

**INTERNATIONAL SYMPOSIUM ON NUCLEAR
SAFETY AFTER FUKUSHIMA
EUROPEAN AND JAPANESE PERSPECTIVES**

**WHAT WORLD GOVERNANCE FOR NUCLEAR SAFETY
LESSONS FROM THE FUKUSHIMA ACCIDENT**

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LEARNING THE LESSONS FROM THE PAST

- “A nuclear accident anywhere is an accident everywhere” - Hans Blix
 - Chernobyl resulted in a “nuclear winter” but also led to a major overhaul of the nuclear safety regime
- The question today is what may be the effect of Fukushima on nuclear safety worldwide ?
- It cannot be “business as usual” – Ban Ki-Moon

A STORY OF SEVERE NUCLEAR ACCIDENTS

- Possible consequences of severe nuclear accidents:
 - Off-site long-term contamination
 - Evacuation of population
 - Transfrontier damage
 - Health, economic and psycho-sociological impact
- Severe accidents over the last 50 years:
 - 1957 - Windscale (UK) - Limited off-site contamination
 - 1979 - TMI (USA) - Core melt-down; no off-site release
 - 1986 - Chernobyl (USSR) – Widespread radioactive contamination
 - 2011 – Fukushima Dai-ichi (Japan) – Significant contamination

FROM SOFT LAW TO HARD LAW

- **Before Chernobyl**
 - International recommendations on sound technical standards and good practices for public authorities and nuclear operators (only advisory)
 - In many nuclear active countries, governments are in charge of both the promotion and the control of the use of nuclear energy
 - Governments claim exclusive jurisdiction over the safety of domestic nuclear installations
- **After Chernobyl**
 - Earlier policy no longer sustainable
- **A quick legal fix:**
 - Convention on Early Notification of a Nuclear accident (26-9-1986)
 - Emergency Convention on Assistance in the Case of a Nuclear Accident or Radiological (26-9-1986)
- More hurdles on the road to an international treaty governing nuclear safety (1986 to 1994)

THE FAMILY OF NUCLEAR SAFETY INSTRUMENTS

- The Convention on Nuclear Safety (20-9-1994)
 - Scope and obligations
 - The “Peer Review” mechanism
 - An “incentive” Convention
- The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (5-9-1997)
- The Code of Conduct on the Safety of Nuclear Research Reactors (2004) (not legally binding)
- ALSO
- The Code of Conduct on the Safety and Security of Radioactive sources (2003) (not legally binding)
- Japan participates in all these instruments

NUCLEAR SAFETY: A DYNAMIC RATHER THAN STATIC PROCESS

- Specialists of nuclear safety tend to consider that safety is not some perfect state to be reached but a dynamic process of good practices, behaviors and rules.
- The **objective** of nuclear safety is :

“To protect individuals, society and the environment by establishing and maintaining... an effective defense against radiological hazard” (INSAG Report 3)
- A more analytical **definition** :

“ The whole of the technical and organizational measures required, at all stages of the life of a nuclear installation, so that its operation and very existence constitutes a risk sufficiently low to be acceptable to workers, the public and the environment” (source CEA)
- Regulations must be supplemented by proper **safety culture** :

“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” (INSAG Report 4)

ASSESSING THE ACCEPTABLE RISK

- There are no human activities without risk
- Nuclear risk is the combination of the chance of an accident to happen and the potential magnitude of its effects
- Risk must be kept as low as reasonably achievable
- Concept of defense-in-depth barriers
- Probabilistic safety assessment
- How frequent are nuclear accidents ?

FUKUSHIMA : A BLACK SWAN ?

- Black Swan: A highly unlikely event with grave consequences
- A beyond design-basis event
- How to imagine the “unimaginable” ?
- As stated by the President of the JAIF:
“We somehow fell into a trap in thinking that as long as we followed strict regulations and standards, we were safe...we failed to keep a questioning attitude and fully stretch our imagination”. – Takuya Hattori

INTERNATIONAL COOPERATION AT WORK

- There have been since 11 March a flurry of actions and reactions internationally and among the nuclear community.
- A short selection:
 - 24 May – Decision on Stress Test to be carried out in Europe (Brussels)
 - 26/27 May – G.8/G.20 Summit (France); call to strengthen nuclear safety
 - 20/24 June – IAEA Ministerial Conference on Nuclear Safety (Vienna) & Report by the Japanese Government on the accident
 - 19/23 September – Endorsement of an Action Plan by the IAEA General Conference (Vienna)
 - 22 September – High-Level Meeting on Nuclear Safety (New York)
 - 9 September – Presentation of the reports on stress tests to the EU Council of Ministers (Brussels)
- And in 2012 already:
 - September – Extraordinary Meeting of the NSC Parties to assess the impact of the Fukushima accident on the Convention

MESSAGE FROM JAPAN

- While TEPCO and competent national organizations are still struggling to take full control of the situation, some lessons emerge from the initial Report submitted last June:
 - “ The fact that this accident has raised concerns around the world about the safety of nuclear power generation is a matter which Japan takes with the utmost seriousness and remorse”
- The investigation Committee created by the Government is asked to demonstrate:
 - “ Independence from Japan’s existing nuclear energy administration, openness to the public and international community and comprehensiveness in examining various issues related not only to technical elements but also to institutional aspects”

PROPOSALS FOR A BETTER NUCLEAR SAFETY GOVERNANCE

- TEPCO's detailed report on the accident expected by June 2012
- The IAEA Action Plan's main proposals:
 - Broader dissemination of better information
 - Involvement of Stakeholders
 - Reinforcement of the regulatory bodies
 - Better emergency preparedness & response
 - Revisit the international legal framework
 - Promote independent peer reviews of NPP safety
- A more prominent role for the IAEA ?

“ While the Vienna Agency is the watchdog for non-proliferation.., it is not the watchdog for nuclear safety”. – Yukiya Amano

- Other proposals

“WE MUST REBUILD PUBLIC TRUST”

Ban Ki-Moon

- Some key words to ponder:
 - Independence
 - Openness
 - Transparency
 - Trust
 - Accountability