Ministerial Seminar on Nuclear Safety

June 7th, 2011 – Paris

Today the international community is mobilized to learn from the accident in Fukushima.

It is essential to draw lessons from each incident, so as to permit continuous improvements in the field of nuclear safety.

The French presidency of the G8 - G20 organized an informal ministerial seminar on 7 June, with the Technical Secretariat of the OECD / Nuclear Energy Agency.

33 countries met to discuss the way to strengthen international nuclear safety in the perspective of the IAEA meeting that will take place in Vienna, june 20. The chair raised the following conclusions.

Even if the natural disaster that befell Japan, and is responsible for the accident in Fukushima, is quite exceptional in its scale, the international community must now, as far as already possible, draw all the lessons from this accident and further improve nuclear safety in terms of prevention on the one hand and management of major accidents on the other. Notably, several countries have launched the so-called “stress tests” (comprehensive reviews). The chair with the support of all delegations encourages the realization of these reviews in every country.

To fully draw the lessons from this accident, here are three major work areas:

- Strengthening international mechanisms;
- Increasing international cooperation;
- Improving the safety of facilities.

Their implementation will rely on the commitment of every country, recognizing that ensuring nuclear safety is primarily a national responsibility.

1. Strengthening international mechanisms

The accident in Fukushima shows that nuclear safety should be a priority area in our international meetings.

It is necessary to consider **updating international Conventions using existing mechanisms.** In terms of safety, it would be appropriate to strengthen the **Convention on Nuclear Safety (CNS)**, and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, through their respective review conference process, and encourage their ratification by all states which have a program in the field of nuclear energy.

We welcome the announcement of a special meeting of the parties of the CNS in 2012, which will be devoted to reviewing the effectiveness of the Convention and its provisions in the wake of the accident in Fukushima notably regarding safety objectives, the responsibility of governments for timely and sufficient measures on accident prevention and management, including the adjustment of procedures for coordination and interaction between the government, the operator and the safety authority, as well as an effective peer review mechanism.

It would be desirable to consider strengthening the review meetings of the Convention in particular by placing increased emphasis on contracting part follow-up to issues and recommendations in cases where recommendations made following his presentation remained unheeded.

In terms of crisis management, one should also strengthen the reporting and mutual assistance arrangements in order to better cope with situations of serious accidents.

To do this, it may be necessary to:

- Encourage states that have not already done so to join the Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency and implement guidelines under the IAEA Response and Assistance Network (RANET);
- Facilitate implementation, where appropriate, of the Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency through a review and, where important, an enhancement to the Response and Assistance Network (RANET);
- Efficiency and substance of notifications on the nuclear accident should be further improved, and the Convention on Early Notification of a Nuclear Accident could be amended if necessary;
- Encourage states that have not already done so, and especially states with a nuclear energy program, to join the Convention on Early Notification of a Nuclear Accident and implement guidelines under the IAEA Unified System for Incident and Emergency (USIE) notification and reporting system.

2. Increasing international cooperation

It is essential to strengthen international cooperation on the continuous improvement on nuclear safety, which can enhance transparency and contribute to developing a strong safety culture.

This cooperation should promote, in countries considering the use of nuclear energy, the **establishment of a robust, independent regulatory framework and the availability of appropriate scientific and technical capacities** to support the management of nuclear and radiological risks.

In particular, this cooperation should include:

- Improving the **peer review system** in each country which runs civil nuclear facilities and strengthening Integrated Regulatory Review Service missions by the IAEA. In addition, the WANO association should be asked to further develop its peer reviews;
- **Encouraging peer review of regulators,** led by the IAEA, for example every 10 years (on all or part of its national safety framework) to ensure that IAEA safety standards are effectively incorporated into national programs. Reports should be public, and recommendations should include timelines. The completion of remedial measures must be monitored by the IAEA. Here too, IAEA assistance could be conditional on to taking into account peers' recommendations;
- **Improving operator audits by the IAEA** (OSART, Operational Safety Review Team missions). An audit frequency may be defined for volunteer country and operators;
- **Encourage greater cooperation between safety stakeholders**: safety authorities/regulators (cross inspections, staff exchanges, exchanges around safety assessments of reactor models ...), nuclear operators (exchanges of experience, industry standards...), scientific organizations (expert methodology, analytical tools, shared experimental facilities, knowledge of natural hazards ...), associations of stakeholders (public outreach methods, enhancing transparency ...);
- Encourage the setting up of a forum of technical and scientific organizations in supporting IAEA and its member states in enhancing nuclear safety worldwide;
- **Ask the IAEA and the NEA to promote best practices,** and promote convergence of practices, taking into account the feedback from Fukushima. Industry groups (e.g. WANO) could commit to regularly inform the IAEA, so as to enable the Agency to incorporate these elements in its safety inspections;
- Encourage the development of safer technologies. Design of safer installation should be shared internationally.

It is also necessary to improve information exchanges and to harmonize the practices of crisis management. Six avenues are to be explored:

- **Encouraging regional initiatives,** particularly those aimed at information sharing (especially between neighboring countries) and convergence among emergency management methods. For instance, inter-compare modeling and

simulation of severe accidents with a view toward providing a predictive tool for national regulators;

- Encouraging cooperation between bodies that develop and operate **scientific and technical tools** in support of crisis management, so as to facilitate sharing of data and data interpretation;
- **Strengthening guidelines and protocols** to facilitate cooperation between crisis centers of different countries that may be involved in a single accident. This could, in particular, cover recommendations to travelers, to foreigners residing in the country, and the screening of passengers and goods from the country concerned;
- Asking IAEA to **strengthen its Basic Safety Standards** (BSS) around the key points of feedback from Fukushima, **to identify issues that may warrant examination and revision and, in particular, to consider developing or improving additional standards for the construction and operation of nuclear power plants in seismically hazardous areas, as well as in areas that might be otherwise exposed to other external events, taking into account their integrated impact.** The BSS may require each operator to be able to retrieve access to a cold source or power supply within 24 hours;
- Strengthening and expanding **mutual assistance networks** that exist at regional or international level between specialized radiological expertise and analysis agencies in the areas of environment and health;
- Conducting **periodic regional joint exercises** (inviting observers from other countries if necessary and involving local populations), increasing the diversity of those exercises and encouraging participation in exercises on the basis of the CONVEX or INEX initiatives;
- Strengthening and, where necessary, expand **training courses at the regional and international level** for personnel in charge of crisis management and post-accident management (operators, regulators, experts, governments, international organizations) to enable a better understanding of the intrinsically regional and international dimensions of a crisis and;
- Ask the NEA and the IAEA to review the INES scale, to ensure it is still relevant in light of the experience in Fukushima.

Finally, continuous improvements to safety require strengthening the provisions for analyzing and using the feedback from nuclear safety events, including serious accidents:

- **Strengthening the IRS** (Incident Reporting System) of the IAEA and NEA internationally;
- **Cross-alerts among 'global' safety actors,** that is, at least WANO, IAEA perhaps also INRA (International Nuclear Regulatory Authorities);
- **Organize international cooperation** to evaluate lessons learned from the Fukushima accident and its consequences and for international organizations (IAEA and NEA) to report on it as soon as it is appropriate.

Overall, the Chair calls for increased overall capacity for the IAEA to organize the review of national safety frameworks in member state, as requested.

3. Improving plant safety and crisis management arrangements

Improving plant safety should be a universally shared goal. It is necessary to develop and share means to promote **highest levels of nuclear safety.**

It is essential to strengthen the commitment of governments to take all necessary measures to prevent accidents and to improve crisis management, by strengthening cooperation and interaction between the government, the operator and the authorities and by developing scientific tools for effective independent expertise.

Every country has to develop internationally recognized safety measures.

For existing nuclear power plants (or those under construction), it is essential to emphasize the importance of improving nuclear safety in general and in the light of the Fukushima disaster to (PB) consolidate and coordinate efforts to analyze the capability of reactors and nuclear sites to cope with exceptional accidental situations, including **implementing so called "stress tests" (comprehensive reviews). This analysis should be conducted** on the basis of a shared **understanding of the challenges to be evaluated.** They must be conducted with a view to analyzing the capacity of each reactor, and, more generally, each nuclear site, to cope with exceptional accidental situations.

The IAEA could put together a **synthesis of safety assessment exercises,** which would be a valuable source of information to improve practices.

It is also necessary to strengthen periodic safety reviews, taking into account the feedback from operational experiences, enhanced knowledge and increased safety requirements, if necessary, on the basis of a change of context. These reviews have to take into account the measure taken to prevent accidents, crisis management and mitigation measures.
It is essential to take into account human and organizational factors in the safety.

For new reactors, it is necessary

- To continue the work initiated by the regulators to **better coordinate and align the authorization, control and inspection processes,** particularly in the context of the so-called "MDEP" (Multinational Design Evaluation Program);
- To ask the IAEA **continue** to develop, as part of relevant instruments (SF, GSRS, SSRs, Guides) **standards on the safety of new reactors to promote the high goals of safety** for the construction and operation of new reactors. **Other venues such as NEA should also promote these high standards and stringent guidelines and be** drawn on lessons **learned from nuclear accidents** so that all countries can benefit from **safe and secure** nuclear technology;

- To monitor during the processes of licensing, preparing, building and commissioning the opportunities to improve nuclear safety of the nuclear installation to be operated.

The IAEA may also be asked to re-examine its basic standards on improving the transparency and independence of the regulators, as stipulated in the convention on Nuclear safety, as well as the management of emergencies.

In light of the accident in Fukushima, it also appears necessary to improve crisis management mechanisms.

The severity of the ultimate consequences of an accident depends on the speed and adequacy of measures taken at the earliest stage, whether preserving a facility's safety features or protecting operators and nearby populations.

It is therefore necessary to enhance mechanisms for an improved, shared understanding of incident management.

- **Off-site relief capabilities for each nuclear reactor**, whether they be managed by the operator or pooled with one or more other operators seem to be essential. Where appropriate, one or more **accident response teams** with specific nuclear training could be established at a national level to support a site in case of a serious accident. These teams could be shared at a regional level, upon agreement between states. The protocols required for their effective use must be defined in advance.

  Specific modalities could be defined according to levels of intervention:
  - Immediately available capacities, at a national level, to be mobilized in less than 24 hours, dedicated and adapted, meeting the safety constraints of nuclear operators. These can be mobilized by the nuclear operator, while being part and parcel of the national crisis process;
  - Capacities that are likely to be shared among operators, possibly in the context of intergovernmental arrangements;
  - Complementary capacities that fall under technical assistance or intergovernmental cooperation.

- The IAEA should, in particular, develop procedures and tools for information exchange among nuclear regulators in the event of an accident, as well as submit these tools to the IAEA for mainstreaming purposes.

Communication to the public during crisis is also an important subject that has to be dealt.

The international community should work together to enable full feedback on the Fukushima accident and its consequences.