

Model Work Health and Safety Regulations for Mining - Public Comment Response Form

Individual/Organisational name: Jim Hondros	
Regulations Chapter 9: Mines	
Part 9.1	
Regulation	Comment
Section 9.1.4	In the definition of “principal mining hazard”, ionising radiation is presented as the 8th principal hazard. However, this is out of step with the other hazards proposed, which are all “acute” exposure hazards. That is the other hazards are those that can kill or injured immediately. Radiation as experienced in mining situations, has the potential to injure (in high enough concentrations) only after long term exposure, so it is inappropriate to include it within this list. If radiation is to be included here, then so should; diesel fumes, silica, heat stress, hazardous chemical, noise, vibration etc (ie; all the other “chronic” exposure hazards).
Part 9.2	
Regulation	Comment
Section 9.2.10	This section defines “Principal Mining Hazard Management Plans”. If radiation is to remain as a “principal mining hazard”, then the requirements of the exiting Mining Code (2005) should be adequate – that is, the proponent should just be required to develop a Radiation Management Plan and a Radioactive Waste Management Plan.
Part 9.3	
Regulation	Comment
Other Comments	

Codes of Practice	
Roads and Other Vehicle Operating Areas	
Section/page number	Comment

Managing Naturally Occurring Radioactive Materials in Mining	
Section/page number	Comment
General	The document is very poorly written with numerous errors of fact and contradiction
General	There is no logic to the material presented in the document – much of the relevant information is mixed together within the sections (section 4 and 5) – and is not any clear.
General	The detail in the document is overly prescriptive – not suited to a code of practice. In addition, the detail provided is not comprehensive, with many important aspects missing. The document is more of a handbook, with a general list of things to do, rather than a select set of minimum requirements. This creates confusion.
General	The requirements for exploration are excessive given that experience shows that doses to exploration crews are very low. The level of effort is not justified given the potential radiological impacts during exploration. This perpetuates the myths around the hazards of radiation.
General	For new operators who may need to access the code, it is very complex and confusing. It is not clear on what should or should not be done.
General	The role and relevance of the ICRP framework for radiation protection and replacing it with a standardised risk system is trivialised. In the international radiation protection system, the approach to impact and risk control is very advanced and the internationally accepted approach should be maintained.
Page 4	ARPANSA does not have legislation that has jurisdictional control over mining operations
Page 4	ALARA has a very specific definition under national and international radiation protection thinking. ALARP is a broader less defined term that is applied to OHS in general.
Section 1.2	Refers to ionising radiation as a principle mining hazard as defined in the WHS Regulations. However, the definition provided in the WHS regs is inconsistent as it is a mix of chronic and acute hazards, which necessarily need to be addressed differently. If this all-encompassing approach is taken, then other principle mining hazards need to be added, such as diesel fumes and silica.
Section 1.2	Error - the ARPANSA Act does not apply to mining
Section 1.2	The principle mining hazard management plan requirement implies that the existing RMP and RWMPs are not adequate. RMPs and RWMP have been used successfully for many years to control exposures to radiation and to control radioactive wastes.
Section 2.2	This section confuses “risk” with “impact”. If there is to be exposure, then the potential impact (ie doses) can be calculated. The factors listed that “should also be considered” are a collection of control measures, dose assessment methods and resources – there is no structure to this section.
Section 3	This section starts by saying that it aligns with the ARPANSA principles found in RPS9. This is not the case. This whole section undermines the well established system of dose limitation propagated by the ICRP. To say that “the ICRP has set <i>some</i> control principles..” is to not understand the philosophy of the ICRP system. To highlight this, the draft code has aligned the ICRP principles of justification, optimisation and limitation with the “hierarchy of control” of

	elimination, minimisation and administrative control, further showing a lack of understanding of the ICRP approach.
Section 3	The ICRP system is the internationally recognised and accepted system of radiation protection and this draft code appears to be attempting to replace it. Tweaking with internationally accepted practices (which are also recognised as worlds best practices) is perilous.
Section 3	Further in this section, the document introduces the ALARP principle, stating that this is effectively the principle of optimisation. This is not the case.
Section 3	The concept of BPT is being confused with ALARA. BPT is a way of achieving ALARA. If doses have been optimised, then the best BPT option, may be to do nothing.
Section 3.2	This whole section covers a range of important radiation aspects and they are all lumped together in a haphazard and illogical manner. It would be extremely difficult for someone new to the industry to work out what was going on.
Section 3.2	This section is titled “Principles of best practicable technology”, yet it also talks about annual reviews of radiation management plans (?) Very confusing.
Section 3.2	The section titled “Principles of Radiation Design” describes “design criteria” in terms of contamination levels or dose rates. This is incorrect. Design criteria are formal physical specifications for plant construction to minimise doses.
Section 3.2	The section titled “classification of restricted areas” highlights another of the shortcomings of the document. It documents actual numbers which could be taken as guidance numbers. The issue is that examples are interspersed with text in a confusing and contradictory way throughout the document.
Section 3.2	The section titled “classification of workers” notes that “in practice...”. What practice ?
Section 3.2	The section titled “areas outside supervised areas”, all of a sudden starts discussing AMAD (particle size), which is out of context.
Section 3.2	There is a section titled “Classification of workers and dose constraints”. These are two very different concepts – they should not be lumped together.
Section 3.2	The section titled “Criteria for prediction of designated workers” provides fine detail and/or examples (it is unclear if the detail is required or just an example) on criteria – the detail here is unnecessary.
Section 4	The statement; “There are four main radiation exposure pathways that require some form of control” is incorrect. Exposures from the pathways may not need to be controlled. It should read; “There are four potential radiation exposure pathways.” that require some form of control
Section 4	The detail provided in this section is closer to a “handbook of ideas” rather than a code of practice. Much of the detail should be removed.
Section 4.1	The discussion on natural and induced disequilibrium is overly complex and largely irrelevant for this type of document. In any case, assessment of potential exposure would generally be based on an assumed uranium ore grade which would provide a conservative estimate of potential impact and dose.
Section 4.1	The section titled “Core and sample storage” is an example of guidance rather than what would normally appear in a code of practice.

Section 4.1	The section titled “contaminated equipment” provides a definition for contaminated equipment which is not consistent to that used outlined in the Code of Practice for the Safe Transport of Radioactive Materials (2008).
Section 4.1	The section titled “contaminated equipment” mentions target levels for cleaning as “background levels” – what does this mean ?
Section 4.1	The section titled “waste management” says that ARPANSA requires a waste management plan. This is not correct. ARPANSA has no jurisdiction over uranium mines. The Mining Code 2005 (issued as RSP9 and published by ARPANSA, which is adopted under state based radiation protection legislation) requires a radioactive waste management plan. Note: This may seem pedantic, but highlights the difficulties with the document. It contains errors of fact. These errors create confusion and ultimately do not lead to improved protection outcomes.
Section 4.2	The section titled “document format and cover sheet”. The inclusion of this level of detail presumes that companies are unable to develop quality documents. This is detail not required in a Code of Practice.
Section 4.2	The requirements outlined in this section for an “exploration program” are excessive and unnecessary. Measured doses from exploration activities do not warrant the requirements outlined. In addition, the level of detail in this whole section is far too much for a code of practice.
Section 5	Much of this section is a repeat of section 4. The detail is far too much for a Code of Practice.
Section 5	The section titled “Equipment and facilities for controlling radiation sources”, provides a general list of design “considerations”. The list is not exhaustive, and would be better suited in a handbook. The Code should only contain a series of principles.
Section 5	The section titled “radiation monitoring program” states that an initial monitoring program should be “exhaustive in order to thoroughly characterise....”. This is an open ended, unhelpful statement. In a previous section, the document notes that a qualified RSO should be employed. It should be the responsibility of the RSO to develop the program in a proper (rather than exhaustive) manner.
Section 5	The section titled “radiation monitoring program” discusses surface contamination monitoring for clearance of potentially contaminated equipment from the site and is more about control measures rather than routine monitoring. The routine monitoring should be conducted in workplaces etc, but the clearance checking should be addressed separately.

The Mine Records

Section/page number	Comment

WHS Management Systems in Mining

Section/page number	Comment

Inundation and Inrush Hazard Management

Section/page number	Comment
Emergency Response in Australian Mines	
Section/page number	Comment
Strata Control in Underground Coal Mines	
Section/page number	Comment
Ventilation of Underground Mines	
Section/page number	Comment
Survey and Drafting Directions for Mine Surveyors	
Section/page number	Comment
Health Monitoring	
Section/page number	Comment
Scope and Application	It says that the document provides guidance, but then states that the code “includes references to both mandatory and non-mandatory practices”. This is inconsistent. A code is a code, not a piece of legislation.
Scope and Application	This section notes that the code refers to situations that “present a significant level of risk to a persons health” – what does significant mean ?
Section 2.1	“Additional monitoring must be carried out for the following activities or chemicals” (the draft code then lists specific contaminants) This is unhelpful because all mines will have these chemicals or activities to some extent. The directive nature of this requirement (“must”) leaves no room for the operator to make an assessment of the potential for exposure. This statement is contradictory to the concept of risk assessment.
Section 2.2	The first para is confusing. The operator should be required to undertake and initial risk assessment rather than be told what to measure.
Mine Closure	

Section/page number	Comment
Ground Control in Open Pit Mines	
Section/page number	Comment
Ground Control for Underground Mines	
Section/page number	Comment
Underground Winding Systems	
Section/page number	Comment