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Nuclear Safety in Different Perspectives

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Foreword

- **Nuclear power technology has contributed to human welfare.**
- **It has:**
  - **produced electricity most economically,**
  - **assured the stable long-term supply of energy, and**
  - **contributed to mitigate the global warming.**
- **In this context, the "safety" is of paramount importance.**
- **The safety record has been the factor in maintaining nuclear power the best option.**

Nuclear Safety in Different Perspectives

- **Nuclear safety itself is the least problem.**
- **We have a strong confidence in the present level of safety.**
- **Looking into the safety as a whole in different perspectives.**

Balancing safety with other technical and social factors:

- **Balance between nuclear-related risk and other societal risks,**
- **Balance between perceived risk and numerical risk,**
- **Balance of risk among different regions and countries, and**
- **Balance of technology between this to next generation.**

Balance between nuclear-related and other societal risks

- **What is the ultimate safety objectives and how do we achieve them?**
- **Total risk to the society should be looked into as a whole.**
- **Nuclear-related risk does not have to be unnecessarily lower.**
- **Relaxation of regulation and licensing standards needed.**
- **Nuclear scientists and engineers should first initiate the movement.**
- **Safety objectives and radiation standards should be properly reevaluated.**
  - **Radiation protection standards based upon the concept of "LNT model"**
  - **Radiation risk to the public is based upon the notion of "collective dose"**
- **Scientific data show that the low-level radiation gives a beneficial effects.**

Close scrutiny of present safety objectives and principles is imperative in order to balance the nuclear-related risk with the other societal risk.

Balance between perceived risk and numerical risk

- **Nuclear-related decisions made by a group of selected experts.**
- **Public participation is treated separately from the genuine process.**
- **Safety heavily depends on the public acceptance of the outcome.**
- **Nuclear safety is numerically presented by the term called “risk.”**
- **Perceived very differently by each person and very subjective.**
- **Perceived risk is usually extremely bigger than the actual risk.**
- **Risk perception should be employed as the key decision-making element.**

Enhancement of public acceptance would be achieved by reducing the gap between the perceived risk and the numerical risk.

Balance of risk among different regions and countries

- **Nuclear safety is not local rather regional or global issue.**
- **Nuclear safety standards should be universally accepted.**
- **Countries should join the same safety-related conventions.**
- **Global safety regime should be built and maintained.**
- **Necessary infrastructure to keep this nuclear safety global regime:**
  - **regulatory bodies/industry;**
  - **government/industry relationship; and**
  - **regulator/operator interactions**
- **Internationalize the nuclear industry.**

A global nuclear safety regime would be secured by balancing the risks among different regions and countries.

Balance of technology between generations

- **Nuclear technology should sustain in many generations to come.**
- **More than 400 operating units still exist in the world.**
- **World power market will revive eventually.**
- **We need to cultivate nuclear professionals for the future generation.**
- **IYNC under the auspices of the IAEA could serve.**
- **Human resources development and disposition program should be initiated.**
- **Existing facilities and teaching staffs should be utilized at maximum.**

Manpower would be sustained by balancing the nuclear technology from this generation to the next.

Conclusion

We have to balance the nuclear safety with other technical and social factors such as:

- Balance between nuclear-related risk and the other societal risks
- Balance between perceived risk and numerical risk
- Balance of risk among different regions and countries
- Balance of technology between this generation to the next generation