WELCOME ADDRESS

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Ladies and Gentlemen,

It is a real pleasure for me to welcome you to this 6th Information Exchange Meeting organised by the OECD Nuclear Energy Agency (NEA).

Back in 1988, the Japanese government asked the NEA to launch an international information exchange programme on partitioning and transmutation (P&T). At that time, only a few countries were really active in this field. In the 1960s and 1970s, preliminary studies and experiments had been conducted in the USA, Japan and within several European countries, as well as the European Commission. The conclusions of some of the assessments published in the late 1970s and early 1980s clearly stated that the transmutation of minor actinides was considered theoretically possible, but that it was not obvious whether the potential long-term risk reduction for the waste disposal site was overall beneficial, because of the increase in short-term risks for the workers. Those studies also concluded that there were no obvious direct cost or safety incentives for P&T of actinides for waste management purposes. However, it was recognised that further investigation of advanced reprocessing techniques for conditioning of plutonium and minor actinides would be valuable.

A second phase of interest in P&T emerged at the end of the 1980s, partly based on the growing awareness of the difficulties in licensing large nuclear waste repositories and certain delays in the related R&D projects. There was a need to re-examine the validity of the P&T option in the light of the more recent results. This led Japan, France, USA and other countries to start new studies, complemented by an experimental R&D programme.

In the early 1990s, new assessment reports were published by France and the USA, as well as studies conducted under the auspices of IAEA or EC. The Nuclear Energy Agency undertook a systems study in early 1996 and published the *Status and Assessment Report on Minor Actinide and Fission Product Partitioning and Transmutation* in April 1999. It is worth emphasising four of the main conclusions of this report:

- P&T will not replace the need for appropriate geological disposal of high level waste.
- The recycling of plutonium and minor actinides could stabilise the transuranium nuclide inventory. However, multiple recycling of transuranium nuclides is a long-term venture for which it may take decades to reach equilibrium.

- Partitioning methods for long-lived radiotoxic elements have been developed on a laboratory scale and could be very useful to condition separated long-lived nuclides in appropriate matrices or in irradiation targets. These matrices could be selected to be less soluble than glass in geological media.
- Last but not least, fundamental R&D for the implementation of P&T needs long lead-times and would require large investments in dedicated fast neutron spectrum devices, extension of reprocessing plants and the construction of remotely manipulated fuel and target fabrication plants.

During the 1990s, we also noticed a renewed interest in accelerator driven systems (ADS). Today, as the participation in this meeting shows, several countries active in P&T emphasise the ADS-line. We have seen increasing international activity, especially in Europe; a growing number of bilateral and multilateral co-operations have been established. Examples of these are the collaboration of Japanese institutes with European Joint Research Centres, the 5th Framework R&D projects sponsored by the European Commission, the Technical Working Group in Europe under the chairmanship of Carlo Rubia, the ISTC activities with our Russian colleagues and the foreseen increased collaboration between USA and France.

It was in response to this emerging interest that the NEA launched new studies under the auspices of its Nuclear Development and Nuclear Science Committees. Both committees have, together with the NEA Data Bank, developed several well co-ordinated activities, covering a diverse set of issues related to P&T, such as nuclear data and benchmarks, partitioning techniques and also more strategic systems studies. Today, more exchange with the NEA Radioactive Waste Management Committee is sought and we view Session II (The Nuclear Fuel Cycle and P&T) of this meeting as a welcome step in this direction. A new Working Party on Scientific Issues in P&T has been launched and, in fact, held its first meeting yesterday here in Madrid. Other Working Parties and Expert Groups, as well as specific Workshops and Information Exchange Meetings will remain part of our work programme and they will be tailored in response to your demands. In addition, our P&T activities are now organised as a horizontal project and in that respect, a single NEA web page on P&T will announce all our projects and programmes in the future. A separate presentation in Session I this morning will cover our activities more in detail.

Ladies and Gentlemen, in the light of these past and ongoing developments, I consider it appropriate to raise two items that I regard as important for future activities on P&T.

The first is the increasing importance that nuclear power could play in response to the need for a more sustainable energy development. During the debate on climate change in den Hague two weeks ago, some delegates indicated that nuclear should be recognised as part of a future energy mix. It is for example encouraging to note that the European energy and transport commissioner, Ms. Loyola de Palacio, recognises this role of nuclear, despite some EC countries having embarked on a nuclear phase-out strategy.

If the concern for our future would be translated into a continued demand for nuclear energy, several of the developments discussed in this meeting could help reply to some of the questions regarding nuclear energy. The public would only accept an increased use of nuclear, if today's concerns about safety, waste and proliferation could be satisfied. P&T is one approach that could contribute to the sustainability of nuclear energy.

A second item relates to the assessment of P&T and especially the question of objectives and indicators to be applied. Society demands more clear objectives and indicators before embarking on

developments. This will surely become the case if society accepts increased reliance on nuclear energy. Society claims an economically viable energy resource, showing an excellent safety level, dealing in an efficient way with waste and other residuals and finally respecting the environment in the short and long term. Therefore, nuclear, and clearly also P&T, will have to face this kind of evaluation. We consider that an honest reflection on applicable objectives and criteria would be a worthwhile undertaking in the future.

In this context, we are all aware of the declining trend in nuclear education and availability of infrastructure. In today's context of deregulation and increasing competitive pressure on the utilities and on research institutes, P&T will have to face this additional challenge of limited resources and infrastructure. However, a positive factor is that the different P&T projects have presented new and challenging scientific problems that are attracting young scientists to enter the nuclear field.

This Information Exchange Meeting is again in co-operation with the European Commission and I wish to thank them for their valuable support. I believe that the co-operation we have established is a good example of how scarce resources can be shared, based on mutual understanding.

In ending my talk, I would first of all like to thank CIEMAT and its Director-General Dr. Felix Yndurain Muñoz, as well as ENRESA and its President Dr. Antonio Colino, who are jointly hosting this meeting and have ensured the success of, what I am convinced, will be a very enjoyable stay here in Madrid.

Ladies and Gentlemen, may I wish you a fruitful meeting. The numerous participation gives me confidence that the scientific programme has captured your interest and that these Information Exchange Meetings respond to your wishes. I am glad that we can also welcome participation from non-OECD countries. I invite all of you to help us shape our activities in the future and your advice or comments will certainly be taken into account and be reflected in our future programme of work.

Thank you for your attention.