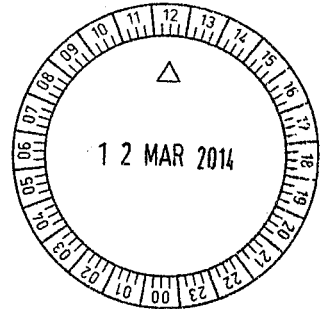




Government of **Western Australia**
Department of **Health**
Public Health and Clinical Services

Hon Simon O'Brien MLC
Chairman
Standing Committee on Environment and Public Affairs
GPO Box A11
PERTH WA 6837



Dear Mr O'Brien

INQUIRY INTO THE IMPLICATIONS FOR WESTERN AUSTRALIA OF HYDRAULIC FRACTURING FOR UNCONVENTIONAL GAS

Thank you for the opportunity to appear before the Standing Committee on Environment and Public Affairs and for the opportunity to provide further information on the queries raised during the Department of Health's submission.

Please find attached further information on how radioactive material is managed in Western Australia.

Should you have further queries or need any additional information please do not hesitate to contact me.

Yours sincerely

Professor Tarun Weeramanthri
EXECUTIVE DIRECTOR
PUBLIC HEALTH AND CLINICAL SERVICES DIVISION

10th March 2014

Att.

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Management of Radiation in Western Australia

Legislative Basis

Within Western Australia, radiation is managed under the Western Australian *Radiation Safety Act 1975*(RSA). Western Australia was the first state/territory in Australia to introduce legislation to control radiation. The RSA sets up an independent statutory authority called the Radiological Council, which reports directly to the Minister for Health. Staff of the Radiation Health Unit in the Environmental Health Directorate of the Public Health and Clinical Services Division within the Western Australian Department of Health provide the administrative support to the Council and undertake the day to day work of administering the RSA.

The Radiological Council is appointed under Section 13 of the *Radiation Safety Act 1975* to assist the Minister to protect public health and to maintain safe practices in the use of radiation.

In its position as an independent regulatory authority, the Council is required to administer the Act and to —

- implement the scheme of licensing and registration;
- conduct inquiries into alleged contraventions of the Act and, where necessary, to suspend or cancel licences and registrations;
- advise the Minister and make recommendations with respect to the technical aspects of radiation safety requirements, the methods that may be used to prevent or minimise the dangers arising from the use of radioactive substances, irradiating apparatus and electronic products, including the preparation of regulations; and
- investigate and prosecute offences.

Section 10 requires the Minister to have regard at all times to the expressed views of the Council.

The provisions contained within the RSA are based on both national and international frameworks and, as such, the requirements in the RSA are consistent with not only other Australian jurisdictions, but also many countries worldwide.

The top tier document in the Australian national framework to manage risks from ionising radiation¹ is the *Fundamentals for Protection Against Ionising Radiation* (2014). It is not mandatory and provides the underpinning science

¹ Ionising radiation means for the purposes of radiation protection, radiation capable of producing ion pairs in biological material(s).

and protection principles. It is based on international documents from both the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency (IAEA). The way that such principles translate into mandatory requirements is set out in the *National Directory for Radiation Protection* (the NDRP) and in relevant Codes of Practice, and is implemented through jurisdictional legislation and conditions of licence.

The purpose of the *National Directory for Radiation Protection* is to provide an agreed framework for radiation safety, including both ionising and non-ionising radiation, together with clear regulatory statements to be adopted by the Commonwealth, States and Territories.

The Australian Health Ministers' Conference endorsed the development of the *National Directory for Radiation Protection* in August 1999, as the means of achieving uniformity in radiation protection practices between jurisdictions. In particular, the Conference agreed that the *National Directory* would be prepared by the Radiation Health Committee for approval by the Conference, via a process for issues resolution that included meeting the Council of Australian Governments (COAG) requirements for national standard setting. The Australian Health Ministers' Conference (AHMC) agreed that, upon consideration and approval of the provisions of the Directory, the regulatory elements of the Directory shall be adopted in each jurisdiction as soon as possible, using existing Commonwealth/State/Territory regulatory frameworks.

The *Radiation Safety Act 1975* incorporates the documents and principles contained in the NDRP and, in this way, the management of radiation safety in Western Australia is based on both international and national best practice.

Legislation as it applies to Naturally Occurring Radioactive Material (NORM)

With particular regard to hydraulic fracturing, the provisions that would apply are similar to those that are already applied to other industries that involve the mining and/or processing of naturally occurring radioactive materials. Western Australia has extensive experience in regulating the mineral sands industry and is also involved in regulating the developing uranium mining industry.

The process of regulating each of these industries is industry specific. Whilst the international and national documents provide the basis and guidance for radiation protection decisions, the detail of regulation and the requirements under the RSA are based on the specifics of the individual operation. Information that is required to determine whether the site and/or industry is captured under the *Radiation Safety Act 1975* includes a pre-operation radiation survey and preliminary monitoring. Radiation levels vary considerably across Western Australia and individual assessments of each area will be required. In addition, once operations are underway, monitoring of a number of parameters, including the flow back fluid, will be required to determine if any NORMs greater

that the exempt limits outlined in the RSA exist. If levels of NORM are greater than the exempt levels, the site and its operation will be captured under the RSA and will be subject to licensing and registration.

One of the major requirements for being captured under the RSA is that the operator will be required to develop a radiation management plan (RMP) for prior approval by the Council. The essential information required in an RMP is contained within the *Code of Practice and Safety Guide for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing (2005)* published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). The RMP needs to detail all potential exposure situations for both operators and members of the public and explain the processes that will be followed to ensure that radiation doses are below the prescribed dose limits. It will also detail how any waste will be managed in order to comply with the requirements of the Act.

All transport of radioactive material in Western Australia is managed under the *Radiation Safety (Transport of Radioactive Substances) Regulations 2002*. The regulations adopt the national *Code of Practice for the Safe Transport of Radioactive Material*, which in turn adopts the *International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material 2005 Edition* (No. TS-R-1). In this way, the transport of radioactive substances in Western Australia is required to meet international and national standards.