



# Medical Association for Prevention of War

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## **Submission on Environment Protection and Biodiversity Conservation Amendment (Bilateral Agreement Implementation) Bill 2014**

MAPW Australia has serious concerns in relation to the proposed changes to the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) and its oversight of the nuclear industry, both uranium mining and waste management. This industry creates unique hazards which should be addressed at a federal level, to help ensure clear and consistent implementation of measures to protect public health.

It is vital that the Act continues to apply to the nuclear industry. Uranium mining produces radioactive materials that have impacts on both human health and environmental health. Appropriate environmental and human safeguards must be

retained, and uranium mining and milling remain within the definition of “nuclear actions” for the purposes of the EPBC Act.

An example of recent practice is the Toro Energy Willuna mine in Western Australia. The Federal government required 35 conditions to be met to protect the local environment before the mine could go ahead, whilst the West Australian government did not provide any conditions or safety requirements. It is of concern that conflict of interest may arise in decision making, as the state governments involved seek to maximise their revenue from mining projects. Environmental impact assessments, such as those seen in Queensland, fall considerably short of best practice. Indeed, when it comes to the complexities of national and international standards in regard to uranium mining, states are highly unlikely to have the capacity to provide sufficient and comprehensive evaluation and regulation.

It is concerning that the uranium industry uses the expression “mild radiation” to describe its radiological environmental impacts, when there is no regulatory basis or definition to use this term, potentially giving the impression that the levels of radiation in the uranium mining industry are without risk to the environment. The evidence is clear and unassailable that this is not correct. Furthermore, it is appropriate that uranium mining continue to be considered a 'nuclear action' as specified by the EPBC Act as the radioactivity derives specifically from nuclear decay processes.

Tailings from uranium mining are radioactive for millennia, resulting in unique environmental considerations for every uranium mine. Impacts from tailings, and impacts on aquifers have the potential to go well beyond state boundaries, which again makes relying primarily on state evaluation and regulation inappropriate.

### **Human exposures**

With regard to human exposure, all radiation regulatory frameworks around the world support the concept of the 'linear no threshold' (LNT) model of carcinogenesis. This means current research finds there is no safe lower dose- any exposure results in increased risk of malignant disease. As the US National Academy of Sciences, Biological Effects of Ionising Radiation VII (BEIR-VII) report (2006) summarised:

“..the current scientific evidence is consistent with the hypothesis that, at the low doses of interest in this report, there is a linear dose-response relationship between exposure to ionizing radiation and the development of solid cancers in humans. It is unlikely that there is a threshold below which cancers are not induced...”

As more research emerges, it has become apparent that the adverse effects of exposure to radiation are greater than previously thought. The International Commission on Radiological Protection has determined that the dose coefficient for radon gas, one of the sources of radioactivity from uranium mining, needs to be doubled, indicating that it is actually thought to be double the previously estimated carcinogenic hazard. The Australian Radiation and Protection Safety Agency (ARPANSA) is currently in the process of revising dose estimates to workers. It follows that risks to others will be increased also and this makes it even more essential that appropriate mitigation strategies are introduced. It is very likely that the environmental risks are also greater than previously thought.

Indeed, the recently released guidelines from the International Atomic Energy Agency have also revised down the dose limits for occupational exposures to the eye, commenting that some of the earlier epidemiological studies, on which limits were based, may not have had sufficient follow-up to detect either radiation-induced lens changes or visual disability requiring cataract surgery. In addition, better techniques for detecting, quantifying, and documenting early radiation-associated lens changes, as well as better dosimetry, may have been factors that contributed to the more recent findings of radiation-induced cataracts at low exposures. The equivalent dose limit for the lens of the eye for occupational exposure in planned exposure situations has been reduced from 150 mSv per year to 20 mSv per year, averaged over defined periods of five years.

This reduction in the dose limit for the lens of the eye follows the recommendation of the International Commission on Radiological Protection in its statement on tissue reactions on 21 April 2011. In the longer term, the interim guidance provided and experience gained in its application will be used as input to a number of Safety Guides that are currently being revised—on occupational radiation protection, and on

radiation safety in the medical uses of ionizing radiation. It is expected that these Safety Guides will be published in 2015–2016.

The concept of the linear dose-response relationship is also supported by all radiation regulators, the International Atomic Energy Agency (IAEA), the United Nations Scientific Committee for the evaluation of the Effects of Atomic Radiation (UNSCEAR) and many others. There is strong evidence that even at low doses any additional radiation over background levels increases the risk of malignancies. It logically follows that there are risks to non-human biota and the broader environment, even at low doses of radiation, or as the Australian Uranium Association would perhaps describe it, 'mild radiation.'

### **Non-human exposures**

With regard to non-human species, the 2010 Australian Radiation and Protection Safety Agency (ARPANSA) Technical Report No. 154 entitled “Environmental protection: Development of an Australian approach for assessing effects of ionising radiation on non-human species” made the following statements:

“It is now generally accepted that under certain circumstances, there is a need to demonstrate, rather than assume, that non-human species living in natural habitats are protected against ionising radiation risks from radionuclides released to the environment by human actions.

In an Australian context, there is a recognised need for specific national guidance on protection of non-human species, for which the uranium mining industry provides the major backdrop; it is Australian Government policy that uranium mining should be based on world best practice standards for assessing environmental impacts.

It is timely that Australia now consider the development of guidance in order to provide clear and nationally consistent advice to operators and regulators on protection of non-human species, including advice on specific assessment methods and models and how these might be applied in an Australian context.”

This report reviews the International Commission on Radiological Protection and Environmental Risk from Ionising Contaminants: Assessment and Management (ERICA) international frameworks for assessment and protection of non-human species and the applicability to the Australian context.

The general conclusions to be drawn from this report include:

- At the international level, the International Commission on Radiological Protection has established a framework for radiological assessment and protection of non-human species based on a reference animal and plant approach;
- In an Australian context, there is a need for specific national guidance on protection of non-human species, identified through the National Directory for Radiation Protection, and realised by the need of the uranium mining industry to integrate world best practice standards for assessing environmental impacts.

### **Specific concerns regarding the proposed amendments**

Under the proposals in the amendment bill, processes and guidelines issued by state government agencies may be accredited by the Federal Minister. This may result in changes occurring without parliamentary oversight. It is essential that regulations, guidelines and processes are set out in law by the Federal State and Territory governments, so they are subject to public scrutiny and consistent with best practice.

Similarly, the proposed changes may enable accreditation of bodies other than the State or Federal Government. This may result in local government or other bodies taking responsibility for protection of areas of national environmental significance. This is a dangerous proposal as not only are these bodies subject to limited oversight, but also such bodies are highly unlikely to have sufficient resources and expertise to properly evaluate the many complexities of proposals. Delegation of environmental regulation to such unsuitable bodies is unacceptable, and an abrogation of responsibility on the part of the Federal government.

Thirdly the new Bill would give the Federal Minister the ability to approve “minor amendments” without recourse to the parliament. This may well lead to the undue influence being brought to bear on the Minister. As a result his or her decisions regarding what does and does not represent “material adverse impact” may not reflect what is in the best interests of the environment and health of the community. Once again it is clear that regulations, guidelines and processes need to remain set out in law, so they are subject to parliamentary oversight and public scrutiny and consistent with best practice, and thus amendments are also subject to appropriate scrutiny.

Lastly, assessment of any proposed nuclear waste storage site will fall under the EPBC Act. Given the already mentioned limitations in state and territories resources and expertise, federal oversight and regulation are essential in the setting of what would be a very long term proposal. This waste storage site will have very significant ramifications for the local and regional population and the regional environment, and it is neither acceptable nor appropriate for evaluation and approval of such a site to be delegated to any state or territory.

## **Conclusion**

Without federal oversight and reporting, best practice standards are highly unlikely to happen in any consistent, coherent or comparable manner. So maintaining the federal EPBC Act in its current form is essential.

Given the clear human health and environmental risks of even low dose radiation exposure, it is also entirely appropriate that uranium mining and milling remain within the definition of "nuclear actions" in the EPBC Act .

Internationally, radiation regulation is increasing, as the risks to human health and the environment become more apparent. The international emphasis (by the IAEA) is increasingly to consider radiation an environmental (as opposed to just a human) hazard so it is entirely appropriate that uranium mining be subject to Commonwealth environmental legislation. There is also patently no reason why uranium mining should be exempt from the remit of the existing EPBC Act.

In summary, the uranium mining industry produces radioactive materials that have impacts on both human health and environmental health. Federal oversight is crucial to prevent long term impacts on both human and non-human species.

It is essential that appropriate environmental and human safeguards remain, and the EPBC Act is not amended. It is also important that uranium mining and milling remains within the definition of “nuclear actions” for the purposes of the EPBC Act.

For the health of our community and our environment here is a clear need for federal oversight to ensure clear, consistent and ongoing implementation of best practice standards.

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