

OPENING REMARKS

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Ladies and Gentlemen,

It's a great privilege and pleasure to welcome you on behalf of NEA to the Fifth Information Exchange Meeting on Actinide and Fission Product Partitioning and Transmutation. It's a particularly interesting occasion because we are able to present to you during this meeting the outcome of the systems study 'Status and Assessment Report on Actinide and Fission Product Partitioning and Transmutation', the result of fruitful work of the expert group.

Partitioning and transmutation has gained in interest during the past decade. As a result of the initiative taken by the Japanese government to launch a long-term research and development programme on the recycling and transmutation of actinides and long-lived fission products (called the OMEGA programme) the OECD-NEA was invited in 1988 to conduct an international project related to actinide separation and use. These information exchange meetings are one of the outcomes of this international project and intend to give the floor to current developments and discussion of issues in this very interesting field. Other incentives involve specialist meetings on particular scientific aspects as the NEA Nuclear Science Committee is conducting. From the outset of this programme, the involvement of and reporting to the NEA Radioactive Waste Management Committee was included, as the potential application of Partitioning and Transmutation would have impact on waste management. Here again, we have to emphasise that P&T would not at all replace the need for geological disposal for high-level waste but has potential to reduce the radiotoxic inventory there.

Four International Information Exchange Meetings have been held, differing in scope and conclusions as well as in attendance. The first meeting was held at Mito City (Japan) in November 1990. Various scientific and policy aspects of P&T were addressed and highlighted several disparate approaches which had been taken, covering a variety of aqueous and non-aqueous chemical procedures and a number of different reactor and accelerator based transmutation schemes. The second meeting took place in November 1992 at the Argonne National Laboratory (Illinois, USA). This meeting revealed a broader scope of discussed issues, including legal background, incentives and implications of P&T for the whole fuel cycle according to different nuclear policies and the need for guidance on the research and priorities. One of the main conclusions was that a comparison of systems studies in the field of P&T, some of them already in progress, should form the central part of the P&T activities under the Nuclear Development Committee of the OECD-NEA.

The third meeting was hosted by CEA in Cadarache in December 1994 and this meeting revealed the wide international interest in this subject and the great progress made throughout the OECD Member countries in understanding the implications of P&T. The fourth meeting was hosted by the Science and Technology Agency in combination with JAERI, PNC and CRIEPI and was held again in Mito City, Japan, in September 1996. This meeting could be summarised by the following:

- Goals of P&T were clearer: P&T would not replace geological disposal; potential hazard reduction was mainly associated with TRU elements; and reduction of the dose impact to man would come from mobile fission product radionuclides such as ^{129}I and ^{135}Cs .
- The main motivations for P&T were ethical reasons for the future generations and public claims concerning geological waste disposal sites.
- There was a need to better define: performance evaluation with criteria e.g. feasibility, credibility or safety gains; cut-off period; the best ways for industrial implementation; and reasonable level of extra costs.
- It would be necessary: to continue performing technical studies; to continue evaluating the results obtained; to continue with systems and strategic studies; and to continue with the necessary economical evaluations.

Today, a first phase in the assessment of P&T has been finalised and will be presented by Dr. Leon Baetslé this morning. The report "Status and Assessment Report on Actinide and Fission Product Partitioning and Transmutation", at your hand, highlights the results of a systems analysis on the complex issues involved in the P&T option. On this occasion I would like to address my special thanks and gratitude to the members of the expert group and to Dr. Leon Baetslé who has chaired this group in a remarkable way, resulting in a new publication which, I am sure, will be a standard reference in the coming years.

The conclusions of this report, although addressing the specific merits of P&T, would lead to new questions about the cost/benefit of the different highlighted partitioning and transmutation options. Especially transmutation in fast reactors and accelerator driven systems demand a comparative study, including the question of technical feasibility and projected performance of the latter. Both options will have their feedback on reprocessing needs and constraints and, in some respect, will be different in reprocessing impact.

The next phase, kindly sponsored by the Japanese government, will address these requirements, the feasibility and the reliability of Accelerator-Driven Systems as transmutation devices and this compared to fast reactors in principal. This second phase will again be co-ordinated by the Nuclear Development Committee and will start during the coming months. In addition, other studies as task forces under the umbrella of NSC will highlight the feasibility and reliability of high-power proton accelerators, the nuclear data needs at intermediate energies and calculation benchmarks on transmutation concepts, and the actinide separation chemistry which was published recently. Collaborative effort with IAEA will involve specific topics of P&T.

Dear colleagues, it's apparent that P&T is one of, if not the main issue in the coming decades. Increased reliance on electricity in an ever developing world, especially in the developing countries, will ask for readiness of production means, and most probably addressing specific demand of nuclear producing capacity if sustainability concerns, environmental maybe first, become more and more

involved in policy questions. Nuclear will need to demonstrate its capacity and should at that moment be able to propose solutions to some remaining issues, with HLW-management being key issue. P&T addresses these sensitivities and our research and development should bring the answer to the questions posed by society. The role of OECD-NEA as an international organisation, is to conduct appropriate studies in these fields and to stimulate international collaboration, a practice which has been common within this P&T community from the earliest outset. In this context we encourage information exchange between the participants.

I thank you for all coming, and I particularly wish to thank Dr. Leon Baetslé and his colleagues of SCK•CEN, as our hosts who have, I am sure, laid the basis for a successful meeting. Finally, I would like to express my special gratitude to the Organising Committee members as well as to the European Commission for their collaboration to this meeting.

I wish you all an interesting, instructive and profitable three days.