



International Atomic Energy Agency

**Conclusions and Recommendations
of the IAEA 2008 International Conference
on Topical Issues in Nuclear Safety
*Ensuring Safety for Sustainable Nuclear Development***

***28 October 2009, International Conference on
Opportunities and Challenges for Water Cooled
Reactors in the 21st Century***

**Mamdouh El-Shanawany
Head of Safety Assessment Section
Division of Nuclear Installation Safety**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- **Over 200 participants from 33 countries and three international organizations came and actively participated and contributed to focused discussions and the success of the conference.**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- **The nuclear safety approach is based on the philosophy developed in the 60's:**
 - **Defense in depth principles and deterministic criteria.**
 - **When properly applied and completed by probabilistic analyses and operational experience feedback, it continues to be a successful approach.**

However, guarding against the risk of accidents requires constant vigilance and high technical competence and a never ending fight against complacency. In this context,

- **Having a strong leadership with a commitment to continuous improvement and a vision of sustained excellence is a key element of nuclear safety.**
- **Continuous improvement in safety also should be pursued through scientific research and operational experience feedback.**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- An accident anywhere is of concern to all Member States. Therefore, it is in the interest of all Member States to share and collaborate on safety matters.
 - Participation of all Member States in international nuclear safety instruments and conventions, including liability for nuclear damage, is considered beneficial to global safety.
 - The Convention on Nuclear Safety, the Joint Convention, international cooperation through IAEA and other organizations, bilateral or multilateral arrangements are important elements for establishing networks for sharing and transferring knowledge.

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- It is acknowledged that the IAEA's Safety Fundamentals and Safety Requirements provide a sound foundation for high level nuclear safety.
 - IAEA Safety Standards should be the basis for the establishment and maintenance of safety infrastructure.
 - The IAEA's peer reviews and services such as IRRS, OSART, Site Evaluation and Reactor Safety Reviews provide also a valuable platform for sharing experience and harmonising safety approaches among Member States. However there is still a need to build on international cooperation in order to promote sharing of experience and knowledge for practical enhancement of nuclear safety.

Ensuring Safety for Sustainable Nuclear Development

- **Countries embarking on nuclear power programmes assume very important safety responsibilities that cannot and must not be delegated.**
 - **Therefore, the establishment of a sustainable national safety infrastructure is an essential foundation for ensuring safe design, construction, operation and decommissioning of nuclear power plants.**
 - **The process involves the development of a strong governmental, legal and regulatory framework as well as the necessary education and training, technical capacity building and integrated approach to safety, and safety management for all nuclear stakeholders.**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- **Vendor countries (vendors and regulators) that are supplying nuclear technology, materials and equipment to the new entrants have moral responsibility and common interest towards these countries and as such should contribute to the creation of strong safety infrastructures in the recipient countries.**

IAEA should support this process. Specific IAEA safety guides for countries embarking on nuclear power should be enhanced or developed and tailored safety reviews should be prerequisite at different stages of newcomer programme development.

IAEA should also develop and provide to the newcomers appropriate training programmes to assure development of safety capacity. Other countries could also provide useful input particularly if they are involved in similar projects.

Ensuring Safety for Sustainable Nuclear Development

- **Operating Experience Feedback is an important element of the continuous safety improvement process for nuclear power plants. OEF databases should be analyzed and used more extensively and the lessons learned disseminated and applied among the Member States.**
- **All Member States, through their regulatory bodies, have the joint responsibility to adopt the OEF lessons learned in their respective nuclear programmes. National safety authorities could take the initiative of organizing international workshops on how OEF has been used and implemented.**
- **Moreover, lessons learned from new construction should be provided and shared between all countries embarking and considering new build.**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- It is vital in today's environment that the synergies between safety and security are maximized, and that culture be developed that integrates safety and security requirements. Safety and security have the same purpose: protecting people, society, environment and both could be based on similar principles even if there are some differences in implementation such as openness and transparency. There are important advantages from integrating the regulation of safety and security as much as possible.

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- **The quality of the supply chain is an emerging issue. Harmonization of safety requirements, design codes and quality standards within the supply chain is acknowledged as requiring further collaboration among Member States, international organizations and supplier companies. Multinational Design Evaluation Programme (MDEP) is an important first step towards this goal.**

Ensuring Safety for Sustainable Nuclear Development

- **Transparency, collaboration, information sharing and openness is responsibility of all Member States to assure not only safety but to foster confidence and trust among all stakeholders.**

Ensuring Safety for Sustainable Nuclear Development

- **Despite NPPs high level of safety, emergency preparedness and response are important issues in the context of developing nuclear energy. Through international cooperation, emergency and response plans need to be developed and well coordinated within all relevant entities.**

Ensuring Safety for Sustainable Nuclear Development

- **In the context of developing nuclear energy the generation gap in education and training as well as the necessity to build technical capacity to properly address safety issues has been acknowledged by the Conference. Therefore, adequate education and training programmes should be developed and implemented.**

Conclusions and Recommendations of the IAEA 2008 International Conference on Topical Issues in Nuclear Safety

Ensuring Safety for Sustainable Nuclear Development

- **The IAEA is willing and ready to support safety enhancements through the establishment and application of Safety Standards, Safety Review and Advisory Services and International Instruments.**
- **All IAEA publications are available at:**
<http://www-pub.iaea.org/MTCD/publications/publications.asp>