Summary of Session 2

Chairman: Professor M. Salvatores

In session 2, mostly national programmes had been presented (in Japan: the JAERI and PNC programmes; the activities in the Netherlands; the IPPE and ITEP activities in Russia; and in France the national programme and related scenarios studies).

In Japan, the framework was provided by the Long-Term Programme for Research, Development and Utilisation of Nuclear Energy. A new initiative had been taken by JAERI -- the Neutron Science Project. Accelerator-based transmutation was part (or would be part) of this project. In France, the framework was the 1991 Parliament Law for radioctive waste management, which required that work was performed during a fifteen year period, in order to gather the necessary elements for selecting appropriate options by the year 2006. In Russia, the role of the ISTC had been mentioned, since certain major programmes were performed there under funding of that Institute. Basic physics activities had also been highlighted.

The "double strata" concept by JAERI (presented by Dr. Mukaiyama) had the merit of conceptually confining the new P&T technologies to some specialised installations. This seemed to be a worthwhile approach to be further studied. In a somewhat opposite attitude (but also very valuable), the PNC approach (presented by Dr. Nakajima) favoured the optimisation of the standard fuel and fuel cycle technology, in order to reduce costs and increase competitiveness.

The French programmes (presented by Mrs Viala) illustrated priorities, in chemistry, for assessing, at the industrial level, the separation capability of trivolent actinides/lanthanides and, in fuel fabrication (Am targets), for realistic scenarios assessment.

In the scenarios presented by the CEA, MA were recycled in a fast reactor core: homogeneous recycling was preferred for Np, while heterogeneous recycling, by means of targets, was preferred for Am, in particular in a once-through option (this "hybrid" mode of recycling had also been considered by PNC in Japan).

The relevance of plutonium recycling characteristics was highlighted, both in the presentation of Dr. Rabotnov and in that of Dr. Delpech. In particular, the latter presentation gave quantified indications of mass flows in a reactor park recycling both plutonium and MA, and the related needs in fuel fabrication and fuel reprocessing plants; and this was a matter for discussion during the session.

From the presentations, it had been possible to recognise the wide network of international collaborations in all the fields of P&T (chemistry, physics, accelerator-based technologies). A significant example was the presentation of the Dutch programme by Mr. Kloosterman. Their programme was deeply embedded in European Commission activities and benefited from them.

In summary, constant progress had been reported by the major laboratories involved in the field. Perspectives seemed to be based on a relatively constant funding for these laboratories. The major challenge was still finding an appropriate measure for cost/benefit analyses.