

Main conclusions of IAEA Topical Issues Conference

During the week 18-22 October 2004, 274 participants presented, critiqued, and discussed issues related to the challenges before the world nuclear community as it moves into an environment of change and globalization. These participants represented 37 countries, five international and private organizations, and all aspects of the nuclear power community. There were 10 observers to our proceedings and 10 members of the press. Approximately two-thirds of us came to China from foreign lands, while one third came from all over this wonderful country.

The need to harmonize regulatory approaches:

- There is a need to build on the IAEA Safety Standards to provide vendors, operators and regulatory authorities with internationally accepted standards for designing, licensing, operating and regulating nuclear installations;
- The variant opinions on design certification
- The question of how to harmonize the transition point between safety standards and industrial standards;
- Role of the IRRT to act as a vehicle to promote regulatory consistency. Emphasis on the new IRRT process that addresses self-assessment. Recognition of the generic call for all Member States with nuclear installations to consider availing themselves of this valuable peer review service.
- The need to establish the right balance in using, in a complementary manner, both deterministic and probabilistic approaches during design, operations and regulatory activities;
- Globalization and the provision of reactors to Member States with no vendor knowledge (or allowing for the new business concepts where new corporate owners or individual site managers are “business oriented and experienced” as opposed to being “operationally experienced”) calls into questions who “owns” the design (design conscience), who is responsible for providing the necessary focus (decision-making and resources) on safety (safety conscience) and security (security conscience).

The concept of Operational Experience and the need to foster an environment conducive to becoming “learning organizations:”

- Maintaining a transparent environment is essential, both with other owner-operators, with the regulatory authorities and with the public;
- Recurrent events are taking place! How to we ensure that the lessons learned in the past are not forgotten during the present and lost in the future?;

- The process for identifying “low level” and “near miss” events must be stimulated and serve as repositories of lessons learned for all members of the nuclear community;
- Artificial barriers to sharing safety related information need to be breached. This includes addressing proprietary, technical and political factors that stand in the way of information sharing;
- Information technology methods, such as self sustaining networks, must be pursued to ensure that resources are leveraged to the maximum degree possible;
- Lessons learned are not unique to any specific period in the life cycle of a nuclear installation or any particular type of nuclear installation. Knowledge must be shared during design, construction operational and decommissioning phases of all facilities (power plants, research reactor and fuel cycle facilities);
- Likewise, lessons learned are not unique to any particular industry. All sources of lessons relative to material and process safety insights must be pursued.

The concept of extended operations:

- What safety standards are needed, if any, for the transition from “normal operations” to “long term operations;”
- Some countries view long term operations as a continuous process and others as something that is tied to their licensing process;
- It was accepted the for safe long term operations of an installation, the safety analysis must show that the plant will continue to operate within its design envelope. Thus, there is a need for:
 - Sound knowledge of the current design basis;
 - Accurate knowledge of the actual state of the plant;
 - Verification that adequate safety margins will be maintained;
- Long term operations must consider the concept of ageing management in its broadest context, addressing both material (pumps, valves, etc.) and personnel (knowledge) issues.