Model Work Health and Safety Regulations for Mining - Public Comment Response by Bruce Ham BE (Mining)MSc(OHS)

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Codes of Practice	
Roads and Other Vehicle Operating Areas	
Section/page number	**Comment**
2 ID Hazard p6	The first step in identifying hazards is to review the design criteria and methodology and cross-match this with operational issues/ equipment. In identifying hazards, causal factors need to be considered. Common causal factors are failures in design and maintenance and personal error of operators. Where operator error may be a factor, fitness for duty is a key issue that needs to be considered in vehicle operations/ operators.
3 Assess Risk p7	The code should stress that in considering risk, there is single event / acute injury risk, but there is also long term risk chronic injury. Assessment, monitoring and management strategies are quite different with chronic issues often being overlooked.
.Managing Naturally Occurring Radioactive Materials in Mining	
Section/page number	**Comment**
Omission	While the need to record cumulative dose is recognised, the code of practice fails to identify that illness due to radiation exposure may have a long latency period. Company records including health surveillance should be kept for 30 years after which they should be released to a government health authority for eventual mortality analysis. Provisions need to be made to provide access to the records for population health studies. Provision needs to be made for individuals to access their own exposure and health records.
The Mine Records	
Section/page number	**Comment**
3 Content p4	Not only should the incident be recorded, but the full investigation including causal and contributing factors, failure mechanisms, remedial actions and future preventative actions also need to be recorded.
WHS Management Systems in Mining	
Section/page number	**Comment**
2.3 Elements p8	Insert after point 1 – Hazard Identification – A workplace health and safety systems is useless unless it correctly identifies hazards. Hazards may be quick acting resulting in acute injury or slow acting resulting in chronic injury or disorders with long latency periods.
Cont.	Insert after this - Review the design criteria and methodology and cross-match this with systems as constructed and operational issues/ equipment – (comment – Safe design is a OHS priority and needs to be raised regularly at the initial hazard identification stages)

5.1Monitoring p23	Monitoring needs to include reporting of incidents, injuries, travel incidents, occupational diseases and disorders, occupational exposures, health disorders in which the occupational environment may have been a contributing factor and restricted duties.
Inundation and Inrush Hazard Management	
Section/page number	**Comment**
1.1 What is ..p5	Should include: gas and/or coal/rock outbursts, material that may be fluidized as a result of vibrations (such as earthquakes or blasting) or change in the state of stress (pillar extraction or crush).
2. ID Hazard p6	Some resources are required to assess the potential for hazards at the site evaluation and design stage.
Emergency Response in Australian Mines	
Section/page number	**Comment**
2.1 ID Hazard p5	Specific hazards need to be identified. Hazards may include direct falls causing traumatic injury, closure of access, closue of ventilation paths, opening of seals of areas of toxic and or inflammable gas, damage to operating, communications, services and other safety systems,
Strata Control in Underground Coal Mines	
Section/page number	**Comment**
1.1 What is, p4	Three types of strata control . add control of surface and environmental effects. Strata control needs to consider short and long term effects of mine subsidence and related strata fracturing effects that may result in inundation, inrush and various environmental effects.
1.1 What is, p4	Design in strata control is based on modelling of coal measure strata using certain assumptions about its characteristics. The material and its structure is variable so there are limitations on the reliability of strata control measure design. As the level of risk increases, more caution is required to confirm the validity of the model and assess variations to the nature and structure of the coal measure strata.
1.1 What is, p4	Effective strata control 5 components– 1. identification and mapping of strata characteristics..4. monitoring of entry and pillar stability, pillar loading and deformations, seam and roof and floor conditions, and 5 Review and adjustment to the planning and operational processes.
3.3 Mine Geometry (intro) p9	While mine geometry is largely organised to extract coal in a cost effective manner, it is also orientated around the extent to which caving of overlying strata is to be used to maximize resource extraction and control stress in the areas where miners are working. The implication of a caving strategy is that some pillars will have a design life and are calculated to fail when appropriate to reduce concentration of stresses in areas of operations.
3.8 Pillar Extraction p14	(after para1) Caving and mine subsidence When one pillar is extracted, the immediately overlying strata caves in and the load of the overlying strata is redistributed to the adjacent pillars. As the width of extraction widens, stress on adjacent pillars increase until a critical width is reached when surface subsidence is initiated and load is partially redistributed to the centre of the caved area. At this point, significant surface subsidence is expected. Hazards and risk associated with mine subsidence needs to be considered in both the short and long terms. Apart from roof collapse, hazards include water and gas inrush from adjacent strata, contamination of ground water resources, surface movement affecting water flow and infrastructure and limitations on long-term post-mining land use.
3.9 Pillar Design p15	Probability of failure should be considered as a very crude and imperfect measure. Often a design consideration is the useful life of the mine roadway and / or pillar. The economics of mining is such that the cost of ensuring stable openings is greater than the value of material extracted in making the opening. To make underground coal mining profitable in general terms, some areas of the mine need to be designed

	to collapse or at least risk collapse after people have withdrawn from the area.
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**
Overview	The rest of the regulatory framework – the Act, regulations and codes adopt the general principles of safety management systems approach. This draft code takes a dated and very narrow approach to health monitoring. The major mining states – Western Australia, New South Wales and Queensland in key sectors, adopted the broader approach in the 1980's where fitness for duty and health monitoring were integrated. This code should undergo significant modifications to bring it up to the level of current good practice in the mining industry.
1.1 Who has duties, p5	This duty includes ensuring, so far as reasonably practicable that: • The provision and maintenance of work practices and the environment are without risks to health...(further dot points) • Persons with temporary or permanent health conditions can be reasonably accommodated to work effectively in the work environment • Persons who are sensitive or who become sensitive to specific exposures or conditions are promptly identified and steps are taken to reduce to risk to them, • Cumulative exposure is monitored so that the risk of harm to persons can be limited to acceptable levels.
New 1.2 p6	1.2 Identifying health hazards A key element in safety management systems is to correctly identify hazards. Some hazards are readily identifiable while others may be difficult. There are numerous common human ailments that may be exacerbated by work or exposures in the mining industry. Various disorders may compromise the workers ability to work effectively or may require some work modification to enable effective work. Some disorders have a long latency so that the effects are not experienced until many years after the initial exposure. While asbestos related cancers are a case in point, There are other conditions and there is a possibility that new health conditions may emerge in the future.
1.2 What is health monitoring in mining? P6	After paragraph 4 Health monitoring included occasional and periodic health assessments to ensure the mine work does not have a medical condition that puts either the worker or other workers at risk. This requires the assessing medical practitioner to have an in-depth knowledge of the ergonomic

	requirement of the tasks that the mine worker is required to perform. To this end, it is useful to refer to the Ausroads (2003) guidelines for 'Assessing fitness to Drive'. There are usually some additional mine related equit=rements. Health monitoring includes collation of data on cumulative exposure and relating this to dose-response relationships. Health monitoring also includes compiling data on health outcomes. Such data includes periodic health assessments, exit medicals, claims for early superannuation payment due to death and total permanent disability and mortality studies. To facilitate comprehensive mortality studies, mine workers need to be identified on a centralised register so that death data can be extracted from the Deaths Index that is held by the Australian Institute of Health and Welfare.
3.6 Results of monitoring p15	Confidentiality of personal medical information needs to be considered when advising the employer of how a medical condition may impact on a mine workers ability to work safely. A useful way to frame the information is provided in Ausroads (2003) 'Guidelines for 'Assessing fitness to Drive'.
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**