

**Keynote Address**

**International Seminar on Nuclear Safety and Security Challenges of the 21<sup>st</sup> Century**

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**Pakistan Nuclear Regulatory Authority**

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## Welcome and Introduction

- Good afternoon, ladies and gentlemen. “Nuclear regulatory challenges”, the focus of this session, are at the heart of the reflexions of many a Government today.
- Little more than a month ago, I would have started my Challenges list with the challenge of developing a nuclear regulatory framework for Newcomers, based on DS424, then I would have continued on the human resources challenge and capacity building, moving then to addressing safety / security synergies, developing safety goals for the future, and I would probably have finished on the need for regulatory systems to integrate science as an essential element of safety and security.

## Fukushima

- Today, all these challenges are still unchanged, (though DS424 is now SSG-16), only a new one has appeared: how to respond to the Fukushima accident? How to build on existing regulatory strengths, towards a stronger, even more reliable system, necessary to prevent accidents and able at the same time to answer Society’s legitimate expectations?
- Already, as I mentioned this morning, some initiatives have been launched by regulators: the so-called Stress Tests. But even before these have been completed, many voices have raised the issue of their harmonisation worldwide. This is definitely a characteristic of our time that, to the challenge of regulating a globalised nuclear industry, regulators must answer through harmonised practices.
- Additionally to harmonisation, two key words that have been in the Lexicon of regulatory systems for the last 25 years, come back with a renewed strength: Independence and Transparency, accompanied by the necessity of a stronger and more visible commitment to the implementation of the internationally recognised standards in nuclear safety and security. These questions will most certainly be at the heart of declarations and discussions during the June Ministerial Conference decided by Director General Amano.

## S&S

- As every Member State is aware, the responsibility to ensure safety and security rests primarily with the country concerned . Both safety and security are built on a legal and regulatory framework, which defines responsibilities for the State, the regulatory authority, and the operating organizations. At the heart, at the basis, safety and security

both serve to protect people, society, and the environment. Whether the cause is an accident or a security breach, managing safety and security becomes a cornerstone of a responsible nuclear development whereby efforts in both areas strive to avoid the same consequences.

- At this point, I want to quote one of the preambular paragraphs of the amendment to the Convention on the Physical Protection of Nuclear Material: “*CONVINCED that this Convention should complement the safe use, storage and transport of nuclear material and the safe operation of nuclear facilities,*” which illustrates the necessary convergence of these two faces of the same coin
- The IAEA Safety Standards and Security Guidances are among the key instruments for knowledge sharing among nuclear professionals worldwide. To prevent another serious nuclear accident or terrorist event, we need new thinking and a new approach adapted to our dynamically changing global situations.
- To that effort over the past year, the IAEA continued to strengthen synergies and integration of its global nuclear safety and security framework through, inter alia, the joint task force of the Advisory Group on Nuclear Security (Ad Sec) and the Commission on Safety Standards (CSS), established in 2009 and assigned the remit of studying, as a long term objective, the feasibility for establishing a common frame for standards, covering both nuclear safety and nuclear security.
- So far, the task force analysed the various thematic and operational areas of nuclear security and nuclear safety to determine where the domains might overlap, and where associating the domains might be feasible; it also conducted a mapping exercise to determine possible ways to combine the current structures of IAEA safety standards and security guidance. We are expecting a report this year to provide details on the way forward.

Ladies and Gentlemen

- The integration and synergy between safety and security is but one area, among several, where continued international cooperation will lead to further improvements in the Global

Nuclear Safety and Security Framework. Our challenge is how to achieve this as early and as effectively as possible.

- Promoting international cooperation is one of the key elements in the Agency's nuclear security activities. You will be aware that these activities were enhanced in March 2002 at the request of our Board of Governors with the adoption of the first Nuclear Security Plan. Currently we are implementing the third Plan which will run from 2010 – 2013.
- The objective of the Plan is to contribute to global efforts to achieve worldwide, effective security wherever nuclear or other radioactive material is in use, storage and/or transport, and of associated facilities by supporting States in their efforts to establish and maintain effective nuclear security.
- I do not wish to go into the details of the Plan in this forum but to highlight a couple of points, under the nuclear security programme, the Agency has contributed to the establishment of a global nuclear security framework through the development of different levels of documents. It has also assisted States to improve their national nuclear security regimes through the provision of advisory services, human resource development programmes and assistance to deal with legacy issues.
- To outline the achievements of these activities, since 2002, the Agency has produced 15 documents in the Nuclear Security Series to assist and guide States in meeting their obligations under the nuclear security framework; we have carried out almost 100 advisory missions to States to look at their security infrastructure; we have developed, with the States concerned, some 52 Integrated Nuclear Security Support Plans to identify proactively where work needs to be done in States and to act as a coordination tool for the implementation of that work; we have trained some 10,000 people from around 120 States on all aspects of nuclear security ranging from high level policy issues to how to use detection equipment to improve borders control; we have improved physical protection measures at 100 facilities; we have donated over 3,000 detection instruments to improve national capacities; and we have participated in the recovery of some 4,700 vulnerable radioactive sources
- Pakistan has been a key player in this work.
- As mentioned, the IAEA emphasises the importance of national responsibility for security, which Pakistan takes seriously. In fact, Pakistan has had an Action Plan in place

to strengthen nuclear security since 2006. This plan covers such items as Management of Radioactive Sources; Nuclear Security Emergency Co-ordination Center (NuSECC); Locating and Securing Orphan Radioactive Sources. Pakistan has worked with the Agency both to implement that Plan and to provide resources for its implementation. For example, Pakistan is the 10th largest contributor to the Nuclear Security Fund, contributing \$1.16 million. This is an example of its strong leadership and commitment as well as of its serious approach to nuclear security in the course of implementing its Action Plan. Additionally, over 200 people from Pakistan have attended IAEA training courses. The Agency has worked with Pakistan to provide detection instruments; staff from PNRA has received “on the job training” with IAEA; security has been improved at a number of facilities in Pakistan using radioactive sources. The relationship between the IAEA Office of Nuclear Security and PNRA is close and sets a good example for others. In fact, the Agency has benefitted from lessons learnt, in particular through membership of the past and current Chair of PNRA on the DG’s Advisory Group on Nuclear Security (AdSec).

- One month ago, the nuclear renaissance looked to be on track. But possibly weakened by Japan’s nuclear safety crisis, the shock of a security incident might have more damaging effects on the credibility of the framework devised to protect the public and the environment. It would be particularly damaging to the developing world looking to nuclear for its future energy needs.

### Harmonizing Safety: Bridging the Generation Gaps

When talking of the future, the present is the first reality check that shapes the field of possibilities. And nuclear reality is that a large percentage of the 437 reactors currently in operation today are expected to see their operating life extended beyond their initial, nominal design lifetime - frequently foreseen as 30 years - to some 50 years or more.

New NPPs currently under construction or in the design phase, are being designed with higher safety goals, and are advertised as being designed to 80 years operation. Which means two things: the next reactors will still be operating into the next, 22<sup>nd</sup> century, and they will be operated in parallel with the old generation for 20 to 40 years.

What will be the expectations of society in the 22<sup>nd</sup> century in terms of safety and security?

How to gain the confidence in nuclear safety, and the acceptance, of the public in nuclear energy, if efforts are not pursued to bring the safety of reactors designed and built in the 20<sup>th</sup> century closer to that achievable today?

These are some of the questions that regulators must strive to address, without having today a clear answer.

As a result, the IAEA together with regulators around the Globe, works to bring forward an internationally harmonised vision of the safety goals for the future nuclear power plants, and to promote ways of reducing (bridging) the generation safety gap to enhance nuclear safety throughout the generations.

Today these issues are being addressed at various national and regional levels. As concerns the Agency, the International Safety Group –INSAG –has been asked to develop a vision of the safety goals for the 21<sup>st</sup> century and beyond, a forerunner to developing safety standards for the future.

### The 3 Ss

I want now to address the subject of the 3 Ss. But not the ones you would expect. It must be understood that Safety, Security, are not just a matter of more or less bureaucratic rules. At the heart of their conception you will find scientific results. Safety of the public is based on innumerable scientific studies on the effects of radiation on health, severe accidents scenarios have been developed on the basis of the characteristics of materials in severe conditions, on experiments to validate scientific hypothesis, and on modelisations that capture and organise the knowledge developed by the international community, at the basis of preventing and mitigating accidents.

A key component of a global safety and security framework is the experts' community. However, the resources and capabilities of States could be exceeded in a large scale emergency. Thus, effective emergency preparedness and response requires communication and cooperation among States, among international intergovernmental organizations to ensure a harmonized worldwide response to nuclear or radiological emergencies, but it should also require networking the critical mass of knowledge available in mature organisations where the scientific basis for safety and security are maintained, developed, and made available to regulatory systems. Mechanisms to activate such a network of experts were part of the plan I had started to envisage in the wake of the Tokyo *International Conference on Challenges*

*Faced by Technical and Scientific Support Organizations in Enhancing Nuclear Safety and Security.* The Fukushima accident arrived too early to allow such a network to be in place. But interestingly enough, the Tokyo Conference had also focused on achieving greater safety and security synergy by establishing a TSO Forum that would act as a platform for worldwide cooperation in both safety and security.

Having come back to the starting point of synergy between Safety and Security, it is now time for me to conclude>

### Concluding Remarks

- To conclude, I would like to emphasize three key points: The first is the need for continued focus on international cooperation, especially providing support for new entrants in building actual capacity and expertise to prevent serious accidents. The second, in the wake of Japan's nuclear crisis is the vital importance of emergency preparedness and response in national and international safety infrastructures in order to mitigate the impacts of accidents should they occur. And the third is the strong commitment to and leadership for safety and security in ensuring that robust national safety and security infrastructures are in place worldwide, with effective and independent regulatory bodies, and strong safety and security management, leadership and culture... Based on internationally recognised standards and guides in safety and security.
- Thank you for your attention.