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COMPATIBILITY OF SAFETY AND SECURITY

EUROSAFE 2008

PURPOSE AND CONTEXT



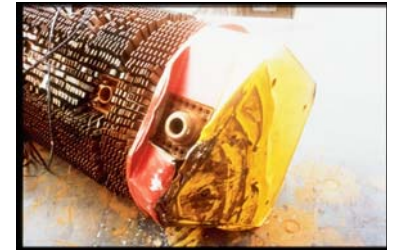
- **A synergy in the field of sabotage**

- Safety: “The achievement of proper operating conditions, prevention of accidents or mitigation of accident consequences, resulting in protection of workers, the public and the environment from undue radiation hazards”
- Security: “The prevention and detection of, and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities”
- ↑ *Safety and security have a common field to protect against sabotage and are mutually complementary in this area*

- **A common aim: the protection of man and environment**

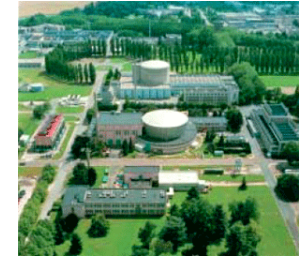
- ↑ *The acceptable risk must be the same whether the initiating event of a given radiological release is following a natural event, equipment failure or a malicious act*

PURPOSE AND CONTEXT



- **Equipment or human failures / intelligent actions**
 - Safety is concerned with failures resulting from natural events, equipment failures, installation internal type events or human failures
 - Security is concerned with malicious events based on « intelligent » or liable to adaptation actions carried out with the intent to cause damage
- **Transparency / confidentiality**
 - The need to share know how and experience exists in both cases
 - But safety promotes to share experience feedback
 - And security requires to protect information

ORGANIZATIONAL PRINCIPLES



- **A legislative and regulatory framework for safety as well as for security to:**
 - Designate a competent authority
 - Implement an authorization system
 - Assess provisions implemented by the operators
 - Implement an inspection system
 - Observe international commitments
- ⤴ *These provisions may depend upon the same legal vector but more frequently be subject of different regulations respectively for safety and for security*

ORGANIZATIONAL PRINCIPLES



- **A competent authority for safety as well as for security**
 - Responsible for implementation of the regulation
 - Accredited with the adequate authority, competence and resources
 - Independent from entities promoting nuclear energy
 - In charge of:
 - ✓ definition of goals to attain,
 - ✓ control and assessment of operator's activities.
- **One or two competent authorities**
 - ↑ *A consultation and coordination mechanism is required if there are two different authorities for safety and security*

ORGANIZATIONAL PRINCIPLES



- **Prime responsibility of operators in safety as well as in security to:**
 - Design, implement and maintain measures to satisfy regulatory requirements
 - Ensure first level control
 - Ensure skill and appropriate training of personnel
 - Inform the authority of events likely to affect safety or security
 - Implement a quality system
- ↑ ***This responsibility cannot be delegated in both cases***

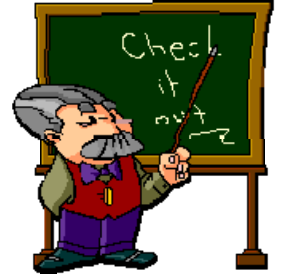
ORGANIZATIONAL PRINCIPLES



• A different involvement of the State

- The State is directly involved in the assessment of malicious action risk
- The State defines the design basis threats
- The State plays a role in prevention and response to malicious acts (law enforcement agencies)
- More State bodies concerned in the management crisis of a malicious action than in a safety crisis
- The State defines rules for confidentiality and information protection
- ↑ *A larger and more direct involvement of the State in security than in safety*

ORGANIZATIONAL PRINCIPLES



- **Safety and security cultures**

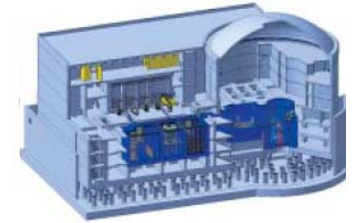
- Based on very similar principles
- Involved in 3 main fields (State, organizations and individuals)
- Notions of deterrence and confidentiality for security
- Notions of transparency and open dialogue for safety

- ⤴ *The 2 cultures must co-exist and back each other up*

- ⤴ *Synergy between them must be developed and encouraged*

- ⤴ *But they could not be melted into a single one*

APPLICATION PRINCIPLES



- **A similarity in design provisions**

- The graded approach
 - ✓ Define measures appropriate and proportional to the estimated risk and its potential consequences
 - ✓ Initiating events and Design Basis Accident (DBA) for safety and Design Basis Threat (DBT) for security
- The defence in depth
 - ✓ Set up consecutive barriers whether physical or organizational
 - ✓ Physical safety defence lines directly linked to the process / security apply to the entire site
- ⤴ ***A first line of defence for security consisting of deterrence provisions***

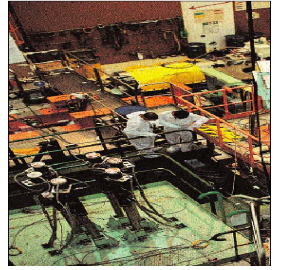
APPLICATION PRINCIPLES



- **A synergy in design provisions**

- Safety and security requirements must be taken into account at an early stage of the design
- ⤴ *Safety is more structuring for the design and layout of systems / security may affect general layout of buildings*
- Safety design principles reinforce security (single failure criterion, redundancy, diversification, physical and geographical separations,...)
- ⤴ *Reduction of the sensitivity of targets and more difficulties (time and means) to perpetrate sabotage*

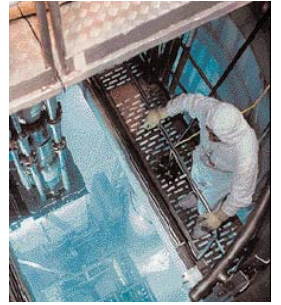
APPLICATION PRINCIPLES



- **A similarity in operating provisions**

- A same need to provide a continuous and careful check of the availability and efficiency of safety and security equipment
- A same need to treat the experience feedback
 - ✓ Events concerning equipment failures, identified anomalies, human errors and sabotage must be recorded and processed
- A same need to update the basis rules
 - ✓ Necessity to re-examine periodically the status of installations and update devices and rules

APPLICATION PRINCIPLES



- **A necessary adaptation in operating provisions**
 - An exchange of good practice more constrained in security
 - ↑ *For safety, encouraging the share of information / For security, limiting exchanges*
 - A need for managing conflicts
 - ✓ Taking into account the safety and security requirements in operating rules and procedures
 - ↑ *Access for intervention of emergency teams / permanent control of access of sensitive areas*

APPLICATION PRINCIPLES



- **A similarity in emergency management**
 - Elaboration of emergency and contingency plans
 - ✓ Both operators and public authorities are concerned
 - ✓ Plans must be complementary and coherent
 - ⤴ ***Contingency plan constitutes a specific line of defence for security, upstream emergency plan***
 - Performance of exercises
 - ✓ Similar aim : validation of plans and training
 - ✓ Similar types : local or national exercises
 - ⤴ ***Necessity to carry out global exercises in order to confirm the coordination of safety and security organizations***

APPLICATION PRINCIPLES



- **Activities managed by quality system**

- Quality system does not differ from the standpoint of principles and takes safety and security into account at the same level
- Certain activities address more especially one or the other of these fields
- Necessity to set result indicators depending purely on safety or security

CONCLUSION

- **Nuclear safety and nuclear security present large similarities in their aim as in their methods**
- ↑ Mutually complementary to protect against sabotage
- **They show specific attributes in some areas which leads to differences in their implementation.**
- **The diversity of nuclear facilities needs to adapt safety and security provisions to fit with the characteristics and the risks of each one.**
- **A well shared safety culture and security culture is the guarantee of a safe and secure operation.**