

**Submission
No 5**

FORMER URANIUM SMELTER SITE, HUNTER'S HILL

Organisation: ANSTO
Name: Dr Ron Cameron
Position: Acting Chief Executive Officer
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EXECUTIVE

24 June 2008

Mr Ian Cohen
Chair
Legislative Council General Purpose Standing Committee No. 5
Parliament House
Macquarie Street
SYDNEY NSW 2000

Dear Mr Cohen

Former uranium smelter site, Hunter's Hill

Thank you for your invitation to make a submission to this inquiry. ANSTO's submission is attached. We would be happy to expand upon its content in a public hearing should the Committee so desire.

Yours sincerely

DR RON CAMERON
Acting Chief Executive Officer

Legislative Council General Purpose Standing Committee No. 5

Former uranium smelter site, Hunter's Hill

Submission by the Australian Nuclear Science and Technology Organisation (ANSTO)

Introduction

ANSTO is a Commonwealth Government organisation set up under statute to conduct research into, and promote the applications of, nuclear science and technology. It does this in areas as diverse as nuclear medicine, the properties of various materials and climate change.

Legislative background

ANSTO's functions are set out in Section 5 of the *Australian Nuclear Science and Technology Organisation Act 1987*. Those functions include the provision of services and advice in situations such as this, and the management of radioactive waste arising from its activities or the activities of certain other bodies, as set out in the section. The relevant parts of Section 5 are **Attachment A** to this submission.

The Hunter's Hill site

In 1911, the Radium Hill Company established a processing works on a parcel of land comprising what is now Nos 5, 7, 9, and 11 Nelson Parade at Hunters Hill in NSW for the purposes of extracting radium from uranium ore for medical and other uses. The plant closed around 1916, leaving some residual radioactive wastes.

ANSTO's role in relation to the site

Neither ANSTO nor its predecessor, the Australian Atomic Energy Commission, has had any involvement in the operation of the processing works or in the remediation of the site. ANSTO does have extensive experience in and knowledge of radiation protection issues generally, and **Attachment B** is a general information pamphlet on radiation which attempts to demystify the subject.

When Brink and Associates were assessing the site for development in October 2000, they contracted ANSTO to investigate the potential radiological issues associated with the site. The assessment was to consist of a field survey of the site, with the highest observed area to be sampled using gamma spectroscopy analysis. ANSTO was advised that the intention was to determine if further work was required or if the site was suitable for development. The survey was performed on 27 October 2000 and the report was provided to Brink and Associates.

In early 2008, NSW Health requested ANSTO to carry out an above ground gamma radiation survey of specific sites on Nelson Parade. ANSTO was advised that the aim of this survey was to provide NSW Health with the external radiation dose rate data, in the first instance, so that they could determine whether the potential exposure to members of the public from external gamma radiation was within applicable limits. On 20 February 2008, a team from ANSTO, under the direction of the NSW DECC and NSW Health, carried out the requested survey. A report setting out the findings of that survey was provided to NSW Health on 6 March.

The two reports referred to above were carried out on commercial terms. Should the recipients of those reports wish to make them available to the Committee, ANSTO would have no objection.

International guidance and experience

Australia is a party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Article 12(ii) of that Convention provides:

Each Contracting Party shall in due course take the appropriate steps to review the results of past practices in order to determine whether any intervention is needed for reasons of radiation protection bearing in mind that the reduction in detriment resulting from the reduction in dose should be sufficient to justify the harm and the costs, including the social costs, of the intervention.

The International Atomic Energy Agency (IAEA) has promulgated guidance to assist states in addressing the problem of remediation of contaminated sites – Safety Standards Series No. WS-R-3, Safety Requirements on the Remediation of Areas Contaminated by Past Activities and Accidents, 2003 (http://www-pub.iaea.org/MTCD/publications/PDF/Pub1176_web.pdf) and its associated document, IAEA Safety Standards Series No. WS-G-3.1, Safety Guide on the Remediation Process for Areas Affected by Past Activities and Accidents (http://www-pub.iaea.org/MTCD/publications/PDF/Pub1282_web.pdf). Those documents in turn draw heavily on the work of the International Commission on Radiological Protection (ICRP) on intervention in situations of ongoing exposure to the public. Practical guidance on the implementation of remediation is provided in IAEA Technical Report No. 424, Remediation of Sites with Dispersed Radioactive Contamination (http://www-pub.iaea.org/MTCD/publications/PDF/TRS424_web.pdf).

The IAEA documents note that remediation activities may include the removal or reduction of the source of exposure, as well as other long term protective actions such as restriction of the consumption of foodstuffs and restrictions on access or on land use. They stress the importance of ongoing monitoring programmes. The Safety Guide sets out a decision-making process for use when considering the remediation of contaminated sites. Of particular importance are a complete understanding of the history of the site and a full site characterisation.

Similar contamination issues have been encountered at a number of overseas sites. Of particular relevance is the remediation of a site in Ontario, Canada, the history of which is outlined at <http://www.llrwm.org/en/programs/historic/scarborough.html>. As noted above, the remediation measures to be undertaken at a particular site will be dependent upon the particular characteristics of the site; nevertheless, the Canadian experience may be of interest to the Committee.

Future consideration

If, following a proper decision-making process, a decision were taken to remove contaminated material from the site, that material should be stored or disposed of in a facility which meets the requirements of the Joint Convention and of relevant IAEA guidance. ANSTO notes that, under its Act, the material would be unable to be stored at its Lucas Heights site.

Attachment A

Relevant excerpts from section 5(1) of the *Australian Nuclear Science and Technology Organisation Act 1987*

The functions of the Organisation are:

- (ba) to condition, manage and store radioactive materials and radioactive waste, arising from:
 - (i) the Organisation's activities (including the production of radioactive materials for other persons); or
 - (ii) the activities of companies in which the Organisation holds a controlling interest (including the production of radioactive materials for other persons); or
 - (iii) the use by other persons of radioactive materials produced by the Organisation or such companies; or
 - (iv) the activities of other persons who are specified in the regulations; and
- (bb) to condition, manage and store radioactive materials and radioactive waste generated, possessed or controlled by the Commonwealth or a Commonwealth entity; and
- (bc) to condition, manage and store radioactive materials and radioactive waste at the request of:
 - (i) a law enforcement agency; or
 - (ii) a Commonwealth, State or Territory agency responsible for the management of emergencies or disasters;including, but not limited to, radioactive materials or radioactive waste involved in, or arising out of, a radiological incident or a radiological emergency; and
- (bd) to condition, manage and store radioactive waste that has been, or is to be, sent to Australia under contractual arrangements relating to the conditioning or reprocessing of ANSTO spent nuclear fuel; and
- (c) to produce, acquire, provide and sell goods, and to provide services, that are:
 - (i) in connection with the production and use of radioisotopes, and the use of isotopic techniques and nuclear radiation, for medicine, science, industry, commerce and agriculture; or
 - (ia) in connection with the conditioning, management and storage of radioactive materials or radioactive waste; or
 - (ib) in connection with nuclear science and nuclear technology; or
 - (ic) in connection with the application and use of nuclear science and nuclear technology; or
 - (ii) otherwise in connection with matters related to its activities; and
- (e) to provide advice on aspects of:
 - (i) nuclear science and nuclear technology; and
 - (ii) the application and use of nuclear science and nuclear technology; and
 - (iii) other matters related to its activities...