HAZARDS & SAFETY

What is new ?

Armand COLAS

MARKET OPENING
A new deal for safety

- **A few positions from the G8' NSSG - October 2003**
  - **Complete Safety Authorities' awareness of market opening**
    - **Needs of competitivity for the whole nuclear industry :**
      - **Conciliation between competitivity and safety**
    - **Costs and staff reduction mainly in maintenance :**
      - **How to be sure the basis in competences, experience, staff and equipments status is kept.**

MARKET OPENING
A new deal for safety

- **A few positions from the G8' NSSG - October 2003**
  - **Complete Safety Authorities' awareness of market opening**
    - **Strong change of their role**
      - **New field of competences**
        - **Business, buying, reengineering, safety responsibility, …**
        - **New approach of independent risks evaluation,**
        - **Identification of safety precursors**
      - **New relationships with operators**

Safety versus competitivity

- **A dramatic dilemma in UK, according to market conditions**
  - **In short term, tremendous losses of money when they have to reduce power, when electricity production is committed**
  - **But this kind of money' losses are non comparable with costs when shutdown is required for safety investigations and upgrading safety requirements**

Last defenses in safety

- **Last lines of defense are provided by the technical equipments : protection and safeguard systems.**
  - **Severity of maintenance and setting defects ;**
  - **Compliance to original technical design.**

WANO learning's

- **Main sources of safety deficiencies for the last years :**
  - **Non compliance to requirements: technical safety design, safety rules, quality assurance, …**
  - **Safety precursors not identified or not taken into account,**
  - **Weak organizations with non consistence in roles, responsibilities, cooperations, …**
  - **Inconsistent decision making process, focus on production, no sufficient attention to staff stability and competences, …**

Experience learning's

- **Significant increase in organizational and management factors :**
  - **First historical step: "technical factors"; mainly safety design and technical reliability**
  - **Second step: "human factors"; how the technical characteristics and safety regulations could be threatened by operational personnel initiatives and common human errors, …**
  - **Third step: "organizational and management factors"; how organization and way of functioning can contribute to safety disturbances: worse decision making processes, no identification of safety defects or precursors, unclear repartition of roles and responsibilities, lack of cooperation and communication etc.**

Cf. Challenger, Columbia, Mont Blanc tunnel, Concorde, AZF, Millstone, TEPCO, Brunsbüttel, Davis Besse, Sizewell B,

Experience learning's

- **Strict and consistent safety could be threaten competitivity**
  - **But, up to now, we have any example**
- **Strict and consistent production management could threaten safety**
  - **Cf: Millstone, TEPCO, Brunsbüttel, Davis Besse, Sizewell B,**
- **Sometimes safety deficiencies are not related to production pressure**
  - **Cf. Philippsburg, Paks,**

Experience learning's

- How to balance competitivity and safety
  - Both have same requirements:
    - Good equipment status,
    - Good way to master activities,
    - Strong use of operating experience,
    - Strong attention to identification and correction of precursors,
    - Continuous improvement process,
    - Strong involvement of ground level,
    - Etc.
  - They have separated way on :
    - In a short term, if any doubt: « safety first », even against production
  - Safety equipments and conditions must be considered as equal for success

INPO/WANO WARNINGS FLAGS

- **Overconfidence**
  - The “numbers” are good and the nuclear staff is living off past successes.
- **Isolationism**
  - There are few interactions with other utilities,
  - Benchmarking is seldom done or is limited to “tourism” without implementation
- **Self defense**
  - Mindset toward Safety Authority is defensiveness or “do the minimum”
  - Employees are not involved, not listened to, and raising problems is not valued

INPO/WANO WARNINGS FLAGS

- **Safety overshadowed**
  - Plant operational focus is overshadowed by other issues, initiatives
  - Engineering is weak (loss of talent) or lacks alignment with operational priorities
  - Design basis is not a priority and design margins erode over time
- **Production priority**
  - Important equipment problems linger, and repairs are postponed while the plant stays on line
  - Nuclear safety is “assumed” but not emphasized in staff interactions and site communications

INPO/WANO WARNINGS FLAGS

- **Managing changes**
  - Organizational changes, staff reductions, retirement programs or relocations are initiated before fully considering impact recruiting or training is not used to compensate
- **Attention to plant events**
  - Event significance is unrecognized or underplayed and reaction to events is not aggressive
- **Poor leadership**
  - Managers are defensive
  - Managers lack integrated plant knowledge or operational experience
  - managers are not involved in operations and do not exercise accountability or follow-up

INPO/WANO WARNINGS FLAGS

- **Poor self critical**
  - **Oversight organizations lack an unbiased outside view or deliver only good news**
  - **Self-assessment processes do not find problems or do not address them**

Thanks for your patience and attention