IRSN
INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

Enhancing nuclear safety

TO REVISIT THE SAFETY CULTURE :
TOWARD A NEW CULTURAL ANALYSIS FRAMEWORK FOR SAFETY MANAGEMENT

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Safety culture (SC)

SC concept is at the core of many approaches to improve risk management

SC concept helps to emphasize that:

- safety is about a questioning attitude towards situations, organizations, processes.

- **informal** aspects of the organisation (values, habits, business standards,and local contexts, etc.).

- risk management is build at **all levels of the organisation** : governance, leadership; work collectives; work situation; and individuals.

SC in regulators bodies

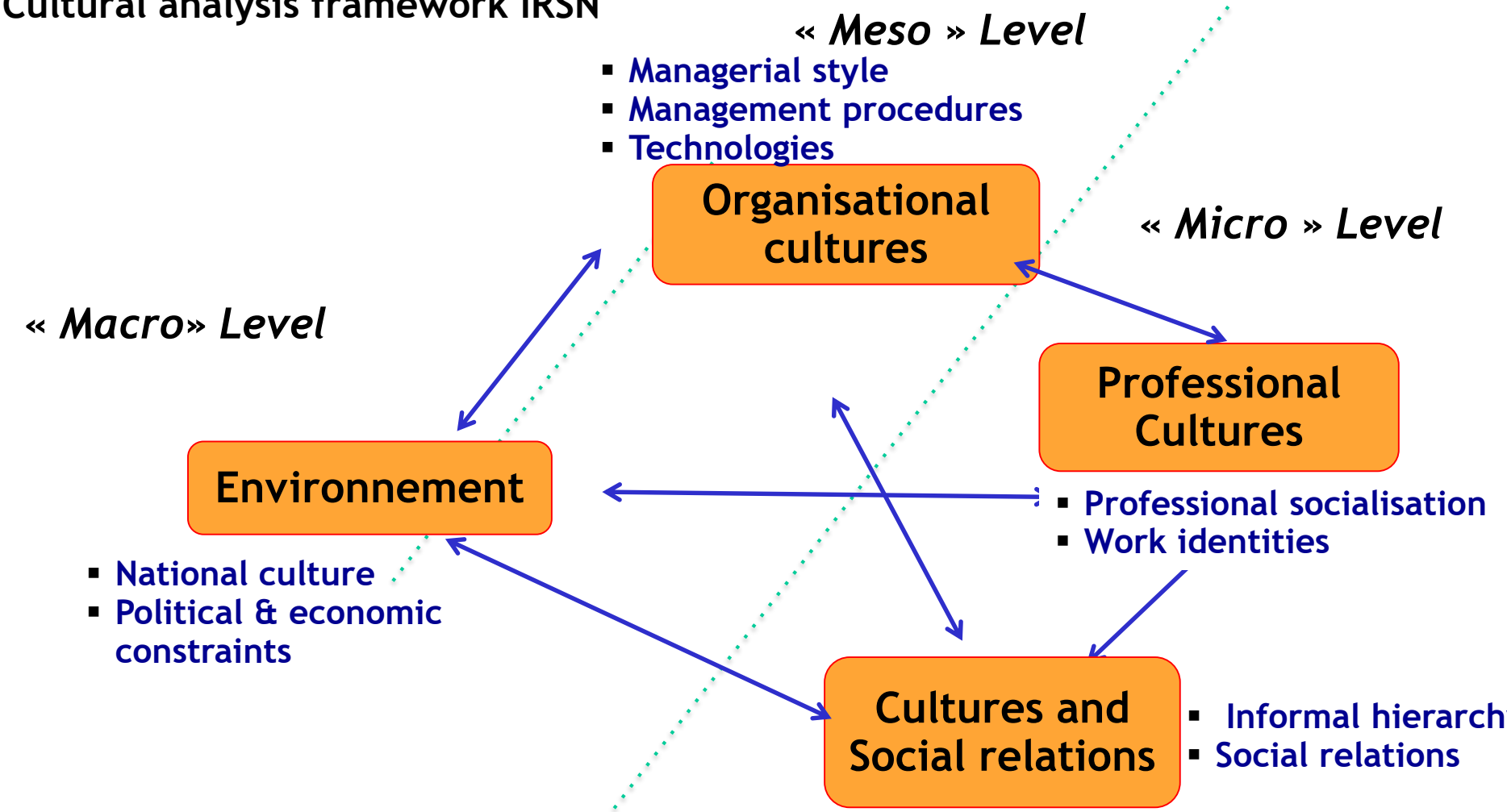
This approach is a key element to improve the safety of nuclear facilities

- Within the nuclear power plant
- From the regulator bodies to verify and raise all relevant issues regarding SC trough safety assessment

Despite its interest, the criticism against the safety culture concept is recurrent:

- The vagueness of the safety culture concept.
- Safety culture appears as a "data item“ that produce insufficient data to understand the cultural aspects of organisations.
- This criticism concerns the "simplistic" view of action on culture.

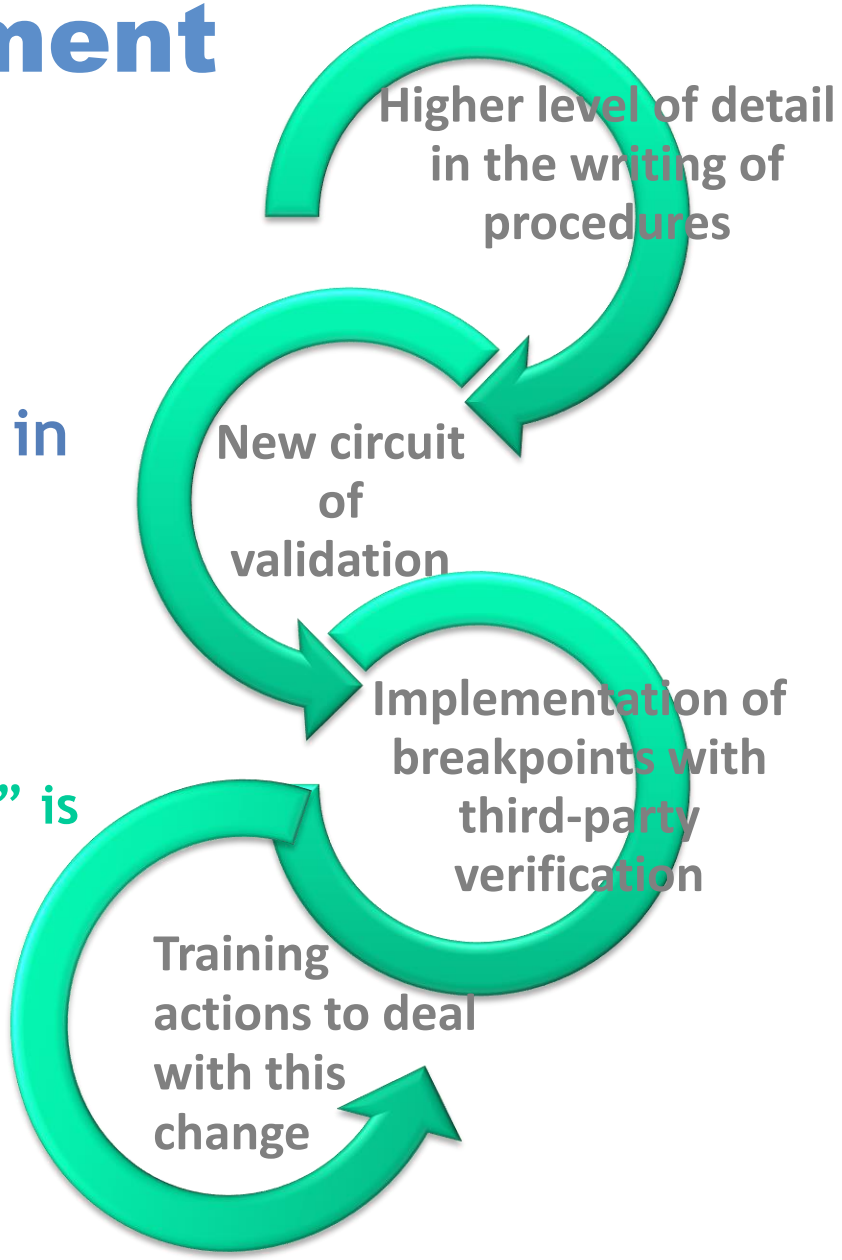
Cultural analysis framework IRSN



- These 3 levels are a way of breaking down the global topic "culture", which appears to be too complex to be addressed directly.
- These 3 level are intended to complement each other and to enable:
  - a comprehensive understanding of the cultural aspects of an organisation,
  - the impact of these on risk management.

A Safety Assessment case study

The introduction of a new safety management system in a nuclear facility



➔ Is the "cultural analysis framework" is relevant to asses:

- Cultural consequences?
- Improve safety?
- Key focal points

Methodology

Approach:

- Qualitative
- Inductive

12 interviews with stakeholders at different levels of the organization have been conducted by 2 HOF experts

Focus:

- Structure and coordination (internal/external contracts) and assessment tools (reporting)
- Safety-related values (what is considered "good" risk management/"bad" risk management, etc.).
- Relationship with the rules: latitude to change the rules, degree of involvement of the workers in the process of creating rules, including the incident analysis (Loss Event Reporter).

The Macro Level

The change:

- Was seen as an obligation imposed by the regulator
- Didn’t make sens in terms of safety
- Produced formalization and rigorism in the definition of safety

➔ Key focal points

- Safety engineers must not only position themselves in response to procedural requests (both internal and external), but remain in strong interaction with the field.
- Develop a common reflection and expectations on the expected benefit of the new safety management

The Meso Level

The change:

- Affected the fluidity of the activities (because of the complexity of a new language planification and work orders have been delayed)
- Limited the autonomy of the operators on the ground (third party verification to restart the activity)

➔ Key focal points

- The risk is to create opacity and circumvention of the rules that would be the opposite consequences to the new management system expectations.

The Micro Level

The change:

- Increased the volume of work
- Created stress and uncertainty
- Forced many break points that create fragmentation of activities
- Not experienced in the same way according to the different professional cultures

➔ Key focal points

- A need for the operators to be supported in the field so that this safety management system change can be adapted as closely as possible to the working context.

Conclusion

- The safety culture is not measurable
- It forces safety culture assesment to make do on a case-by-case basis
- In this purpose a « cultural analysis framework » is relevant
- But certain conditions must be met regarding
  - Access to the field (time and authorization)
  - Competences of the HOF experts

Thank you for your attention

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