

## Annex III

### THORIUM RESOURCE STUDIES IN AUSTRALIA

Australia's thorium resources are those contained in monazite, itself a by-product of mineral sands mining. Australia has some 12780 tonnes of reasonably assured resources of thorium (recoverable at less than \$80/kg TH- however, if monazite was mined solely as a source of thorium, this resource would not be recoverable at less than \$80/kg TH).

There are no specific exploration programs for thorium in Australia. Exploration effort for mineral sands (containing thorium-bearing monazite) has responded generally to changes in the price of titanium and zirconium ores.

Thorium is not produced in Australia. All monazite production is exported. Latest production figures of monazite concentrates and contained thorium are:

Production (tonnes)		
	1983	1984 (prelim)
Monazite concentrates	15141	16707 (prelim)
- thorium content	893	969

Summary of work on the utilization of Th-based fuel in Australia (provided by the Australian Atomic Energy Commission).

"The AAEC has carried out four experiments in the area of nuclear data on thorium isotopes: fission fragment angular distributions for thorium 232; the average number of prompt neutrons emitted in the fission of thorium 232; fission fragment angular distributions for thorium 230, and the fission cross-section of thorium 230. The first three experiments (concluded by 1980) aimed to examine the existence of a triple-humped fission barrier in the fission of thorium. The data from each experiment were in good agreement with such a barrier shape. The fourth experiment (still running) measured the sub-threshold fission resonance in thorium 230 near 715 keV to confirm the energy resolution and energy accuracy of the first three experiments."