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The Future of Technical Knowledge Management

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Technical Knowledge Management

- Focuses on the safety of ***nuclear power plant technology*** as an effort of establishing “***global safety regime.***”
- Technical knowledge:
 - Information.
 - Experience.
- Management of technical knowledge:
 - Optimization of
 - Acquisition of technical knowledge.
 - ***Transfer of technical knowledge.***
 - ***Deployment of technical knowledge.***
 - ***Maintenance of knowledge base.***



Future of Knowledge Management (Challenging topics)

Acquisition of safety-related knowledge: least problem.

- Future management lies on:
 - Optimizing the transfer and deployment of knowledge.
 - ***share of the knowledge***
 - Maintaining the technical knowledge base.
 - ***preservation of the workforce***



Share of the Knowledge (R&D work)

Develop a system of sharing the technical knowledge among countries:

- Establish easy flow of safety-related R&D information from developed to developing countries.
- Share safety-related operational experience: Asian Nuclear Safety Network.



Share of the Knowledge (infrastructure)

Develop a system of assuring the safety between exporting and importing countries:

- Exporting country holding the full responsibility of:
 - Safe construction and operation.
 - Establishment of a proper ***infrastructure in the importing country.***
- Implementation of “***Multinational Design Approval Program (MDAP).***”



Share of the Knowledge (Convention)

- Develop a fundamental treaty (“***Global Nuclear Safety Treaty***”) beforehand.
- Force all the countries to join the treaty with a strong enforcement agreement mechanism of achieving the global safety regime.
- Reformulate CNS as “***Global Safe Agreement***”

IAEA should work hard to achieve the mechanism.



Preservation of the workforce

- Keep a well-qualified workforce to:
 - Maintain the safety of existing nuclear power plants.
 - Adopt advanced concepts for the future (GIF and INPRO programs).
- Overall shortage of present nuclear workforce due to:
 - Departure of many qualified persons from nuclear profession.
 - Reduction of new young people entering nuclear fields.
- Expected increase of new constructions.



Preservation of the workforce (IYNC)

To increase the inflow of young students to the nuclear profession:

- International Youth Nuclear Congress (***IYNC***) serves as an excellent forum of communication between generations as well as across international boundaries.
- In IYNC, we exchange the views on young generation issues in relation to nuclear science and technology.
- IYNC should be fully supported by all of us, especially under strong auspices of IAEA.
- We should attend the Congress whenever possible and convey our true visions towards nuclear energy in the future.
- ***Youth internship program.***



Maintenance of the workforce (education)

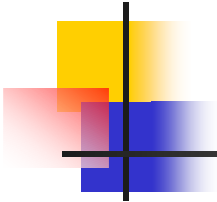
Share regional nuclear knowledge base for higher education:

- Regional program:
 - Asian Network for Higher Education in Nuclear Technology (***ANENT***).
 - Training center of excellence for on-the-job training facility.
- International program:
 - World Nuclear University (***WNU***)
 - Use of cyber-lecturing through Internet.
 - Cross-approval of credits among educational organizations in degree work.
 - Certification of credits by the authorized body like IAEA.



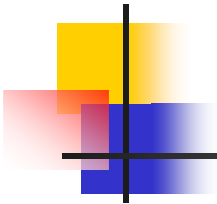
Maintenance of the workforce (proper use)

- Develop a system of keeping the well-qualified workforce of retirement age intact.
- Balance the workforce:
 - Publication of “***World-Wide Directory of Nuclear Professionals***”.
 - Certification program of nuclear professionals in the international level.



Summary in general

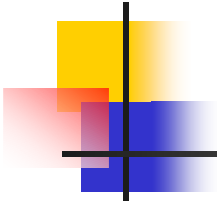
- The sustainable development of nuclear energy requires a proper global safety regime.
- It could be achieved through the effective management of technical knowledge.
- The future of its management mainly lies on how to optimize transfer and deployment of the technical knowledge, and maintain the knowledge base.



Summary

For share of the knowledge ,

- Develop a mechanism of assuring the free flow of R&D information from developed to developing countries.
- Develop a mechanism of imposing a trading agreement between nuclear exporting and importing countries.
- Reform CNS as more enforcing and binding agreement in keeping the global safety regime.



Summary

For preservation of the workforce,

- Support IYNC as an excellent forum of communicating nuclear technical knowledge between generations.
- Utilize regional and international educational systems for workforce development such as ANENT and WNU.
- Develop a program of employing retired workforce and solving the unbalanced disposition of workforce.



Conclusion

- We will encounter a great deal of challenges in nuclear power plant technology in the future. The effective management of its technical knowledge will become one of them in order to support nuclear safety.
- With wisdom and effort, we can overcome these challenges.
- IAEA has always been the corroborator of maintaining high levels of nuclear safety through close international nuclear cooperation. These important roles of IAEA have always been well recognized and should continue to be emphasized more than ever in order to secure the global safety regime in time.

Thank you very much for your attention.