

**OPENING REMARKS BY MR. G.H. STEVENS**  
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Ladies and Gentlemen,

It is a great privilege and pleasure to welcome you on behalf of the NEA to the 4th International Information Exchange Meeting on Actinide and Fission Product Separation and Transmutation. It is a particular pleasure for me as it was here that the first of these meetings was held in 1990, and I treasure my memories of that occasion.

At a number of recent meetings related to nuclear energy but not specifically to nuclear science or to waste management, I have noticed a tendency to believe that there does exist some magic spell that will somehow relieve us of the difficulties of managing highly radioactive wastes. I, too, wish that there could be such a "spell" but I do not believe in alchemy. I do believe that patient research and ingenuity in development will improve our capabilities to meet the challenges of long-term waste management within a cost-competitive fuel cycle. I see no reason to modify the position that has been taken since the outset of this Programme, that successful application of Partitioning and Transmutation would not replace the need for geological disposal for high-level waste.

Since the NEA was invited to take up this topic in 1988, the interest in it has grown in several of our Member countries. The task is one of long-term scientific research, but it is recognised that certain short- or medium-term benefits could also be derived. There is quite a rich network of bilateral agreements on P&T between OECD countries. However, judging from the number of participants who have come a long way to this meeting there is a clear view that substantial benefits can be achieved from wider international activities and co-operation. I am very glad to see so many friends and colleagues from around the globe.

There are also some newcomers to this forum and I am glad about that too. Mainly for their benefit let me describe briefly the NEA's role and responsibilities in the field we are here to discuss. When the NEA agreed to work on the Japanese proposal for an international activity, it was entrusted to the Nuclear Development Committee. They agreed that it would be sensible to sponsor an information exchange. This led to the first Mito City meeting in 1990. That generated the idea of holding specialist meetings on particular scientific aspects. Subsequently the establishment of the NEA's Nuclear Science Committee made it more practical to hold such meetings under that committee. The Secretariat ensures close co-operation between these committees. The topic is one of great interest to the waste managers and this is recognized in the reporting of the activities we make to the Radioactive Waste Management Committee and in the nomination by it of one of its members, M. Lefèvre, as their special liaison person.

In November 1992, the Argonne National Laboratory hosted the second NEA International Information Exchange meeting. The papers presented indicated that one common thread was the need for some means of taking an integrated view of the expected benefits and possible disadvantages of including P&T in the

nuclear fuel cycle. Among other results of such an approach would be guidance on research needs. A number of emerging important issues were identified during the meeting, including the legal background, the incentives and the implications for the whole fuel cycle in different countries.

These views were carried forward at the third NEA Information Exchange meeting, hosted by the CEA at its Cadarache site in December 1994. Several participants from 11 countries, together with Russia, the IAEA and the European Commission attended the meeting which primarily focused on P&T strategic systems studies. The meeting provided a solid base for approaching a more co-ordinated NEA project, which has started in early 1996, on the benefits and penalties of adding P&T to the nuclear fuel cycle.

At that meeting, interesting papers were also presented on national policy orientations and on scientific and related data aspects. There was a wealth of wide ranging ideas and suggestions for future activities. It was noted that real progress since the Argonne meeting had been achieved in three fields:

- chemistry of separation;
- experimental irradiation of actinide-based fuels and targets had been launched in the frame of national or international programmes;
- preliminary cost estimates were presented for a P&T scenario in the frame of the EU strategic systems study.

There is a clear need for objectives against to which to measure potential benefits of P&T. Discussion at the Cadarache meeting indicated that a final set could not yet be established. Therefore, working hypotheses should be adopted for goals which can be adjusted as knowledge improves. This remains our approach.

In addition, the NEA Nuclear Science Committee (NSC) and the NEA Data Bank are co-ordinating a number of technical activities in the field of P&T. The NSC task force on different transmutation concepts has issued specifications for a calculation benchmark comparing activities from various fuel cycles after passage through different reactor and accelerator concepts. The NSC is also preparing a state-of-the-art report on the separation chemistry of actinides. An important part of the technical activities is related to nuclear data questions for transmutation applications. The data activities cover both conventional reactor and intermediate energy applications, and include the compilation of a high priority request list for nuclear data, as well as the compilation of basic experimental data themselves. The Data Bank is also setting up a collection of evaluated intermediate energy nuclear data libraries and is conducting nuclear model code comparison to validate the computational methods used.

I am looking forward to hearing in this meeting of progress in ways of evaluating a number of different P&T systems and their integration into the nuclear fuel cycle. I have no doubt that we shall also have lively discussion on the scientific ideas and results that have been coming out in the last two years. Please forgive me if I have a biased view on these matters, but I firmly believe that exchanges of information and opinion in this sort of meeting is one of the most effective ways to carry forward R&D in this complex and, in some ways, politically sensitive area. I am grateful for the support that the Japanese Government has given the NEA in order that we can continue to be sufficiently active in this field.

I know that organising a meeting like this is hard work, so I particularly wish to thank our Liaison officer Dr. Mukaiyama and his colleagues in the STA, JAERI, PNC and CRIEPI, who have, I am sure, laid the basis for a very successful and stimulating meeting. Thank you all for being here. I wish you all an interesting, instructive and profitable three days.