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Nuclear-based science benefiting all Australians

Australian Government

22 July 2009

The Hon Martin Ferguson AM, MP
Minister for Resources and Energy
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

Dear Minister

I am writing to advise you of significant developments in international best practice in radioactive waste management which are relevant to decisions relating to how Australia manages its radioactive waste. A meeting in Vienna from 29 June to 1 July, chaired by an ANSTO officer discussed the challenges facing the management of disused radioactive sources. The report of that meeting is attached.

Millions of radioactive sources have been, and continue to be, used around the world during the last 50 years for a wide range of beneficial applications in medicine, agriculture, industry and research. The vast majority are of relatively low radioactivity (e.g. smoke detectors) and do not pose a safety or security threat. However, some applications require sources of higher activity. In some cases where high activity sources have been lost, stolen or abandoned (so-called 'orphan sources'), they have led to serious radiation accidents. In many countries, such sources were historically subject to a much less rigorous control regime than were nuclear facilities such as reactors, despite the fact that sources have caused many more accidents than nuclear facilities have.

International concerns about the security of high activity sources escalated following the 2001 terrorist attacks. Experts judge that the use of a radiological dispersal device based on such a source (RDD, or "dirty bomb") would not cause widespread death or injury. There would be a high probability of public panic, and over the longer term there could be significant economic and social impacts. The clean-up of an RDD site would be complex and arduous – leading to some analysts calling RDD's 'weapons of mass disruption'. These concerns led to the adoption by the International Atomic Energy Agency (IAEA) of the Code of Conduct on the Safety and Security of Radioactive Sources (the Code) in 2003, and of supplementary Guidance on Import and Export of Radioactive Sources in 2004.

The major safety and security threat comes from disused sources, as they are obviously more likely to be lost, stolen or abandoned ("orphaned") than are sources in everyday use. Since the adoption of the Code, concerns about the long-term management of disused sources had been expressed at international and regional meetings on the safety and security of radioactive sources. Accordingly, it was decided to hold a meeting to discuss the issue this year.

The discussion at the meeting confirmed that, given the risks of disused sources becoming orphaned and thereby potentially becoming safety and/or security risks, most countries require licensees to either send disused sources back to the supplier or to send them to a licensed recycling or waste management facility. In these countries, licensees are prohibited from retaining disused sources beyond the period required to arrange shipment to the supplier, recycler or waste management facility. Most countries also ensure that central

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storage or disposal facilities for disused or orphaned sources, which could not be returned to the supplier are available. The clear view of the meeting was that this is international best practice. Some countries have recently conducted national collection programs for disused sources – either for all disused sources, or for a class of such sources (e.g. radium sources). These collection programs are also regarded as international best practice.

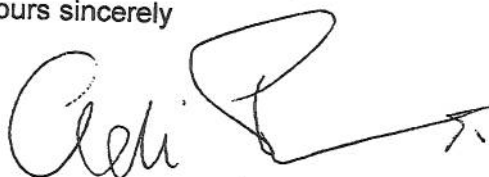
In contrast to this international situation, most Australian jurisdictions do not have licensed central facilities for the storage of disused high-activity sources (generally, their stores are small and are only used to store orphan sources). Indeed, holders of such sources are usually required to hold onto those sources indefinitely if return to the supplier is not possible. This is in contradiction to international best practice, and arises from ad hoc and short-term approaches to regulation and waste management. ANSTO is aware of a number of cases in Australia where disused sources have been discovered in abandoned premises. By good fortune, to date, there have been no serious safety or security incidents involving such sources.

Whilst radioactive sources provide a wide range of benefits, their proper management once they become disused is important for public safety. In that context, Australian jurisdictions need to review their current policies and practices to ensure that they are consistent with international best practice. This is also important from national security and regional leadership perspectives.

In ANSTO's view, it would seem important to take this issue into account in the context of the government's current review of national radioactive waste management policy. In particular, the government might consider whether it would be preferable for a single national store – meeting appropriate safety and security standards – to be created, rather than waiting for the eight states and territories to site and construct individual facilities. Early attention to the attendant national security risk would be timely.

We would be happy to provide further background on this issue if so requested.

Yours sincerely



Dr Adrian Paterson
Chief Executive Officer

Enc

Cc: The Hon Senator Kim Carr