

# Safety Culture in Regulator's Perspective



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# Structure of Presentation

- Introduction to safety Culture
- History of Safety Culture
- Regulatory Role
- Conclusion

# Introduction to Safety Culture

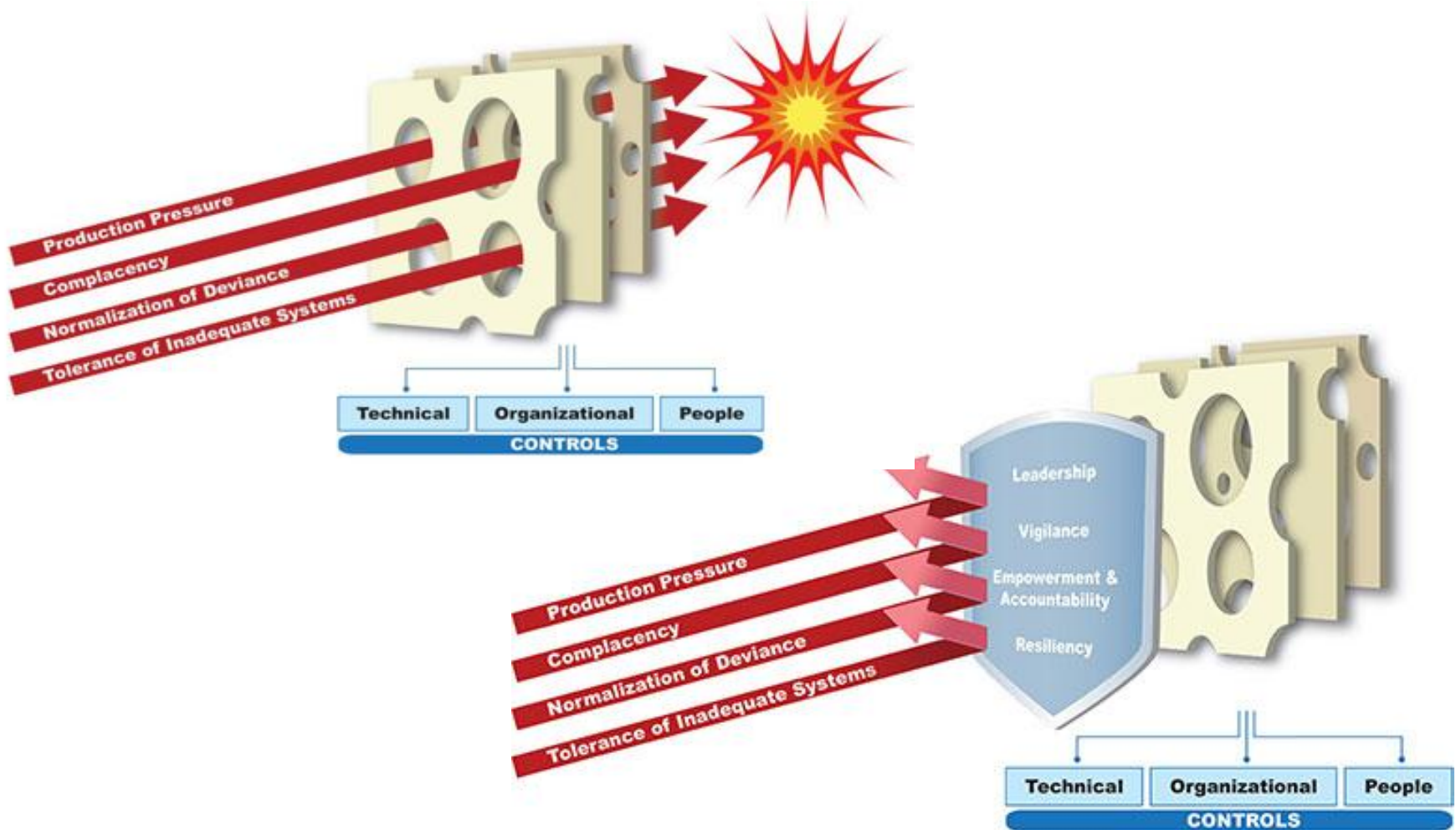
# Why Safety Culture ?

- ❑ There is something called “Act of God”, otherwise
- ❑ Most of the problems arising nuclear facility originate in some way due to human error.
- ❑ Yet the human mind is very effective in detecting and eliminating potential problems, and this has an important positive impact on safety.
- ❑ Safety Culture-as to prevent human error and to benefit from the positive aspects of human action

# *safety culture* combines two concepts: *safety* and *culture*

- *Safety* is protection from harm
- Culture comprises the collective beliefs, values, and behaviours
  
- Nuclear safety is a collective responsibility.
  - applies to every responsible organisation – Design, Manufacture, Construction and Operation
  - No one in those organization is exempt from the obligation to ensure safety first.

# Defence that Safety Culture provides



# History of Safety Culture

(INSAG-1, 1986) through (INSAG-4, 1991)

- ❑ The safety culture concept first applied to the nuclear power industry by the International Atomic Energy Agency's (IAEA's) Advisory Group (**INSAG, 1986**).
- ❑ The term was used to explain how the lack of knowledge about risk and safety and failure to act appropriately contributed to the Chernobyl accident.
- ❑ INSAG-4, 1991 “the effectiveness of the organisation’s safety culture should be reflected in its performance”

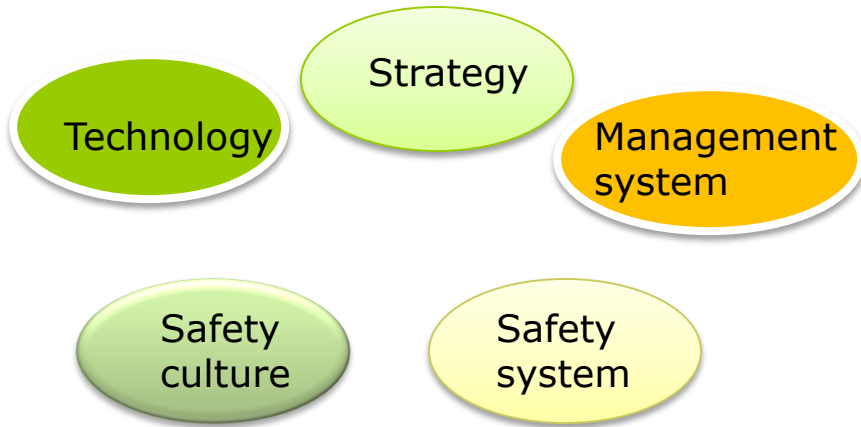


# The progress of the safety culture concept

- - Twenty five years of work
  
- Not much...
  - ... but some achievement have been accomplished
  - Internationally recognized concept of high reliability organisations
  - International safety standards acknowledge the importance
  - Safety culture assessments are common practice

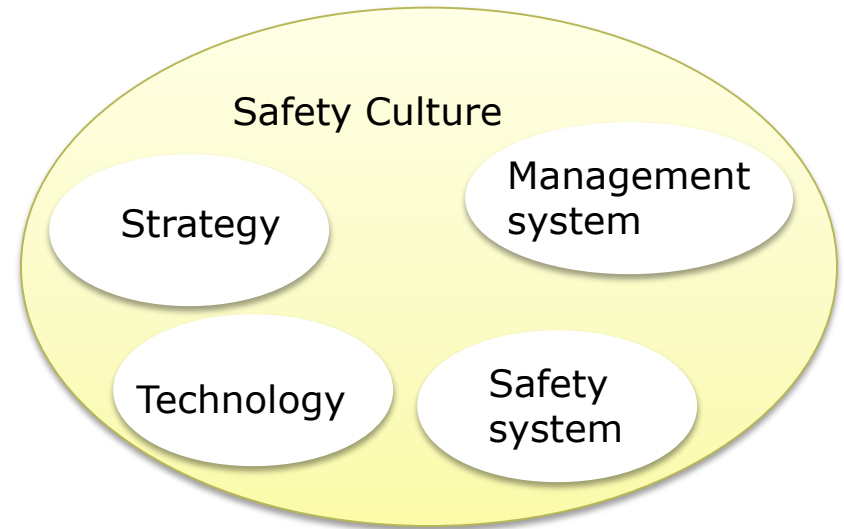
The general safety culture approach is still not up to date with the theory of organizational culture

# Organisational Approach



Culture as one variable amongst others:

The Variable Approach  
Organizations have cultures



Culture as something inherent in all aspects of the organisation:

The Metaphor Approach  
Organizations are cultures

From Priority to Climate

# REGULATORY ROLE

## Regulation can be of two type

Highly Prescriptive

OR

Performance Based

### Responsibility:

Independently assuring that nuclear plants are designed, manufactured, constructed and operated in a safe manner.

# SAFETY ASSESSMENT

- The most difficult challenges in assessing Safety Performance is to recognize early signs of declining safety performance, before serious deterioration sets in.

Safety Performance Indicators helps

## Regulatory Techniques

- On-Site and Periodic Inspections

## Assessment of Performance:

- Inspectors observations, reviews by specialists;
- reviews of trends in event reports;

# Pattern of declining safety performance

- **Stage 1: Overconfidence**
  - Unjustified self-satisfaction.
- **Stage 2: Complacency**
  - Self-satisfaction leads to delay or cancellation of some improvement programmes.
- **Stage 3: Denial**
  - Negative findings by internal audits are rejected as invalid.
- **Stage 4: Danger**
  - Rejects criticisms from internal audits, regulators or other external organizations.
- **Stage 5: Collapse**
  - Problems become clear to all parties and the regulators. A major improvement programme has to be implemented.

# Regulatory Response to Declining Safety Culture.

- Balanced overview
- Graduated Response
- Continuous Dialogue
- Right Enforcement at the right time.

# Conclusion

- ❑ Maintaining and improving safety culture requires continuous evaluation.
- ❑ Two important factors
  - continuous improvement attitude exists in the organization; and
  - whether management is committed to the improvement of safety culture.
  
- ❑ *Whilst it may not be possible to legislate or regulate all the attributes of safety culture, the role of the regulatory body is very important in establishing and fostering a safety culture attitude in the facilities under its jurisdiction.*



**Thanks**