



... for a brighter future

Lecture L.6.2

Structure and Development of Safety Culture

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SAFETY CULTURE

A Report by the
International Nuclear Safety Advisory Group

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 1991

DEFINITION AND CHARACTER OF SAFETY CULTURE

Safety Culture is that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance.

Universal Features of Safety Culture

In all types of activities, for organizations and for individuals at all levels, attention to safety involves many elements:

- *Individual awareness* of the importance of safety.
- *Knowledge and competence*, conferred by training and instruction of personnel and by their self-education.
- *Commitment*, requiring demonstration at senior management level of the high priority of safety
- *Motivation*, through leadership, the setting of objectives and systems of rewards and sanctions, and through individuals' self-generated attitudes.
- *Supervision*, including audit and review practices, with readiness to respond to individuals' questioning attitudes.
- *Responsibility*, through formal assignments and description of duties and their understanding by individuals.

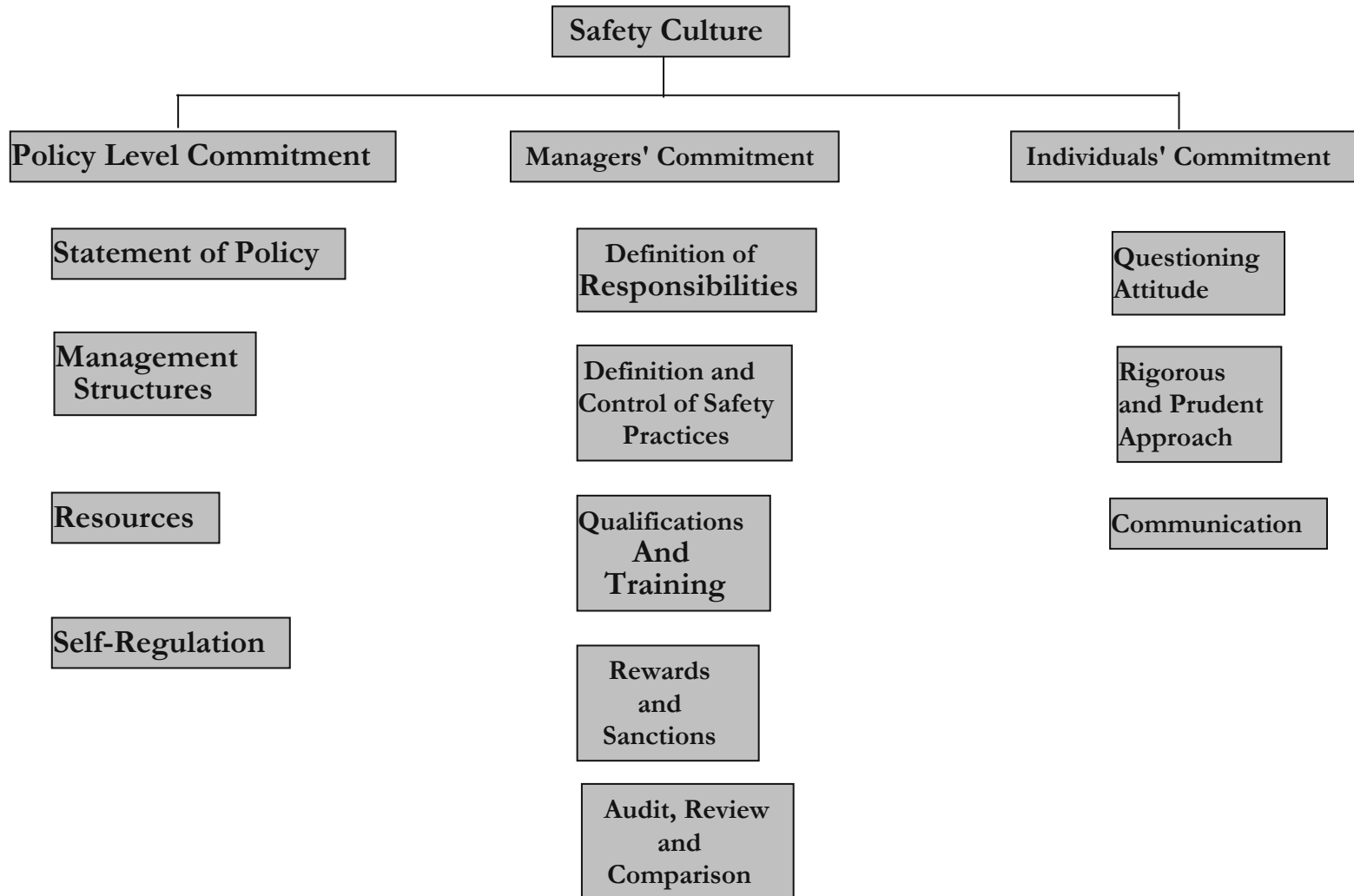
Safety Culture

Safety Culture has two general components.

*The first is the necessary frame-work within an organization and is the responsibility of the **management** hierarchy.*

*The second is the attitude of **staff** at all levels in responding to and benefiting from the framework.*

Safety Culture Illustration



Requirements at Policy Level

In an important activity, the manner in which people act is conditioned by requirements set at a high level.

*The highest level affecting nuclear plant safety is the **legislative level**, at which the national basis for Safety Culture is set.*

Within an organization, similar considerations apply. Policies promoted at a high level create the working environment and condition individual behavior.

Statements of Safety Policy

An organization pursuing activities with a bearing on nuclear facility safety makes its responsibilities well known and understood in a safety policy statement.

This statement is provided as guidance to staff, and to declare the organization's objectives and the public commitment of corporate management to nuclear facility safety.

Statements of Safety Policy (cont.)

Safety policy statements by different bodies with differing functions vary in both form and content.

An operating organization has full and formal responsibility for the safety of its nuclear facilities.

- Its safety policy statement is clear and is provided to all staff.*
- This statement declares a commitment to excellent performance in all activities important for the safety of nuclear plants, making it plain that **nuclear plant safety has the utmost priority**, overriding if necessary the demands of production or project schedules.*

Statements of Safety Policy (cont.)

- A regulatory body has a weighty influence on the safety of nuclear facilities within its purview — an effective Safety Culture pervades its own organization and its staff.
- The basis is again set down in a safety policy statement. This makes a commitment to implement legislation and to act to promote facility safety and the protection of individuals and the public, and to protect the environment.

Requirements on Managers

The attitudes of individuals are greatly influenced by their working environment.

The key to an effective Safety Culture in individuals is found in the practices molding the environment and fostering attitudes conducive to safety.

It is the responsibility of managers to institute such practices in accordance with their organization's safety policy and objectives.

Definition of Responsibilities

Discharge of individual responsibilities is facilitated by unique and clear lines of authority.

Definition and Control of Working Practices

Managers ensure that work on matters related to nuclear safety is carried out in a rigorous manner.

Managers ensure that tasks are carried out as defined. They institute systems for supervision and control and insist upon orderliness and good housekeeping.

Requirements on Managers (cont.)

- **Supervisors ensure that we ‘DO THINGS RIGHT’**
- **Managers ensure that we ‘DO THE RIGHT THINGS’**

• **Qualifications and Training**

Managers ensure that their staff are fully competent for their duties.

Instruction instills more than technical skills or familiarity with detailed procedures to be followed rigorously.

These essential requirements are supplemented by broader training, sufficient to ensure that individuals understand the significance of their duties and the consequences of mistakes arising from misconceptions or lack of diligence.

Requirements on Managers (cont.)

Rewards and Sanctions

Ultimately, satisfactory practice depends on the behavior of individuals, as influenced by motivation and attitudes, both personal and group. Managers encourage and praise and seek to provide tangible reward for particularly commendable attitudes in safety matters.

Importantly, at operating plants, systems of reward do not encourage high plant output levels if this prejudices safety. Incentives are therefore not based on production levels alone but are also related to safety performance.

Errors, when committed, are seen less as a matter of concern than as a source of experience from which benefit can be derived. Individuals are encouraged to identify, report and correct imperfections in their own work in order to help others as well as themselves to avert future problems. When necessary, they are assisted to improve their subsequent performance.

Nevertheless, for repeated deficiency or gross negligence, managers accept their responsibility for taking disciplinary measures, since safety may otherwise be prejudiced. There is, however, a delicate balance. Sanctions are not applied in such a way as to encourage the concealment of errors.

Response of Individuals

The response of all those who strive for excellence in matters affecting nuclear safety is characterized by:

A QUESTIONING ATTITUDE

plus

A RIGOROUS AND PRUDENT APPROACH

plus

COMMUNICATION

The result will be a major contribution to:

SAFETY

Questioning Attitude

Before an individual begins any safety related task, his or her *questioning attitude* raises issues such as those listed below:

- Do I understand the task?
- What are my responsibilities?
- How do they relate to safety?
- Do I have the necessary knowledge to proceed?
- What are the responsibilities of others?
- Are there any unusual circumstances?
- Do I need any assistance?
- What can go wrong?
- What could be the consequences of failure or error?
- What should be done to prevent failures?
- What do I do if a fault occurs?

Rigorous and Prudent Approach

This Includes:

- understanding the work procedures;
- complying with the procedures;
- being alert for the unexpected;
- stopping and thinking if a problem arises;
- seeking help if necessary;
- devoting attention to orderliness, timeliness and housekeeping;
- proceeding with deliberate care;
- forgoing shortcuts.

Communicative Approach

This Involves:

- obtaining useful information from others;
- transmitting information to others;
- reporting on and documenting results of work, both routine and unusual;
- suggesting new safety initiatives.

Safety

A **questioning attitude**, a **rigorous and prudent approach**, and necessary **communication** are all aspects of an effective Safety Culture in individuals.

The product contributes to a high level of safety and generates a personal pride in dealing with important tasks in a professional manner.

SAFETY (cont'd)

Question: Can the Safety Culture of an Organization be Measured?

Answer: Yes

Question: How?

Answer: By seeking and identifying the components of the organization that are rooted in culture, and assessing how well they support the safety goals of the facility .

Critical Components of an Operating Organization

- ✦ Corporate Level
 - Corporate Level Safety Policy
 - Safety Practices at Corporate Level
 - Definition of Safety Responsibilities

- ✦ Management Level
 - Actions and Attitudes of Managers
 - Review of Safety Performance
 - Focus on Safety
 - Training

- ✦ Individual Level
 - Attitudes of Individuals
 - Questioning Attitude
 - Rigorous and Prudent Approach
 - Communications