

## Consultation Regulation Impact Statement (CRIS) for Model work health and safety regulations and Codes of Practice for mines.

**Submission from: SA Environment Protection Authority (SA EPA)**

While it can be argued that ionising radiation in modern mining contexts does not present a “risk of multiple fatalities in a single incident or fatalities in a series of recurring incidents” (as defined in proposed regulation 9.1.4), neither the CRIS, nor its associated *Issues paper*, make a case for including ionising radiation as a principal mining hazard under the model work health and safety legislation given the existence of a nationally endorsed radiation protection framework. The proposed Code of Practice on naturally occurring radioactive materials (NORM) is also unwarranted in light of the fact that more comprehensive documents already exist that are published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and are referenced in jurisdictional legislation.

### Statement of the problem giving rise to a need for action and the proposed regulations

Most fundamentally, the CRIS does not accurately define the problem to be addressed by the proposed regulations in relation to ionising radiation. The CRIS states the problem as (p.33):

*There is not a consistent approach across jurisdictions to the concept of managing these types of hazards [ionising radiation] as a principal mining hazard or for the regulation of these significant hazards [ionising radiation]. This means that these key hazards [ionising radiation] are being regulated to different standards, which may have implications for worker health and safety.*

This may be the case if only existing occupational health and safety/mine specific legislation is being considered as regulating for worker radiation protection, but such a problem does not exist if account is taken of the radiation protection legislation which exists across the jurisdictions, and the changes being made there. National uniformity is being achieved as each jurisdiction moves to adopt in their radiation protection legislation the requirements of the nationally agreed, ARPANSA Radiation Protection Series No.6 publication titled *National directory for radiation protection* (2011)<sup>1</sup>.

The CRIS acknowledges this in its discussion of the impacts of the proposed regulations(p.37):

*Radiation is currently regulated under different legislation, often under public health legislation, ... in most jurisdictions. Jurisdictions will have within their body of legislation requirements to manage the risks of ionising radiation, predominantly based on standards and guidelines developed by the Australian Radiation Protection and Nuclear Safety Agency [ARPANSA]. ...*

*... the regulations under which they [mines] work will already require these plans [radiation protection/safety plans], or the nature of the hazard [ionising radiation] will require that they are already managed to the extent prescribed under the proposed regulations.*

*... it would be expected that the mine operator would already have in place controls to minimise the risk of those hazards, whether required under [ionising radiation] hazard plan, specific regulations or in complying with the general duty of care.*

Information is provided on the following pages which give an overview of South Australia’s radiation protection legislation and which should be added to section 3.1 of the final RIS.

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<sup>1</sup> The *National directory for radiation protection* sets out the agreed overall framework for radiation protection in Australia, the uniform regulatory elements which each jurisdiction is expected to adopt within its particular regulatory framework, as well as guidance to assist regulators adopt consistent approaches. A copy can be accessed at <http://www.arpansa.gov.au/Publications/codes/rps6.cfm>.

### SA's radiation protection legislation

- *Radiation Protection and Control Act 1982 (RPC Act)*
- *Statutes Amendment (Budget 2010) Act 2010 (Part 12 – Amendment of Radiation Protection and Control Act 1982)* - The changes to the RPC Act resulting from the *Statutes Amendment (Budget 2010) Act 2010* are expected to come into force in 2012
- *Radiation Protection and Control (Ionising Radiation) Regulations 2000*
- *Radiation Protection and Control (Transport of Radioactive Substances) Regulations 2003*

### SA's radiation protection legislation (which applies in mining and mining related contexts), for example:

- defines, for example, 'ionising radiation', 'mining', 'milling', 'mineral processing', 'developmental testing operations', 'mining licence', 'radioactive ore', 'radioactive substance', 'prescribed radioactive substance'
- prescribes what are to be called "radiation facilities"
- prohibits "natural persons" from operating ionising radiation apparatus, or from using or handling radioactive substances unless authorised by, respectively, a 'licence to operate radiation apparatus' or a 'licence to use of handle radioactive substances'
- prohibits persons from possessing/carrying out a range of operations/activities involving sources of ionising radiation without an appropriate licence, and for sources of ionising radiation to be registered.
  - The following apply (as appropriate) in mining and mining related activities both downstream and upstream of mining (such as borehole logging and mineral analysis):
    - 'Licence to carry out mining or mineral processing' (s.24) - this prohibits persons from carrying out mining or mineral processing where a prescribed radioactive substance is present without having first granted such a licence
    - 'Licence to use or handle radioactive substances' (s.28) – this prohibits 'natural persons' from using or handling a radioactive substance unless the authorised by such a licence
    - 'Licence to operate radiation apparatus' (s.31) - this prohibits 'natural persons' from operating, for example, an ionising radiation apparatus unless the authorised by such a licence
    - 'Registration of premises in which unsealed radioactive substances are handled or kept' (s.29) – this requires occupiers of premises where an unsealed radioactive substance is kept or handled to register the premises under their name
    - 'Registration of sealed radioactive source' (s.30) – this requires owners of sealed radioactive sources to register them under their name
    - 'Registration of radiation apparatus' (s.32) – this requires owners of apparatus to register, for example, ionising radiation apparatus under their name
  - The following are expected to come into force in 2012 and apply (as appropriate) in mining and mining related activities):
    - 'Licence to test for developmental purposes' (s.23A) – this will prohibit persons from carrying out developmental testing operations involving, or in relation to, mining or mineral processing where a prescribed radioactive substance is present without having such a licence
    - 'Facilities licence' (s.29A) - this will prohibit persons from preparing a site for, or constructing, establishing, controlling, operating, managing, decommissioning, disposing of or abandoning, a radiation facility without having such a licence
    - 'Licence to possess a radiation source' (s.33A) - this will prohibit persons from being in possession of a radiation source unless authorised by such a 'management' licence
- sets out specific provisions relating to, for example, duties of "specified employers" (such as to maintain items in good condition, to remedy faults, to give "radiation workers" certain information, to prepare radiation safety manuals, to prevent radiation exposures above certain limits, to appoint a radiation safety officer (RSO) with "detailed knowledge of the principles and practices of all aspects of radiation protection applicable to the activities carried out by the specified employer at the establishment in respect of which the radiation safety officer is appointed", to make certain things available to an RSO, to carry out personal and area monitoring as appropriate, to keep personal radiation exposure records for each radiation worker and maintain records of certain measurements, to investigate instances of exposure of radiation workers to certain ionising

radiation doses, as well as radiation incidents, accidents and emergencies, and to prepare contingency plans

- requires employers to, for example, carry out health surveillance on “designated employers” as set out in the ARPANSA publication RPS9: *Code of practice and Safety Guide for radiation protection and radioactive waste management in mining and mineral processing* (the ‘Mining Code’)
- establishes the powers of ‘authorised officers’ (inspectorate) (s.17 and s.42), and allows authorised officers to including powers
- establishes a general objective (s.23) to ensure exposure of persons to ionising radiation is- this prohibits persons from carrying out mining or mineral processing where a prescribed radioactive substance is present without being first granted such a licence as low as reasonable achievable, social and economic factors being taken into account
- allows for maximum penalties for licence or registration holders who fail to comply with a condition of licence or registration of \$50,000 and/or imprisonment for 5 years.

Applications for the radiation licenses and registrations required under the RPC Act are considered by the SA EPA. Applicants without prescribed qualifications are assessed to determine if they have appropriate knowledge of the principles and practices of radiation protection to carry on the activities proposed to be carried on by the applicant pursuant of the licence. The SA EPA issues licences and registrations that are subject to a variety of conditions (as per s.36) that, for example, require equipment/layout design and/or work related practices conform with national documents published by ARPANSA, and in particular, those included in Schedule 11 in the aforementioned RPS6: *National directory for radiation protection* (Republished July 2011).

#### Desired objectives and options for achieving them

Given the existence of comprehensive radiation protection legislation in the jurisdictions which provides for worker radiation health and safety, it is not necessary to establish a parallel set of legislation under the work health and safety framework. Improvements in worker radiation health and safety would be better served by updating (where necessary), administering and enforcing the current radiation protection regulatory framework, including the Codes and other material developed through ARPANSA. This equates to Option 1.

It is relevant to note that some of the strengths of the existing radiation protection legislative framework are that it:

- aims to protect not only worker health and safety, but also that of the public and the environment from all dealings with ionising radiation sources
- applies in all industries which use, store, or otherwise deal with radioactive substances (including in mining and those industry sectors up and downstream of mining)
- promotes a nationally uniform regulatory approach to ensuring maximum environmental, work and public health and safety outcomes based on internationally recognised radiation protection principles.

The holistic nature of the existing radiation protection regulation means that, for example, lessons learnt in one industry context can be translated to improve radiation protection outcomes in another, and emerging issues more readily identified. Responsibility for radiation protection in South Australia lies with the SA Environment Protection Authority. For information on SA EPA roles and responsibilities in relation to ionising radiation in general and, more specifically, in mining, see

[http://www.epa.sa.gov.au/environmental\\_info/radiation](http://www.epa.sa.gov.au/environmental_info/radiation) and  
[http://www.epa.sa.gov.au/environmental\\_info/radiation/mining\\_and\\_mineral\\_processing](http://www.epa.sa.gov.au/environmental_info/radiation/mining_and_mineral_processing).

Assessment of the impact (costs, benefits and, where relevant, levels of risk) on consumers, business, government and the community of each option

Duplication of existing regulation risks a number of adverse outcomes:

- increased costs for industry from having to comply with two sets of legislation relating to ionising radiation
- confusion within industry as to what is required to comply with potentially conflicting legislation and codes
- increased inspectorate costs for government having to fund and operate two inspectorates covering the same hazard/risk
- confusion over regulatory responsibilities in circumstances where two inspectorates try to regulate the same issue
- less effective regulatory oversight of industry
- potential for differences in radiation protection outcomes to arise between mining and mining related industries, and other industry sectors.

In addition, including 'ionising radiation' as a 'principal mining hazard' in Chapter 9 would create an internal inconsistency in the overall national model work health and safety regulations when adopted in SA.

Specifically, in chapter 7 relating to 'Hazardous Chemicals', regulation 7.1.2(1)(e) states that "This part does not apply to the following: ... substances, mixtures or articles that are radioactive ...", and includes a jurisdictional note that "Some jurisdictions will insert a relevant law here". It is our understanding that when the model regulations are adopted into regulation here in SA, that a specific reference will be made to radioactive substances that are subject to control under SA's RPC Act. It would be useful for a jurisdictional note to be included similar to that allowed for in relation to Chapter 7 on 'hazardous chemicals' that effectively exempts ionising radiation sources (be they radioactive substances or apparatus/equipment which can be made to emit ionising radiation) subject to control under SA's RPC Act from the application of Part 9.

For a recent discussion of the current regulation of naturally occurring radioactive materials in Australia, please see:

Jeffries, C., Akber, R., Johnston, A. and Cassels, B. (2011). Regulation of naturally occurring radioactive materials in Australia. *Radiation Protection Dosimetry*. 146(1-3). pp:174-177.