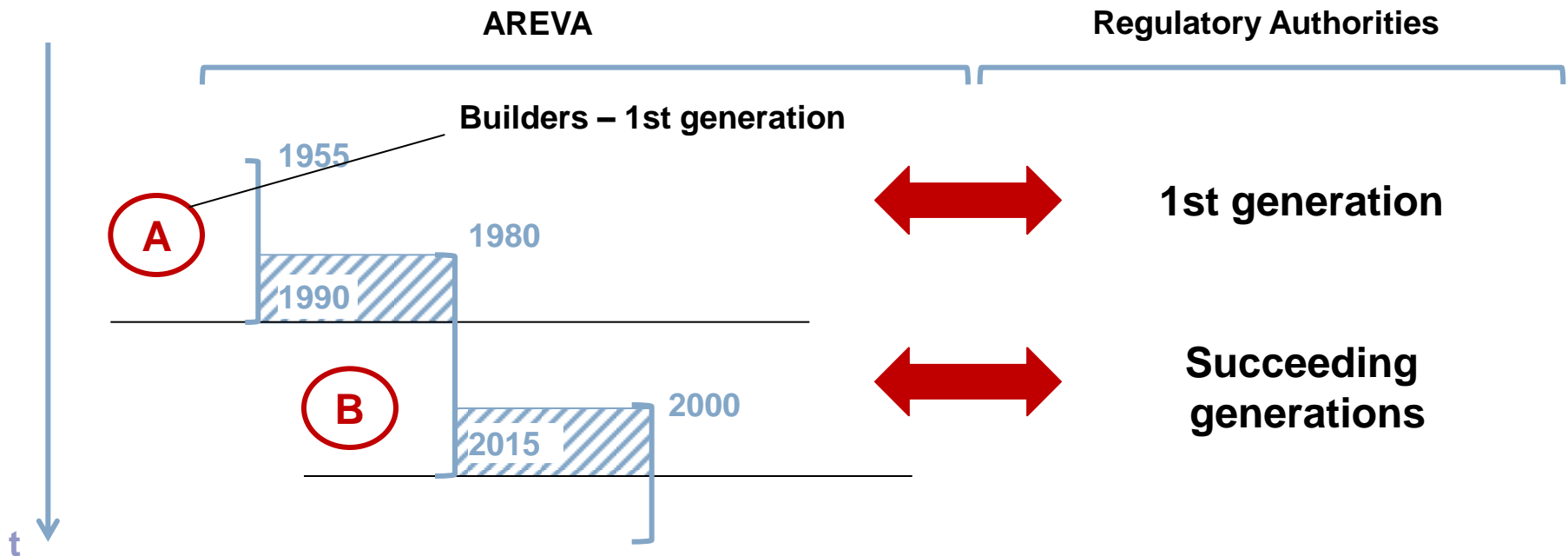
Challenges for new generations



- Shared knowledge of the facilities
- Accurate appreciation of the risks
- Technical authority

Part 2: Future challenges for safety and safety governance

► Generational renewal



- Weakening of technical knowledge of operations
- Weakening of relationship to risk

Technical authority ➡ **Disciplinary authority**

Part 2: Future challenges for safety and safety governance

► Generational renewal

- ◆ How to narrow the distance to risk and ensure its management?

 **Prescribing rules and regulatory requirements**

◆ Advantages of prescription

- Encapsulate risks in a set of rules (model of defense in depth)
- Rules superposition postulated to cover every aspects of risk
- Sanction associated to requirement not followed (formal demand...)

“Weak” logic:

The more the safety requirements, the safer the operation of facilities

Part 2: Future challenges for safety and safety governance

► Generational renewal

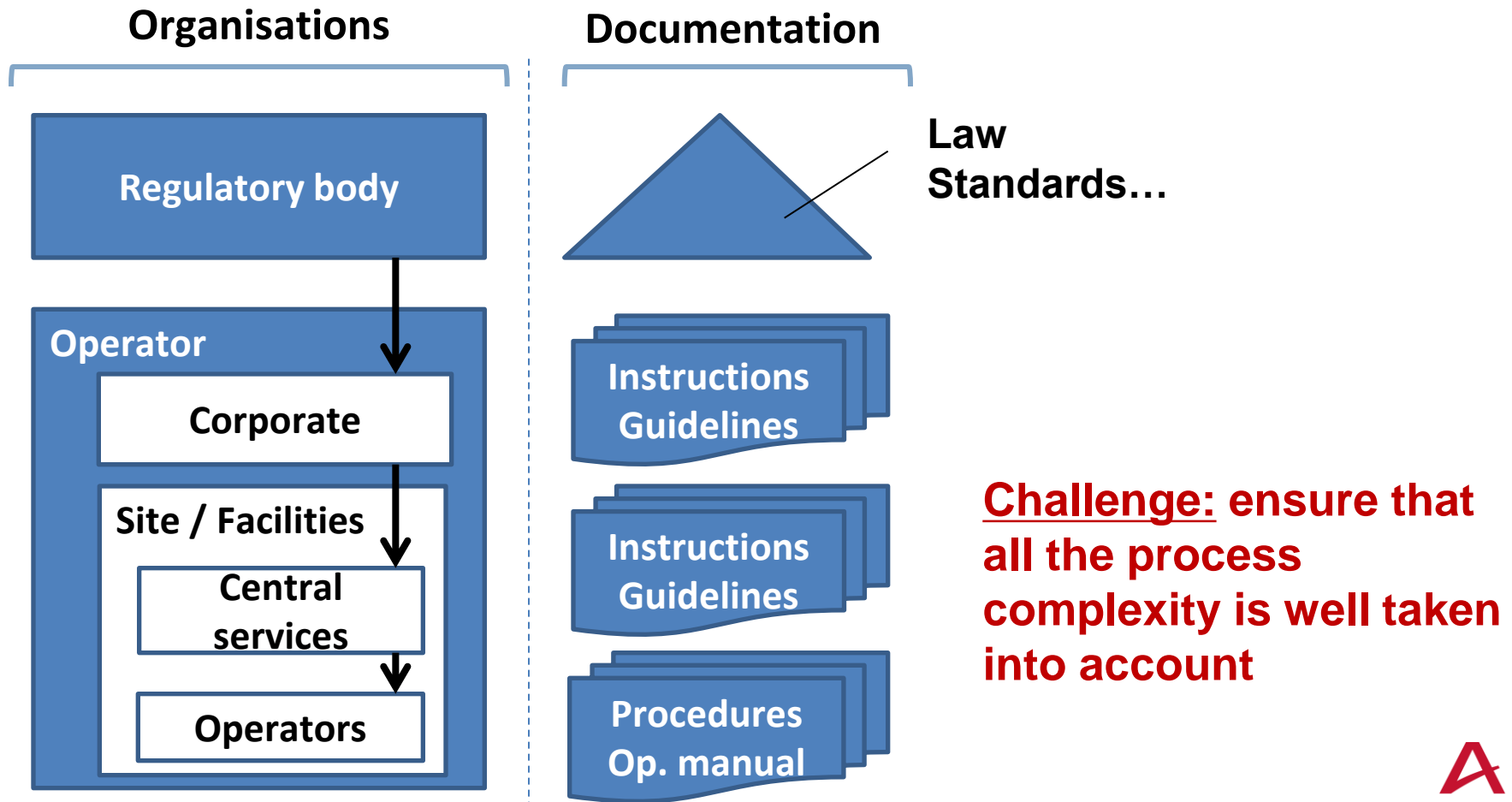
Legitimacy of rules and their construction

- ◆ The expression of the rule does not determine its efficiency (Theory of social regulation)
- ◆ Rules do not apply themselves and are mobilized only by the decision of an individual to act => legitimacy is needed.
- ◆ New generations difficulties to appropriate
 - Operational realities
 - Related constraints
 - Accurate perception of risk

- ➡ - Loss of legitimacy of the system of rules
- Risk to put rules on the same level

Part 2: Future challenges for safety and safety governance

► Appropriation process of the rules: a “digestion” process



Part 2: Future challenges for safety and safety governance

► Dogmatism in safety: another trap for new generation

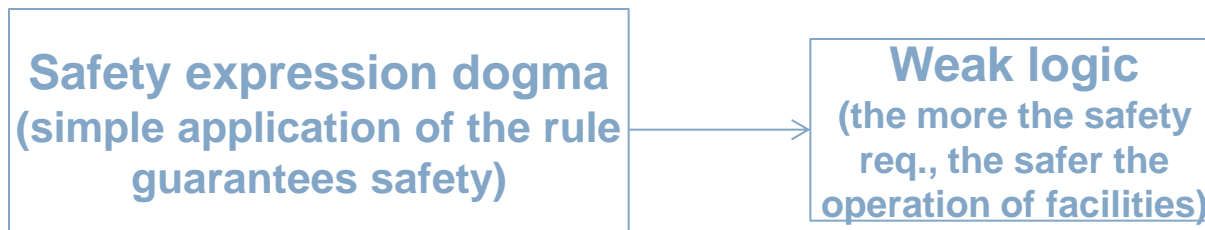
1. Expression of the rule

“The expression of the rule is the condition of safety and one can trust this regulated safety” (Amalberti, 1996)

→ Safety expression dogma

“the simple application of the rule guarantees safety, and it precludes any gap between the rule and the action” (De Terssac, 2013)

- ◆ Transorganizational dogma (operators...)
- ◆ Dogma presents at each level of the safety governance



Part 2: Future challenges for safety and safety governance

► Dogmatism in safety: another trap for new generation

2. Masking mechanisms at work in the dogma

1. Unconsciously avoids having to think about the complexity of safety governance
2. Deformation or even the disappearance of the human dimension of safety
 - Misunderstanding of human behavior and its involvement in the safety governance
 - Masking of the fundamental need for people to understand usefulness of rules to apply them cv

⇒ Risk of

- ⇒ weakness for development of the rule
- ⇒ Rejection by the recipient
- ⇒ Creation of important roadblocks to rules implementation

Part 2: Future challenges for safety and safety governance

► Dogmatism in safety: another trap for new generation

3. Means and resources: a partial or even ineffectual response

- ◆ Dogma also avoids having to think about resources to develop rules, make them operational, enabling them to be applied effectively in the facilities
- ◆ Dogma = permission to free from precautions (e.g. facilitation of rule production...)
- ◆ Consequences
 - Appropriation of the system of rules => extra-costs
 - The growth of regulations increases complexity (organizational and cognitive)
 - Cognitive: increasing difficulty to understand the rules system
 - Organizational:
 - Needed additional resources increase the number of actors and interactions,
 - Need to recruit and train people...

Part 2: Future challenges for safety and safety governance

► Dogmatism in safety: another trap for new generation

3. Means and resources: a partial or even ineffectual response

- ◆ Non linear growth of complexity (interactions between rules, repercussions on organizations)

Hypothesis 1: the final cost of the functioning of safety governance is significantly higher than it should be

Hypothesis 2: this functioning does not improve the overall level of safety of the facilities and it could be lower

Part 2: Future challenges for safety and safety governance

► Paradoxes of safety

- ◆ **Deviation from the standard leads to the deterioration of the regulated safety (De Terssac, 2013)**
 - ⇒ **The rule as formulated effectively contributes to safety**

- ◆ **BUT... some rules do not further safety, others are contradictory**
 - ⇒ **If rules do not contribute to safety, does deviation degrade safety ?**

- ◆ **“the incompleteness of the rule is one of its characteristics” (De Terssac)**
 - ⇒ **The expression of the rule is not the only necessary condition of safety**
 - ⇒ **The application of the rule does not guarantee safety in its entirety**

If safety dogma is taken as it stands and considered true, it results:

- 1. A fragmentary safety**
- 2. A not completely guaranteed safety**

Conclusion (1/2)

- 1. AREVA faces challenges for the generational renewal and the safety dogma.
Conventional means have been set up to meet them**
- 2. Generational renewal and safety dogma are also issues for safety governance actors and *in fine* safety**

Safety improvement could be achieved only by effective and suitable handling of the internal HOF issues of each actor.

Conclusion (2/2)

3. **Proceduralization of safety is still on going. Safety is the first victim.**

Safety culture (questioning attitude) should lead us to ask ourselves about the path safety is taking.

4. **“Risk to lose track of the exact conditions under which safety is daily produced by many different categories of actors, in different parts of the overall system” (Bourrier & Bieder, 2013)**



How can the entire process of safety management be enhanced and even renewed ?



Thanks for your attention