Senate Standing Committee on Economics
ANSWERS TO QUESTIONS ON NOTICE
Innovation, Industry, Science and Research Portfolio
Supplementary Budget Estimates 2011-2012
19 October 2011

AGENCY/DEPARTMENT: AUSTRALIAN NUCLEAR SCIENCE AND TECHNOLOGY ORGANISATION

TOPIC: EMPLOYMENT

REFERENCE: Written Question – Senator Abetz

QUESTION No.: SI-50

1. Please define the difference between radioisotope research and radiochemistry research?

2. How many world recognised researchers for radioisotope production do you have employed at ANSTO? Please define world recognised as being the lead author in 5 or more published peer reviewed papers.

ANSWER

1. Radioisotope research involves the development of methods for radioisotope generation, purification and application. This includes target irradiation procedures, target design, radioactivity extraction from the target, final product purification and separation methods, quality control and measurement of the activity of the radioisotope(s) and the understanding of their decay products. Radioisotope research includes the development of automated and partially automated products and product systems to economically make radioisotopes available for clinical or industrial use. An example developed by ANSTO is the GenTech Tc-99m generator, used in over 200 hospitals and clinics in Australia on a weekly basis.

   Radiochemistry is the study of the chemistry of radioactive materials. It has also come to include the use of radioisotopes to understand the chemistry of non-radioactive chemical systems.

2. None. Consistent with the international levels of effort in nuclear science and technology, ANSTO has in recent years focused on developing new applications for existing radioisotopes (radiochemistry research) in preference to the development of new radioisotopes (radioisotope research). Consistent with this global trend, ANSTO LifeSciences has recently intensified its research efforts and has four world-recognised radiochemistry researchers, as defined above.

   In general, ANSTO has strong current experience in radioisotope production. This practical experience is not intended to result in the publication of academic papers, rather in the development of more efficient processes for radioisotope production, consistent with the mandate provided in the Australian Nuclear Science and Technology Organisation Act 1987.