

SESSION I

CHAIRMAN: L.H. BAETSLÉ

The introductory papers clearly showed a growing interest in Partitioning and Transmutation (P&T) from the international community. The OECD-NEA announced the continuation of the P&T assessment study which will be focused on Accelerator Driven Transmutation Systems (ADS). The EURATOM programme managed by the European Commission and the five successive OECD-NEA information exchange meetings have greatly contributed to international collaboration.

The International Atomic Energy Agency (IAEA) has conducted a more basic programme aimed at the coverage of P&T activities from non OECD-NEA member countries and focused on safety, environmental and non-proliferation aspects of P&T.

The Japanese OMEGA and French SPIN programmes are the engines of the world-wide current R&D activities.

The OMEGA programme produced a broad spectrum of basic and applied research and pioneered the concept of the double strata fuel cycle and Fast Burner Reactors. The programme has been reviewed and will be revised in 1999. The new major direction of activity is oriented towards ADS and its associated fuel cycle. A powerful ADS machine is under construction in Japan.

The French SPIN programme achieved breakthroughs in the new partitioning methods and in the global impact of P&T on the current fuel cycle. The future evolution of the French R&D programme will be based on the comprehensive investigation of the double strata concept and its impact on the nuclear waste programme. The French P&T programme aims at reducing the waste radiotoxicity by a factor of 100. Long-term fundamental studies in the ADS field (GEDEON association) are programmed for the next decade.

A European partitioning programme, NEWPART, coupling institutes with chemical expertise, has led to very promising results:

- the DIAMEX process has been tested with success in the two different institutes.
- the combination of DIAMEX-CYANEX and SESAME can lead to the complete separation of actinides.

Partitioning activities in Russia are based on the proven methods to separate heat emitting nuclides (^{137}Cs and ^{90}Sr) and minor actinides. An industrial extraction experiment using cobalt dicarbollide at the Mayak plant showed excellent results with real high-level waste.

The OECD/NEA P&T status and assessment report is currently the most extensive database for P&T and comprises a critical analysis of the impact of P&T on the nuclear fuel cycle and waste management. Partitioning and transmutation can conceptually reduce the long-term radiotoxicity but it will require new fuel cycle plants of new dedicated reactors and an increased need for specialised intermediate storage plants. Geologic disposal structures for high active waste remain inevitable.