

# The safety culture of the regulator

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## Context:

### *Examples of weaknesses in regulatory culture*

- Fukushima Daiichi accident (2011)
  - Widespread assumption that nuclear power plants were safe – not challenged by regulators
  - Fragmented regulatory structure
  - Rigidly structured inspection programme
- Boeing 737 MAX accidents (2018 and 2019)
  - Excessive delegation of regulatory certification functions to Boeing
  - Senior managers in the regulator acted against the safety recommendations of their own technical experts
  - *“Lack of trust, inconsistent accountability, role confusion”*

# NEA principles for the safety culture of an effective regulator

- *“With its regulatory strategy, the way it carries out its daily oversight work, the type of relationship it cultivates with duty-holders, the values it conveys and the importance it gives to safety, the regulator profoundly impacts duty-holders’ safety culture, their sense of responsibility for safety and, by extension, the safety of their facilities.”*
- NEA principles:
  1. Leadership for safety is demonstrated at all levels
  2. All staff exercise responsibility and accountability for safe behaviour
  3. There is a culture of co-operation and openness
  4. The regulator takes a holistic and systematic approach to safety
  5. There is a culture of self-assessment, learning and improvement

## **Assessing and strengthening the safety culture of the regulator:** *Project by NEA Working Group on Safety Culture*

- Purpose:
  - To identify and analyse methods which regulators can use to assess and strengthen their safety culture
- Scope:
  - Methods for building competence and awareness in safety culture
  - Methods regulators can use to assess and reflect on their safety culture
- Method:
  - Survey and analysis of methods used by nuclear regulators in 17 countries, including best practices and lessons learned

# Methods for building competence and awareness in safety culture

## *Examples*

- Example 1: Site visit and workshop on safety
  - Purpose: To enhance the awareness of all staff on safety, understand safety culture and how it applies to daily activities
  - Scope of activity: Visit to Fukushima Daiichi nuclear power station and workshop to allow deep discussion and exchange of opinion on safety
  - Outcome: The visit to the Fukushima Daiichi nuclear power station has a positive impact on staff and is a cornerstone in understanding the identity of the regulator and maintaining the currency of lessons learned

# Methods for building competence and awareness in safety culture

## *Examples*

- Example 2: Behaviour and communications training for inspectors
  - Purpose: To enhance the “soft” skills of inspectors to learn and influence
  - Scope of activity: Training programme covering:
    - Collaborative communication
    - Appreciative inquiry (a strengths-based approach to change)
    - Double loop learning (learning which challenges existing strategy)
  - Outcome: Increased awareness among inspectors of how their behaviour and communications influence their own learning abilities as well as those of duty-holders

# Methods for building competence and awareness in safety culture

## *Commentary*

- Nuclear regulators use a variety of methods to enhance the competence and awareness of staff in safety culture
- These methods include training (classroom / e-learning), workshops, internships and tutorship programmes
- The methods address not just the needs of inspectors (generalist / specialist) but all staff
- Training is most effective when it has the commitment and active participation of senior management.
- Training can be enlivened through use of role-play and with the input of experienced inspectors and duty-holder staff

## Methods for safety culture self-reflection and self-assessment: *Examples*

- Example 3: Regulatory nuclear interface protocol
  - Purpose: To improve the efficiency and effectiveness of interactions between regulator and duty-holder
  - Scope of activity:
    - A shared set of values and behaviours between the parties, eg ‘consistent and transparent’, ‘timely’ etc
    - Taking a few minutes at the end of each interaction to reflect on whether the objectives were met and whether each party’s behaviours aligned to the agreed framework
  - Outcome:
    - Action to improve the effectiveness of interactions (short/long term)



# Methods for safety culture self-reflection and self-assessment:

## *Examples*

- Example 4: Formal safety culture assessment
  - Purpose: To describe the safety culture of the regulator and compare it against a normative framework
  - Scope of activity: Rigorous, multi-method assessment, typically undertaken every 3-5 years with independent support, involving:
    - Questionnaire
    - Interviews, focus groups and document analysis
    - Qualitative data analysis
  - Outcome: Deeper understanding of the culture of the regulator and supporting improvement action plan

# Methods for culture self-reflection and self-assessment:

## *Commentary*

- Nuclear regulators use a variety of means to assess and reflect on their safety culture.
- These range from:
  - Simple structured feedback as part of routine meetings
  - Group work using metaphors to explore the culture of the regulator
  - Use of more rigorous surveys and/or qualitative research techniques
- These techniques are complementary and their success depends on the commitment and openness of management and effective engagement of staff

## Conclusions and recommendations

- Safety culture is as relevant to regulators as it is to duty-holders and other stakeholders in the system
- If regulators are to have a positive influence on safety then they should focus not only on “what” they regulate but “how”, eg their regulatory strategy, stakeholder relationships and how they carry out their daily oversight activity
- The work undertaken by the NEA provides a catalogue of methods nuclear regulators can use to assess and strengthen their safety culture
- Key to applying these methods effectively is management commitment and involvement, active engagement of staff and an openness to learning

## Contact details

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