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Introductory Statement to the 5th Scientific Forum during the 46th Session of the IAEA General Conference

## Nuclear Power Life Cycle Management, Managing Nuclear Knowledge, and Nuclear Security

IAEA Director General Dr. Mohamed ElBaradei



### Introduction

I am pleased to welcome all of you to our 5<sup>th</sup> Scientific Forum - a venue that I am pleased to say in recent years has contributed to making the General Conference a clearinghouse of ideas in the nuclear field. Our theme this year addresses three timely and relevant issues: nuclear power life cycle management, managing nuclear knowledge and nuclear security. We have brought together at this Forum technical experts, policy-makers and other concerned parties, and we encourage active audience participation. For each topic, we hope by this Forum to take stock of the current situation and raise awareness of current concerns - but even more to generate discussion and innovative ideas of how best to proceed.

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### Nuclear Power Life Cycle Management

The discussion of nuclear power life cycle management will focus on two specific issues: nuclear power plant licence extension and facility decommissioning. Extending the operating life of existing nuclear plants will help to reduce the short term need for new generating capacity - without new capital costs. However, these extensions must take place in the context of careful safety analysis and monitoring of equipment ageing concerns. As this process begins to go forward in more countries, it will be vital that insights are shared on all fronts - technical data, safety considerations and regulatory policies. I hope that this Forum will identify opportunities for such networking.

Decommissioning also remains a challenge. While successful decommissioning and site restoration has been effectively and safely demonstrated, some public concerns remain. Again, it is vital that we learn from experience and share insights, to optimize the use of existing decommissioning resources, to address waste storage and disposal concerns, and to enhance public acceptance of the process. Experience has also shown that by improving up front the design and operation of nuclear facilities, using simple, low cost measures, we can make their eventual decommissioning safer and less costly. In this area, as well, I hope that this Forum will both provide insights on the status of decommissioning worldwide and consider ways to ensure that information about new developments is shared effectively in the future.

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### Managing Nuclear Knowledge

Like any highly technical endeavor, the use of nuclear technology relies heavily on a vast accumulation of *knowledge* - volumes of scientific research, engineering analysis, operational data, regulatory reviews and many other types of technical information - combined with a complex assortment of *people* with the requisite educational background, expertise and acquired insight to apply that body of knowledge safely and effectively. The effective management of nuclear knowledge includes ensuring the continued availability of this essential reservoir of qualified personnel. As the nuclear workforce ages and retires, and support decreases for university programmes in nuclear science and engineering, this issue is becoming critical to ensuring safety and security, encouraging innovation, and making certain that the benefits of nuclear energy - related to human health, food and agriculture, water management, electricity supply, and a host of other applications - remain available for future generations.

As most of you know, the Agency in June [convened a meeting](#) to learn what

Member States are doing and to determine what more can be achieved through co-operative international efforts. We hope through this Forum discussion to extend that dialogue - to better understand, for example, how to attract more young people to nuclear fields, how to promote better networking among academic institutions with nuclear programmes, and how to promote mutual support on this issue among governments, industry leaders, and universities.

### **Nuclear Security**

Well before 11 September 2001, the Agency was conscious of the need for the security of nuclear material, as evidenced by the [Convention on Physical Protection of Nuclear Material](#) - although this was somewhat limited in its coverage - and by the presence of Agency guidelines. However, 11 September was clearly a wake-up call for us in this area. For radioactive sources, the security element has also been an essential component for many years, but primarily as a pre-condition for radiation safety. One aspect that I hope you will consider in the Forum discussions is to what extent the security framework for nuclear material can be adapted for radioactive sources - in terms of the methods and modalities for assessing risk and threat, as well as the means of achieving adequate protection.

In a similar sense, given the extensive efforts to strengthen and expand all aspects of our nuclear security programme over the past twelve months, I believe the time is ripe for a reflective look at the scope and effectiveness of our approach. Nuclear security must be considered for all nuclear applications, in a manner that encompasses all phases of nuclear activity - the use, storage and transport of nuclear and other radioactive material, as well as the design, operation, and decommissioning of nuclear facilities. Our framework must also be broad enough to consider the needs of all States, regardless of the size of their nuclear programme, and should be supported by all.

### **Conclusion**

These and other considerations I hope will be part of a stimulating discussion here at the Forum over the next two days. Again, I welcome each of you and look forward to the Forum report, which will summarize your views and recommendations and will be conveyed to the plenary of the General Conference by Dr. Mohammad Ridwan, the Chairman of BAPETEN - the Nuclear Energy Control Board in Indonesia - who has kindly agreed to serve as rapporteur for this Forum.

We are fortunate to have not only three stimulating topics, but also three very capable individuals to moderate the individual sessions of the Forum. The moderator for nuclear power life cycle management is Dr. V. K. Chaturvedi, the Chairman and Managing Director of Nuclear Power Corporation of India Limited, who brings to the table his extensive experience in the design, construction and operation of nuclear power plants.

The moderator for the session on managing nuclear knowledge is Mr. Dave F. Torgerson, the Senior Vice President for Technology for Atomic Energy of Canada Limited. Canada is one country that has taken steps to address these nuclear knowledge issues, and Mr. Torgerson's insights will be a welcome asset to the discussion.

The moderator for our final session, on nuclear security, is Dr. Richard A. Meserve, the Chairman of the US Nuclear Regulatory Commission who, in addition to his extensive background in the nuclear field, has like many of us been deeply involved over the past year in reviewing the nuclear security framework in the US, and I hope will share some of his perspectives with this Forum.

With these remarks I hereby open the 5<sup>th</sup> Scientific Forum, and turn the podium

over to Dr. Chaturvedi.

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