SESSION III
CHAIRMAN: S. PILATE

New concrete achievements were obtained in fabrication and irradiation of americium and technetium. In the frame of the EFTTRA programme, an americium target was fabricated and irradiated. However, as the target was not sufficiently homogeneous, under irradiation it swelled substantially. Improved methods of fabrication are needed to eliminate this disadvantage.

It is interesting to note that the Americium Laboratory is planned to be operational at ITU in the year 2000. As there will be extra-shielding, targets containing some curium mixed with americium will also be handled. Further irradiation is planned in the High Flux Reactor with Am and Tc targets in order to achieve higher burnup.

In the progress of research work on the nitride fuel cycle at JAERI, an important aspect was mentioned: the recycling of ^{15}N could probably be done on an industrial scale with a good recovery yield (90 %), thus providing minimised costs linked to ^{15}N.

The knowledge of the physical characteristics of Tc metal and of Tc-Ru alloys was progressively enlarged.

The merits of the high thermal flux reactor at Grenoble (ILL) were shown; it was capable of determining with high accuracy the cross-section data of minor actinides. This reactor has D_2O as coolant and moderator. The example of the capture cross-section of $^{242}Am_{gs}$ was given showing the JEF 2.2 file was largely in error; however, this discrepancy was recently resolved.

Recent results were then presented from two major experimental facilities; IRMM in Geel and at CERN in Geneva. In the linac of Geel, GELINA, in close co-operation between CEA-Saclay and IRMM scientists, two investigations were recently conducted; one on the total cross-section of ^{237}Np, and the other on the total and capture cross-sections of ^{99}Tc in the resonance region. The quality of the measurements in GELINA is well known, as measurement of cross-sections is frequently done on the request of JEF2.

The TARC experiment measuring ^{99}Tc and ^{129}I capture cross-sections was described. Small samples were irradiated in the centre of a large block of pure lead with neutrons produced by spallation. While these results are of high quality, one should not extrapolate the transmutation yields on small samples to the case of the Energy Amplifier, where large quantities of Tc and I should be loaded and dispersed. One difficulty will be to minimise self-shielding effects in the targets.