

# International Conference on Knowledge Management in Nuclear Facilities (18–21 June 2007)

IAEA Opening Statement

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Good morning, Ladies and Gentlemen,

Let me introduce myself. I am Yury Sokolov, Deputy Director General and Head of the Department of Nuclear Energy of the International Atomic Energy Agency. It is my pleasure to welcome you all to Vienna and to this *International Conference on Knowledge Management in Nuclear Facilities*.

The conference has been organized by the IAEA in cooperation with the European Atomic Forum (FORATOM), the European Commission (EC), the Japan Atomic Energy Agency (JAEA), the Nuclear Energy Institute (NEI), the OECD Nuclear Energy Agency (OECD/NEA), the World Nuclear Association (WNA) and the World Nuclear University (WNU).

This conference also involves a shared IAEA effort between the Department of Nuclear Energy and the Department of Nuclear Safety and Security, represented here by Deputy Director General Mr. Taniguchi, Head of the Department of Nuclear Safety and Security.

I also have the pleasure of welcoming you on behalf of our Director General, Mohamed ElBaradei, whom I know has a special interest in the deliberations this week. As you are no doubt aware, over the last few years the Director General has repeatedly addressed nuclear knowledge management in his speeches and reported on our activities to the IAEA's General Conference.

All applications of nuclear technology are based on nuclear knowledge. So managing, preserving and building on the knowledge we have accumulated is both wise near-term management and an important inter-generational responsibility.

In addition to contributions in the areas of human health, agriculture and industrial applications, a key area where nuclear technology can benefit humankind is the production of energy. Today, 1.6 billion people in the world are without access to electricity, and 2.4 billion rely on traditional biomass for cooking and heating because they have no access to modern fuels. In recent years we have seen rising expectations for nuclear power as a source of electricity. This rise is driven by a number of factors. The rapid growth in global energy demand is putting a premium on all energy sources. Climate change concerns have highlighted the advantages of nuclear power in terms of its minimal greenhouse gas emissions. And the sustained nuclear safety and productivity records over the past twenty years have made nuclear operating costs relatively low and stable. There are currently 437 nuclear power reactors operating in 30 countries, supplying about 15 per cent of the world's electricity. This percentage has been roughly stable since 1986. To date, the use of nuclear power has been concentrated in industrialized countries. In terms of new construction, however, of the 30 new reactors under construction, half are in developing countries.

Safety is essential for the sustainable utilization of nuclear energy, since an accident in a nuclear installation anywhere will affect society and future utilization of nuclear power everywhere. In view of the potential for the rapid expansion of nuclear power I would like to emphasize that a commitment to launch, or expand a nuclear power programme should be accompanied by a commitment to nuclear safety. Considering the limited resources of the world nuclear community, the experience and knowledge accumulated need to be better shared as the global common asset. Standards, publications and guidance issued by the IAEA, including the IAEA safety standards series and publications from the new NE document series, are examples of common wisdom developed, documented and used by the entire world nuclear community.

Nuclear knowledge has been developed and accumulated over decades of research and development (R&D). Our present generation is the owner and custodian of that body of nuclear knowledge. We fully expect that large parts of this knowledge will be used in the future — most importantly for the

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continued use of existing installations, but also for future innovations and for socioeconomic development.

Unfortunately, the present status of nuclear knowledge and its management leave much room for improvement. Since nuclear knowledge is unique in many ways, its management requires specific programmes and has specific objectives. Without diligence in managing this knowledge, substantial portions could be lost due to staff retirements and to disuse and disposal associated with changing priorities. Good management of nuclear knowledge can contribute to good economic performance, safety and innovation.

Nuclear knowledge is owned today by many different stakeholders. While some parts of nuclear knowledge are being constantly applied, developed and freely shared, other parts are ‘stranded’, restricted or not being used. There is broad agreement that the need for nuclear knowledge will only increase in the future, in all areas – for continued successful and safe operation, for subsequent decommissioning of facilities, for waste management, for the design and construction of new facilities and for increasing the contribution of nuclear applications in medicine, agriculture and industry — in particular in developing countries.

However, managing nuclear knowledge is difficult, since it is unique in so many ways. It is complex, involving high development costs and often requiring significant governmental support. It must be developed and retained over long time frames, and it is subject to special constraints due to the dual use, i.e. the possibility for many nuclear technologies to be used for both peaceful and non-peaceful purposes.

The overall state of nuclear knowledge is globally imbalanced, due partly to variations among government budgets, , demographic gaps in the professional workforce, the significant but non-uniform increase in nuclear applications worldwide, and often a past unawareness of the importance of systematically managing nuclear knowledge.

In 2002, the IAEA General Conference adopted a new resolution emphasizing the importance of nuclear knowledge management. The resolution was reiterated in subsequent years, calling for action by both the Secretariat and Member States. This conference is organized as part of the response to those resolutions, and also builds on the first conference on *Nuclear Knowledge Management – Strategies, Information Management and Human Resource Development*, organized by the IAEA in 2004 in France. At that time, knowledge management was still relatively new in the nuclear field.

It can be confidently stated that now, in 2007, nuclear knowledge management has become an important element of the nuclear industry and an important management tool for the industry. Awareness is growing, but while nuclear knowledge management is being considered in many additional organizations and Member States, it is still not at a fully satisfactory level. Important challenges remain and must be addressed, including nuclear knowledge management for continued safe operation of the existing nuclear fleet through a generational change in the workforce, nuclear knowledge management for the development of new and innovative designs, and nuclear knowledge management for satisfying the anticipated knowledge demand growth due to both new nuclear plants and growing non-energy applications.

The conference we start today addresses specifically industry needs and operating nuclear facilities. It already helps to share lessons learned from on-going programmes.

The Policy Forum on the first day will discuss how nuclear knowledge management fits into the nuclear field. Four thematic sessions follow on four key areas:

1. How nuclear knowledge management can contribute to maintaining the core knowledge that must be in place to operate existing plants safely;
2. How nuclear knowledge management can help achieve gains in economic and operational performance;
3. How nuclear knowledge management can help preserve existing knowledge and channel it towards future innovations;

4. How nuclear knowledge management can help assure the smooth and effective transfer of the knowledge of today's generation to the next generation.

A total of 145 keynotes, papers and posters will be presented at this conference. More than 270 participants are registered, coming from 50 Member States and 10 international organizations. This considerably exceeds our initial expectations with regard to the number itself, but also with regard to the broad range of topics and contributors. This conference is considerably larger than the 2004 conference in France, a clear indication of the still growing importance we all assign to this topic.

I thank you all for coming and I thank your organizations for making your time and expertise available to the IAEA. In spite of the work, I hope that you will have a pleasant stay in Vienna. Rest assured that the Scientific Secretaries will do everything possible to make this a useful and productive conference.

Mr. Dave Torgerson, Senior Vice President of AECL, Canada, has kindly agreed to serve as Chairman of this conference. Mr. Bertrand Barré from AREVA, France, agreed to serve as conference rapporteur.

I now declare this meeting open and turn it over to the Chairman.

Mr. Torgerson, you have the floor.