

SECOND HAZELWOOD MINE FIRE INQUIRY
STAFFING OF ANGLESEAMINE FOLLOWING ITS CLOSURE
SUPPLEMENTARY REPORT OF RODINCOLL

INTRODUCTION

1. This supplementary report about staff required at the Anglesea mine after its closure was requested by letter from the second Hazelwood Mine Inquiry dated 23 July 2015¹.
2. The tasks that will be carried out after closure are listed in the Inquiry's letter as follows:
 - A security presence 24 hours per day and 7 days per week.
 - Sufficient people to carry out the inspection and monitoring of the mine at least to the extent recommended by Mining One in its report to Alcoa dated July 2015.
 - Sufficient people to carry out appropriate preventative maintenance and testing of the equipment that will remain on the site (see supplementary statement of Warren Sharp dated 14 July 2015 at [71]-[73]).
3. The supplementary report was asked to identify:
 - the number of people needed to perform these tasks; and
 - the expertise and skills that those people should possess.

TASKS TO BE PERFORMED AFTER CLOSURE

4. The equipment to be retained on site after closure was listed as one 60,000 litre water cart, one excavator, and one wheel dozer in the supplementary statement of Warren Sharp². To assist with scoping the nature of the skills required, this plant is illustrated in Figure One.
5. The Company is working to identify and engage adequately trained operators for this equipment by 31 August 2015, who will be available to respond to fire as required in a timely manner.
6. The task of plant operation is additional to the tasks listed in Para. 2.

¹ Included in Appendix One.

² Supplementary statement of Warren Sharp (paras. 71-73)



Figure One: Plant items to be retained at the mine after closure³

7. The scope of work required at the mine after its closure is shown in Table 1.

ITEM	TASK	REQUIREMENT
1	Security presence	24 x 7
2	Inspect and monitor mine	As specified in Table 2
3	Operate mechanical plant	As required for 3 plant items
4	Maintain and test equipment	As required by Preventative Maintenance Program

Table 1 - Tasks to be carried out at mine after closure

³ Supplementary Statement of Warren Sharp Para 71.

MINE INSPECTION FREQUENCY

ITEM	SOURCE: MINING ONE TECHNICAL REVIEW ¹	LOCATION	FREQUENCY OF INSPECTION
1	Para 3.2.2: Recently exposed coal that is left uncovered	South western face	Daily
2	Para 3.2.5: Recently exposed coal that is left uncovered	Western pit limit	Daily
3	Para. 4.1: Coal face that has been exposed to air for more than two years and will not be covered	West wall	weekly
4	Para 4.1: Coal face that has been exposed to air for less than two years that is left uncovered	West wall	Daily for three months, then twice a week
5	Para 5.1.1: Oxidation in coal exposed by water erosion	Overburden fill areas	Inspection following rainfall
6	Para 4.3.1: Oxidation of coal under overburden cover in crevices or at edges	OB fill areas	Constant vigilance, infrared monitoring suggested

Table 2 - Inspection frequency of various coal combustion risks specified in Mining One Technical Review of Anglesea Mine Coal Coverage

EXPERTISE AND SKILLS REQUIRED BY PERSONNEL

Maintain and test equipment, Item 4 in Table 1

8. "Maintain and test equipment" arrangements for plant and vehicles working at the mine will follow the industry pattern with two levels of responsibility.
9. The plant operator is required to carry out daily checks on the equipment. Minor defects are logged for attention. If a fault affecting functionality or safety is found, the machine is tagged and withdrawn from service until the fault has been rectified.
10. Programmed preventative maintenance based on the manufacturer's requirement is carried out by plant fitters as required. On a large project a base workshop may be established. For a small number of plant items, program maintenance is a mobile, often contracted service.
11. There would be no requirement for on-site maintenance staff to carry out this function after 31 August.

Determination of skills required to perform Items 1-3 in Table 1

12. The skills, knowledge and abilities required to safely and effectively perform a task or a group of tasks has been assembled into a national training framework by the Australian National Training Authority. The base units for a particular task are called competencies, which are assembled into blocks for job training, selection and qualifications.

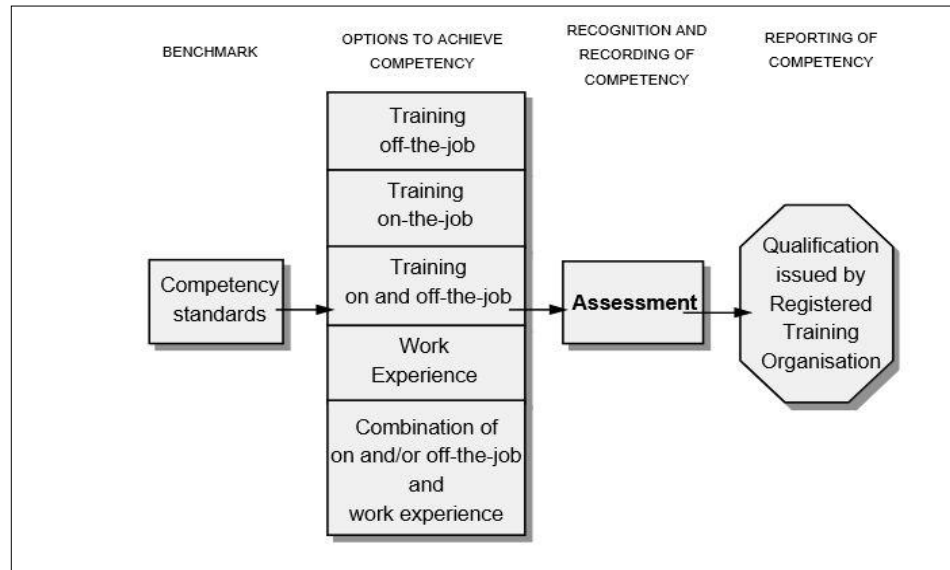


Figure 2: Development of workplace competencies

13. Protocols for the assessment of skills, knowledge and abilities (KSA's) have been developed to provide evidence that an employee can deliver the required task performance (Figure Two)⁴. This is required to demonstrate quality assurance and risk management as a component of the organisation's Safety Management System, to comply with workplace legislation.
14. Competencies have been assembled into industry groups. The Extractive Industries ITAB (Industry Training Advisory Board) have issued the Extractive Industries Training Package (MNQ98). This covers competency standards in the mining industry. Each competency has elements and performance criteria that further detail the requirement (see Table 5 as an example).
15. To define the expertise and skills (i.e., the KSA's) required for the positions at the mine after closure the job competencies for security personnel, mine inspections, and plant operators need to be assembled.

⁴ Extractive industries training package - MNQ98

16. It is acknowledged that this is written without any knowledge of the Company's protocols in personnel administration, in order to provide the estimates requested by the Inquiry.

Security Personnel

17. The basic security classification is "Unarmed Guard" which includes the following competencies for Victorian licensing⁵.

CERTIFICATE II – UNARMED GUARD	
ID	competency
CPPSEC2001A	Communicate effectively in the security industry
CPPSEC2002A	Follow workplace safety procedures in the security industry
CPPSEC2003B	Work effectively in the security industry
CPPSEC2004B	Respond to security risk situation
CPPSEC2005A	Work as part of a security team
CPPSEC2006B	Provide security services to clients
CPPSEC2011B	Control access to and exit from premises
CPPSEC2014A	Operate basic security equipment
CPPSEC2015A	Patrol premises
CPPSEC2017A	Protect self and others using basic defensive techniques
CPPSEC3002A	Manage conflict through negotiation
HLTFA311A	Apply first aid or
TLIE2007A	Apply first aid
HLTFA301C	Use communication systems

Table 3: Unarmed guard competencies

18. It is also intended that the security personnel will carry out basic emergency response tasks after closure:

"The (revised) Emergency Plan will include relevant training for the security service monitoring the site, as well as put in place procedures for the security service to follow when responding to any issues, including fire, they identify"⁶.

⁵ Diamond Protection <http://www.diamondprotection.com/>

⁶ Warren Sharp - Signed Statement

19. This would involve personnel achieving accreditation in the relevant competencies, for example as selected from the Certificate in Mine Response and Rescue⁷ shown in Table 4.

RII30709 Certificate III in Mine Emergency Response and Rescue	
ID	competency
Core Units	
HLTFA301B	Apply First Aid
RIICOM201A	Communicate in the workplace
RIIOHS201A	Work safely and follow OHS policies and procedures
RIIRIS201A	Conduct local risk control
RIIQUA201A	Maintain and monitor site quality standards
Elective Units	
PUAFIR207B	Operate breathing apparatus open circuit
PUAFIR306B	Render hazardous materials incidents safe
PUAFIR307B	Monitor hazardous atmospheres
PUASAR024A	Undertake road crash rescue
PUASAR032A	Undertake vertical rescue
RIIERR201A	Conduct fire team operations
RIIERR205A	Apply initial response First Aid
RIIERR302A	Respond to local emergencies and incidents

Table 4: Mine emergency response competencies

⁷ RII30709 - from Certificate III in Mine Emergency Response and Rescue
<https://training.gov.au/Training/Details/RII30709>

Inspect and Monitor mine

20. The competencies required to carry out the mine inspections listed in Table 2 could be accredited within the competency "Conduct Local Risk Control"⁸ shown in Table 5.

**ELEMENTS AND PERFORMANCE CRITERIA OF COMPETENCY
"CONDUCT LOCAL RISK CONTROL"**

1 Plan and prepare for risk control	1.1 Access, interpret and apply risk management documentation and ensure the work activity is compliant 1.2 Inspect work area conditions to identify potential hazards 1.3 Apply risk management procedures to deal with recognised hazards 1.4 Recognise the type and scope of unresolved hazards and their likely impact
2 Assess and identify unacceptable risk	2.1 Assess and determine consequence of an event 2.2 Consider and determine likelihood of the event 2.3 Identify criteria for the acceptability/unacceptability of the risk 2.4 Assess risk against criteria to identify if it warrants 'unacceptable risk' status and action 2.5 Effectively communicate and clarify the decision to others
3 Identify, assess and implement risk treatments	3.1 Identify and consider all possible risk treatment options 3.2 Identify options by preliminary analysis and consideration of options 3.3 Analyse options, including resource requirements 3.4 Select most appropriate and effective course of action 3.5 Plan and prepare the course of action in detail and acquire/obtain required resources and approval 3.6 Implement the approved risk treatment 3.7 Review risk management processes
4 Complete records and reports	4.1 Effectively communicate accurate information to others on the course of action and implementation 4.2 Complete written records and reports for hazards and actions from personal risk assessment

**Table 5: Elements and Performance Criteria of Competency RIIRIS201D
"Conduct Local Risk Control"**

⁸ Skills DMC, Resources and Infrastructure Industry Package, Commonwealth of Australia

Operate Mechanical Plant

21. The competencies for plant operators will be accredited within the modules shown in Table 6:

LINE NO	PLANT ITEM	COMPETENCY
1	WATER TRUCK	RIIMPO206B - Conduct bulk water truck operations
2	EXCAVATOR	RIIMPO301C - Conduct hydraulic excavator operations
3	WHEELED DOZER	RIIMPO309A - Conduct wheeled dozer operations

Table 6: Plant Operators Competencies⁹

22. The competencies for Bulk Water Truck Operation are shown in Table 7.

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for operations	1.1. Access, interpret and apply compliance documentation relevant to conducting bulk water truck operations 1.2. Obtain, interpret and clarify work requirements and procedures for the satisfactory completion of the allocated job 1.3. Access, interpret and apply geological and survey data required to complete the allocated job 1.4. Resolve coordination requirements with others at the site prior to commencing and during work activities
2. Operate truck	2.1. Carry out pre -start , start -up , park -up and shutdown procedures 2.2. Select and modify the operating technique to appropriately meet changing work conditions 2.3. Conduct, control and monitor operations within the equipment limitations 2.4. Act on or report monitoring systems and alarms 2.5. Recognise and respond to hazardous and emergency situations
3. Load, haul and distribute water	3.1. Load water at the water point 3.2. Carry out water haulage operations efficiently in accordance with requirements and procedures 3.3. Distribute water efficiently in accordance with requirements and procedures 3.4. Complete work in accordance with agreed work requirements and within the operating capacity of the allocated equipment
4. Carry out post-operational procedures	4.1. Inspect, fault find and report faults 4.2. Carry out routine operator servicing , maintenance and housekeeping tasks 4.3. Maintain and process records and reports

Table 7: Competency RIIMPO206B - Conduct bulk water truck operations¹⁰

⁹ <https://training.gov.au/Training/Details/RIIMPO206B>

¹⁰ <https://training.gov.au/Training/Details/RIIMPO206B>

23. The competencies for Hydraulic Excavator Operation are shown in Table 8.

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for operations	1.1. Access, interpret and apply compliance documentation relevant to conducting hydraulic excavator operations 1.2. Obtain, interpret and clarify work requirements for the satisfactory completion of operations 1.3. Access, interpret and clarify geological and survey data required to complete the allocated work 1.4. Inspect and prepare work area in coordination with others 1.5. Identify, address and report potential hazards and risks 1.6. Resolve coordination requirements with others at the site prior to commencing and during work activities 1.7. Select personal protective equipment appropriate for work activities 1.8. Evaluate equipment and /or attachments supplied for suitability for the work to be undertaken to maximise efficiency and effectiveness of work activities
2. Operate hydraulic excavator	2.1. Carry out pre -start , start -up , park -up and shutdown procedures 2.2. Walk excavator and position for operation 2.3. Select and modify the operating technique to appropriately meet changing work conditions 2.4. Conduct, control and monitor operations within the equipment limitations 2.5. Act on or report monitoring systems and alarms 2.6. Distribute bulk materials into materials handling equipment to ensure maintenance of the stability and maximum load requirements. 2.7. Load bulk materials into materials handling equipment 2.8. Side cast bulk materials 2.9. Recognise and respond to hazardous and emergency situations 2.10. Complete work in accordance with the agreed plan and outcomes and within the operating capacity of the allocated equipment
3. Carry out post-operational procedures	3.1. Inspect, fault find and report faults 3.2. Carry out operational maintenance and housekeeping tasks 3.3. Process records and reports

Table 8: Competency RIIMPO301C - Conduct hydraulic excavator operations¹¹

¹¹ <https://training.gov.au/Training/Details/RIIMPO301C>

24. The competencies for Wheeled Dozer Operation are shown in Table 9¹².

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for operations	1.1. Access, interpret and apply compliance documentation relevant to wheeled dozer operations 1.2. Obtain, interpret and clarify/confirm work requirements in the form of shift briefings, handover details or work orders before proceeding 1.3. Access, interpret and apply geological and survey data required to complete the allocated work 1.4. Access and apply safety information and requirements throughout the work
2. Operate wheeled dozer	2.1. Resolve coordination activities with others at the site prior to commencement of, and during the work activity 2.2. Carry out pre-start, start-up, park-up and shutdown procedures 2.3. Control speed and articulated steering of the wheeled dozer during tramming operations 2.4. Use dozer controls and functions effectively, including manoeuvre, blade and ripper to complete specified tasks 2.5. Carry out towing of equipment and plant safely and in accordance with authorised equipment and/or connection capabilities 2.6. Maintain safe grip, traction and productivity in varied operating conditions 2.7. Act on or report monitoring systems and alarms 2.8. Recognise and respond to hazardous and emergency situations 2.9. Complete work in accordance with the agreed plan and outcomes and within the operating capabilities of the allocated equipment
3. Carry out operator maintenance	3.1. Carry out dozer inspections and fault-finding 3.2. Carry out authorised routine operational servicing, lubrication and housekeeping tasks 3.3. Carry out authorised minor maintenance 3.4. Process records

Table 9: Competency RIIMPO309A - Conduct wheeled dozer operations

¹² <https://training.gov.au/Training/Details/RIIMPO309A>

DETERMINATION OF THE NUMBER OF PERSONNEL REQUIRED AFTER 31 AUGUST 2015.

25. Having assembled the competencies for the positions required at the mine after 31 August 2015, it remains to determine the number of people needed to perform these tasks.

Inspect and monitor mine - Item 2 on Table 1

26. The "Inspect and monitor mine" function requires daily inspections of a number of locations in the mine as shown in Table 2. Inspections to detect incipient coal oxidation would be carried out during the heat of the day. Erosion checks would follow rainfall when it was safe to do so.
27. It is considered that these inspections can be combined with the security site patrol duties following the required training and accreditation. Additional personnel would not be required for this work.

Security presence - Item 1 on Table 1

28. The security presence is to be on duty 24 hours 7 days a week, requiring a shift crew.
29. To allow for a two-person site patrol on day shift and a continuation of access control in the gatehouse, the practical minimum is two personnel on 24x7 shift and one on 1x7 day shift. A minimum of two personnel are required for the night shift.
30. One position on a 24x7 shift roster requires (approx.) 5.5 full time equivalent (FTE) personnel, thus the minimum strength of this roster would be 11 personnel. One position on a 1x7 roster requires 1.5 FTE's, in practice, two personnel, so on the basis outlined the security presence would require 13 personnel as shown in Table 10.

Operate mechanical plant - Item 3 on Table 1

31. The requirement for plant operators is linked to "fire alert" weather conditions conducive to the spread of fire, or to repair subsidence or erosion of the fill following rainfall.

32. In this context it should be borne in mind that coal oxidation (in the form of a "steamy coal event") is an indicator of the need for prompt recovery work and not an urgent call for fire suppression activity¹³.
33. This could involve plant operators on a 1x7 day shift with security and site inspection duties. Two plant operators would be required for this roster. This would mean that there was always one plant operator to initiate a response to a "steamy coal" event during daylight hours. The second plant 1x7 operator on this roster could be on availability for a call-in support in the event of such an incident.
34. Additional plant operators on a short notice availability roster could be secured by agreement with a skilled labour hire company. This option is included in Option 2 of Table 10.
35. The main advantage of Option 2 is that there would always be a machine operator available on day shift.
36. Alternatively, in view of the generally non-urgent work likely for plant operators, a short-notice availability roster geared to a mine fire alert would provide cover for the level fire risk anticipated at the mine. This is included in Option 1 on Table 10.
37. However in view of the relatively low probability of a fire event outside conditions conducive to the spread of fire, Option 1 is considered to cover the risks identified for fire ignition at the mine after 31 August 2015.
38. If suitably trained and accredited plant operators cannot be recruited for a short term availability roster, then an Option 2 style arrangement involving additional plant operators may be needed.

Supervision

39. Allowance has been made for a 1x7 shift of Company Supervisors in Table 10. It is acknowledged that other arrangements made by the Company may well be just as effective in providing oversight of the mine workforce.

¹³ Statement of Christopher John Rolland para 52

<i>Line</i>	<i>Role</i>	<i>Minimum on duty</i>	<i>Requirement hrs x days</i>	<i>FTE</i>	<i>Avail-ability</i>	<i>Source</i>
1: MACHINE OPERATORS ON AVAILABILITY						
1	Security patrol	2	24 x 7	11		Contract shift personnel
2	Day shift patroller	1	7.6 x 7	2		Contract 1X7 personnel
3	Super- vision	1	7.6 x 7	2 (1.5)		Company supervision
4	Machine Operator	0	On site during fire alert	0	4	Operators all on Availability Roster
	Total		Full time equivalent	15		
2: DAY SHIFT OPERATOR, BALANCE ON AVAILABILITY						
5	Security patrol	2	24 x 7	11		Contract shift personnel
6	Day shift patroller	1	7.6 x 7	2		Contract 1X7 personnel
7	Machine Operator	1	7.6 x 7	2		One operator on day shift, one on Availability Roster
8	Machine Operator	0	7.6 x 7	0	2	Two Operators on Availability Roster
9	Super- vision	1	7.6 x 7	2 (1.5)		Company Supervision
	Total		Full time equivalent	17		
PLANT SERVICING AND MAINTENANCE						
10	Plant maintenance	0	Servicing as required by schedule	0		Mobile plant fitters

Table 10: Two workforce Options

Mine Fire Alert Conditions

40. The probability of coal heating and vegetation fire spread increases as the temperature and surface wind rises, and the relative humidity falls.
41. It has been suggested that a local mine fire alert should be set up as and monitored on site with a set of appropriate responses¹⁴.
42. The Mine Fire Alert conditions for the Hazelwood Mine¹⁵ are set at a combination of a:
 - maximum forecast temperature above 35°C
 - minimum forecast relative humidity below 25%;
 - maximum forecast wind speeds is above 30 km/hour
 - maximum wind gust speed is above 40 km/hour
 - The forecast Forest or Grassland Fire Danger Index to exceed 40 for the Latrobe Valley or the Hazelwood Mine.
43. These parameters are measured on site.
44. A similar set of conditions would be a recommended starting point for a Fire Alert at the Anglesea mine after 31 August 2015.
45. This would be coupled to the mine fire response protocol for the 2015/2016 fire danger period.
46. An appropriate response when the Fire Alert had been triggered, would be to call in the machine operators for standby at the mine.

R A Incoll
26 July 2015

¹⁴ Second Mine Fire inquiry Report of Roderic Incoll para 207

¹⁵ Annexure 1 to Statement of James Maugher, first Hazelwood Fire Inquiry para 7