

NUCLEAR SAFETY IN EUROPE

First Regulatory Conference

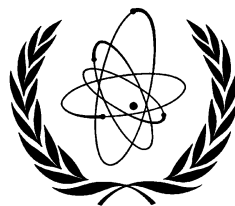
Bruxelles

28-29 June 2011

Denis Flory

Deputy Director General

Head of the Department of Nuclear Safety and Security



INTERNATIONAL ATOMIC ENERGY AGENCY

Madam President, Commissioner, Honourable Member of the European Parliament, Minister, Ladies and Gentlemen, my dear colleagues

This first European Regulatory Conference dedicated to Nuclear Safety in Europe comes at a very special moment indeed: after 25 years without serious accident, as a result of extreme natural hazard that struck Japan East Coast on March 11th, the Fukushima Daiichi NPP was severely damaged and is still in a crisis situation. Nuclear safety is going through a major test of its capability to assess its weaknesses, to learn from the accident, and to rebuild global confidence in the safety of nuclear energy.

In these conditions, it is with a profound sense of responsibility that I address this Conference to share with you the results of the IAEA Ministerial Conference which finished its work on Friday. First of all, I want to highlight the fact that we are still early in a process where many actors have their place.

The first mobilisation is indeed that of our Japanese colleagues, the staff from TEPCO Fukushima Daiichi NPP who is still struggling to bring the four damaged reactors to a safe state, together with Japanese regulators, ministries and agencies. This mobilisation also embraced the whole international nuclear community: Governments, regulators, industry and operators around the globe, and the International Atomic Energy Agency.

The process to assess, learn, and rebuild confidence has already gone through many milestones in little more than three months. I shall mention some of the most prominent: the G8 summit in Deauville, the ministerial seminar on nuclear safety followed by the NEA forum on 7th and 8th of June in Paris, both leading to the Vienna IAEA Ministerial Conference. This last highly significant event was prepared by in depth consultations of IAEA Member States during 6 sessions under the chairmanship of Ambassador Guerreiro, the President of the IAEA Ministerial Conference. It built on the detailed reports of the Japanese Government on the accident, and on the report of the IAEA International Fact-Finding Expert Mission which undertook a 10-day mission to Japan.

The participation of many ministers and over one thousand participants showed how seriously the IAEA Member States take nuclear safety. The Ministerial Declaration adopted already on the first day of the Conference outlines a number of measures to improve nuclear safety and expresses the firm commitment of IAEA Member States to ensure that these measures are actually implemented. Collectively, our Member States have expressed their sense of urgency, as well as their determination that the lessons of Fukushima Daiichi *will* be learned and that the appropriate actions *will* be taken.

At the very outset of the Conference, Director General Amano made five concrete proposals:

- to strengthen IAEA Safety Standards;
- to systematically review the safety of all nuclear power plants, including by expanding the IAEA's programme of expert peer reviews;
- to enhance the effectiveness of national nuclear regulatory bodies and ensure their independence;
- to strengthen the global emergency preparedness and response system; and,
- to expand the Agency's role in receiving and disseminating information.

As of today, we have made significant progress: the Ministerial declaration has been adopted by acclamation, paving the way for the following steps of the process, building on the results of the three working sessions: the Preliminary Assessment of the Accident at TEPCO's Fukushima Daiichi Nuclear Power Stations and Actions for Safety Improvements - Emergency Preparedness and

Response – and The Global Nuclear Safety Framework. The proposals of DG Amano found a broad support and resonance during the works of the Working Sessions, and detailed summaries have been presented at the closing plenary session of the Ministerial Conference.

At the September IAEA Board of Governors, Director General Amano will report on the Conference, and propose a Draft Action Plan. The report of Director General Amano will be informed by the report and recommendations he has asked the International Safety Group (INSAG) to prepare, on the basis of the works of the Conference but also drawing from its highly regarded professional experience.

I shall now try to convey the most significant elements that were highlighted during the Conference. Here, I must stress that, since the crisis is still on-going, detailed lessons concerning technological aspects that will have a definite impact on the work of the nuclear industry and of nuclear operators, are still largely to be learned. I shall also mostly limit myself to the aspects relevant to nuclear regulatory work, as the focus of this first European regulatory conference, thus unfortunately leaving aside aspects such as science and research, information sharing, capacity building... that might not fit in my speaking time.

The Working sessions and also the plenary Statements covered a wide range of ideas, which can be organized around major themes:

- **The IAEA Safety Standards**, where the Agency was encouraged to review and strengthen its Safety Standards in all relevant areas.
- **The safety of Nuclear Power Plants**, where it was noted the importance for all Member States to systematically review the safety of all existing nuclear power plants, with special emphasis on external natural hazards.
- **The Peer Review mechanism**, where the IAEA should undertake more regular and systematic peer review of the regulatory framework, including regulatory implications from the Fukushima accident.
- **The worldwide emergency preparedness and response framework**,
- **The International Cooperation**, particularly the interaction between the major players in the nuclear arena — operators, regulators and vendors.
- **The Global Nuclear Safety Framework**.

Strengthening the IAEA Safety Standards

From the very beginning, in the Ministerial declaration, the importance of the IAEA Safety Standards has been recognized:

“We, the Ministers, [...] Emphasize the importance of implementing enhanced national and international measures to ensure that the highest and most robust levels of nuclear safety are in place, based on IAEA safety standards, which should be continuously reviewed, strengthened and implemented as broadly and effectively as possible ...”

1. The IAEA Safety Standards represent the common reference for nuclear safety. A preliminary examination of the IAEA Safety Standards on preparedness and response related to severe reactor emergencies indicates that the relevant standards address the issues adequately. However, not all Member States apply them, and those States that do apply them may not always implement them fully. During the Conference, all Member States were encouraged to commit to making national safety standards consistent with those of the IAEA.
2. All Member States were also encouraged to make a firm commitment to apply the IAEA Safety Standards in their national arrangements for ensuring nuclear safety in a transparent and open way.
3. Newcomers were recommended to fully implement IAEA Safety Standards to demonstrate complete preparedness to operate nuclear power plants (NPPs) before commissioning the first reactor.
4. As the details of the Fukushima accident will become clearer over time. The IAEA following the call from its Director General will review and update its Safety Standards, to incorporate the lessons learned from the Fukushima accident. Special attention needs to be paid to those standards pertaining to multiple severe hazards, such as tsunamis and earthquakes, and their impact on single-unit and multi-unit sites. And standards that deal with preparedness for prolonged power blackouts and with cooling of both reactors and spent fuel storage facilities under severe accident conditions should also be reviewed.

Safety Reviews

“We the Ministers [...] Encourage States with operating nuclear power plants to conduct, as a response to the accident at the Fukushima Daiichi Nuclear Power Station, comprehensive risk and safety assessments of their nuclear power plants in a transparent manner;”

5. The Fukushima accident has highlighted the need for thorough and transparent national safety assessments of nuclear power plants. It is important to take into account site specific characteristics and features, including low probability extreme events previously not included in original design and engineering considerations. Many licensees and national regulators are undertaking these assessments. It was suggested that the IAEA develop a service that focuses on (a) safety margins against extreme natural hazards, such as earthquakes, tsunamis and floods, and (b) the regulatory implications of the Fukushima accident. Such assessments could be carried out within the next 12–18 months. The lessons learned, including an assessment of the regulatory responses to the Fukushima accident, should also be incorporated into existing services. This is a field where Europe has shown the way and where we shall certainly be interested to cooperate with its regulators and operators.
6. It was further suggested that internationally harmonized review methodologies be implemented by all Member States. The IAEA could play a leading role in the development of these methodologies on a coordinated basis, and assist in carrying out peer reviews of national safety reviews, using the services of international expert teams and make the results publicly available. This could enhance the openness and credibility of national safety reviews.
7. And finally, Member States were strongly encouraged to report the results of safety reviews and their responses to lessons learned at the Extraordinary Meeting of the Contracting Parties to the CNS in 2012.

Peer reviews

“We the Ministers [...] Underline the benefits of strengthened and high quality independent international safety expert assessments, in particular within the established IAEA framework, through

periodic reviews and evaluation missions assessing national regulatory frameworks, emergency preparedness and response and nuclear power plant operation in order to ensure continuous improvement of the safety of nuclear installations on the basis of internationally agreed rules and procedures”

8. The role of independent international peer reviews of national regulatory frameworks and nuclear installations should be reinforced as part of the process of ensuring that there is continuous improvement of safety and proper regulation of nuclear installations. These peer reviews provide recommendations to improve safety and serve to exert peer pressure to ensure that every State with nuclear installations recognizes its safety responsibility and is able and committed to meet the IAEA Safety Standards.

9. In addition, the IAEA’s safety review services are currently being carried out in Member States on a purely voluntary basis. While safety review services are requested by some Member States, they have not been sought by all. Moreover, there are instances where reviews have been carried out without follow-up to monitor implementation of previous recommendations. Member States should take advantage of the review services and respond promptly to the results.

10. The IAEA peer review services (IRRS, OSART, design review service) need to be accorded a greater profile, and an increased level of transparency to enhance public confidence in the national and international arrangements for safety. It was suggested that the schedule of planned peer review missions should be published along with the respective mission results and, if applicable, the associated follow-up results.

11. Member States with nuclear power programmes could consider giving prior consent to the IAEA to perform systematic, regular international peer reviews of regulatory effectiveness, operational safety and emergency preparedness.

12. A mechanism could be developed to select the particular NPPs to be reviewed by the IAEA expert team. This may be a random process, but the initial focus should probably be put on older NPPs.

Emergency Preparedness and Response – information

The ministerial declaration emphasized “ the need to improve national, regional and international emergency preparedness and response to nuclear accidents, including through the possible creation of rapid reaction capacity and the development of training in the field of crisis management at the regional and international levels, as well as to strengthen cooperation among national authorities, technical safety organizations, operators and among relevant intergovernmental and non-governmental organizations; and call[ed] for a strengthened role of the IAEA in emergency preparedness and response by promoting and possibly expanding existing IAEA response and assistance capabilities;”

13. Legal instruments for the international emergency preparedness and response framework were adopted 25 years ago and inevitably reflect the prevailing concerns at that time. Possible ways to strengthen these instruments should be considered.

14. Member States should consider making use of systematic and regular Emergency Preparedness Review (EPREV) and follow-up missions to appraise national emergency preparedness and response arrangements and capabilities to ensure their continuous improvement.

15. To better cope with serious emergencies, international assistance arrangements and capabilities should be strengthened by enhancing the IAEA’s Response and Assistance Network (RANET) and by implementing its improved guidelines to ensure assistance compatibility and effectiveness.

16. The IAEA's role in response to a radiation emergency should be broadened to enable it to conduct analysis of emergency conditions, progression, possible scenarios for emergency development, consequences, associated radiological impact and response actions, and to share this analysis with Member States.

17. Universal implementation of the IAEA Safety Standards on emergency preparedness and response at the national level would improve preparedness and response, facilitate communication in an emergency and contribute to harmonization of national criteria for protective and other actions. It was also noted that cooperation among national authorities, utilities and technical support organizations could be strengthened.

18. Review and improvement of the International Nuclear and Radiological Event Scale (INES) are needed to make the scale more effective from a communications point of view. The IAEA was encouraged to institutionalize the practice of 'fact finding missions', in the case of nuclear incidents/accidents. The criteria for invoking such missions could be linked to INES.

International cooperation

19. Experience from the Fukushima accident has shown that the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE) is an effective and useful mechanism. However, it should now be carefully reviewed and enhanced, and relevant organizations that are not yet members of IACRNE should be encouraged to become members.

20. The Joint Radiation Emergency Management Plan of the International Organizations (JPLAN) also demonstrated its usefulness. However, additional operational procedures and bilateral protocols to support its implementation and reduce the response times should be developed.

21. While recognizing that the operator has prime responsibility for nuclear safety, all parties (governments, operating organizations, regulatory bodies, technical support organizations, research organizations, WANO, OECD/NEA, etc.) which have a role to play in nuclear safety should work together, respecting their different roles and responsibilities, to maximize the benefits of the lessons learned.

22. The IAEA was encouraged to facilitate the dialogue and interaction between the various stakeholders, and to give enhanced support to operating organizations, which have the prime responsibility for nuclear safety. This could include improving communication between the IAEA and the representatives of the operators and establishing a forum for enhanced communication between the various parties.

23. The IAEA and WANO were encouraged to establish a mechanism to improve their cooperation in sharing experience, and in particular to learn lessons from the Fukushima accident, while respecting each other's roles and limitations.

Global Nuclear Safety Framework

"We the Ministers [...] Commit to further strengthening the authority, competence and resources of national regulatory authorities, including through appropriate technical and scientific support and to continuously ensure their effective independence;"

24. The existence of credible, competent and independent regulators is an essential element of nuclear safety. It was recognized that effective regulatory independence is one of the main pillars for strengthening nuclear safety. All countries were encouraged to reinforce their regulatory bodies and ensure that they are genuinely independent, with clarity of role and appropriate authority, in all circumstances, and staffed by well trained, experienced personnel.

25. In order to ensure that all safety issues are fully considered, it was suggested that there be a review of the effectiveness of the Convention on Nuclear Safety and its associated review mechanisms, both of which form an important part of the global nuclear safety framework. The Convention on Nuclear Safety (CNS) could be enhanced by taking into account areas such as transparency, the independence of regulatory bodies, emergency preparedness and the peer review process. If an amendment to the Convention is undertaken, it might appropriately incorporate, among other matters, stronger requirements related to the concept of effective regulatory independence. However, the response to the Fukushima accident should not await the amendment of the Convention. And finally, it was recognized that

26. the IAEA plays a central role and is the appropriate international focal point for strengthening the global nuclear safety framework.

Conclusion

Rather than a conclusion, I would like to make a plea. During these past three months, I have seen at first hand the distress of countries with little capabilities to assess the situation; I have seen the loss of confidence of the public in the capability of governments, regulators and the industry to safely manage nuclear energy; I have seen the expectations of this same public in a strong global nuclear safety framework.

We have a responsibility to demonstrate in a totally transparent way that all actors share a common vision of safety values, share the same views on the ways to continuously enhance nuclear safety, through strong and responsible operators, through improved technology, and through the overview of a strong and independent regulator.

As a group of States sharing common regulations basis, geographically close, with a long history of working together in nuclear regulation (WENRA, HERCA, now ENSREG...) I often see European nuclear regulatory system as providing a test laboratory for what would be beneficial to many IAEA Member States. You have made IRRS missions compulsory every ten years, and harmonisation of approaches based on WENRA's work is alive and strong.

Now, I have one question: how can you ensure that other countries without the benefit of such a regional environment have the necessary knowledge, resources, safety culture...to develop and use the benefit of nuclear energy in a responsible and sustainable way? The answer lies in cooperation, capacity building, training, all these tools that we know very well and implement along the years, but when we have used all these tools, there is still the last and most important: **the verified application of recognised standards**. This is what many aspects of the Conference were about last week. This entails that a universal commitment to applying IAEA Safety Standards, and allowing the IAEA to perform international peer reviews, is the most effective tool that the international nuclear community has to build the necessary confidence between States, and to offer this confidence to the public.

This does not need any illusory international nuclear regulatory authority. Nothing is farther from the Agency's objectives.

The benefit of this commitment is enhanced nuclear safety, enhanced confidence, and should widely overshadow its cost in terms of... commitment.

This is why I shall conclude in saying that **now is the time to strengthen the IAEA Safety Standards, consistently implement them, review the safety of NPPs and work together for the benefit of the worldwide nuclear community.**