

# **History of Risk Regulation, including the Basic Safety Standards**

**Session Chairs:**

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# Session Presentations

- 1. KEY NOTE: Risk Management is the Problem: A short history of how risk estimates led management of the Chernobyl disaster into darkness, Kate Brown, University of Maryland, Baltimore County, USA**
- 2. How To Communicate With The Public In The Event Of An Emergency – Legal Aspects Of Public Information In Revised EURATOM Legislation, Verena Ehold, BSS project, Austria/Belgium/ Spain**
- 3. Civil society investigation of nuclear EP&R provisions in Europe, Nadja Železnik, Nuclear Transparency Watch and REC, Slovenia**
- 4. Access to information and participation of the public in the context of a nuclear accident – insights from the Aarhus Convention and UN Guiding principles on internal displacement, S. Baudé, et al., Mutadis, France**
- 5. Nuclear Safety Goals in Japan: History, Context and Challenges, Shin-etsu Sugawara et al., Central Research Institute of Electric Power Industry, Japan**
- 6. The nuclear safety evolution after the accident at Three Mile Island (1979): focus on the risk of core meltdown, Ismail Goumri, IRSN, France**
- 7. Analyzing seismic risk assessment evolutions from an historical perspective: French nuclear safety after the Fukushima Daiichi nuclear accident, Mathias Roger, IRSN, France**
- 8. Building trust whilst communicating risk: nuclear waste disposal in the UK and France, S. Butler et al., The Science Museum (London) & Universitat Pompeu Fabra, Spain**

# Session Themes

- Nuclear Community Attitude about Risk and Stakeholder Involvement
- Access to Information
- Communicating with the Public
- The Importance of History

# Engineering Attitudes

# Nuclear Community Attitude

- The “standard model” of low radiological risk colored response to the Chernobyl accident by UNSCEAR and IAEA for many years
  - Thyroid cancers not recognised as radiogenic
  - Illnesses of those remaining in affected zones ignored
  - “un-peer-reviewed” results not used
- Post-Fukushima Stress Tests
  - Things look good on paper according to the authorities
  - Standards exist
  - Many policy, regulatory and applicational issues exist
    - cross-country coordination of criteria and practical arrangements
    - interaction between nuclear EP and civil protection
    - coordination between different authorities
    - unrealistic in their focus on only design-based scenarios
    - lack of involvement of civil society in emergency and post-accident strategies, trainings
    - lack of reflexivity: lessons not learned from emergency exercises & drills
    - social media, citizen science not taken benefit from

# Nuclear Community Attitude

- Using PRA and safety goals for explaining “our NPPs are safe”
- Power companies have focused too much on what they have been told to do by regulators or local governments – thinking this will lead to acceptance
- Public acceptance-oriented management
- Resistance from responsible authorities

# Role of science, expertise, experts

**Contrived science:** instrumentalisation of science for political and economic ends

- Using science / scientific studies to avoid further uncomfortable questions from being asked: “no additional studies needed”

**Deviant science:** manipulation of data and methods to produce desired results

# Access to Information

A democratic framework for the protection of populations implies a pooling of knowledge, uncertainties and gaps, in particular as regards radiological risks and the knowledge of actual exposures

Participation of the public in decision-making

- Implementing the Aarhus Convention in the event of a nuclear accident involves 3 levels of participation:
- consultation on successive public policy frameworks (in the preparation phase and after an accident),
- opening of subsidiarity spaces in the post-emergency phase to enable people to choose their conditions of life in conditions of freedom and security,
- direct involvement of people in radiological protection as part of a project to rehabilitate their living conditions

The need for stakeholders to be supported to UNDERSTAND information should be explicitly required (e.g. in conventions, policies, legislation, etc.)

# Access to Information

- Promote a self-reflective attitude – continuous improvement, humbleness...
- What role for EURATOM? Specific recommendations on
  - Cooperation and exchange of info between MS and other countries?
  - Practical, obligatory organisation of public information?
  - Public communication in emergency situations?

# **Communicating with the Public**

# Communicating with the Public

“**Effective** public communication can not be regulated, no law can guarantee its success in the event of an emergency“ (V. Ehold)

- International recommendations and EURATOM legislation should be updated to require communication with the general public, and to coordinate protective measures & public information
- Update of ECURIE agreement required
- International guidelines on emergency communication exist, but should be better implemented and exercised

# The Importance of History

- Better understanding the trajectory of core meltdown risk treatment helps to reconstitute long term issues
- Understanding history of TMI can provide recommendations by highlighting the economic and political aspects associated with the role of expertise in severe accident situations

# The Importance of History

- Japanese Safety Goals (PRA)
  - Before 2011: **Public acceptance-oriented management**
    - ✓ SGs had been originally expected to be used for improving risk management.
    - ✓ In reality, SGs had been utilized as a tool to convince people of the “completeness” of safety, and as an excuse for stopping further effort to gain deep risk insight.
    - ✓ Fear of societal “overreaction” could distort the ways of risk management.
- Challenges
  - How to harmonize scientific rationality and democratic legitimacy
    - ✓ How to design public discussion process on SGs
  - How to utilize SGs for ensuring “Questioning attitude”
    - ✓ How to keep motivation for continuously improving risk assessment and management instead of being satisfied with the present condition
    - ✓ How to ensure such attitude not only by safety culture of individual organization but also by societal/institutional framework
    - ✓ Risk governance (IRGC), Institutional strength in depth (INSAG) ?

# The Importance of History: France

France inherited American deterministic risk assessment

## **TMI**

1. Improvements in safety assessment methods:
  - incremental improvement of deterministic risk assessment
  - gradual introduction of probabilistic assessment
  - institutional changes: e.g. new unit for probabilistic risk assessment
2. Better scientific and technical knowledge of severe accidents
  - e.g. core meltdown became an established topic of research
3. Introduction of social sciences into nuclear safety regulation
  - reflection on the nature of risks, deep uncertainty, ignorance, organisational aspects of safety regulation...

## **Chernobyl**

- major differences in the responses of European countries
- Conventions (Sept 1986): Obligation to immediately notify other states of transboundary radiological dangers & to provide assistance in case of an accident

## **Fukushima**

- EU stress tests brought discussion on probabilistic risk assessment to centre stage

# The Importance of History: trust-building as an objective?

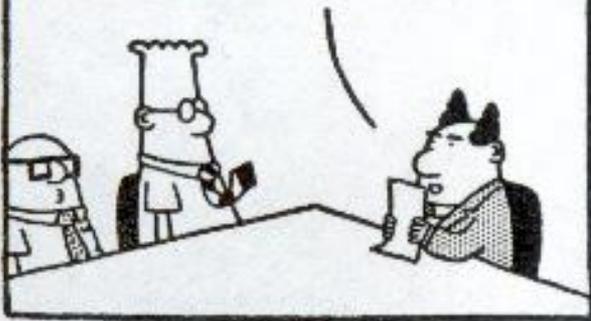
- Historically constituted local-national, reciprocal trust/mistrust relationships – “us” and “them”, goes beyond the opponents-defenders division
- Trust is not always good, and mistrust is not always bad
- Focus on trust-building can backfire (Nirex in the UK)
- For people to trust government, government must trust people
- Crises of trust and “active mistrust” can help to improve RWM projects

**History teaches us  
WHAT lessons we have learned  
WHY we learned lessons**

**And history suggests to us  
HOW to not relearn lessons**

# Knowledge and Insight

DANGEROUS ASBESTOS  
HAS BEEN FOUND IN  
EVERY ROOM IN OUR  
BUILDING.



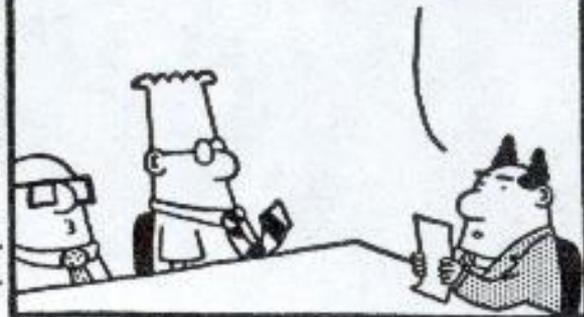
S. Adams

THE PROBLEM WILL BE  
ADDRESSED USING A  
... SCIENTIFIC PROCESS.



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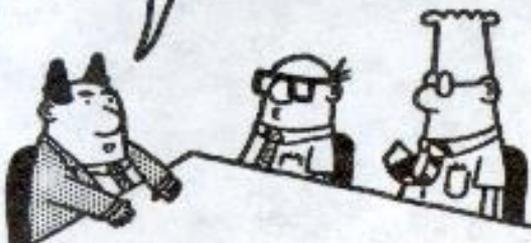
SOMETHING  
CALLED  
ATTRITION.





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HAVE STARTED THEIR  
ANNUAL STRATEGIC  
PLANNING SESSIONS.



THIS INVOLVES SITTING  
IN A ROOM WITH  
INADEQUATE DATA  
UNTIL AN ILLUSION  
OF KNOWLEDGE IS  
ATTAINED.



THEN WE'LL REORGA-  
NIZE, BECAUSE THAT'S  
ALL WE  
KNOW  
HOW  
TO DO!

HAVE YOU TRIED  
IT WITH A  
MAGAZINE?



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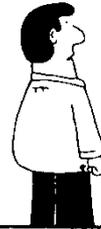
RUMORS

ALL RUMORS ARE  
TRUE - ESPECIALLY  
IF YOUR BOSS  
DENIES THEM.



I HEARD THAT  
WE'RE ALL GOING  
TO BE RECLASSIFIED  
AS "SERFS."

AND THEY'LL  
MAKE US  
WEAR  
PAPER HATS.



... AND WE'LL  
HAVE TO SALUTE  
ANYBODY FROM THE  
MARKETING  
DEPARTMENT!



THE LOBOTOMIES ARE  
SCHEDULED FOR  
TUESDAY!



THESE RUMORS ARE  
RIDICULOUS. WE ARE  
NOT CONSIDERING  
LOBOTOMIES...



CERTAINLY NOT  
AT THE PRICES  
WE WERE  
QUOTED.