

Senate Standing Committee on Economics
ANSWERS TO QUESTIONS ON NOTICE
Innovation, Industry, Science and Research Portfolio
Additional Estimates Hearing
26 February 2009

AGENCY/DEPARTMENT: AUSTRALIAN NUCLEAR SCIENCE AND TECHNOLOGY ORGANISATION

TOPIC: Molybdenum-99

REFERENCE: Written Question – Senator Eggleston

QUESTION No.: AI-3

1. During the last estimates, you discussed issues faced by ANSTO in sourcing molybdenum-99 from overseas and how you were aiming to have your own molybdenum-99 plant commissioned around Christmas of last year. Were you successful in this goal and if not why not?
2. You also mentioned that there were only 4 other sources of molybdenum-99 in the world with most of those sources relied upon old reactors. You also suggested that Australia might play a role in meeting the needs of molybdenum-99 of other countries. How is this opportunity to export molybdenum-99 panning out?
3. What is the annual value of molybdenum-99 production in Australia and how much of that are you looking at exporting?
4. Could you advise if there are any other export avenues open to ANSTO, their potential benefits, and what would be needed to see those options come about?

ANSWER

1. The hot commissioning of the plant commenced in November 2008, and was completed on 13 January 2009. ANSTO is currently awaiting necessary regulatory approvals to supply technetium generators to the Australian market (technetium is produced by the decay of molybdenum-99, which in turn is produced in a reactor and separated in a processing plant. That decay takes place in a container known as a technetium generator).
2. The first priority for ANSTO is meeting the needs of the Australian market from the molybdenum-99 processing plant (although it is anticipated that the supply of technetium generators to New Zealand will correspond with the distribution to the Australian market). Export opportunities will be explored once domestic production is consistent and reliable.
3. ANSTO currently receives \$10-12 million per annum from technetium generator sales (gross income). Given current molybdenum-99 production constraints, ANSTO produces generators almost entirely for the domestic market. ANSTO is examining the processes needed to become a significant exporter. It is premature to estimate the likely returns from export.
4. ANSTO is the only potential commercial-scale producer of molybdenum-99 to use reactor fuel and “targets” manufactured from low-enriched uranium (LEU). The use of LEU is favoured by Australia, the United States and other states for non-proliferation reasons. Depending on the outcome of US policy reviews currently underway, there may be very significant export opportunities to the US available in the future. Although OPAL has the capacity to irradiate sufficient targets to meet a substantial proportion of US demand, our processing plant (currently being licensed) does not have sufficient capacity for that purpose. Capital expenditure on a new processing plant, together with associated waste management facilities, would be required to become a major player in the global market.