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UNITED FIREFIGHTERS UNION

SUBMISSION

INTO THE

HAZELWOOD MINE FIRE INQUIRY

HAZELWOOD MINE FIRE INQUIRY

Submission cover sheet

Post your submission with this cover sheet to:

Submissions Hazelwood Mine Fire Inquiry
PO Box 3460
GIPPSLAND MC Vic 3841

Email your submission with this cover sheet to info@hazelwoodinquiry.vic.gov.au.

Title: **Mr**	First Name: **Peter**	Surname: **Marshall**
Organisation represented(*if applicable*): **United Firefighters Union - Victoria Branch**		
Email address:	**io1@ufuvic.asn.au**	
Postal address:	**410 Brunswick Street, Fitzroy, Victoria 3065**	
Telephone: **03 9419 8811**	Mobile:	
Origin and circumstances of fire Measures by Hazelwood Coal Mine to prevent fire **Application and administration of regulatory regimes** Other (please state)	Response to fire by: Hazelwood Coal Mine **Emergency Services** Environmental Agencies Public Health Officials Other Government Agencies	

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Acknowledgements

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Signature

National & Victorian Branch Secretary , United Firefighters Union Of Australia

OR if sending electronically please confirm your acknowledgment by ticking by box **Date: 19/05/14**

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Lower ground floor
1 Spring Street, Melbourne 3000

To the Board of Inquiry

Re : UFU submission

Please find attached the United Firefighters Union submission into the Hazelwood Mine Fire Inquiry.

Please note we have provided statements from Firefighters but have withheld their identity due to avoid any possible adverse outcomes including disciplinary action. This enabled these firefighters to be candid about events and the incident management.

Please do not hesitate to contact me if you have any queries or require any further information. Please direct any such inquiries to through io1@ufuvic.asn.au or I can personally be contacted on [redacted]

Yours faithfully,

Peter Marshall
Branch Secretary

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UNITED FIREFIGHTERS UNION SUBMISSION INTO THE HAZELWOOD MINE FIRE INQUIRY

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5.1.13 6th March UFU Bulletin "Safety Alert: Water Contaimination identified at Hazelwood"

5.1.14 MFB Commissioned AMCOSH health and safety report dated 13 February 2014. The MFB did not disclose it had this report or provide it to the UFU. The UFU accessed a copy in late March 2014. This Report raised serious health and safety concerns with recommendations to be implemented on the night of 12th of February 2014 which were never fully implemented or advised to employees or the UFU.

5.1.15 24 March letter UFU to WorkSafe's CEO Denise Cosgrove - OH&S allegations

5.1.16 24 March letter UFU to the Premier of Victoria, Dennis Napthine - OH&S allegations

5.1.17 24 March letter UFU to Fire Services Commissioner (FSC), Craig Lapsley - OH&S allegations

5.1.18 24 March Letter UFU to MFB's Acting CEO Russell Eddington - OH&S allegations

5.1.19 24 March Letter UFU to CFA's CEO Mick Bourke - OH&S allegations

5.1.20 24 March Letter UFU to FSC - further advice

5.1.21 24 March "The Hazardous Health Effects of Coal Tar Emitted from Coal Seam Fires" Declan z. Clark, Monash Science School.

5.1.22 26 March update email from Peter Rau (MFB)

5.1.23 Email from Pater Rau (MFB) to UFU - "Health Management and Decontamination Plan Latrobe Valley Coal Mine Fires" - Version 1 (attached)

5.1.24 1st April Fire Services Commissioner Craig Lapsley response to UFU's 24th March letter

5.1.25 10th April letter from the State Coroner's Solicitor to UFU Secretary Peter Marshall stating the Coroner would not commence investigating the Hazelwood Mine Fire pending the publication of the Board of Inquiry's report.

5.1.26 10th April letter from Worksafe Chief Executive to UFU Secretary Peter Marshall responding to the UFU correspondence raising concerns regarding firefighters' carbon monoxide exposure. The UFU is notified that its correspondence has been referred to the Enforcement Group for "a comprehensive investigation" into the UFU's allegations .

5.1.27 14th April letter from Premier of Victoria dated 10th April to UFU stating the matter has been referred to the Emergency Services Minister.

5.1.28 'AIIMS Companion for Victoria 'Australasian Inter-Service Incident Management System (AIIMS) 2012

5.1.29 CFA's Standard Operating Procedure J3.04 - Safety Officer

5.1.30 CFA's Standard Operating Procedure 11.07 - Safety Officer/Field Safety Advisor – Role and Responsibilities

5.1.31 Email from Ken Brown regarding P2 masks

5.1.32 7th March 2014 UFU commissioned water quality testing by Bureau Veritas

5.1.33 UFU Bulletin no 39, volume 20 on 19th February 2014

5.1.34 UFU bulletin no 48, volume 20 on Tuesday 4th March 2014

5.1.35 UFU bulletin no 53, volume 20 on Thursday 6 March 2014

5.1.36 UFU bulletin no 60, volume 20 on Wednesday 19 March 2014

5.1.37 20th February 2014 OH&S and UFU inspection of Hazelwood mine fire site

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5.1.39 CFA Incident Controller procedures - SOP 8.02

5.1.40 Photo of size of boulder that missed a firefighter "I"

1.0 INTRODUCTION

The United Firefighters Union of Australia ("the UFUA") is the federally registered union representing approximately 10,000 professional firefighters throughout Australia.

The UFUA has eight branches in the ACT, New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia and an Aviation sector Branch. Each Branch has a very high level of union membership with almost all the Branches averaging around 95-98 per cent membership of professional firefighters.

The UFUA is represented on national and international organisations including Standards Australia and the International Standards Organisation (ISO).

The UFUA has participated in Inquiries including appearing before Federal Senate Committees including recently *"Recent Trends and Preparedness for Extreme Weather Events"* and in relation to the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Bill 2011.

The Victorian Branch represents approximately 3150 members including firefighters, emergency call centre employees and fire agency corporate, administration, hospitality, technical and mechanical employees. The UFU represents its members in all industrial relations jurisdictions and has participated in numerous Inquiries and Coroners Inquests and Commissions of Inquiry, examples including:

- 1997 Dandenong Fires
- Longford Explosion
- Investigation and Inquests into a Wildfire and Deaths of Five firefighters at Linton in December 1998
- 2009 Board of Reference (into CFA response times and capacity)
- 2009 Royal Commission into the Victoria Bushfires.

This submission to the Board Inquiry into the Hazelwood Coal Mine Fire raises serious concerns about the way in which the incident was managed including the risks, testing and monitoring of exposures to carbon monoxide, contaminated water and other toxins and carcinogens.

2.0 LEGISLATIVE FRAMEWORK

2.1 Country Fire Authority ("the CFA")

2.1.2 The general duty of the CFA is pursuant to section 20 of the *Country Fire Authority Act* 1958 (Vic) which states:

The duty of taking superintending and enforcing all necessary steps for the prevention and suppression of fires and for the protection of life and property in case of fire and the general control of all stations and of all brigades and of all groups of brigades shall, subject to the provisions of this Act, so far as relates to the country area of Victoria be vested in the Authority.[1]

2.1.3 The CFA also '... must assist in the response to any major emergency occurring within Victoria' pursuant to section 20AAA of the *Country Fire Authority Act* 1958 (Vic).[2]

2.1.4 A major emergency is defined pursuant to section 20AAA(2) of the *Country Fire Authority Act* 1958 (Vic) which states a:

major emergency means—

(a) a large or complex emergency (however caused) which—

(i) has the potential to cause or is causing loss of life and extensive damage to property, infrastructure or the environment; or

(ii) has the potential to have or is having significant adverse consequences for the Victorian community or a part of the Victorian community; or

(iii) requires the involvement of 2 or more emergency agencies to respond to the emergency; or

(b) a major fire within the meaning of the Fire Services Commissioner Act 2010.[3]

2.2 Metropolitan Fire and Emergency Services Board ("the MFB")

2.2.1 The function of the MFB is defined at section 7 of the *Metropolitan Fire Brigades Act 1958* (Vic) which states the functions as:

(a) to provide for fire suppression and fire prevention services in the metropolitan district; and

(b) to provide for emergency prevention and response services in the metropolitan district; and

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[1] *Country Fire Authority Act* 1958 (Vic), s 20.
[2] Ibid, s 20AAA.
[3] Ibid, s 20AAA(2).

(c) to carry out any other functions conferred on the Board by or under this Act or the regulations or any other Act or any regulations under that Act.

(2) The Board has all powers necessary to carry out its functions.

(3) The functions of the Board extend to any vessel berthed adjacent to land which by virtue of section 4(2) is part of the metropolitan district.

(4) The Board must use its best endeavours to carry out its functions in accordance with the performance standards developed by the Fire Services Commissioner under section 19 of the Fire Services Commissioner Act 2010 [emphasis added].[4]

2.2.2 The MFB's duty to assist in a major emergency is defined at section 7AA of the *Metropolitan Fire Brigades Act 1958* (Vic) which states:

(1) In addition to any other of its duties and functions under this Act, the Board must assist in the response to any major emergency occurring within.[5]

2.2.3 A major emergency is defined at section 7AA(2) of the Metropolitan Fire Brigades Act 1958 (Vic) which states a:

major emergency means—

(a) a large or complex emergency (however caused) which—

(i) has the potential to cause or is causing loss of life and extensive damage to property, infrastructure or the environment; or

(ii) has the potential to have or is having significant adverse consequences for the Victorian community or a part of the Victorian community; or

(iii) requires the involvement of 2 or more emergency agencies to respond to the emergency; or

(b) a major fire within the meaning of the Fire Services Commissioner Act 2010.[6]

2.3 Occupational Health and Safety Act 2004 (Vic)

2.3.1 The OH&S duties of employers to employees is defined pursuant to section 21 of the *Occupational Health and Safety Act 2004* (Vic):

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[4] *Metropolitan Fire Brigades Act 1958* (Vic), s 7.
[5] Ibid, s 7AA(1).
[6] Ibid, s 7AA(2).

(1) An employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health. Penalty: 1800 penalty units for a natural person; 9000 penalty units for a body corporate.

(2) Without limiting subsection (1), an employer contravenes that subsection if the employer fails to do any of the following—

(a) provide or maintain plant or systems of work that are, so far as is reasonably practicable, safe and without risks to health;

(b) make arrangements for ensuring, so far as is reasonably practicable, safety and the absence of risks to health in connection with the use, handling, storage or transport of plant or substances;

(c) maintain, so far as is reasonably practicable, each workplace under the employer's management and control in a condition that is safe and without risks to health;

(d) provide, so far as is reasonably practicable, adequate facilities for the welfare of employees at any workplace under the management and control of the employer;

(e) provide such information, instruction, training or supervision to employees of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health....

(4) An offence against subsection (1) is an indictable offence. However, the offence may be heard and determined summarily (see section 28 of the Criminal Procedure Act 2009.[7]

2.3.2 The OH&S duties of employers to monitor health and conditions is defined pursuant to section 22 of the Occupational Health and Safety Act 2004 (Vic) which states:

(1) An employer must, so far as is reasonably practicable—

(a) monitor the health of employees of the employer; and

(b) monitor conditions at any workplace under the employer's management and control; and

(c) provide information to employees of the employer (in such other languages as appropriate) concerning health and safety at the workplace, including the

[7] *Occupational Health and Safety Act 2004* (Vic), s 21.

names of persons to whom an employee may make an enquiry or complaint about health and safety. Penalty: 240 penalty units for a natural person; 1200 penalty units for a body corporate.

(2) An employer must, so far as is reasonably practicable—

(a) keep information and records relating to the health and safety of employees of the employer; and

(b) employ or engage persons who are suitably qualified in relation to occupational health and safety to provide advice to the employer concerning the health and safety of employees of the employer. Penalty: 60 penalty units for a natural person; 300 penalty units for a body corporate.[8]

2.3.3 The duty to manage the risks to health and safety is pursuant to Section 20 of the *Occupational Health and Safety Act 2004* (Vic) which states:

(1) To avoid doubt, a duty imposed on a person by this Part or the regulations to ensure, so far as is reasonably practicable, health and safety requires the person —

(a) to eliminate risks to health and safety so far as is reasonably practicable; and

(b) if it is not reasonably practicable to eliminate risks to health and safety, to reduce those risks so far as is reasonably practicable.

(2) To avoid doubt, for the purposes of this Part and the regulations, regard must be had to the following matters in determining what is (or was at a particular time) reasonably practicable in relation to ensuring health and safety —

(a) the likelihood of the hazard or risk concerned eventuating;

(b) the degree of harm that would result if the hazard or risk eventuated;

(c) what the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or reducing the hazard or risk;

(d) the availability and suitability of ways to eliminate or reduce the hazard or risk;

(e) the cost of eliminating or reducing the hazard or risk.[9]

[8] Ibid, s 22.
[9] Ibid, s 20.

3.0 Chronology of events

3.1. The following chronology of events sets out:

- key events
- the identification of health and safety concerns,
- the raising of those concerns by firefighters and the UFU to the MFB, CFA and the Fire Services Commissioner;
- the commissioning and receipt of reports including determined safe levels of exposures, testing and monitoring of exposures;
- conditions while fighting the fire in the mine and being within the mine area including accommodation and amenities;
- Standards of practice and incident management plans and directions

February 2014

9 Feb: The fire spread into the Hazelwood and Yallourn mines as a result of a bushfire that had started west of Morwell.

13 Feb AMCOSH report as received by the MFB. The MFB did not disclose this report had been received and did not provide a copy to the UFU. The UFU obtained a copy in late March 2014.

13 Feb Email from MFB Acting Chief Officer Peter Rau **(See attachment 5.1.1)**

16 Feb Email from UFU Secretary Peter Marshall to, MFB Acting Chief Officer Peter Rau and Fire Services Commissioner, Craig Lapsley outlining health and safety concerns raised by firefighters and requesting a meeting **(See attachment 5.1.2)**. Concerns included:

- Length of tour of duty including meal and rest breaks
- Mandatory Breathing Apparatus (BA) wearing is directed which does not conform with 2 hour turnaround or current BA procedures (30 minutes per cylinder and changeover of BA to occur in a clean environment)
- Personnel instructed to wear BA and are not doing so
- Rest areas are in hostile environments - exposed to unnecessary levels of heat and exposure to carbon monoxide
- Clean/Dirty areas are not uniform amongst CFA and MFB causing unnecessary potential exposure to toxins both known and unknown.
- Asking what monitoring equipment is being used for excessive carbon monoxide levels (globally and individually).

- Is the carbon monoxide monitoring equipment calibrated for accuracy
- What other testing is being done for toxins in the atmosphere
- Asking for testing re mercury in water and surface of the coal and the atmosphere and to provide results to the UFU
- Accommodation facilities for firefighters are inadequate
- Working of excessive hours by senior command - 22 hours without sleep is not a safe working environment re fatigue management for Commanders and subordinates which could be critical to death or injury.

17 Feb UFU sends the UFU Bulletin 35 dated 17 February 2014 to the Fire Services Commission Craig Lapsley as a courtesy so that he was aware of the information the UFU was providing to its members. **(See attachment 5.1.3)**

17 Feb UFU Bulletin No 35, Volume 20 'Yallourn - Hazelwood fire'. Members are informed that the UFU has been in constant contact with the MFB, CFA and the State Fire Services Commissioner regarding the ongoing activities at Yallourn- Hazelwood mine fire ground. Informing members of the issues raised with the fire services and the State commissioner. The UFU has been attempting to resolve these issues to the satisfaction of our members with the primary consideration of the safety and wellbeing of our members and the community.
(See attachment 5.1.4)

17 Feb A firefighter emailed the UFU raising an issue regarding wrist bands for CFA and MFB firefighters who are given 'all clear' to leave Hazelwood fire site and whether they can also be given an information sheet detailing the signs and symptoms that may present re CO poisoning, which would be useful for them and for their family members to refer to when these personnel return from the incident. **(see attachment 5.1.5)**

17 Feb It was reported in "The Age":

"Nineteen firefighters have been hospitalised after falling ill or becoming concerned about elevated carbon monoxide levels while at the three-kilometre fire roaring through an open-cut coal mine at the Hazelwood Power Station."

A copy of the article can be accessed via:
http://www.theage.com.au/victoria/firefighters-falling-ill-at-coal-mine-fire-20140216-32u0r.html"

18 Feb Meeting with UFU Secretary Peter Marshall and Industrial Officer Michelle Baldini, CFA Chief Officer Euan Fergusson, CFA representatives Scott Purdy and John Haynes where UFU health and safety concerns were discussed.

(See attachment 5.1.7 which are UFU notes of the discussion)

18 Feb As a result of that meeting and agreed outcomes, CFA Chief Officer Euan Fergusson emailed to the UFU the "Health Management and Decontamination Plan Latrobe Valley Coal Mine Fires" Version 2.
(See attachment 5.1.6).

18 Feb Email from MFB to UFU deployment proposal for MFB staff MFB to UFU Hazelwood Deployment proposal - 12 hours on and 12 hours off emergency roster and other measures. **(See attachment 5.1.8)**

18 Feb Email from MFB to all staff Rau - does not mention what safe CO levels are **(see attachment 5.1.9)**

20 Feb UFU Secretary Peter Marshall to visit the mine. Mr Marshall and UFU OH & S representative Tony Branchflower undertook a site visit on the 20th February 2014. **(see attachment - 5.1.37).** At about this time due to ongoing health and safety concerns the Fire Services Commissioner requested a UFU Branch Committee of Management representative to be embedded into the Incident Management Team. The UFU did not believe this was the responsibility of the UFU and instead requested that HSR's be rostered on every shift in the mine to ensure safety issues were identified, communicated and addressed.

28th Feb The Chief Health Officer Rosemary Lester issued a health advice fort Morwell South residents on the Health Victoria Government website.
(See attachment 5.1.10)

March 2014

4th Mar The fire is reportedly within metres of the power station and also the raw coal bunker. The Emergency Command Centre emailed all MFB stations and platoons listing specific positions that the CFA had been unable to fill and that were required by the ICC at Hazelwood.
(See attachment 5.1.11)

6th Mar UFU Secretary Peter Marshall writes to the Coroner's Office requesting an investigation into the one or more fires at the Hazelwood Coal Mine and/or Morwell since 9 February 2014 and a subsequent inquest.
The UFU raised the medium and long term exposure and health effects to firefighters and the Morwell community to Particulate Matter as reported by the EPA.
(See attachment 5.1.12)

6th Mar Via a UFU Bulletin the UFU notified members of that as a result of series serious safety breaches at the Hazelwood incident the UFU had commissioned independent testing of the water being used at Hazelwood in fire fighting operations including the H.A.R.A or ash pit area. The initial test results indicated that the water contained high levels of coliforms and E.Coli and that Pseudomonas aeruginosa was also detected. This was a serious concern due to the similar exposures being reported in recent times at Fiskville. **(See attachment 5.1.13)**

10 Mar The Hazelwood open cut mine fire is reported as "Under Control" after 29 days of extensive fire fighting by the Fire Services Commissioner and Incident Controller Peter Lockwood.

24 Mar UFU Secretary Peter Marshall writes to the Premier the Hon. Denis Napthine, Worksafe Victoria CEO Denise Cosgrove, Fire Services Commissioner Craig Lapsley, MFB Acting CEO Russell Eddington and CFA CEO Mick Bourke alleging serious breaches of the CFA and MFB obligations including failing to implement the actions and resolutions in the 13 February 2014 Amcosh report. In addition it appeared that the MFB and CFA Had failed to notify staff of the report and its findings including the associated risks and related matters regarding testing and safe levels of Carbon Monoxide.
(see attachments:
5.1.15 letter to Worksafe
5.1.16 letter to the Premier
5.1.17 letter to the Fire Services Commissioner Craig Lapsley
5.1.18 letter to the MFB Acting CEO Russell Eddington
5.1.19 letter to the CFA CEO Mick Bourke)

24 Mar Letter from UFU Secretary Peter Marshall to Fire Services Commissioner Craig Lapsley referring to Mr Lapsley's media interviews that day where he had made a statement to the effect that the fire services had acted on further advice following the Amcosh report. The UFU requests copy of the written further advice he referred to.
(see attachment 5.1.20)

26 Mar "Update from Acting Chief Officer " as emailed to all MFB employees referring to the Amcosh report and meeting with its author Robert Golech, including the instruction to wear BA and health monitoring protocols. **(see attachment 5.1.22)**

1st Apr Email from MFB Acting Chief Officer Peter Rau, Acting Chief Officer to UFU Secretary Peter Marshall attaching "Version 1 of the Health Management and Decontamination Plan for the Latrobe Valley Coal Mine Fires". **(see attachment 5.1.23)**

1st Apr Fire Services Commissioner Craig Lapsley response to UFU's 24th March letter where the UFU had alleged serious breaches of the CFA and MFB obligations including failing to implement the actions and resolutions in the 13 February 2014 Amcosh report and failing to notify staff of the report and its findings including the associated risks including matters regarding testing and safe levels of Carbon Monoxide.
(see attachment 5.1.24)

10 Apr State Coroner's Solicitor to UFU Secretary Peter Marshall stating the Coroner would not commence investigating the Hazelwood Mine Fire pending the publication of the Board of Inquiry's report.
(see attachment 5.1.25)

10 Apr Worksafe Chief Executive writes to UFU Secretary Peter Marshall responding to the UFU correspondence raising concerns regarding firefighters' carbon monoxide

exposure. The UFU is notified that its correspondence has been referred to the Enforcement Group for "a comprehensive investigation" into the UFU's allegations . Worksafe email to UFU - will investigate but not lead for prosecution as it has been less than 6 months **(see attachment 5.1.26)**

14 Apr 14th April letter from Premier dated 10th April to UFU referred matter to Kim Wells and does not specify which correspondence **(see attachment 5.1.27)**

3.2. Key Issues:

3.2.1 **Supervision**

Firefighters have raised with the UFU issues with supervision. A key example is where firefighters, especially CFA, were not consistently and systematically escorted from the staging area to the mine fire with a mine guide either due to a lack of safety officers and/or Health and Safety Representatives (HSR) to co-ordinate this. As a result firefighters had no alternative but to transport themselves from the staging area to the mine fire and this may have resulted in delays in relieving firefighters who had worked two hours or more. The UFU had requested firefighters be restricted to no more than two hours at a time in the Mine. In contrast, MFB firefighters have reported they consistently had mine guides scheduled to take them from the staging area to the mine fire which was coordinated by the MFB Safety Officer.

3.2.2. **Clean/Dirty areas**

Firefighters are trained to minimise cross contamination from PPE that has been worn in a fire. Exposure to used PPE can result in exposure to contaminates and/or toxins. There are a wealth of studies that have reported the link between the nature of fire fighting and the increased risk of specific cancers. Storing and managing PPE is necessary to minimise that increased risk which cannot be fully eliminated.

Firefighters have reported inadequate decontamination processes including:

- The failure to have specific clean/dirty areas set up in the first week of the fire;
- Inconsistent application of clean/dirty areas and principles between fire agencies
- Some firefighters reported having no option but to eat meals in dirty/contaminated clothing
- Firefighters reporting used PPE was not safely transported back to station
- Firefighters reporting having no option but to re-wear wet and dirty PPC

- Insufficient Personal Protective Clothing for all firefighters and change of shifts
- Firefighters reported having to wear Personal Protective Clothing that was not their size. Size of PPC is paramount to protect the firefighter from burns.

3.2.3 Amenities and further equipment issues

Firefighters have reported concerns regarding amenities which included:

- Mess areas not enforced as specific PPC clean areas
- Amenities provided on a service basis only. For example, MFB had an Urban Search and Rescue (USAR) tent where a staging area setup was meant for all but it was utilised by MFB only.
- Lack of shade in rest areas despite extreme heat.
- Food not correctly stored and chilled.
- Inconsistent transport from the staging area to the mine site and concerns some vehicles may not have been fit for purpose particularly if firefighters travelled through areas of high Carbon Monoxide levels, fire, smoke or ash.
- Failure to decontaminate appliances before being returned to stations. This included possible contaminated water from the mine site remaining in the appliances and therefore risk of further exposure to the contamination.

3.2.4 Exposure testing

- Firefighters were tested for the percentage level of Carbon Monoxide (CO) in their blood with Pulse Oximeters. Those performing the testing in the medical tent were not identified as medically qualified.
- It was unclear if the testing performed was best practice or accurate in terms of results. At some point during the fire, staff administering the tests were informed that the fluorescent lighting could detrimentally affect the CO readings. As a result towels were then placed over the hand of the firefighter being tested.
- The pulse oximeter readings were reportedly highly variable.
- There were varying advice and reports regarding "safe levels" of carbon monoxide. In particular there the AMCOSH report reported different "safe" levels compared to that contained in the Health Management Plan and the firefighters were being tested in accordance with the Health Management Plan. Therefore firefighters were informed of some results as safe and told they can return to the fire and

whereas those same levels would have been deemed not to be safe levels if the Amcosh report was applied.

(Some of the above issues are included in the firefighter statements attached at Appendix A)

3.2.5 Safety equipment

Firefighters reported that there were issues with safety equipment and the level of health and safety protection it actually provided.

- The standard issue for protection from particulate matter was P2 masks.
- Firefighters reported a lack of instructions as to when the P2 masks were to be worn.
- Firefighters reported the P2 masks often did not provide for a proper seal and contaminants consequently would have penetrated the airways of firefighters.
- The UFU inquired whether mine staff were wearing P3 masks and whether this should be implemented for firefighters. The response from the MFB's Ken Brown was that mine staff were wearing P2 masks and that CFA's Scientific Officer Warren Glover stated that P2 masks are appropriate for this incident. **(see attachment 5.1.31)**

- As reported in Australasian Science by Associate Professor Adrian Barnett a Research Fellow at the Queensland University of Technology, *"Staying indoors or wearing masks does not offer complete protection from some of the smoke particles, which can be tiny and easily penetrate inside homes. If I lived in the [Morwell] area I would move my family away until the fire was out."*[10]

- The medium and long term exposure and health effects to firefighters and the Morwell community is very concerning. The EPA reported high levels of particles resulting in *"health risks, because they can lodge deep into the lungs due to their small size (approximately 1/30th the average width of a human hair)".*[11]

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[10] Australasian Science, *Hazelwood coal fire health impacts*, March 2014, <http://www.australasianscience.com.au/article/issue-march-2014/hazelwood-coal-fire-health-impacts.html>.
[11] EPA Victoria, *Air quality testing*, 29 March 2014, < http://www.epa.vic.gov.au/air-quality-latrobe-valley-mine-fire/air-quality-testing>.

- Australasian Science by Professor David Cliff, a Professor of Occupational Health and Safety in Mining and Director of the Minerals Industry Safety and Health Centre at the University of Queensland reported *"The potential hazards of such a fire are quite varied. The obvious ones relate to the particulate matter, especially the fine particle sub 2.5 microns in diameter, as these can cause acute respiratory effects...There is no absolute safe concentration for these particles as they can affect sensitive Sectors of the population (eg. the infirm, the young and the elderly) at very low concentrations. There is an advisory standard for this pollutant which currently is regularly being exceeded in Morwell. Other pollutants include carbon monoxide, oxides of nitrogen and oxides of sulphur. Potentially more worrying is the possibility of long term chronic health effects if the coal undergoes significant distillation and produces measurable quantities of hydrocarbons such as benzene, toluene and xylene, as well as the poly cyclic aromatic hydrocarbons..."*[12]

3.2.6 **Breathing Apparatus (BA)**

The AMCOSH report dated 13 February 2014 recorded Robert Golech's attendance at the mine on the 12th February 2014 and a meeting with the Deputy Incident Controller, Operations Officers, the MFB Scientific Officer and paramedics where it was agreed that a series of resolutions would be implemented on the evening of the 12th February 2013. That included the requirement that *"Any entry into the mine would require compulsory SCBA use" and that "work around the perimeter of the mine fire where CO levels were low could be undertaken without SCBA"*. (See attachment 5.1.14)

The Fire Services Commissioner 'Health Management & Decontamination Plan - Latrobe Valley Coal Mines Fires' version 1 (Document 5.1.23)_dated 15 February 2014,and version two (dated 14 February 2014 and attached as Document 5.1.6) is contrary to the Amcosh report and agreed matters for implementation.

[12] Australasian Science, *Hazelwood coal fire health impacts*, March 2014, <http://www.australasianscience.com.au/article/issue-march-2014/hazelwood-coal-fire-health-impacts.html>.

Attachment 3 of the plan (Document 5.1.23) implies that firefighters are to be deployed into the mine without BA as they were to immediately withdraw from the area and don Breathing Apparatus BA or Compressed Air Breathing Apparatus (CABA) when there are two measurements greater than 50ppm but less than 75ppm on their personal monitoring device in any one hour period. Therefore this was a direction to Crew Leaders to deploy firefighters into the mine without BA and only to don BA when specified levels were recorded on personal monitoring devices. This would have resulted in firefighters being exposed to levels deemed to be unsafe prior to being instructed to wear Bas which is not consistent with the AMCOSH report.

In the 26 March "Update from Acting Chief Officer" (document 5.1.22) Acting Chief Officer Peter Rau claims that as a result of the 12 February 2014 meeting with Amcosh that "all firefighters were immediately instructed from that night to wear breathing apparatus at all times when in the mine as per the recommendations. That claim is inconsistent with the reports of firefighters and there is no record of any such instruction.

Further, in Mr Rau's update to staff on the 18th February 2014 there is no reference to the requirement to wear BA.

Firefighters reported to the UFU that they did not see firefighters wearing BA or did not have BA on their appliance or had limited cylinders for BA and limited refilling of BA. **(see statement of firefighters: 4.2 'B' paragraphs 3, 5; 4.3 'C' paragraph 22; 4.6 'F' paragraphs 8, 18; 4.7 'G' paragraph 6, 10 and 32; 4.9 'I' paragraphs 11, 20)**

Firefighters reported that it was impracticable to record the levels from their personal monitoring devices due to fire fighting the fire and obvious issues such as smoke and water.
Further there were significant communication issues as outlined below.

It has also been reported that there was not enough BA sets and cylinders to protect all the firefighters on the fire ground for the duration of their 2 hour or more deployment in the mine.

3.2.8 Fatigue

Firefighters have reported to the UFU that some firefighters, including senior command, were working for 18 - 22 hours consecutively at the Hazelwood mine. This was a threat to their health and safety in terms of fatigue management and a foreseeable risk that should have been mitigated by the fires services.

(see attachment 5.1.4 UFU bulletin 17th February 2014)

Other firefighters reported to the UFU that they worked anywhere between 2.5 and up to 8 hours continuously in the mine fire fighting and due to this prolonged exposure to carbon monoxide and other contaminants felt nauseated and ill and in some cases were sent to hospital. One firefighter reported a lung infection and others reported viral infections not long after Hazelwood mine fire fighting deployments. **(see attachment 5.1.12)**

There are numerous instances where firefighters worked excessive hours which directly impacted their health and safety. Firefighters reported working 12 or 16 hour shifts at Hazelwood mine with little or no breaks during a fire fighting shift and that they reported there was little supervision by Commanders checking on fatigue levels and/or their well being. **(see statement of firefighters: 4.7 'G' para 22)**

3.2.9 Contaminated water

Firefighters have reported to the UFU that water used to fight the Hazelwood mine fire often came from the Hazelwood mine itself and it was unknown whether this water was safe and/or contaminated. Firefighters were regularly exposed to this water on their face, nose, eyes, mouth, ears, hands, body and legs, often soaking right through their Personal Protective Clothing.

Following a series of serious safety breaches at the Hazelwood incident the UFU undertook to have its own independent testing of the water being used at Hazelwood in fire fighting operations including the H.A.R.A or ash pit area. The testing was in response to reports that a firefighter reported getting a serious infection (septicaemia) from a paper cut whilst at Hazelwood. This testing was undertaken by a Senior Occupational Hygienist who provided

to the UFU, that afternoon, the initial test results which were later provided in the full report.

The results indicated that the water contained high levels of coliforms and E.Coli. Pseudomonas aeruginosa was also detected. (see attachment - 5.1.32 which is the UFU commissioned water quality testing by independent testing organisation Bureau Veritas)

3.2.10 Staging area/Divisional Command - CFA/MFB

Staging area/Divisional Command is where fire operations are directed from. Firefighters have reported to the UFU that the staging area at one stage was set up close to the mine edge, and divisional command was moved on Saturday night the 15th February 2014, due to a wind change, and the entire area being overcome by high CO levels and ash and smoke. By way of example it was reported to have CO levels of 50ppm inside the mess room. Staging area/Divisional Command was moved to mine control temporarily, and then moved to the external car park of the power station where it remained. **(see attachments 5.1.38 CFA staging area procedures and 5.1.39 CFA Incident Controller procedures)**

The staging area was moved to the external car park of the power station but under overhead power lines. Firefighters have reported that due to the staging area being close to the Power Lines, the staging area radio to the front gate was constantly crackling and in the end CFA staff were forced to use their personal and/or work mobile to communicate with staff to facilitate the moving of appliances.

CFA personnel have reported that mine employee staff tried to take away CFA log records as the books recorded movements of all people in and out of the mine. According to the CFA personnel, they were having trouble with mine staff who once passed the staging area were under CFA control but were not following direction in terms of clean hands and clean areas. An example is that mine staff were walking in their dirty boots through the kitchen area which is a designated clean areas where firefighters have their meals.

3.2.11 Staffing

The Hazelwood deployment occurred during the bush fire season with many significant fires occurring throughout the state of Victoria. In regards to firefighter numbers in order to fight the Hazelwood fire effectively firefighters were working extra overtime shifts to

cover a shortfall of numbers and interstate crews and appliances were utilised as well (Queensland, South Australia, Tasmania) in the mine. NSW crews and appliances were also used to back fill CFA fire stations whilst CFA crews and appliances were fighting the Hazelwood fire. Not only firefighters were fighting lengthy shifts in the mine, but for some that was on their days off so coming off a rotation, doing lengthy hours, and had limited days off before back on rotation. The UFU encouraged off-duty members to accept recalls to fight the Hazelwood mine fire. **(see attachment 5.1.33)**

The Hazelwood mine fire highlighted the lack of staff available to respond to a large incident at CFA and MFB whilst maintaining staffing levels at fire stations.

3.2.11 Emergency Roster

The CFA was forced to utilise the emergency roster at Hazelwood mine fire resulting in firefighters increasing their working hours from 10 hour day shift and 14 hour night shifts to 12 hour on shift and 12 hour off shift. **(see attachment - 5.1.34 - UFU bulletin no 48, volume 20 on Tuesday 4th March 2014)**

3.2.12 Crewing of Appliances

The UFU had numerous discussions with the CFA regarding the crewing of appliances. For example the UFU informed members of agreed safe crewing provisions specific to this operation. **(see attachment - 5.1.35 - regarding UFU bulletin no 53, volume 20 on Thursday 6 March 2014)**

3.2.13 Sector Commanders

The Hazelwood mine fire was operationally divided into geographical sectors which were under the control and direction of a Sector Commander. The UFU was concerned that firefighters that were not qualified to do so had been requested to perform the role of Sector Commander. **(see attachment - 5.1.36 - UFU bulletin No 60, Volume 20 on Wednesday 19 March 2014)**

3.2 14 Supervision

As per the *Occupational Health and Safety Act 2004* (Vic) '[a]n employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working

environment that is safe and without risks to health'[13] and the employer must 'provide such information, instruction, training or supervision to employees of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health'.[14]

The Australasian Inter-service Incident Management System ("AIIMS") Companion for Victoria Reference Manual that is currently utilised by the CFA which names two positions: a safety officer and a field safety officer.[15] The safety officer role is to report to the Incident Controller 'on all aspects of potential and current safety and risk management issues identified at the incident'[16] which includes 'reviewing the operational aspects of the medical plan for the incident'.[17] **(see attachment 5.1.28)**

Both the safety officer and field safety officer roles according to Standing Operating Procedure J3.04 and 11.07 'cannot veto an operational decision, but must raise any operational issues identified with the appropriate personnel'.[18] **(see attachment 5.1.29 and attachment 5.1.30)**

On the 4th March 2014 the Emergency Control Centre emailed all MFB stations and platoons listing positions the CFA had been unable to fill to act as Safety Officers for specified night shifts. **(see attachment 5.1.11)**

Firefighters also highlighted that there was no official mechanism to feedback current fire ground conditions to those in command and/or a formalised hand over briefing procedure for the next crew coming onto the fire ground.
On the 20th February 2014 on behalf of UFU firefighters, Secretary Peter Marshall and OH&S Co-ordinator Tony Branchflower visited the Hazelwood Power Station, considering the health & safety management of the site during current fire fighting operations and issues being raised by firefighters.

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[13] *Occupational Health and Safety Act 2004* (Vic), s 21(1).
[14] *Occupational Health and Safety Act 2004* (Vic), s 21(2)(e).
[15] Country Fire Authority, ' AIIMS Companion for Victoria', 1 July 2012, 19-20.
[16] Ibid.
[17] Ibid.
[18] Ibid.

3.2.15 Communication

On site decision making was performed from the Staging Area by Divisional Command (DivCom) by Divisional and/or Sector Commanders who were in charge of a distinct geographical area. Firefighters main concern was a lack of communication from firefighters on the mine fire ground to Divisional and/or Sector Commanders in regards to:

- Firefighters well being - health and safety
- Information on how the fire fighting was progressing
- Whether an appliance was in an optimal position to fight the fire
- Communication was very much one way from the Sector Commander

Firefighters have reported that portable radios used by firefighters experienced a lot of static during night operations which required them to move in one instance 1 kilometre away to get radio reception. This is an obviously detrimental to the health and safety of firefighters who were relying on portable radio communications.

An MFB firefighter reported that he could not communicate with Divisional Command to report his CO levels every 15 minutes, as they did not have a CFA radio which was a real concern to their health and safety. It once again highlights the lack of interoperability between MFB and CFA as firefighters advised they could not easily communicate between each other due to differing radio technologies and/or frequencies. The 2009 Victorian Bushfires Royal Commission Final Report Recommendation 23 included specific proposals to improve radio communications.

3.2.16 Mine Guides and maps

Firefighters reported a lack of supervision and co-ordination by CFA in terms of scheduling mine guides for CFA firefighters to guide them into the mine from the staging area. Firefighters reported the MFB did have safety officers which performed this role. This again highlights the lack of interoperability between the MFB and CFA when they work together as they often still operate as separate functional entities working within their organisational silos.

Firefighters also raised the issue that maps were often not provided to firefighters and that grid references kept changing causing confusion between the fire ground and Divisional Command.

4. STATEMENTS OF FIREFIGHTERS

4.1 Attached as Appendix A are statements by firefighters who were deployed to the Hazelwood Mine Fire at various times. The UFU includes these statements in its submission as it provides first hand-accounts of events and of firefighter concerns.

- The statements are from MFB, CFA firefighters and a volunteer.
- The names and indentifying factors of the firefighters have been withheld. This is to ensure the firefighters cannot be subject to any detrimental action including but not limited to any disciplinary action.

5.0 RECOMMENDATIONS

5.1 The UFU has made this submission to the Board Inquiry into the Hazelwood Coal Mine Fire to raise serious concerns about Health and Safety impacts and operational shortcomings that firefighters faced when combating the Morwell/Hazelwood coal mine fire.

The UFU makes the following recommendations:

1. **That the fire agencies and the Fire Services Commission be audited to ensure effective procedures are in place for immediate implementation upon a possible risk of exposure to any chemical or substance being identified. Firefighters should not be exposed to unsafe levels including carbon monoxide. Where essential operations result in firefighters being exposed, firefighters should be provided with, and consistently be required to wear, all necessary protection including respiratory protection and procedures to minimise the risk of exposure. Exposure levels should be consistently and stringently monitored according to independent scientific recommendations.**

2. **That the MFB and CFA be audited to ascertain whether the obligations under the Occupational Health and Safety Act 2004 (Vic)including the obligation to take all reasonable steps and provide information to employee was complied with.**

3. **The Hazelwood Mine operation highlighted the insufficient number of available firefighters. The CFA should employ the additional career firefighters as agreed by Government and the CFA in 2010 as a result of an independent Board of Reference. This agreement is documented in media and government reports and the CFA has repeatedly referred to the 2016 project of deployment 342 additional firefighters.**

4. **That the CFA and MFB must have Health and Safety Representatives (HSRs) at major fires and incidents.**

5. **That there be a requirement of a safety officer at every wildfire and major incident fire to protect firefighter safety as was previously recommended by the Investigation and Inquests into a Wildfire and the Deaths of Five firefighters at Linton on 2 Dec 1998.** [19]

6. **CFA and MFB must improve and provide formalised mechanisms so firefighters can feedback to Commanders and oncoming crews fire fighting conditions and any OH&S risks.**

7. **That the CFA and MFB enforce decontamination procedures and areas at the incident to prevent ongoing exposure to firefighters of toxins, including the prevention of the wearing of used PPC outside of the fire or incident area.**

8. **All firefighters must be provided with adequate amenities to rest and adequate meal facilities at major fire incidents so their health and safety is protected.**

9. **MFB and CFA must monitor all Fire Fighting staff so that excessive hours are not recorded during major fire incidents.**

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[19] State Coroner, 'Report of the Investigation and Inquests into a Wildfire and the Deaths of Five firefighters at Linton on 2 December 1998', (1998), 624.

10. **CFA and MFB must routinely provide independent credible testing of water and air quality at major incidents. Where possible water testing must occur before unknown sources of water are used or at least with urgency. Results of any such testing must be provided to employees and their representatives as soon as practicable.**

11. **Only qualified personnel must be deployed as Sector Commanders and/or incident controllers to any fire or incident. Firefighters must only be deployed in accordance with their qualifications and competencies.**

12. **The 2009 Royal Commission Final Report recommendations regarding communications and in particular compatibility and interoperability of communication systems between fire agencies be implemented.**

The UFU appreciates the opportunity to provide evidence and information to assist with this inquiry. If the Board has any queries or requires confirmation of any of the above information please contact the UFU office on 03 9419 8811.

APPENDIX A - FIREFIGHTER STATEMENTS

4.1 Firefighter "A"

1. I am employed by the CFA as a Station Officer ("SO"). I have 11 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood on the 19th of February 2014 to the 24th of February 2014 (my first deployment) and the 1st to 5th of March 2014 (my second deployment), both night shifts. As an SO I was a crew leader.
4. Once I arrived at the staging area on my 1st deployment there was no clear direction of what to do and/or where to go in relation to stand down areas, medical procedures or briefings or whether they would occur. My expectation is to have clear direction and clear and precise information regarding the incident so I can brief my crew with any safety issues.
5. It was through liaising with members coming off day shift that we learned that we were required to go through the medical centre to get our CO readings and register being on site.
6. It took a long time to clearly identify our role and the time and location where briefings occurred.
7. The briefings were for CFA and mine employees only, whilst the MFB conducted their own briefing even though we were working in the Sectors together.
8. I went into the tent for medical testing where you sit down with a number of persons. I was not advised if they were medically qualified. They stuck a device on my finger and placed a towel over my hand and we were told to wait 1 minute for a reading to be determined. This reading gave a percentage level of Carbon Monoxide (CO) in the blood. During my first deployment my oximeter readings were from 0 to 3 percent.
9. At that point I had to register that we were on site. This happened in the medical tent and they who got our name only.
10. After the medical tent I went to the kitchen area which was also a stand down area which was not very hygienic due to firefighter's from MFB and CFA wearing contaminated gear in the clean area.

11. MFB had a USAR Urban Search and Rescue tent which was a staging area setup for all but it was utilised by MFB only.
12. After asking questions I found out the Operational point was 100 metres away from the staging area located through a secure gate that was monitored by the mine staff. There were no signs or directions to find this.
13. I was then deployed with my crew to the northern batters and I was guided down by mine staff to the location required.
14. The conditions I found myself in was smoky, muddy with poor visibility and lacking suitable maps.
15. I had mine guides on the way in but none on the way out in case of emergency.
16. There was a problem with fatigue management due to the time delay getting an escort back up to the staging area with a mine guide, this extended our exposure beyond 2 hours in the mine and 2 hours out off the mine as identified in the safety brief.
17. Initially we had CO monitors but only 2 per truck which meant 2 firefighters did not have personal CO monitors and my crew were working with readings from 7 parts per million (ppm) to 60ppm during the 2 hour period in the mine.
18. On my first deployment my crew and I were not required to provide CO readings on a regular basis.
19. The CO meters got extremely dirty during their use and the readings were variable within 5 to 10 metres of each other on a regular basis.
20. The Incident Controller briefed us that up to 30 parts per million (ppm) I could work in the mine safely for 2 hours and then at 50 ppm I was told to put Breathing Apparatus (BA) on and then anything greater than 75 ppm you were to evacuate the area.
21. The mines had strategically located sprinklers depending on the location you were in. I was constantly sprayed with water from these sprinklers it was my assumption that the water came from the bottom dam I did not know if this water was safe.
22. My crew also got exposed to spray and water coming off the Aerial appliance intermittently.
23. On one occasion the MFB was supplying water to the aerial pumper. We had to reposition the appliance. To do so we had to disconnect a hose from the pump

during this stage and residual pressure from the inlet side sprayed up and this soaked me completely at the front of my body including my eyes, mouth, nose, ears and soaked right through to my skin. We were unsure if this water was safe.

24. My PPE was completely soaked and there was no replacement for this during a 2 hour shift and when I started my next 2 hour shift, I had no choice but to put on wet and soaked and dirty Personal Protective Equipment (PPE). This was within the same 12 hour shift.
25. I did request the staging area manager for replacement gear and I was told none was available yet and they were on order.
26. Not having anything to change into like many other firefighters at the staging area I was forced to eat our meals whilst in dirty and wet gear in a supposedly clean environment/area.
27. After the first night the mines guide became harder to resource which meant I was spending up to 3 hours down in the mine when we were supposed to be only down for 2 hours and I and my crew were forced to return without a mine guide as none were available.
28. It did not seem like a coordinated approach as MFB had a rotation procedure in place so people had adequate rest after 2 hours working and had access to mine guides.
29. Each night it was a challenge to determine who was the Sector Commander for us.
30. At the end of my first deployment I went to the medical tent for CO testing. This was done by placing a sensor on my finger and they took my name and organisation and they gave me a tag which meant I was safe to leave the site.
31. I was advised in the daily briefing by the Operational Officer in the first brief that we had to wear P2 masks if the CO readings were over 30 ppm and above.
32. During the first deployment we wore P2 masks intermittently and it was regularly over 30 ppm for Carbon Monoxide readings.

<u>2nd deployment</u>

33. My crew was instructed in my second deployment in the briefing by an Operational Officer to avoid direct contact with the water where possible. This was very difficult due to the sprays and sprinklers I frequently came into

contact with and the constant moving of appliances and draining of hoses and being exposed to the mud.

34. There was now a change area which was basically a shipping container with timber across to make a roof and shelves built on site. This enabled change of dirty gear into clean gear.

35. The first two nights the site ran out of appropriate sizes for Personal Protective Clothing (PPC) which meant again putting on wet and dirty PPC for 2 hour shifts.

36. The medical monitoring had not changed from my first deployment. I was not advised if they were doctors or nurses completing the medical testing. The only medical staff I was aware of were ambulance staff who were separate from the medical testing.

37. The conditions which were extremely muddy, and the ground was sticky, caused me to get large blisters on both my feet.

38. Due to staffing difficulties and planning issues I and my crew were forced to travel to the mine site without a mine guide whereas MFB continually had procedures in place to have their personnel escorted down the mine with a mine guide in a safe and timely manner to relieve staff aiding in fatigue management (2 hours in 2 hours out).

39. On my second deployment Operational Officers said to report CO readings every 15 minutes and to put this down on paper and report the CO readings via the radio reporting channel every hour. This was not easily done with wet gloves and gear every 15 minutes whilst fighting the fire in the mine. I may not have reported all CO readings every 15 minutes.

40. On my second deployment I was still regularly getting wet and soaked whilst fighting the fire in the mine and not getting sufficiently clean change over gear.

41. It was not until the second last day of my second deployment that CFA and MFB had a joint briefing and were in the process of working co-operatively towards the management of the fire.

42. There seemed to be a problem with MFB and CFA communicating jointly and often MFB only reported back to their own MFB command channel. This was highlighted when an MFB appliance was supplying water to the aerial pumper and when I requested water to be turned off to the pumper and the MFB did not respond or acknowledge over the radio. A member of my crew was then forced

to physically walk 90 metres through mud and water sprays with poor visibility, as it was night time, to request the MFB to turn the water off to the pumper.

43. At the end of the 2nd deployment I started to feel sick with pain at the back of my neck and my stomach was upset as well.

44. When I got back home I had hay fever symptoms which caused headaches and a runny nose and flu like aches and pains and also an upset stomach and diarrhoea and I developed hot sweats and dizziness and general light headiness. This lasted for 5 or 6 days.

45. I went to my doctor and he stated I had a viral infection and did not give me anything for this and he said to wait 2 or 3 days.

4.2. FIREFIGHTER "B"

1. I am employed by the CFA as a Qualified Fire Fighter ("QFF"). I have 5 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood on Saturday the 1st of March 2014 for 4 nights until Tuesday the 4th of March 2014, on night shift, working 12 hours shifts.
2. I also went to Hazelwood on Sunday the 9th of March 2014 for 2 day shifts until the 10th March.
3. I did not wear Breathing Apparatus (BA), was individually issued with a carbon monoxide monitor and I had to fill out a range log sheet every 15 minutes. We were directed to work 2 hours in the mine and 2 hours out of the mine.
4. It was not practical to record CO levels on a paper log sheet every 15 minutes whilst fighting the fire because of fire fighting activities and being in wet conditions.
5. I was told by my crew leader that for anything above 75 ppm CO levels I would need to don BA. I did not wear BA at any stage fighting the fire at Hazelwood mine.
6. I was told my crew leader had to report back to the health monitoring crew every hour, to give my crew's current reading plus a peak reading of CO levels.
7. A problem with the CO meters was that they had no memory function to gain an average or a peak reading, you had to view it as you went.
8. Every time I went out of the mine I had to go through a monitoring station where they took your CO levels via a finger monitor. I was not advised if they were nurses or doctors or even medically qualified.
9. The medical monitoring staff then advised if the reading was between 0 and 5 percent you could continue and if it was over 5 per cent you would not go back into the mine and would be re-tested in approximately 2 hours.
10. My reading was only ever between 0 and 3 per cent for Carbon Monoxide levels in my blood.
11. I saw the person who performed the tests on me then that person recorded the test results in a book. I never got a copy of the test results or that log in the book.

12. At the time I was tested I was asked by personnel in the medical tent if I was a smoker, if I had any previous medical conditions, what my name was and the fire service I worked for. My CO levels were tested at the start just after entering the mine site and at the end of each shift in the medical tent.
13. I was not allowed to leave the site unless I had a yellow band/tag that signified I had been at the Hazelwood mine fire site.
14. I was given a P2 mask and others were too. They only filter out some particulate matter and I did not get a 100 per cent seal whilst wearing the mask.
15. I was not advised what protection this mask would give.
16. When fighting the fire on the aerial pumper we were blacking out in the northern batter area. Blacking out means locating, breaking open, or exposing and extinguishing any smouldering fuel above or below ground.
17. There were exclusion zones due to CO levels and the levels depended on the way the wind was blowing.
19. From the staging area I went in to the mine with 2 persons in the Aerial Pumper and 2 persons went in a 4WD Land Rover to the northern batter area.
20. I saw other crews working in zones that were more affected by smoke and they were in the thick of the smoke. I was unsure if they were wearing any masks.
21. On my second deployment the medical monitoring team asked me if I had any open wounds as well and if I was a smoker and if I had any health conditions.
22. At the crew briefing Operational Officers gave warnings about the Hara water, they said don't drink it and try not to work near any overspray. It was impossible to not work near overspray and not get wet.
23. The aerial pumper that I was involved with used the Hara water. The UFU later reported after independent water testing that this had containments with high levels of E.Coli and coliforms in the water. The testing also detected Pseudomonas Aeruginosa.

    [see attachment 5.1.13]
24. I was constantly exposed to this contaminated water as the water becomes airborne due to operations. It regularly blew in our direction whilst

fighting the fire. This meant my gloves and uniform were soaked and the water went all the way through my gloves and to my skin and we inhaled overspray. This contaminated water also got on my face - nose, ears and mouth.

25. I was never advised by management the water was harmful to our health but cautioned in coming into contact with it. This was only emphasised during my 2nd deployment.

4.3 FIREFIGHTER "C"

1. I am employed by the CFA as a Fire Fighter ("FF"). I have 3 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I was deployed to Hazelwood 6 times. My first deployment was from the 12th of February to the 15th of February 2014 for 4 nights. The first 2 nights were at the Yallourn Mine, the second two and the remainder of deployments were at Hazelwood. They were all 12 hour shifts and I worked there for a total of approximately 168 hours.
4. My second deployment was from the 20th to the 23rd of February 2014, day shifts.
5. My third deployment was the 27th February, day shift
6. My fourth deployment was from the 5th to the 6th of March both day shifts.
7. My fifth deployment was from the 13th to the 14th of March both night shifts.
8. My sixth deployment and my last deployment was the 24th March and was a day shift.
9. At the beginning Divisional Command was set up close to the mine edge. The Divisional Command was moved on Saturday night the 15th of February 2014, due to a wind change, and the entire area being overcome by high CO levels, including 50ppm inside the mess room. It was moved to mine control temporarily and then moved to the external car park of the power station where it remained.
10. On my initial 2 deployments, health checks were done at the start of shift and the end of shift. After this it then became every 2 hours.
9. There were no wrist bands at the first deployment which signify if you have been exposed to chemicals ie. carbon monoxide.
10. For the health checks I was told to sit down and put my finger in a monitor which determined a percentage level of Carbon Monoxide (CO) in my blood.
11. The range considered safe was 0 to 5 percent of CO levels. If we registered 6 percent CO levels in the blood or above we had to sit down for 20 minutes and then do a retest. If after a retest if it was 6 percent CO levels in the blood or above you would then be sent home. If you registered 7 or 8

percent CO levels in the blood you would need to see a paramedic and/or go to hospital.

12. During all deployments when I was tested I was between 1 and 3 percent of CO levels in the blood.
13. On the 15th of February 2014 the reading on the fire ground on my personal CO monitor was maxed at 380 parts per million. I relocated immediately to a lower CO reading area.
14. As I was being transported from the staging area to the mine in a 4WD ute I did not have Breathing Apparatus set with me.
15. The Incident Controllers each briefed us that up to 30 ppm we could work safely for 2 hours and then at 50 ppm we were to put Breathing Apparatus (BA) on and for anything greater than 70 ppm you were to evacuate the area.
16. I was told by the hazmat crew on the night of the 15th of February that anything over 350 ppm was Immediate danger to life or health (IDLH).
17. At all times I was wearing a CO Monitor. On some days this may have read 0 ppm for 2-3 hours. On other days I was constantly working in 25-35 ppm, with regular short peaks of 70-80 ppm.
18. On two occasions whilst at the mine I was exposed to 170 ppm and 380 ppm for short periods of times.
19. After finishing on the 27th of February 2014 on dayshift I became rather unwell suffering from headaches, a sore throat and hot and cold sweats. I was put onto antibiotics as my Doctor said I have a bug and I recovered 4 days later.
20. I reported this via an incident report to the CFA on the 12th of March 2014.
21. I was advised in a daily briefing by Operational Officers to wear a P2 mask and to wear them all the time whilst down the mine.
22. In our briefing by Operational Officers each day we were advised the masks would protect us from, coal and airborne particulates but would not protect for CO because it is a gas.
23. During my whole deployment I did not see anyone wear BA. If there was an area of high CO levels over 50 ppm the crew would move away to work in an area that had lower levels of CO.

24. We were not advised about any danger of the Hara water or water in general until we were advised by a United Firefighters Union (UFU) bulletin. **[see attachment 5.1.13]**

25. There was no way of telling where the water being supplied to the Aerial Pumper we were using came from and whether it was Hara water and/or contaminated water.

26. I put in an Incident report on the 12th of March 2014 to the CFA stating that it had been revealed that the water being used at the coal mine fire was contaminated. The water which was used to fight the mine fire was being recycled and reused at the mine.

27. Testing engaged by the UFU shows results have indicated E. Coli and Pseudomonas aeruginosa was also detected as per bulletin 52, Volume 20, Thursday 6 March 2014. **(see attachment 5.1.13)**

28. Up until this bulletin I had worked 11 shifts and whilst working in the mine at numerous times each day, I was exposed to unknown sources of water. I was regularly working around leaking hydrants and hose lines and I was regularly exposed to overspray from appliances.

29. The aerial pumper would spray water from up to 19 metres high and I was working down below either side of this appliance and depending on wind conditions I would get overspray from the tips.

30. The 450mm main hydrant outlets were always leaking and when I was tasked with hooking up hoses I was exposed to the water and it soaked right through my gloves and occasionally sprayed my face even though I was wearing safety glasses.

31. The water would have also gone into my mouth, nose and ears on numerous occasions when using the hydrant.

32. The mains pipes had sprinklers on them that constantly sprayed water which also got me wet, and when sprayed with this water I did not know whether this was contaminated Hara water or not.

33. It is my view that the monitoring, although it did improve 2-3 weeks in, initially was not of the appropriate level or standard and they could have done a lot more to protect the health and safety of firefighters.

34. On regular occasions CFA were refused transport due to mine cars being booked already by the MFB resulting in CFA members driving CFA vehicles without a mine guide into the mine to ensure the crews working in the mine did not work over 2 hours as we were working 2 hours in the mine and then 2 hours off.

35. As the transport was all booked out by the MFB, who had a safety officer booking cars which the CFA did not, it was then up to the individual crew leaders to organise. I was unable to get a mine guide at all times which meant I and my crew were forced to take a vehicle down the mine to relieve staff who were approaching the end of their 2 hour shift. This shows a lack of coordination and a risk to our health and safety.

36. Initially the MFB had one CO monitor per person whereas the CFA had one per truck or appliance.

37. The reason for this is that the MFB had fire safety officers who organised this, for CFA we were told it was one per truck or appliance.

38. It was not until the intervention of an MFB safety officer and UFU representative that one monitor per person was introduced after some time since the Hazelwood fire starting.

39. On the 14th of March 2014 all CFA officers present (3 of them) were taken off the trucks to be utilised as Sector Commanders as there was not enough staff arranged by CFA for that night shift. The mine fire was split up into Sectors and a Sector Commander would manage fire fighting tasks and truck placement for that Sector. This lack of staff highlights organisational and planning issues with the CFA.

40. The aerial pumpers were being rostered without the minimum manning of 1 Station Officer (SO), 1 Leading firefighter (LFF) and 2 firefighters (FF's). It was not until the crews arrived that we realised that minimum crewing had not been achieved which meant the truck did not get used. This happened to me on the 14th and 24th of March where the aerial pumper did not go out to fight the mine fire due to this reason. On the 14th there was no SO and the 24th there was no LFF or SO. This may have occurred on other occasions where there was not enough staff to crew the aerial pumper(s).

41. To my knowledge there was no Health and Safety Representative (HSR) on site for CFA firefighters to protect our health and safety interests.

42. Since the end of the Hazelwood mine fire I have still been unwell. I went to the Doctor's approximately on the 10th of April 2014 and the Doctor ordered a blood test after I told the Doctor about my symptoms and my exposure to the Hazelwood mine fire and the results came back a week later and I needed to take more antibiotics for a chest infection.

4.4 FIREFIGHTER "D"

1. I am employed by the MFB as a Station Officer ("SO"). I have 34 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I was deployed to Hazelwood from the 13th to 17th of February 2014 and on the 28th of February 2014.
4. On my first deployment we arrived at the staging area 150 metres from the rim of the mine.
5. I was deployed on the tele-squirt appliance down to the northern batters. I was told in briefings by Operational Officers to be 2 hours in the mine and 2 hours out. This did not occur due to transport and logistical problems. I and my crew set up the tele-squirt and basically fought the mine fire for 2 to 3 hours and then came out for 1.5 to 2 hours.
6. I had mine guides to guide myself and my crew to the mine site on day 1 and day 2 until lunch time of my 1st deployment and the day after as a replacement we had an MFB firefighter driving an MFB twin cab ute to take us down to the mine from the staging area. We were told from our Senior Station Officer (SSO) later we had to have a mine guide under the Mines Act.
7. The water used on my appliance was from the ring main of the mine and I did not know if the water was safe or if it was contaminated. It was black and brown in colour. From the water of the tele-squirt we regularly got overspray where this water was sprayed over my entire body and got onto my face and this contaminated my Personal Protective Equipment (PPE)/clothing(PPC). I was not wearing any safety glasses.
8. When I came out of the mine I had a headache and my Carbon Monoxide (CO) level was alternating between 4 and 5 per cent on my first deployment. I was told to just drink plenty of water.
9. The first day we were there we were in a large office area and the staff in the medical testing area were wearing CFA polo shirts. We assumed they were administrative staff as they did not appear to be nurses or doctors.
10. I was told by the medical testing personnel if the CO levels were 5 per cent or above that we had to have oxygen for 20 minutes.

11. On my first day I only got a CO monitor by asking for one from a Divisional Commander who had one around his neck.
12. I had a personal CO meter and if it went above 50 parts per million (ppm) I had been advised in daily briefings by Operational Officers that I had to move to another area and check the reading again. If it got above 75 ppm then I was advised to don/wear Breathing Apparatus (BA), however the tele-squirt I was working on did not have BA on it.
13. The tele-squirt did not have a CFA radio. I had a portable radio but it was difficult to communicate with anybody. If I and my crew needed to evacuate we could not do this quickly as it takes time to lower the tele-squirt down and because it was muddy the truck was quite bogged and it was difficult to get out quickly.
14. I was advised by Divisional Command to record my CO levels every 15 minutes on a log sheet and to report every hour to Divisional Command but because we did not have a CFA radio we could not do this, this was a real concern for our health and safety. CFA and MFB radios are unable to communicate with each other.
15. On the second day I was in the lunch/staging area and my CO personal meter read 12 ppm and then the wind changed later that day. After I came back from the mine the staging area had been moved and I was told this was due high CO levels. This was a real concern for our health and safety.
16. I never saw a Commander from the MFB or CFA ask me or other firefighters how I was going and what were your thoughts on the ground level to feedback health and safety and/or operational concerns.
17. During the briefings which were quite long we were given information but we were not able to feed crucial information back on what was happening in the mine.
18. Repeatedly I asked Divisional Command for a CFA radio for 2 days and in the end I was able to get one. This was very frustrating in terms of communicating from the mine to Divisional Command without a CFA radio. This was a serious concern for my crews ongoing health and safety. CFA and MFB radios are unable to communicate with each other.

19. For the first four days there was no communication from firefighters to Commanders for debriefs and there was no 'hot fire debrief' done at all, which is a usual process for MFB. A hot fire debrief is where feedback is given and key learning's are taken away.
20. On the third day of my deployment I started to feel unwell. I had a headache, a sore throat, a runny nose and a broken voice and it basically developed into a pretty severe head or cold and flu type symptoms.
21. On the fourth day I went to a Morwell chemist to get cold and flu tablets and throat lozenges.
22. I went to the medical tent beforehand and they said they could not give me anything for my symptoms or illness. I was not provided with assistance from a Doctor whilst at the Hazelwood mine site.
23. When I got home I felt exhausted. I had no energy and I got home at 2pm in the afternoon and I slept for 4 to 5 hours. I then took cold and flu tablets for 3 weeks and then symptoms of a runny nose and sore throat were eventually gone.
24. There was no rehabilitation area or clean and dirty area and there was no place to rest on my first deployment at Hazelwood. It is important to have dirty and clean areas so firefighters are not exposed to contaminants when eating or resting.
25. On my second day during lunchtime we moved to the coal production facility where I ate lunch on concrete with no shade and shelter and there were many flies and it was quite warm. This also meant the hygiene of the food was questionable as the salads were sitting out in the sun.
26. I was told by Divisional Command to wear a P2 mask. I was told they would protect us from products of combustion they were hot and uncomfortable to wear.
27. The condition in the mine varied depending on the wind. At some times the smoke was quite thick, at other times it was clear. At one stage the CO monitor went to 85 ppm and then I moved a short distance and then it went down to an acceptable 10 or 12 ppm. This then happened quite often and led me to question the accuracy of the personal CO monitor.

28. For my first two days I was the only firefighter in my crew with a CO monitor as they did not have enough monitors for everyone. This meant I had to walk around the truck to monitor the levels for each of my team members. This I believe is an unsafe work practice.

29. There was only ever 2 firefighters on the tele-squirt in the mine at any one time. The minimum required manning for a tele-squirt is 4. This tele-squirt was put out of commission at first as the appliance had not been commissioned and there had been no training for MFB firefighters on this appliance.

30. At Hazelwood I was on 2 appliances at different times, the tele-squirt and the tele-boom. On day 2, 3 and 4 I was on the tele-boom and this too only had 2 firefighters crewing this where the required crewing level should have been 4 persons.

31. On the pumper tankers this was crewed with 2 firefighters instead of providing the required crewing of 4 persons.

32. On my second deployment (on the 28th of February) things were better organised. We were told we were going to be working 12 hour shifts but the time we left my home station and until the time we got back was 17 and 3/4 hours and a lot of us had to work day shift the next day. I also had to drive home from my home station which took an hour to do so as I was tired and because of this I was offered a taxi voucher but midnight on a Friday I could not get a taxi so I ended up going to my station to sleep at 1:30am. Then I was up at 7am for my next shift which was only 5.5 hours rest which is terrible for fatigue management and my health and safety.

4.5 FIREFIGHTER "E"

1. I am employed by the MFB as a Station Officer "SO" and I have 27 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood on 17 February 2014 to 20 February 2014 (my first deployment) and 23 February 2014 (my second deployment), both for day shifts.
4. The medical tent personnel took my carbon monoxide (CO) readings when I first got there and every morning they put on a finger monitor for a minute with a towel over my hand to get my percentage CO levels in the blood. I assumed they were either ambulance staff or nurses. They also asked for my age and if I was a smoker and if I had any medical conditions. They asked which service I was from, either CFA or MFB. The staff then recorded this information in a book.
5. After the medical check we were deployed into the mine. I first went down and was transported in a mine staff 4WD ute and I had 1 mine guide with 4 firefighters, 5 in total. I was wearing the 1 CO monitor we had between 2 persons. I was wearing this monitor yet other firefighters could have been up to 100 metres apart or further and this could have meant different levels of CO exposure between us, potentially putting the person with no personal CO monitor at risk.
6. The water used for the appliances was from the mains water in the mine. We regularly got overspray with this water and the water got on my face directly and it would have got on my nose, ears and even behind my glasses.
7. On 19 February 2014 on one occasion there was a strong wind storm and I and my crew were soaked to our skin from the tele-boom spray and the rain as well. On this day it was so windy and intense this caused the fire to flare up and we came under ember attack which was coming up over a ridge. We directed the tele-boom at that particular area and due to wind strength it was difficult to reach.
8. We were advised to record our CO levels in our daily briefing by Divisional Command, whilst fighting the fire in the mine, every 15 minutes. The CO levels that I recorded were from 20 parts per million (ppm) to 100 ppm. My readings

would fluctuate between 100 ppm and 30 ppm in a matter of seconds, possibly due to windy conditions. I did not call Divisional Command every hour to give my CO results and I am unsure if I was advised to do so.

9. I was advised in our daily briefing by Divisional Command that if the CO levels went over 50 ppm we were to get into the cabin and if the levels were still high to put on Breathing Apparatus (BA). I was advised if it was over 100 ppm we would have to evacuate but we could not do so quickly as we would have to wait for a mine guide.

10. I was advised in our daily briefing by Divisional Command to wear P2 masks and I don't recall what exactly this would protect me from. My understanding was that it would protect me from coal and flying embers etc.

11. On the fire ground/mine area there was only 2 fire-fighters per appliance. Normally on the tele-boom the minimum crewing is 4.

12. When we got back to the staging area we then had our CO levels checked and it was generally about 1% carbon monoxide levels in the blood.

13. When I first arrived there was not defined clean and dirty areas. Later on the second day this area was moved. The clean and dirty area is so that Personal Protective Clothing and footwear which is contaminated is separated from the clean area where firefighters eat and rest.

14. I did not feel sick at Hazelwood but approximately 10 days later on Sunday 2 March I felt I had chest pains which presented as symptoms of a heart attack, profuse sweating and change of colour and crashing chest pains. I was at home at this stage. I was taken to the Northern hospital by Ambulance and admitted. I was advised this was a virus and the cause was unknown. It was a virus that was in the pericardium membrane which surrounds the heart. I was advised by the doctor/cardiologist that this causes inflammation and presents as a heart attack but there is no damage to the heart tissue. I was in hospital for 2 nights and I was discharged on Tuesday 4th March 2014. I had to take medication for inflammation and rest and I am still on medication in relation to this issue. I was cleared for work on 21 March 2014 by my local GP. I have not had anything like this before and I do not have a heart condition.

4.6 FIREFIGHTER "F"

1. I am employed by the MFB as a Leading Fire Fighter "LFF" and I have 31 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood on 13 February 2014 to 17 February 2014 (my first deployment) and the 27th of February 2014 (my second deployment), both day shifts. On the 1st deployment we worked 12 hours in and 12 hours out.
4. I was initially on a day shift crew then I was swapped onto night shift and went to the accommodation centre and then was sent to Hazelwood on day shift crew and was transported to the mine site. Due to this mix-up I had no safety briefing in the staging area.
5. The medical tent personnel testing for carbon monoxide (CO) levels as far as I knew may have been mine staff as all the miners knew them by name. They asked if I smoke and/or had I been ill and if I had any other medical problems. Then they placed a sensor on my finger to get percentage CO levels in my blood, my reading was zero.
6. I then had lunch at the mine site and I noticed firefighters in their dirty gear whilst in the lunch area. The lunch staff made sure firefighters washed their hands.
7. I was then transported to the mine site and we were transported with a mine guide to the northern batters. I was down on the tele-squirt for 6 hours on the mine site. We were told to take water, Gatorade and food provisions. I and my crew were eating and drinking at the mine fire site which I believe was an unsafe work practice.
8. On the tele-squirt I and my crew had no Breathing Apparatus (BA) and as it was an appliance taken from the workshops it was not a commissioned truck (not ready for service) and it did not have hand washing facilities.
9. On my first day I wore safety goggles and a helmet but I was not advised to wear a P2 mask or BA at this stage. I was wearing wildfire gloves which was inappropriate due to the mud and water and they got soaked as well.
10. The appliances were pumping the water from the mine pit dam and I never got told early on anything about the water and whether it was safe or contaminated.

11. I regularly got overspray of water from my truck and when I changed the hose I got hit with this water and my pants got soaked to the skin as well. The overspray got on my face including cheeks and nose and I and my crew were not told to wear P2 until later on the first day of my first deployment.
12. On day one of my 1st deployment Divisional Command issued only 1 CO personal monitor per appliance. I would say now this was an unsafe work practice. As CO readings would fluctuate depending on where an individual was standing.
13. Later on Divisional Command provided 1 CO monitor between 2 firefighters and there was only 2 on the crew. Although this was better it would have been safer to have 1 CO monitor per person as a safer work practice.
14. Before I left the mine site I and my crew were tested for our CO levels and then I got tagged before I and my crew were let off the site. There was no separation between dirty and clean areas.
15. On my first day of deployment there was no shelter provided that could accommodate the amount of firefighters for MFB and CFA. There was also limited seating for eating if there was no seat you were forced to sit outside where I was subjected to ash and smoke from the mine fire. This occurred until a marquee was put up and we commandeered it to use for shelter to eat meals, store our Personal Protective Clothing and get changed etc.
16. On the first night I was there after I finished I was taken to our accommodation and I then showered and had a meal. I then felt nauseated and took some panadol.
17. The next day I went back to the mine and medical tent personnel tested my CO levels which was 2% CO level in the blood. There was no concern around this. On day 3 at lunch time my reading was 7 per cent of CO in the blood and I was placed on oxygen for 20 minutes and then rest for 20 minutes and then it went down to zero which I found hard to believe.
18. From day 2 of my first deployment I started working 2 hours in the mine and 2 hours out of the mine on the tele-squirt which still did not have any

BA. If the CO monitor went off (ie. over 30 ppm) I was advised to get in the cabin of the appliance and put the air conditioning on and/or seek a relief area which meant walking away from the site with high CO readings.

19. When driving in and around the mine the CO monitor was recording 200 ppm at times. Often we were driving in zero visibility because of the smoke.

20. On the fourth day of my 1st deployment they shifted the forward control point/staging area as the previous one was overtaken by ash and smoke and high CO levels which was affecting everyone. The new staging area was above the southern batters, there was no shelter provided for anyone to have their meals. The volunteers from Bunning's who were cooking breakfast were getting soot and ash and smoke from the southern batters and they were exposed to the elements. All the fire fighting crew eating their meals were also exposed to the elements and soot and ash from the southern batters.

21. On the last day of my 1st deployment in the medical testing area, medical tent personnel placed a towel over my hand with the finger monitor underneath the towel. The reason we were told was that fluorescent lights affected the readings and may have given elevated readings. I was told this procedure was advised by an ambulance officer as the medical area staff were not aware of this and ambulance staff may not have been liaising with medical area staff.

22. I was taken back to accommodation very late and I nearly missed out on my meal at the university and then the next day I was transported to the MFB college. I left the university at approx 8am in the morning and the other crew came back to the university. I had a shower and I got changed and we were transported back to my home station.
The problem was that all our dirty and contaminated fire clothing/gear was then transported back with us in our own personal fire fighting deployment bags.

23. Communication was very confusing due to the maps as given to me at the briefings by Divisional Command. At the briefings one per truck were given to us as they kept changing the location of appliances.

On day two Divisional Command told me and my crew to evacuate the northern batters and go to the 40 ton bridge and once we got there nobody knew why we were supposed to be there and no one knew who gave the order.

24. There was lack of cohesion between the CFA and MFB firefighters. An example was a lack of hoses available and couplings used between CFA and MFB appliance were in short supply. Couplings are an adaptor to link hoses to different appliances . There was also an acute lack of hose ramps - my crew and I needed these to protect our hoses from heavy vehicles crushing our hoses.
25. I hardly ever saw a Commander check on firefighter's welfare as it was left to the officers to do this. A lot of the Commanders were away from the staging area and they were located at the front gate on my first deployment.
26. After my deployment I got a continual dry cough and it lasted for a month. The Doctor was unsure but said it could have been aggravated by the Hazelwood smoke.
27. I did have trouble sleeping after both of my deployments for approx 5 or 6 weeks. I would be tired but I could not stay asleep and my Doctor gave me sleeping tablets which I did not take.
28. After I got back to my home station I got back at one in the afternoon and there was no debrief and no advisory personnel to tag my Personal Protective Clothing, which was contaminated, and put it in to dry cleaning at my home station. There was no firefighter welfare check and nobody offered cab charges to me to get home. There was also problems with claiming entitlements and what was supposed to be claimed.
29. On my second deployment things were better. The staging area was right in front of the gate, there were proper areas for meals and showers on site and we had health monitoring coming in and out of the site. However the 2 hours in and 2 hours out of the mine did not work effectively as it took 30 minutes to get in and out of the mine site decreasing our rest time.
30. On my 2nd deployment we worked 16 hour days from a Melbourne location to the mine site and then back to my home station including travel

time. I was advised it would be 12 hours on shift and 12 hours off shift. I also had to travel from a Melbourne location to my home in regional Victoria on top of this in my own vehicle and I was not offered a cab charge for this.

31. In the mine my lowest CO reading was 0 and the highest was 50 ppm in the northern batters.

4.7 FIREFIGHTER "G" (VOLUNTEER)

1. I am a volunteer and I hold the rank of 4th lieutenant and I have 8 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood for 3 deployments. My first deployment was approximately 9 and 10 February, on night shift. My second deployment was on the 12th of February, on night shift. My third deployment was approximately on the 16th of Feb 2014 on night shift.
4. On my first deployment when I arrived there was no orientation or medical testing.
5. I was first taken to Morwell Fire Station and they gave us some maps and sent us to the pulp mill. At the pulp mill there was a log stack fully alight/consumed and after that we were deployed not far from Maryvale and due to a wind change we were deployed for asset protection at the crane depot.
6. The fire came out of the Hazelwood mine and then it jumped into the SES depot. At the SES depot there were a number of vehicles fully alight spewing heavy black smoke and white smoke which stunk. I asked my strike team leader whether to don/wear Breathing Apparatus (BA) he said not to worry about it. I said, "stuff this I am moving my crew and truck out of harm's way". We had blokes standing in this smoke for 30 minutes with no protection P2 masks or BA. We had no further BA backup ie. replacement sets or cylinders as well.
7. I and my crew successfully defended the crane depot and then we sent 2 appliances (tankers) to get down to the mine pit bottom and protect the multimillion dollar coal dredge. Command gave no information to our strike team leader about the location of this or what the conditions were like down there.
8. To get down there to the mine there was a steep track with no mine guide and there was a fully involved house on fire six feet away from our appliance on the mine site on the edge of track, not far from the crane depot which was possibly the south side of the mine.

9. Also next to the house a machinery shed was on fire inside and I had no idea what was inside but it was furiously burning.
10. I had 5 members on each tanker and we only had 2 BA sets on each one. I and my crew were given no instructions on whether to wear BA or P2 masks.
11. I and my crew got about 300 metres down the track and there was about a 30 to 40 knot wind about the coal face and we were getting peppered with hundreds of red hot embers the size of marbles, I'm talking 100 of red hot embers. I decided it was way too dangerous in there as there was no risk assessment done at all.
12. Both appliances then left the scene (tanker appliances). The heat from the house fire was very intense and the personnel on the back of both trucks had little or no protection only their Personal Protective Clothing (PPC).
13. I reported back to the strike team leader at the start of the track and I said it was too dangerous to proceed and we withdrew for crew health and safety reasons.
14. Then when we went on a number of small missions on the middle layers of the mine where power lines were in danger from grass fires and we were successful in putting these fires out.
15. At 01:00 I was sent to protect a series of major pumps that transfer water from the Hazelwood pondage. One tanker was stationed as the pump vehicle at the pipeline we lifted water 15 metres to the other appliance from which we deployed 3 lines to combat a large and fierce grass fire that was threatening a mine pipe/pumps infrastructure. I and my crew were told if the fire got these mine pumps the plant would need to shut down.
16. Once I and my crew got on top of the grass fire it ignited the coal underneath and then we had a very fast spreading coal fire that took us 6 hours to get under control.
17. When I was accessing the mine pipe connecting to our hoses there was a lot of water spray involved and I got soaked through to my skin and this got everywhere on my face including my nose, eyes and ears.

18. The mine guide advised me that the mine pipe water was 50 degrees Celsius and later on when I spoke to my Doctor what sort of stuff could grow in the water in the pipeline that was stagnant for 3 weeks and he reeled off a whole bunch of organisms that I could have been exposed to.

19. On my first deployment I had a lot of communication problems there was a lot of static during the night. This static problem improved during daylight hours. At one stage I and my crew had to move 1 kilometre to be in communication range to get out of the static, there was a lot of powerlines where we were. It was really difficult to use portable radio communication out of the mine pit.

20. I had a previous prickly heat rash but the rash changed after I was exposed to this mine water 24 hours after my first deployment. It was a very aggressive rash which was painful and itchy. The rash seemed to be in all my crevasses shoulders, buttocks, groin, armpits and around my eyes which were very swollen with raised skin.

21. I went to the Doctor he said it looks like dermatitis but he did not do any testing and he said to use a topical ointment and a couple weeks later it was still worse. I went back to see him again. Then he gave me a steroidal and non-steroidal anti-fungal creams to use for 2 weeks and if it was not okay then to come back. By this stage I was becoming debilitated from what was Ross River fever which my doctor diagnosed by performing a punch biopsy sample which was tested. I was then advised this was a mosquito borne disease and was most likely bitten whilst staying at an regional motel after fighting a fire at Goongerah.

22. Once we finished the fire fighting on my 1st deployment I was on fighting the fire for 16 hours without a break. Then we were taken off the mine pipe area to the staging area for a feed then we were sent home. There was no separated dirty and clean areas and no awareness of the carbon monoxide issue, it was not mentioned nor were carbon monoxide personal monitors supplied. On my first deployment there were no health checks. We ate the food given to us in our dirty gear. There was no tagging before being let off site. We then drove back to home, and in

my case this was a regional area which took about 3 hours after being on site for 20 hours.

Second deployment

23. Once I got to the staging area I queued up for health checks and this took an hour to get through the system. The medical tent personnel took our carbon monoxide percentage in the blood reading using a pulse oxygen oximeter. The staff taking the readings had no uniform and I assumed they were either nurses or doctors. My reading was 0% CO reading in my blood.
24. The medical area staff asked if we were smokers and if we have any major health issues or any allergies. They did not ask if we were CFA or MFB but they had our names.
25. I heard a person from the medical tent say that they were getting CO readings of 2% from people coming in and they should have been zero as the firefighters had not been into the mine yet. After I realised this I raised the issue that due to a wind direction change the wind was blowing carbon monoxide from the mine to the staging area.
26. I was unsure if the staging area got moved due to CO exposure as I was sent down towards the mine.
27. I and my crew then had a mine guide that took us to the northern batter and that was the last we saw of him as we did not have a mine guide again.
28. We only had 1 CO monitor for 5 firefighters. We were told if we get a CO reading higher than 35 parts per million (ppm) we were told to withdraw and let them know, we were told to take readings every 15 minutes and to record them on paper and report on the hour the baseline and spike/peak CO readings.
29. Within 4 hours the safe baseline had changed again down to 15 ppm, anything below this was safe and 2 hours later down to five ppm, anything below this was safe.
30. The driver of the appliance had the personal CO monitor and for half the time he was inside the cabin and there was no CO monitor on the

ground during this time to record CO levels. This was a risk to me and my crews health and safety.

31. When the driver moved around our appliance CO readings fluctuated depending on the wind between 0 and 38 ppm.
32. On my 2nd deployment on the end of the hose we had firefighters in BA but we were limited to 2 cylinders per person. This was about 40 minutes of oxygen from each cylinders. We did not have enough cylinders and we resorted to wearing P2 masks.
33. The MFB had a BA pod to restock cylinders but it could not refill due to incompatibility between CFA and MFB BA gear in the staging area.
34. I and my crew were not given strict time limits on the mine fire at all. I was there on the mine site for up to 4 hours.
35. I and my crew used mine water from the standpipe for our appliances and we had very old hoses and equipment and the water sprayed everywhere. I got soaked on the lower half of my body. I was not aware at that stage or advised if this water was clean or contaminated.
36. I and my crew were moved from different locations on the mine site due to high CO readings.
37. After getting out of the mine site I was given a health check by medical tent personnel and my CO percentage level in the blood was 2%. I had to wait around until it was zero and then I and my crew were all allowed to eat in our dirty and wet gear. I was then tagged then we were okay to leave. There was no separate dirty and clean areas.
38. Communication was a lot better on my 2nd deployment due to a higher elevation. The communication was good with Sector Commanders but I noticed that if one area was deemed unsafe I and my crew were moved but then placed in the same area later on.
39. I was told by my crew leader to wear P2 everywhere on the job but no-one wore it in the staging area. I was told at the briefing the P2 would protect you from pretty much everything.

4.8 FIREFIGHTER "H"

1. I am an MFB firefighter and I am a Leading Fire Fighter ('LFF') and I have 27 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood for 3 deployments. My first deployment was approximately on the 2 March 2014 on day shift. My second deployment was on the 13th of March 2014 night shift. My third deployment was approximately on the 17th of March 2014 day shift.
4. We worked 12 hours on and 12 hours off except for 1 shift where I only had less than 8 hours off where I finished at 10:10am and was back on at 6:00pm.
5. After our briefing we were then split into crews. I was on the tele-boom for all three deployments.
6. We were told in our briefing where the appliances were situated and we were advised of health and safety issues and to record our Carbon Monoxide (CO) levels every 15 minutes on a piece of paper.
7. When I was tested in the medical tent by placing a monitor on my finger my CO levels in my blood were between 0 - 1%.
8. I was advised that 50 part per million (ppm) we were to don/wear Breathing Apparatus (BA). If levels started to get quite high 30 to 40 ppm we were advised to get into the truck. If the CO levels were 70 ppm we were advised to evacuate.
9. We were advised it was 2 hours on 2 hours out of the mine. But at times we were on the mine site for up to 3 hours until we were relieved by the next crew.
10. Approximately on Wednesday 5 March I was directed to clean an appliance at my home MFB station which had used water from the mine site. I was told to clean and flush the water tank and deliveries and the monitor, the whole lot. When I was doing this the wind blew over into my face which included water from the truck. We were told this water was possibly contaminated and that is why we cleaned it.
11. The next day my left eye got bright red and itchy and was irritated and started to close up. I went to work the next day. I went to the

Doctor on the 8th March 2014 and he gave me oral medicine and cream antibiotics. The eye took 2 days to clear up. I advised the Doctor of the UFU bulletin which advised the names of bacteria (E.Coli and psuenodomas and coliforms in the water and Pseudomonas Aeruginosa). He used this information in his diagnosis to treat me.

12. I had to cancel my deployment to Hazelwood on the 9th of March due to this eye infection.
13. When I was down fighting the fire on the tele-boom I was exposed to overspray and I often got this overspray on my face, cheeks and ears. I was wearing safety glasses.
14. The water used for the tele-boom was from the mains piping from the mine. I was unsure whether this water was safe or was contaminated, even in our briefings they did not know. The colour of the water was a murky colour and it was not clear.
15. We were advised the P2 masks would protect us from coal and I wore this all the time. It was up to the individual firefighter to change to a new P2 mask.
16. We were unsure if the people taking the CO levels were medically trained or nurses or doctors.
17. The clean and dirty areas were well defined. However, our Personal Protective Clothing (PPC) got extremely dirty and muddy and we had to re-wear this dirty, wet and damp clothing on our next shifts.
18. I did not see our Sector Commander very much to check on our well being and to feedback information on how the fire fighting was progressing, if the truck was in the right place and to check on our health and safety.
19. There was a general lack of communication and feedback from firefighters on the mine site to the Sector Commander, communication was very much one way from the Sector Commander.
20. I always had mine guides taking me down to the mine site. They seemed to know where appliances were located more than the Sector Commanders.

21. Before we went home my CO levels were tested and then I was given a tag to wear. This showed we were at Hazelwood mine fire and what we were exposed to.
22. There were only 2 operators on the tele-boom, the normal crewing was 4 operators for this tele-boom.

4.9 FIREFIGHTER "I"

1. I am a CFA firefighter and I am a Leading Fire Fighter ('LFF') and I have 13 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I was deployed to Hazelwood on the following dates:
    - 17th of February 2014 to 20th of February 2014 (day shift)
    - 25th and 26th of February 2014 (day shift)
    - 1st of March 2014 (night shift)
    - 6th of March 2014 (day shift) and
    - Approximately on the 12th of March 2014 (night shift)
4. I went on my first deployment on a CFA tele-boom in the southern batter of the Hazelwood mine. I was merely told where to go in the mine.
5. There was no briefing, however CO testing was done by placing a monitor on my finger which was performed by the CFA health team. I was unsure if they were medically qualified and my CO level was zero.
6. There were no resource management or t-card fire incident management cards used to track where appliances/resources were on a large map. I put in a report about this (a salmon card). An MFB safety officer got back to me and said they are working on it. This was for the first week I was down at Hazelwood.
7. We had mine guides going in and out of the mine in the first week.
8. For the first couple of shifts we were in there all day. I got into the mine at 9am and got out of the mine at 5pm and we only had a 30 minute break and a 1 hour lunch break.
9. We were not briefed about P2 masks but I and my crew decided to wear them anyway. They were white in colour.
10. With the P2 masks that I used it did not provide a good seal and always there was dirt or contaminates inside the mask area when I took it off.
11. I and my crew never wore any Breathing Apparatus (BA) when I was down in the mine fighting the fire at any stage.

12. During the first week we were only given 1 CO monitor per appliance with limited instructions of what to do or how to use it. During the first week I was not made aware of and did not report CO levels every 15 minutes or every hour.
13. The CO levels in the Hazelwood mine ranged from 0 to 160 ppm during the first week.
14. I got verbally told if the CO levels were 50 ppm twice in an hour we were told to leave the mine for up to an hour.
15. During the first week we were forced to stay in wet and dirty gear as there was no replacement uniform.
16. There was also a lack of showers when we arrived in the first and second staging areas
17. We were not advised what gear we should be wearing. First we wore structural gear which was too hot to wear and then later on we wore wildfire gear which was cooler but did not provide moisture protection as water could soak right through this uniform.
18. The water used was from the base of the mine which was later found out to be contaminated water.
19. Every person in my crew got this water on their face, nose, ears and eyes and water soaked through my gloves as well. I was not wearing safety glasses and neither was my crew.
20. We were advised by management that we could operate our tele-boom with one qualified operator and through UFU union intervention we kept the minimum safe crewing of 2 qualified operators.
21. There were no dirty and clean areas when we came out of the mine early on.
22. We ate our food in our contaminated gear and mine ash from the fire was falling on us as we ate.
23. To my knowledge the power companies employee's local knowledge possibly was not used to its fullest advantage.
24. In the first week in order to get a CO monitor I had to walk through the kitchen area in contaminated gear. I reported this via a salmon card. An MFB safety officer said they were working on this.

25. We were told if CO levels got too high to don BA and get out of there, if it was over 30 ppm to don BA and at 50 ppm get out of there but you could not drive out of there in BA gear.
26. Neither I or my crew wore BA the whole time we went down there.
27. I was told that there was no two hour turn around despite it being written in briefing notes.
28. There were no operational or safety briefings for the first two weeks.
29. On the 1st of March I was almost killed by a landslide. We had the tele-boom up spraying water and a monitor 30 meters away and I went to adjust the monitor and I then heard a rumbling and my other crew member shouted and it was pitch black and I could not see the black coal coming down. I ran but I did not know which direction to run as it was dark and the coal only missed me by 1 metre. The coal came from a height of 20 to 30 meters down towards me.
30. I put in a report about this (a salmon card) and I also notified the Sector Commander immediately via mobile phone as the portable radios were a known problem. There was no direction from the Sector Commander to move and we were just told to be careful. The Sector Commander after being asked came down to view the area he advised that it was not the first time this has happened and I was only told to be careful.
31. I reported the coal slide to an MFB safety officer and he said that was a CFA safety officer issue and he was only the MFB safety officer. Through the whole deployment I sought out CFA safety officers and to my knowledge there were none.
32. On about the 25th of February 2014 I was made aware that there were only to be 2 hours in the mine and 2 hours out. We found out this by searching for briefing notes. The problem was the briefing occurred before the day shift bus arrived so I did not get briefed from the 17th of February 2014 up until the 24th of February 2014.
33. I was advised by a firefighter who told me that he had a 100mm hose coupling sheared off, this coupling is about the size of your head and with the pressure of the hose it flew past his head and narrowly missed

his head. I believe he reported this. This may have occurred due to physical fatigue of the hose.

32. On the 1st of March I was tested for my CO levels and there were health teams doing the testing and nurses were there too. My CO readings ranged approx. from zero to 3% CO levels in the blood.

33. In the last week I was there the health team started to put towels over the hand when they were testing for CO levels.

34. From March onwards clean and dirty areas improved dramatically.

35. A typical day was very long. The day started at an outer suburb of Melbourne at 5:30am in the morning a meeting point and we arrived at the mine 8am and we worked until 5pm or 6pm and we caught a bus home and usually arrived back about 9:30pm at an outer suburb of Melbourne. In total this is a 16 hour day. This became a huge issue with fatigue and I was getting exhausted and others were getting exhausted as well with these long hours.

36. A directive did come out that we were expected to take a bus from our home to Hazelwood and back in terms of fatigue management.

37. Before the 6 March 2014 I became aware that Sector Commander's were being staffed by Leading firefighters who did not have the training or qualifications or were not at the appropriate level (Senior Station Officer) to be a level 3 Incident Controller.

38. For the 1st, 6th and 12th of March 2014 there were problems with getting a mine guide and getting a vehicle from the staging area to the mine to relieve firefighters caught in the mine. As firefighters were in there for more than 2 hours I and my crew were forced to grab any car to get down to relieve the crew. If people needed to get out of the mine if CO levels were high we had no way of being able to get them out.

4.10 FIREFIGHTER "J"

1. I am an MFB firefighter and I am a Leading Fire Fighter ('LFF') and I have 9 years of service as a firefighter.
2. I have been asked by the UFU to share my experience at Hazelwood.
3. I went to Hazelwood twice the first time was approximately on the 27th February 2014 on day shift and the other on the 6th March 2014 on night shift.
4. I had medical testing done for my carbon monoxide levels where a sensor was placed on my finger and they placed a towel over my hand. My level for carbon monoxide was zero. I was unsure whether the staff were nurses or not.
5. After getting some food I went to a briefing which seemed pretty pointless as we could not hear what was being said. I don't recall getting any safety information sheet on carbon monoxide or otherwise.
6. I went down there as a tele-boom operator. They were trying to get me to operate the appliance with only 1 person and not the required minimum of 2 qualified operators. This got resolved quickly with the help of the UFU.
7. We had a mine guide going into the mine and out of the mine.
8. I had a personal CO monitor which malfunctioned as it read at zero CO levels all the time so I had to rely on my colleagues personal CO monitor.
9. The CO level reading on the ground was 5ppm to 28ppm. My work mate was located 8 to 10 metres away from me and he was wearing the personal CO monitor.
10. I wore a P2 mask all the time when fighting the fire. We logged our 15 minute CO readings on a piece of paper and we radioed every hour our CO readings. However, often I would forget to log the CO readings every 15 minutes and radio in every hour my CO levels.
11. Both shifts I had problems with the water. We had enough water to run 1 appliance but not 2 appliances that were there. This made it a less effective fire fighting operation. This seemed to be due to the poor

quality of the water being used which was drawing a lot of grit and gravel from the mine water. The water was a brown and had a tannin quality.

12. The water being used was pumped from the bottom of the mine and was likely to be contaminated water.
13. I regularly received overspray and I got this contaminated water on my face, cheeks and ears. My hands got soaked with this water especially when changing over the water supply connections.
14. There was a problem with tracking of the appliances and where they were located on the map with the grid references. We needed a more clearly defined grid reference and this would have been better to help communicate where appliances were.
15. After coming out of the mine we had defined clean and dirty areas after changing my gear. I was then tested for my carbon monoxide levels which came back zero.
16. I found out for a period of 1 to 2 hours that appliances during the day were sitting there with no crew which seemed to be an inefficient use of resources, especially since the fire had been going for quite some time.
17. On my night shift I got tested for my CO levels and the briefing was done in a portable hut so I could actually hear the briefing this time around. Prior to the briefing we were handed a safety information sheet on the way to the mine.
18. After getting something to eat a mine guide took us to the mine site for my night shift.
19. For the first half of the shift for approximately 6 hours we did not have any water to fight the fire as there was no water available. So we were told to move the appliance to a more active/volatile area and there was only a little bit more water there.
20. After moving to a more volatile area the carbon monoxide levels were high. At one stage it was 96 ppm and where it was too high we just moved until the reading went down. The CO monitors were usually reading below 30 ppm. At 30 ppm the monitor alarm goes off.
21. The tele-boom we were operating was broken and they could not repair it on site as the monitor where the water comes out was unable

to be positioned and/or directed as the wiring was ripped out so we were forced to move the whole boom arm to direct water which is not a normal practice as you can't get a fine adjustment to get where the water is needed.

22. We did a night shift in the mine for 2.5 to 3 hours which was over the 2 hour limit we were supposed to be in the mine. This was due to waiting for a full crew to be fully orientated to relieve us. I was aware that other crews were still in the mine for 2.5 hours as well.

23. The shift was for 12 hours but by the time I got back to my home worksite at my home fire station it was 17 hours in total.

4.11 FIREFIGHTER "K"

1. I am an MFB operational staff member and I am a Senior Station Officer ('SSO') and I have 25 years of service in the MFB.
2. I went to Hazelwood on approximately 4 occasions during the deployment. I had medical testing for my carbon monoxide levels where a sensor was placed on my finger.
3. When I arrived for the first time on 14 February my CO reading was approximately 9%. The testing staff asked how long I had been in the mine, I told them I had just arrived. After discussions they told me the high reading must be due to attending other fires during the week. They put me on Oxygen for 30 minutes and then re tested me. The reading was still over the 5% but as I was rostered as deputy divisional commander I was advised that providing I stay in the Div Com centre and not deploy into the pit itself I should be ok. I note that during that 4 day tour of duty Div Com was evacuated and relocated 3 times due to excessive carbon monoxide and being enveloped in smoke. The original location of the Div Com was supposed to have clean areas were firefighters could rehabilitate and rest to ensure no prolonged exposure to Carbon Monoxide. However in a lot of circumstances the CO levels were too high in this area, causing the CO monitors to go into alarm, hence the staging areas being relocated on a number of occasions.
4. As an deputy divisional commander I noticed a high proportion of both firefighting and mine staff were getting high readings including around 8% or 9%. A lot of these high readings were coming from people at the start of their shift who hadn't as of yet been down in the mine itself.
5. Conversely people who had been in the mine repeatedly I noticed were getting low readings. I became concerned about the reliability of the testing regime and requested to be tested on both hands on every finger by all three machines to test the validity of the results. If the results were accurate I should have had about the same reading on each occasion. My personal results ranged from 0% to 14%.

6. My main concern as the deputy Div Com, was not sending people home with false high readings but rather sending people into the mine with false low readings.
7. I reported my concerns to the incident management team based in Traralgon who sent a CFA manager down the following day shift. I explained what had occurred and he said he would look into it and also that a different type of testing device would be arranged which would be breathed into, but to my knowledge these never arrived. I then booked off duty at the end of that shift.
8. The following night shift the parameters had changed again and a new set of Carbon Monoxide protocols were established. These included not utilising oxygen as a means of lowering readings after high readings as it was discovered the oxygen masked the readings and did not displace the Carbon Monoxide in the blood. The testing staff were also instructed to place a towel over the finger during testing to stop any light affecting readings.
9. However there was still huge variability and people reading greater than 5% after the changed protocols. Also, the practice of using Oxygen to reduce peoples readings and then assuming the CO had actually reduced was reinitiated at a later point.
10. Communications problems were an ongoing issue due to a limited number of CFA personal radios, and firefighters were working in a subterranean environment and it was difficult to send signals out. Due to not enough CFA personal radios, firefighters had to return to the truck to radio out, sometimes having to walk 90 metres, and then appliance location affected whether the transmission would actually be received by the Communications bus. The system was practically unworkable. This was known by management.
11. All firefighters were under strict instructions to have a mine driver escorting people in and out of the mine at all times. MFB were adhering to this policy and had safety and movement officers designated for this, however CFA and interstate firefighters were not adhering to the policy. The effect was that the divisional commander actually had no idea of the

numbers or locations of personnel in the mine at any one time, except for MFB personnel to some extent. However communication issues and vehicle identification issues affected the ability to determine locations of MFB appliances.

12. A potential catastrophic situation occurred on the night of the 15th of February when a may day call was issued from CFA firefighters who had become entrapped by fire due to a sudden wind change and they had no idea of their location, meaning that appliances couldn't be redirected to perform a rescue. The trapped firefighters had no BA with them. They were lucky to be trapped on a water pipe as it would have been a high probability that they would have continued over the edge of a nearby ledge. Luckily during the confusion a mine escort driver was able to locate the entrapped firefighters and ferry them to safety.
13. At one instance there were a number of telebooms in place but with no signage on them to identify which appliance was which, causing great confusion. For instance when crews were being swapped over they would at times be taken to the wrong appliances which were a long way apart. Some of the appliances had no identification on them, including specialist appliances requiring specific qualifications.
14. I initiated a system of naming the appliances teleboom 1 through to teleboom 4 and placing large signage on each appliance.
15. However on a further shift the system was changed again and the trucks were causing confusion again.
16. It took another 8 hours until we had the teleboom 1 through to 4 system in place again.
17. The last time I was in the IMT the CFA were again insisting on self deploying in and out of the mine without escort because it was easier as they wouldn't have to rely on mine staff for escorting.
18. At another time we put in place a truck in the staging area to act as a rapid intervention vehicle if required. This arose due to the near catastrophic incident I mentioned earlier.

19. However management saw the system as a waste of a resource because it wasn't being involved in firefighting and re-deployed the vehicle to the mine at a later date.
20. At a later point, an HSR then insisted on the appliance being used as a rapid intervention and it was again taken out of the mine for this purpose.
21. There were enormous levels of frustration as changes were made to improve safety including personal CO monitoring devices, escorting of all persons into and out of the mine, improvements to identification of appliances and other systems which would then be changed again by subsequent management decisions.
22. On as far as I can recall the 14th of March an incident which I will describe occurred. I was the Commander in charge of Safety and was informed that there were no qualified CFA sector Commanders in charge of the sectors which put at risk all firefighters due to there being no management structure. There was also confusion over the location of crews and vehicles. I consulted with the HSR and we agreed to withdraw all crews until suitably qualified personnel were put in place so that crews could be re-deployed. I contacted the Incident Controller who was supportive of the action. It was during this time that it was also discovered that crews from the Queensdland Fire and Rescue Service were not located in the staging area but had actually relocated back to their motels because they had decided that the 2 hour turn around was too onerous so they instigated a 4 hour turn around without any knowledge of the Incident Controller, contrary to the protocols agreed by all parties and in operation. Suitably qualified MFB SSO's were put in place as sector Commanders due to the inability of the CFA to provide qualified personnel. This was raised to the Senior Duty Officer of the CFA at the change of shift the following morning who had organised staff deployment orders and he was apologetic and deeply embarrassed that such a situation could occur.
23. I have read the correspondence from Acting Chief Officer Peter Rau to all MFB staff on 26 March 2014. In his correspondence he states that all staff were instructed to wear BA whilst in the mine. I saw no instruction and I'm not aware of any time where all firefighters in the mine were wearing BA.

Further, our BA duration is approximately 30 minutes. The shifts in the mine were 2 hours. It took approximately 30 minutes to be transported from the staging area into the mine pit itself. Therefore the BA cylinder would have been depleted upon arrival at your appliance, causing a requirement to change a BA cylinder in a hazardous environment and further to that you would then be required to change it a further 2 times in the allocated 2 hour time period in the mine before getting back to the staging area and being relived. We didn't have that many BA cylinders or BA's because the relief crew would also have to wear BA to enter the mines and relieve firefighting duties at the fire front. The idea that all firefighters would wear BA lacks operational awareness of what was actually occurring and what could be achieved in battling this challenging fire. Additionally if it was a requirement for firefighters to wear BA at all times in the mine due to concerns of CO poisoning then surely the same instruction would need to be made to all mine staff who were operating in the same environment. I never saw any mine staff wearing BA in any occasion and I am not sure if they are suitably qualified or trained in wearing BA. The most I ever saw were staff wearing particulate filters, P2 masks, designed as a rudimentary form of respiratory protection in regards to airborne particulates, certainly not CO.

24. The fire was difficult enough, but coupled with the complex interagency issues and the health and safety concerns, firefighters were exhausted by the incident.
25. After being contacted by numerous members over their concerns about being exposed to water in the HARA pit that was deemed off limits and the hospitalisation of a firefighter with septicaemia after receiving a paper cut, the UFU contacted the Fire Services Commissioner, the MFB Acting CO Rau and the CFA CO Ferguson voicing concerns about the suitability of the water being used for fighting the fire.
26. The UFU was assured that the EPA were the statutory authority in charge of that aspect of the incident and were conducting regular testing which showed that the water was safe for use.

27. The UFU then commissioned its own independent testing of the water by Occupational Hygienists Beauro Veritas. The results confirmed the UFU that the water was not safe for use and posed a significant health risk to firefighters. The water contained elevated levels of E. Coli, coliforms and pseudomonas aeruginosa. The hygienist reported high levels prior to providing the final report and the UFU immediately notified Alan Quinton the MFB incident controller of the results. The UFU also notified the Fire Services Commissioner.
28. The Fire Services Commissioner announced that the UFU testing regime would be enacted to ensure firefighting activities were conducted safely. A number of additional personal protection protocols were instigated in an attempt to minimise exposure to firefighters using the contaminated water to fight the fire.

ATTACHMENT 5.1.1

From: "RAU, Peter" <PRAU@mfb.vic.gov.au>
Date: 13 February 2014 11:59:08 AM AEDT
To: "Exchange Mailboxes (all)" <ExchangeMailboxes-all@mfb.vic.gov.au>
Subject: Update from the Acting Chief Officer

13 February 2014

Update from the Acting Chief Officer

Colleagues,

As you are aware, MFB is involved at a state level with the incident in the Latrobe Valley including the Hazelwood coal mine, with a number of our staff there currently and more to be deployed over the coming weeks. Special precautions are required given the particular conditions of a coal mine fire.

The State Controller has issued the health and safety bulletin below to all agencies to ensure a consistent approach to carbon monoxide. Please read it and ensure that if you or any of your team are involved in deployment to Hazelwood you highlight any issues you may have.

Peter Rau
Acting Chief Officer

Carbon Monoxide Exposure Risks
Smoke and the production of other toxic products are inherent in bush and other types of fires. The current fire at the Morwell open cut coal mine is producing smoke and also carbon monoxide due to the incomplete burning of the coal. Agencies are to ensure that appropriate mitigation measures are employed to address this risk.
Exposure to carbon monoxide can pose higher levels of risk to specific personnel and the following advice has been provided by the SCC OHS advisor.

General Health Issues
Individuals who have a history of cardiovascular or respiratory conditions should not be deployed to this incident. This is due to the increased sensitivities that might be attributable from increased carbon monoxide levels in the open cut fire.

Female Firefighters

State emergency agencies have received medical advice from the MFB and CFA Medical Officers and the Deputy Regional Health Commander at the Incident Management Team at Hazelwood that there is a risk to the foetus of pregnant women exposed to high levels of concentrations of carbon monoxide potentially present at this incident.
Health and safety is the State emergency agencies' highest priority and because of this risk any female firefighter who is pregnant or there is any chance that they may be pregnant, should not attend this incident due to the increased potential exposure to carbon monoxide. Female firefighter should seriously consider this advice.

Pre Deployment
Staff planning to be deployed for a shift in the open cut fires should have 24hrs of "clear time" away from smoke logged incidents (e.g. prior deployments).
This information should be made available to all personnel within all agencies who are deploying staff to the coal mine fire.

Membership ATTACHMENT 5.1.2

From: Casey Lee
Sent: Monday, 17 February 2014 2:21 PM
To: Joanne Watson
Subject: Fwd: Serious Concerns Hazelwood

Begin forwarded message:

From: Peter Marshall <[redacted]
Date: 17 February 2014 11:48:39 am AEDT
To: Casey Lee [redacted]
Subject: Fwd: Serious Concerns Hazelwood

Peter J Marshall

National & Victorian Branch Secretary , United Firefighters Union Of Australia

Begin forwarded message:

From: Peter Marshall <[redacted]
Date: 17 February 2014 10:04:57 AEDT
To: Danny WARD <[redacted], Dave Hamilton <[redacted] Mick Tisbury <[redacted]
Subject: Fwd: Serious Concerns Hazelwood

Peter J Marshall

National & Victorian Branch Secretary , United Firefighters Union Of Australia

Begin forwarded message:

From: Craig.Lapsley@firecommissioner.vic.gov.au
Date: 16 February 2014 22:00:36 AEDT
To: "Peter Marshall" <[redacted]
Subject: Re: Serious Concerns Hazelwood

I'm onto it

Sent from my EIP Phone

On 16 Feb 2014, at 9:50 pm, Peter Marshall [redacted] wrote:

Thanks Craige

I don't mean to make your

job any more difficult , but
I have had firefighters raise
these matters

Peter

Peter J Marshall

National & Victorian Branch Secretary , United
Firefighters Union Of Australia

On 16 Feb 2014, at 17:37,
Craig.Lapsley@firecommissioner.vic.gov.au
wrote:

> Peter M
> I have requested answers to your
> questions and will reply with details
> Monday.
>
> Talk soon
> Regards Craig Lapsley

> **Fwd: Serious Concerns Hazelwood**
>
> Peter Marshall to: Peter RAU, Craig.Lapsley

> Dear Craig,
>
> We have been notified of
a series of serious
concerns regarding the
current conditions at
Hazelwood. The key issues
are:
>
> 1. Appropriate
procedures in context of
the two hour turn around
and whether this should be
reviewed to one hour.

> We would also like
clarification of what is a
tour of duty including
meal and rest breaks.

> We understand that
mandatory wearing of BA is
being directed and in this
context the two hour
turnaround does not make

sense with current BA procedures .

> We fail to see how the 2 hour conforms with BA procedures.

> Could you please also confirm that personnel are being instructed to wear BA and are doing so? - our understanding is that they are not .
>
> 2. Rest area/rehabilitation area.

> It is our understanding that when troops withdrawn from the fire fight they are retreating to an area that is also one of a hostile environment , being exposed to unnecessary levels of heat and exposure to carbon monoxide.

> Additionally the clean/dirty area principles/ discipline is not uniform and the difference in culture is causing unnecessary potential exposure to toxins both known and unknown.
>
> 3. Could you please advise us as to what monitoring equipment is being utilised for detection of excessive carbon monoxide levels both on a global and on a individual basis.

> Additionally whether such equipment has been calibrated for accuracy.
>
> 4 Additional to carbon monoxide monitoring what other testing is being done for toxins in the atmosphere?
>
> 5. We also understand testing has been concluded for mercury both in water, on the surface of the coal and the atmosphere could you please provide such results.
>
>

> Additionally can you please confirm the arrangements for accommodation for personnel. We understand that there are using six bed dormitories that incorporate non standard adult size beds with such dormitories sharing one toilet and one shower and no air conditioning.
>
> We also understand that senior command have been working excessive shifts, we are reliably informed up to 22 hours without sleep this is not only dangerous to the individual but we question the ability to provide a safe working environment for subordinates in the context of fatigue and decision making which could be critical to death or injury.
>
> We are also concerned about health and safety of all in this environment and in the spirit of cooperation would like to meet to discuss and coordinate with our nominated person to address all issues.

Could you please contact me when convenient on [redacted]

>
>
Peter

and any attachments.
Our organisation respects the privacy of individuals. For a copy of our privacy policy please go to our website or contact us.

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ATTACHMENT 5.1.3

From: Joanne Watson
Sent: Monday, 17 February 2014 3:49 PM
To: 'Craig.Lapsley@firecommissioner.vic.gov.au'
Cc: Peter Marshall; [redacted]
Subject: UFU BULLETIN: YALLOURN-HAZELWOOD FIRE

Dear Fire Commissioner,

Please see attached a UFU bulletin regarding the Yallourn-Hazelwood fire for your information.

We are sending you a copy as a courtesy so that you are aware of the information we are providing our members regarding recent communications.

Sent on behalf of Secretary Peter Marshall.

Joanne (Wattie) Watson
National Industrial and Research Officer
United Firefighters Union of Australia
410 Brunswick Street, Fitzroy, Victoria 3065

W: 03 94198811
F: 03 86720457
M: [redacted]
E: ufunational@ufunat.asn.au

STRENGTH IN UNITY - PROUD TO BE UNION

United Firefighters Union
Victorian Branch ABN 74 030 569 265

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Fax: (03) 9419 9258

BULLETIN

Bulletin No: 035 **Volume:** 20 **Monday 17 February 2014**

To ALL UFU MEMBERS

Yallourn - Hazelwood fire

Members are informed that the UFU has been in constant contact with the MFB, CFA and the State Fire Services Commissioner regarding the ongoing activities at Yallourn- Hazelwood mine fire ground.

The UFU has also received a range of information and issues from members regarding potential problems and logistics that have arisen at the Yallourn Hazelwood fire ground.

The UFU has been working productively with the fire services and the State commissioner as we understand that the above incident/fire is of considerable complexity with the additional problem of challenging circumstances due to the protracted nature of this event.

In other words, as matters have arisen the UFU has been attempting to resolve these issues to the satisfaction of our members with the primary consideration of the safety and wellbeing of our members and the community.

The UFU is pleased to report that we believe the fire services and the State Fire Services Commissioner have also adopted a similar approach.

Further activities and issue resolution

The UFU has forwarded the following points as agenda items to be discussed with a view to resolution. We want to emphasise that we have done so in a cooperative process where hopefully we can assist:

- *Appropriate procedures in context of the two hour turn around and whether this should be reviewed to one hour. We have sought clarification of what is a tour of duty including meal and rest breaks.*

- *We understand that mandatory wearing of BA is being directed and in this context the two hour turnaround does not make sense with current BA procedures. We fail to see how the two hour conforms with BA procedures.*

- *We have sought confirmation that personnel are being instructed to wear BA and this is occurring.*

- *It is our understanding that when troops are withdrawn from the fire fight they are retreating to a rest/rehabilitation area that is also one of a hostile environment and are being exposed to unnecessary levels of heat and exposure to carbon monoxide.*

- *The clean/dirty area principle/ discipline is not uniform and the difference in culture is causing unnecessary potential exposure to toxins both known and unknown.*

- *We have asked for information on the monitoring equipment being utilised for detection of excessive carbon monoxide levels both on a global and on an individual basis. We have asked whether such equipment has been calibrated for accuracy.*

- *We have also asked what other testing is being done for toxins in the atmosphere in addition to carbon monoxide monitoring.*

- *We also understand testing has been concluded for mercury both in water, on the surface of the coal and the atmosphere and have requested the results of such testing.*

- *Additionally we have sought confirmation of the arrangements for accommodation for personnel. We understand that there are six bed dormitories of non standard adult size beds with such dormitories sharing one toilet, limited shower facilities and no air conditioning.*

- *We have raised the issue of senior command working excessive shifts - up to 22 hours without sleep - this is not only dangerous to the individual but we have also questioned the ability to provide a safe working environment for subordinates in the context of fatigue and decision making which could be critical to death or injury.*

- *We are also concerned about health and safety of all in this environment.*

If members have any issues at all please do not hesitate to contact the branch secretary irrespective of the time of day on 0419 127 004.

Additionally members are informed that the union is also in discussion with its health and safety coordinators where the outcome will be communicated to members in the near future.

In closing, the dangers of firefighting and our occupation are present on a daily basis but this event brings into stark reality the challenges and dangers that firefighters face on a daily basis.

The Yallourn-Hazelwood fire is of unique nature and globally it doesn't appear that there is any learning from previous incidents that can assist as this type of mine is the only one in existence for this type of operation.

Strength in Unity
READ OUT AT MUSTER AND PIN ON NOTICE BOARD
Authorised by Peter Marshall, Branch Secretary

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Victorian Branch ABN 74 030 569 265

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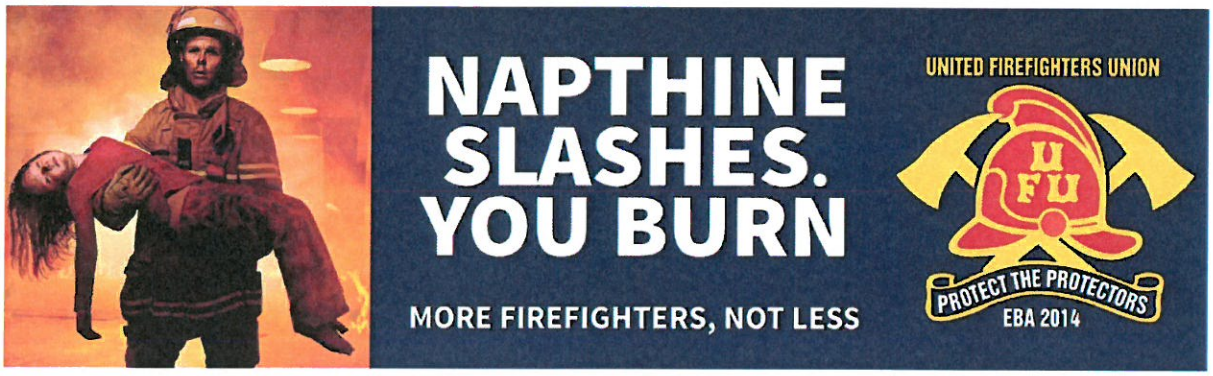

BULLETIN

Bulletin No: 53 **Volume:** 20 **Thursday 6 March 2014**

To ALL UFU CFA MEMBERS

STAFFING OF THE AERIAL PUMPER AT HAZELWOOD INCIDENT

Agreement was reached between the UFU and the CFA regarding the commissioning of the new aerial pumpers (snozzle) for use at Hazelwood incident.

The staffing levels for this appliance were to be 1 SO, 1 LFF and 2 FFs.

The operation of this appliance requires two endorsed and incremented operators at any given time, one of which must be a crew leader. That is, the SO and the FF will operate together for a maximum of two hours, both of which have to be endorsed and incremented operators, followed by the LFF and the FF operating the following two hours both of which have to be endorsed and incremented operators.

This is for the safe and effective operations of this appliance.

There have been numerous discussions between the Secretary and the DCO regarding this matter of which both were in agreement that this is the way the appliance will operate at Hazelwood.

Please contact your shop steward should you have any further questions.

Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.4

United Firefighters Union
Victorian Branch ABN 74 030 569 265

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BULLETIN

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We are also concerned about health and safety of all in this environment.

If members have any issues at all please do not hesitate to contact the branch secretary irrespective of the time of day on 0419 127 004.

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In closing, the dangers of firefighting and our occupation are present on a daily basis but this event brings into stark reality the challenges and dangers that firefighters face on a daily basis.

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Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

Membership ATTACHMENT 5.1.5

From: Peter Marshall [redacted]
Sent: Monday, 17 February 2014 6:09 PM
To: Joanne Watson; Casey Lee; Michelle Baldini
Subject: Fwd: Health Mgmt re Hazelwood Open-cut Incident

Peter J Marshall

National & Victorian Branch Secretary , United Firefighters Union Of Australia

Begin forwarded message:

From: [redacted]
Date: 17 February 2014 17:52:58 AEDT
To: [redacted]
Subject: Health Mgmt re Hazelwood Open-cut Incident

As discussed on the phone .... If this has not already been done .... can you please note for consideration to put back to CFA .....that it would be helpful if when CFA release wrist-tagged personnel from the Hazelwood open-cut incident that the organisation also give these personnel an information sheet detailing the signs & symptoms that may present re CO poisoning, which would be useful for them & for their family members to refer to when these personnel return from the incident.

Thanks again

CFA [redacted]

Protecting lives and property cfa.vic.gov.au

Membership ATTACHMENT 5.1.6

From: Euan Ferguson [redacted]
Sent: Tuesday, 18 February 2014 12:14 PM
To: Peter Marshall; Michelle Baldini
Cc: Scott Purdy; John Haynes; Craig Lapsley; ESC-MFB (Peter Rau); Mick Bourke; Peter Cordova; Jeff Green; Fran Boyd
Subject: LATROBE VALLEY HAZMAT AND FIRE - HEALTH AND DECONTAMINATION PLAN
Attachments: Health Management and Decon Plan_16022014v2.pdf

Dear Peter,

Thank you for your time and discussion at our meeting this morning. A range of actions were agreed to. One action was that I provide you with a copy of the Health Management and decontamination Plan, which is attached to this email.

Please contact me if you have any further questions. We appreciate your advice and involvement in this ongoing incident.

Regards, Euan

Euan Ferguson AFSM
Chief Officer
CFA

Headquarters
8 Lakeside Drive, Burwood East VIC 3151
PO Box 701, Burwood East VIC 3149
Ph: [redacted]
Fax: +61 3 9262 8397
Email: [redacted]
www.cfa.vic.gov.au

FIRE SERVICES COMMISSIONER VICTORIA

Health Management & Decontamination Plan

Latrobe Valley Coal Mines Fires

WORKING IN CONJUNCTION WITH CFA MFB Victoria Department of Environment and Primary Industries

15 · 02 · 2014

FIRE SERVICES COMMISSIONER VICTORIA

This Plan including all Attachments has been approved and endorsed by the following:

Approved by:

.....
Regional Controller
[date]

.....
Incident Controller
[date]

.....
CFA Medical Officer
[date] 6/2/14

Endorsed by:

.....
State Controller
[Date] 14/2/14.

.....
CFA Chief Officer
[Date] 14/2/14

.....
MFB Chief Officer
[Date] 14/2/14

.....
VICSES Chief Officer
[Date] 14/2/14

W. Chivers
Fire Services
Scientific Officer

This Plan will be formally reviewed and where required amended every three days.

Contents

Context

On Sunday 9 February 2014, a large number of grass fires started around Morwell. As a result, fires impacted a range of infrastructure, including the Hazelwood Power Station and Yallourn Power Station. Fire remains in the area around Morwell, including inside the Hazelwood mine site and in proximity to the Yallourn Power Station. There are complex health and safety issues specific to the environment. The fires are expected to burn for a number of weeks. Incident Control planning has been extended to 28 February and will be reviewed every three days.

Purpose

The Health Management & Decontamination Plan for the Latrobe Valley Coal Mine Fire (the Plan) has been developed to manage the health and safety of all personnel on the fireground at the Hazelwood and Yallourn Mines.

The Plan documents the health, safety and welfare arrangements in relation to:

- General Health and Crew Selection requirements for deployment to Hot Zones
- The health monitoring process for personnel that have been deployed to the mine fire due to the risk posed by elevated levels of Carbon Monoxide
- The management of Personal Protective Clothing & Equipment used in the Hot Zones.

Validation and Audit of Plan

Following approval and endorsement this Plan, it is intended that independent validation through of the implementation of the Plan and associated processes be undertaken by a third party to monitor compliance. There will also be random audits undertaken to validate that the Plan and associated processes have been implemented and are followed for the duration of the event.

Carbon Monoxide Information

Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death. Exposure to high levels of Carbon Monoxide have significant health impacts. The use of 5% as the limit for operational activity has been determined by a range of Health Professionals including the CFA Medical Officer and MFB Brigade Medical Officer.

This amount is half the recommended level of NIOSH and Safe Work Australia. This level was also determined with consideration given to previous protocols set in past incidents at this site.

Crew Selection

General Health Issues

Individuals, who are heavy smokers, have a history of cardiovascular or respiratory conditions should not be deployed to this incident.

This is due to the increased physiological sensitivities that might be attributable from increased carbon monoxide levels in the open cut fire.

Crews planning to be deployed for a shift in the open cut fires should have 24hrs of "clear time" away from smoke logged incidents (e.g. prior deployments).

Female Personnel

Due to the increased presence of carbon monoxide within the Open Cut Hot Zone there is a risk to the foetus of pregnant women exposed to high levels of concentrations from the carbon monoxide at this incident.

Due to this risk any female fire-fighter who is pregnant or there is any chance they may be pregnant, should not attend this incident due to the increased potential exposure to carbon monoxide.

It is the responsibility of staff who are allocating members to this incident to ensure that the above guideline is followed and ensure that all personnel have been clearly briefed.

Pre Deployment, Pre Entry, Pre Tasking,

Prior to deployment personnel are given a Carbon Monoxide Information Sheet (Refer Attachment 2) and briefed of the risks and safe work practices prior to deployment.

At the commencement of shift crew leaders are given a Crew Leader Instruction for Carbon Monoxide Management (Refer to Attachment 3)

Crew Health Management

The following is to occur:

- Agencies providing crews for deployment are to ensure the crew selection criteria are met.
- The Incident Controller will determine the Hot Zone and Warm Zone.
- The Incident Controller will identify 'Dirty' and 'Clean' areas and appropriate areas for decontamination and disrobing.
- Crew health observations are to occur and be recorded in accordance with the Health Monitoring Process (Attachment 4).

- Crew Health Observations may be undertaken by first aiders under the supervision of a Health Professional
- Where any results do not meet the criteria established they are not to be deployed.
- Crew deployment shift times are to be recorded and monitored to ensure they do not exceed the maximum timeframes (Refer to Attachment 3)
- There will be ambient gas monitoring in Hot and Warm Zones.
- A 'bagging' and 'tagging' process will be followed.
- The incident is to be deemed a non-smoking site to reduce the impact of CO build up in individual's
- All gas monitoring results are to be logged and maintained. Results that exceed defined levels are to be investigated to ensure crew welfare is not placed at risk and appropriate control strategies are in place
- All injuries, near misses or hazards are to be notified via the chain of command, recorded and action taken where deemed appropriate
- The importance of eating well, being properly hydrated – for every two litres of water consumed, 1 litre of electrolytes should be consumed.
- Rest breaks should be taken and crews should not undertake any strenuous activity during this period.
- At the commencement of each shift crew leaders are given a Crew Leader Instruction for Carbon Monixide Management (Refer to Attachment 3)

Personal Protective Clothing (PPC)

- Bushfire protective clothing is to worn at all times.
- Crews are to use BA in accordance with Attachment 3
- Crews operating outside the Hot Zone are to use a P2 particulate filter in accordance with Attachment 4
- Where appropriate open up PPC clothing to allow adequate ventilation

Shift Arrangements

Maximum shift durations for this incident are outlined in Attachment 3 Crew Leader Instruction

These shifts arrangements should be regularly reviewed and will be modified based on risks identified such as:

- extreme heat
- heavy smoke logging
- work activity
- work rate
- on the recommendation of the CFA Medical Officer or MFB Brigade Medical Officer.

Shift Release

Prior to release crews should be made aware of the symptoms of CO exposure and advise to present to hospital should these occur. Symptoms include headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. (Refer to Attachment 2 & 4)

PC/E Management

To ensure ongoing availability of fit for purpose PPC for rotating crews at the Latrobe Valley open-cut mine. The following plan is proposed to ensure required quantities of PPC remains available for the duration of this incident.

Key areas requiring direct management:

- Onsite cleaning of PPC
- Offsite cleaning of PPC
- Staging area PPC resupply point
- SLC ongoing resupply
- Disposal of unserviceable items

Onsite cleaning of PPC

The following items of PPC can generally be cleaned on site:

- Bushfire Helmet (including Head Cradle/Harness)
- Goggles

Use a mild detergent pH range 6.0 to 10.5 with warm water and a soft cloth to wipe. Dry in well-ventilated area not in direct sunlight.

- General Purpose Leather Firefighting Boots (external contamination only)

Hose off and/or scrub with brush as required, air dry.

Offsite cleaning of PPC

Where any of the below items of PPC are heavily soiled the following offsite decontamination arrangements can be implemented:

- Bushfire Jacket (24 hours)
- Bushfire Trousers and Braces (24 hours)
- Bushfire Helmet Neck Protector (24 hours)
- General Purpose Leather Firefighting Boots (48 hours)

The contracted Decontamination and Cleaning Service Provider can attend and collect items from the staging area. Cleaned items will be returned to the staging area within 24 hours (excluding boots which will take 48 hours due to drying time).

Staging Area PPC Resupply Point

A cache of the following items can be established at the Staging Area for managed allocation:

- Bushfire Jackets x 200

- Bushfire Trousers and Braces x 200
- Bushfire Helmet Neck Protector x 100
- General Purpose Firefighting Boots x 100
- Goggles x 300
- Bushfire Gloves x 300
- P2 Respirators x 1000

Cache quantities would be established to cater for approximately 200 wearers to support crew rotation frequencies and cleaning processes.

A cache will be drawn from both CFA and MFB stores.

It is recommended that all items issued from the staging area resupply point (as appropriate) be issued on a one for one replacement basis.

State Logistics Ongoing Resupply

Incident duration will determine the need for any additional supplies which would be arranged directly with the State Logistics Centre (SLC) and/or MFB equivalent.

Disposal of Unserviceable Items

Items deemed unserviceable should be consolidated at the staging area for later disposal in accordance with local industrial waste arrangements.

PPC/E Planning Considerations

The following PPC/E is immediately available and should be considered:

- Significant quantities of FirePro (Level 2) gloves are immediately available from the SLC and should be considered for this incident.
- Significant quantities of Bushfire Overalls are immediately available from the SLC and should be considered for this incident.
- Detailed steps, processes and responsibilities require documenting upon acceptance of any or all of this proposed Management Plan.

Breathing Apparatus

Arrangements for the maintenance, filling and supply of breathing apparatus will be established in light of the expected incident duration and volume of B/A being used. The Incident Controller should liaise with PPE/C Management Centre or MFB Protective Equipment Manage to enable appropriate planning.

Vehicles & Appliances

CFA, MFB, SES and contractor vehicles and appliances MUST be signed off by a CFA District Mechanical Officer (DMO) or MFB mechanic, as appropriate, prior to returning 'home' or being redeployed due to the fire risk caused by coal dust in the brakes.

The Incident Management Team via the Resourcing Unit will be required to supply vehicle numbers, types and names to the Fleet Services Duty Officer prior to demobilising from the incident. As much forward notice should be given to ensure DMOs are prepared.

All vehicles deployed to the mines must have a full decontamination wash to the body, pump, cabin interior and underside of vehicle, prior to leaving the mine site.

All vehicles will be delivered by CFA 'Operations' to CFA workshop at Moe to have wheels and brake drums removed for inspection and cleaning prior to returning 'home' or redeployment. This task will be organised by CFA Fleet Services to ensure vehicles are prepared for redeployment in the shortest possible time frame.

Attachment 1 - Carbon Monoxide Specific Information

Background

Carbon monoxide (CO) has a high affinity for haemoglobin (Hb) in blood. Hb is the compound that transports oxygen (O2) in the blood stream. CO is absorbed via the lungs into the blood stream where it forms carboxy-haemoglobin (COHb). CO has 240 times the affinity for Hb than oxygen so that:

$$\frac{CO\ Hb}{O2Hb} = \frac{240\ pCO}{pO2}$$

In basic terms, low levels of CO will rapidly displace O2 from Hb and rapidly reduce the bloods oxygen carrying capacity. Small quantities of carbon monoxide (CO) are produced in the human body naturally. This leads to a background level of 0.3 – 0.7% COHb in normal individuals.

Ambient air that has a CO level of 35 ppm will result (under normal circumstances) in a CO Hb concentration of 5 %.

The half-life of COHb is 2 – 5 hours.

CO – Acute poisoning:

The appearance of symptoms in someone suffering from acute exposure is dependent on the following:

- The concentration of CO in air breathed
- The exposure time
- The degree of physical exertion
- Individual susceptibility

Susceptible individuals include the following:

- Pregnant females – toxicity to foetus
- People with anaemia (low blood count)
- People who have cardio –vascular or blood vessel disease(CVD)
- Smokers and those with respiratory disorders

Acute effects are summarised in the following:

CO Hb Concentration %	Principal signs and symptoms
0.3 – 0.7	No signs or symptoms, normal endogenous background
2.5 – 5	No symptoms. Compensatory increase in blood flow to vital organs. People with CVD may lack compensatory reserve and experience chest pain.
5 – 10	Visual light threshold increased
10 – 20	Headache ("frontal tightness"), possible shortness of breath. May be lethal for someone with severe heart disease.
20 – 30	Moderate headache, nausea, flushing
30 – 40	Severe headache, dizziness, nausea
>40	Collapse, coma, convulsion, death

N.B. This is given as a guide only and there may be considerable variation depending individual history.

Acute poisoning

Acute CO poisoning may result in neurological problems.

Primary recovery may be followed by a subsequent neuropsychiatric relapse days or even weeks after poisoning. The degree of brain damage after CO poisoning is determined by the intensity and duration of exposure.

Repeated exposure

CO does not accumulate in the body, it is completely excreted after each exposure if sufficient time in air is allowed. Remember half life of CO in blood is 2 – 5 hours. However it is possible that repeated mild / moderate poisonings can lead to permanent nervous system damage (headaches, dizziness, impaired memory, personality changes and weakness in limbs).

Attachment 2 – Carbon Monoxide Information Sheet for Personnel

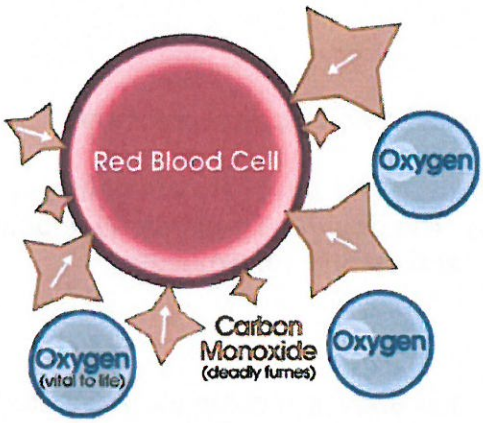
Frequently Asked Questions

What is carbon monoxide?
Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death.

Where is CO found?
CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, and gas ranges and heating systems. CO from these sources can build up in enclosed or semi-enclosed spaces. People and animals in these spaces can be poisoned by breathing it.

What are the symptoms of CO poisoning?
The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. Unless suspected, CO poisoning can be difficult to diagnose because the symptoms mimic other illnesses. People who are sleeping or intoxicated can die from CO poisoning before ever experiencing symptoms.

How does CO poisoning work?
Red blood cells pick up CO quicker than they pick up oxygen. If there is a lot of CO in the air, the body may replace oxygen in blood with CO. This blocks oxygen from getting into the body, which can damage tissues and result in death. CO can also combine with proteins in tissues, destroying the tissues and causing injury and death.



Reference: Centers for Disease Control http://www.cdc.gov/co/faqs.htm

Attachment 3 – Crew Leader Instruction for Carbon Monoxide Management

All crew must be checked by Health Monitoring personnel prior to entering the mine.

All crew leaders are to collect carbon monoxide detectors and ensure there is one per appliance

Log the detector reading every 15 minutes on the attached sheet.

Provide average and peak readings and map grid reference of location to the DIVCOM every hour via radio.

Crews must not work in the mine for a continuous period of greater than 2 hours without leaving the mine. These 2 hour periods of operation within the mine must not exceed 4 in any 12 hour period.

If in any 1 hour period there are two measurements greater than 50ppm on the personal monitoring device but less than 75ppm, workers must withdraw from the area immediately don CABA to remain working in this location.

At any time a carbon monoxide reading of 75ppm or greater is recorded, CABA must be immediately donned or workers must withdraw from this area. This must be immediately reported to the DIVCOM.

All crews must be rechecked by Health Monitoring Personnel at the conclusion of their shift prior to leaving the site. Personnel will not be permitted to leave the site without appropriate clearance provided by the Health Monitoring personnel.

Attachment 4 – Latrobe Valley Coal Mine ICC – Heath Monitoring Process

The following process is being undertaken to monitor and manage the health of all personnel on the fireground at the Hazelwood & Yallourn Mines. The process will be overseen by a qualified Health Professional to ensure the protocol is followed.

On Arrival

1. Personnel (emergency service organisation personnel, mine workers and contractors) enter the staging area and hand in 'T cards' to the Staging Officer
2. Personnel are directed to enter the official entrance of the DIVCOM building.
3. Hygiene stations have been established at the DIVCOM entrance for personnel to wash hands before entry.
4. Personnel enter the Health Monitoring (HM) assessment area via cordoned walkway and sit with available HM team member.
5. HM team member (HM team member includes CFA Health member with appropriate qualifications or Health Professional) attaches Pulse Oxymeter probe to personnel's third finger and obtains a CO reading.
6. HM team member records:
    - CO reading
    - Time
    - Name
    - Smoker or non – smoker status
    - Previous activity associated with fire in the last 24 hours
7. Based on the CO reading, the HM team member directs the person to take the specific actions.

CO READINGS	ACTIONS
Reading is less than 5%	1. Person is released from HM assessment area via designated exit and instructed to: - enter the incident control centre for tasking, or - return to staging area for deployment to the Hot Zone, and/or - rest, and/or - eat.
Reading is equal to or greater than 5%	The person is unable to start work in the Hot Zone. Will either be reassigned or released.

Table 1 – On Arrival – CO Readings & Actions

8. All personnel that have a reading under 5% are approved to enter the staging area for deployment to the Hot Zone.

During Shift (Hot Zone & Warm Zone)

9. Over a 12 hour shift, allow for 4 by 2 hour work shifts, includes break times and travel in and out of the mine two levels of monitoring are provided:
    - personal monitors for a crew member who is active outside the vehicle
    - remote monitoring and recording of CO plus H_2S O_2 and VOC from 'Area Rae' remote monitors back to the monitoring station.
10. Wear SCBA at all times in the Hot Zone

Atmospheric Carbon Monoxide (CO) Action Levels

11. Atmospheric monitoring, personal and remote monitoring will continue on an ongoing basis and results will be collated and analysed for both special mapping and to correlate COHb levels with CO exposure levels.
12. Crew member CO concentrations are to be recorded every 15 minutes and results relayed every hour to the DIVCOM with both average and peak readings and provide map grid reference.
13. If in this hour period, there are two measurements exceeding 50 ppm (parts per million) but less than 75 ppm on personal monitoring device, workers must withdraw or utilise CABA.
14. Any single measurement exceeding 75ppm, CABA must be immediately used or workers must withdraw from the area. This result must be reported to the DIVCOM immediately.
15. Any crews registering 150ppm or above must immediately move out of the area into clean air, contact DIVCOM and report to the Health Monitoring team.

Blood Carbon Monoxide (COHb) Action Levels

16. At any time during monitoring of COHb during a shift if the 5% level is exceeded, the worker will not be allowed back to work in areas of CO contamination.

Shift Completion

17. At the completion of shift, all personnel are required to undertake the health monitoring process. The process is the same as 'On Entry'. The following actions are taken based on the CO reading.

CO READINGS	ACTIONS
Shift Completion Reading Less than 5%	2. Person is informed they can leave the site via designated exit. 3. HM team member briefs person of potential health issues and to seek further medical advice if required.
Shift Completion Reading equal to or greater than 5%	4. Person receives a cable tie wrist band (indicating excessive CO reading) and is assessed by a Heath Professional and managed accordingly. Any person reporting any symptom's such as headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion should be referred to Ambulance Victoria

Table 2 – Exit from the Hot Zone at Shift Completion

18. Personnel who exit the area of operations will be wrist tagged.

CO Reading of Equal to or Greater than 8%

19. Any person with a reading equal to or above 8% at entry or exit stage, are immediately referred to Ambulance Victoria where they will be assessed and either sent home or to hospital for further assessment and monitoring. Exposures over 8% are to be reported as a 'Health Issue'.

Briefings – Pre Entry, Pre Tasking and Pre Release

20. On change of shift, strike teams are given a specific briefing on health and CO issues.

Post Deployment Medical Monitoring

21. Crews are to be advised that if after release from the site they develop symptoms of potential CO poisoning such as headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion they should present to the emergency section of the local hospital. On return home personnel are advised to rest for 24 hours, avoid alcohol and ensure good hydration. If they still have any symptoms as mentioned above, personnel should return to their local doctor or hospital emergency department.

Appendix 5 - Delineation of Safety Zones for Carbon Monoxide Exposure Management by Atmospheric Monitoring

Background

To support the site health surveillance program, continuous monitoring of Carbon monoxide levels is being undertaken.

One member of each operational Fire Appliance is wearing a CO monitor. Members of Hazelwood mining and power station employees are also monitoring CO in their work areas. Results are being recorded by DIVCOM and Hazelwood OHS respectively.

In addition, positional monitors (AreaRAEs) are continuously monitoring CO, Oxygen, Volatile Organic Compounds, Flammability and Hydrogen sulphide levels throughout the site, including administration areas. These monitors are deployed in areas of concern and results are transmitted wirelessly to the HazMat Team in the Staging Area for continuous surveillance and risk assessment.

The Scientific Advisor will advise the HazMat Sector Commander when and where zone classifications need to be changed. HazMat Technicians are also monitoring CO throughout the Morwell community.

Table 1: Safety Zones and Action Levels – Operational Areas

The purpose of the following zones is to minimise the risk of personnel exceeding the biological exposure limit of 5% Carboxyhaemoglobin.

Zone	CO Concentration (ppm)	Exposure Management
Cold - Offsite	9	DoH and EPA should be consulted for guidance
Warm - Unrestricted	<30	At this level firefighters/workers are permitted to work in standard PPE, including P2 respirator, standard work hours, and undergo health surveillance as per site procedure.
Warm – Protective Action	30-50	As per site SCBA, crew rotation procedure
Hot - Restricted	>50	As per site procedure for essential works

Reference: SafeWork Australia Occupational Exposure Standards, Health and Safety Information System.

Cold Zone - Community Health Limits

Government of Australia, Department of Environment and Heritage recommend the ambient air CO level be kept below 9 ppm and persons not exceed this level for more than 8-hours in one year. DoH and EPA should be consulted for guidance.

ATTACHMENT 5.1.7

18/2/14

R Ferguson, S. Purdy, J. Haynes
P. Marshall, M. Baldini

PM- people getting tired
MFB ran out of firefighters on recall
Came ~~out~~ up with a system → limit exposure
put hand up for a day & a night
problems → LFF not trained in sector commands
2 hr turnaround

EP - annoyed
ensure documentation up to date
enforcing whats in that plan

PM- dont want people in trouble
went through urgent clarification
02 testing

EP - yesterday → heap of new ma.
& operating yesterday
6 yest 6 today 5 tomorrow
require to wash hands & surgical wipe
- ambulance personel - nurse students
under supervision of nurse, doctor or ambulance
- contract nurse since sat

- mecury testing - verbal advice - raised level
iron - no consequences - results yesterday 4pm
numbers - gone back to EPA - need to provide
letter with interpretation
indep testing house - 8 diff samples - range of
water

PM- can we get a copy of testing report supplied high level

EF - hard copy - give an understanding not a scientist

PM- [redacted] have a look

EF - if you think a concern, I am concerned
- looked at report, EPA had a look, all power stations emit, goes into water but ends up in sediments - so long as not disturbing sediments
- test water using firefighters

SP - testing from the mine
EF - asked people to ask Hazelwood
- verbal advice EPA - iron - not health
SP - what might change - how much water gets back - constantly monitor

PM - might ring back
- calibration

EF - have hazmat area - a
SP - have, upgraded types, hospitals might be giving faulty readings

PM - wider community
SP - area - rays in community & in the floor
EP - monitoring EPA & Dept of Health are doing air quality in Morwell very good this morning
- discussions re EPA monitoring locations
- community monitoring → EPA & Dept of Health

SP- small period of time impact - not 24/7 community
PM- increase in ambulance calls
EF- no statistics but Dept of Health starting to see symptoms - working through detail
SP- not just mine

PM- senior personnel span of hours
SP- shouldn't be happening
EF- day shift / night
JH- 14 max
PM- say go home
EF- Steve done as deputy regional controller, said really good now - div com, can go
PM- ask if go down

PM- ask to consider 1hr turnaround lesser exposure - don't know if can do
SP- if ba, wont be 2 hrs
PM- radiated heat, structural
SP- 2 hr in & out, might be 3 rotations not 2 rotations
EF- reinforce hydration
PM- next point, what is hydration
JH- 2 waters to gatorade every hour
EF- have to constantly, can reconfirm, reinforced standard messages of fatigue, hydration
PM- no briefing on action plan, overall plan, come back ~~tomorrow~~ this morning from 550
EF- division commander not briefing
PM- down forefront, also debriefing

PM- health plan, fact sheet for co - what band means
EP - [redacted] produced
JH- late today with Green
BP - briefing - no alcohol, rest

PM- clean dirty, not just career & vol, also staff, no of officers had to pull up, cultural problem might have improved but don't know
EP - another 10-14 days
JH - min
EP - highlight to Steve & incident controller
SP- cultural issue with mine employees

PM- proper facilities
JH- pretty sure motel but check
SP- proper

PM - ba
SP- strategies - if levels within critical - ba, might be variable

JH - [redacted] went up, [redacted] making sure
- SO stay with as crew leader officer in Charge
- trucks complete with crew
SP- currently typing plan
JH - will give plan
SP- arrangements locally
JH - one to reset MFB, 2 tdeboons, free up Corio & Ballarat
- free up 20-30 firies

SP- way manage Dandenong v. Sheppartan
-diff rotation

PM- chief officer emergency roster
EF - 12/12 on career
SP- only gives one platoon to deploy
if just for a week ok, if 3 week have to do rest periods
EF - sought advice - prevent long-term fatigue
SP- I think fatigue a proben

PM- unreasonable overtime
EF - should relieve
PM- bulletin - if fatigued - should take proper rest breaks
EF - proper eating, proper hydration
PM- put on fact sheet
- validate fear - if dont want to go dont have to

MB- conversion course Bronto to Aerial Pumper
JH- 1 day course
- French & Jennings
- email it

PM- happened last night, no rescue
SP- should be a rescue plan, including mine who know
PM- & own people
EF- foriegn environment
PM- issue mine people come tog

PM- Lack of debrief
- rehab area
JH - request for air con tents
- went down & sent back
PM- debrief through
- don't use against → names
EF - won't
PM- if can alleviate some concerns, morale might start to perk
EF - 1hr v 2 hr turn around
- reinforce hydration
- personal health sheet → reinforce debriefing
- have to have discussion re clean
- send copy of health plan
- details NSW plan
- [redacted] personal sheet
- Bronto conversion
- rescue plan
- let Warro know re visit
- issues local Warro higher level than
PM- [redacted] going down
- constructive not destructive
EF- if you think have a good idea let us know
- airport personnel → committed one training appliance
SP- should fit
EF- maximise aerial streams, set up pipe work, irrigation [redacted], water bombing
SP- not belly tankers, long line bucket

ATTACHMENT 5.1.8

18th February, 2014.

Mr Peter Marshall
State Secretary
United Firefighters Union
410 Brunswick Street
Fitzroy, Victoria. 3065

Dear Peter,

Hazelwood Deployment Proposal:

Deployment proposal:

The following deployment proposal is to be considered.

In accordance with the provisions under clause 85 of the 2010 MFB UFU Operational Staff Agreement, the parties agree to the following special deployment proposal for the Hazelwood Deployment. This proposal is on the basis that the arrangement is without prejudice and without precedent to future deployments outside of the MFD which shall continue in accordance with the agreed arrangements:

1. Coverage at the incident to be provided with a 12/12 system with travel on either end of the 12 hour shifts.
2. All employees to be deployed only from off duty shift personnel and only for 1 day at a time.
3. All offers to be deployed will be made on the basis that employees will agree to 1 day shift and 1 night shift.
4. However in any 8 days, any 1 employee will only be deployed on 1 occasion.
5. Day Shift:
    a. Employees to muster at 6am at the Burnley Training College
    b. Employees to be deployed by bus to the Hazelwood Mine.
    c. Light breakfast to be provided on the bus.
    d. 8am is approximate start at site.
    e. Lunch to be provided.
    f. 8pm is approximate finish at site.
    g. Meal allowances x2 ($23.10 in total) to be provided.
    h. Light meal provided on the bus whilst on route back to Burnley.

i. Leave site at 8PM for 10PM return at Burnley.

6. Night Shift:
   a. Employees to muster at 6pm at the Burnley Training College
   b. Employees to be deployed by bus to the Hazelwood Mine
   c. Light meal to be provided on the bus.
   d. 8pm is approximate start at site.
   e. 8am is approximate finish at site.
   f. Meal allowances x2 ($23.10 in total) to be provided.
   g. Light meal provided on the bus whilst on route back to Burnley.
   h. Leave site at 8am for 10am return at Burnley.
7. All time to be paid at overtime rates.
8. Fatigue management to be implemented including travel home form Burnley where required.
9. Arrangement to commence on the night shift of 18 February 2014.
10. Approximately 40 people will be deployed in each shift.
11. The deployment is to apply to all crews required to work at the Hazelwood and Yallourn Divisional Command.

Review process:

The parties agree to review the ongoing deployment on a daily basis.

Yours Sincerely,

David Bruce
Acting Deputy Chief Officer
Metropolitan Fire and Emergency Services Board
456 Albert Street
East Melbourne.3002

ATTACHMENT 5.1.9

Martin Davis

Subject: FW: Update from the Acting Chief Officer
Attachments: image001.png

From: Peter Marshall
Sent: Tuesday, 18 February 2014 4:29 PM
To: Casey Lee
Subject: Fwd: Update from the Acting Chief Officer

Peter J Marshall

National & Victorian Branch Secretary , United Firefighters Union Of Australia

Begin forwarded message:

From: "RAU, Peter" <PRAU@mfb.vic.gov.au>
Date: 18 February 2014 13:06:41 AEDT
To: "Exchange Mailboxes (all)" <ExchangeMailboxes-all@mfb.vic.gov.au>
Subject: Update from the Acting Chief Officer

18 February 2014

Update from the Acting Chief Officer

Colleagues

As advised yesterday we have been looking at alternate deployment models to allow MFB to continue with firefighti efforts for the next several weeks.

To manage the extended deployment we will be shifting to a one day one night roster. This will consist of two 12 ho shifts with appliances left in-situ and crews bussed to the site from Melbourne. Day shift will leave Melbourne at 6a and night shift will leave Melbourne at 4pm. This new deployment has been developed in consultation between M management and the UFU and will commence on Wednesday evening.

The Telesquirt will be back in service today crewed by firefighters from the SAMFS who are familiar with the applian and have been deployed to Hazelwood for the next two weeks. Fire and Rescue NSW has also provided 10 step ups Victoria which will release MFB crews to return to the metropolitan district Wednesday night.

The Deputy State Controller for the Latrobe Valley coal mine fires has developed a Strategic Risk and Consequence P which includes strategies for extinguishment, health, communications and infrastructure.

As the fire at the Hazelwood mine poses some significant challenges in terms of the extinguishment, a delegation of health, mining and fire experts, headed by Fire and Rescue NSW Commissioner Greg Mullins, has been assembled ar will assist in reviewing the extinguishing plan.

Health monitoring

Carbon monoxide monitoring of all crews at the Hazelwood open cut coal mine continues to be undertaken by the health management cell. Health monitoring at the site will be continuous, with crews checked before entering the n and every time they leave. QRAEs (gas detectors) have also been allocated to each crew.

The EPA also has air monitoring in place for fine particles in Traralgon and in Morwell to measure the impacts of the smoke (from bushfires and from the mine fires) on local air quality.

Emergency services and the EPA will continue monitoring over coming weeks to minimise any risks to communities c firefighters.

I remind everyone to look out for each other and be conscious of fatigue and injury management and report any inju or near-miss events, no matter how minor, to MFB Safe. If you are having difficulty or feel you need someone to tall please use the resources available to your via Peer Support or the Employee Assistance Program (EAP). Contact Pee Support Coordinator: [redacted] or [redacted]

State wide fire situation

Nine advice messages are in place across the state.

There are four significant fires that are not yet under control:

- Hazelwood Mine (411ha)

East Gippsland

- Goongerah – Deddick Trail (136,221ha)
- Club Terrace Cluster (8017 ha)
- Timbarra – Gil Groggin (1145 ha)

Note:

- Mickelham- Kilmore (22,882 ha) is now under control

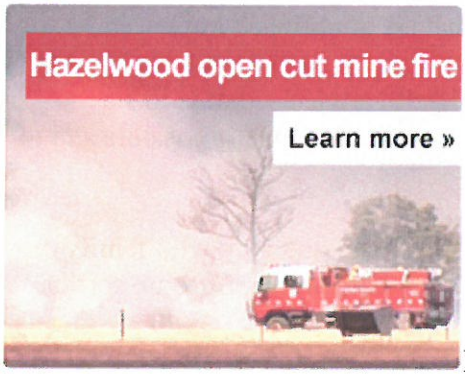
Approximately 370,000 hectares have been burnt this season.

Peter Rau
Acting Chief Officer

ATTACHMENT 5.1.10

http://www.health.vic.gov.au/media/morwell-south-residents-advice-28-feb-2014.htm

New health advice for Morwell South residents



Date: Friday, 28 February 2014

Victoria's Chief Health Officer, Dr Rosemary Lester, has today advised people aged over 65, pre-school aged children, pregnant women and anyone with a pre-existing heart or lung condition living or working in Morwell South to consider temporary relocation because of the Hazelwood mine fire.

Latest indications are that the fire may not be extinguished in the near future and as a result Dr Lester has determined the best way for vulnerable people in Morwell South to avoid the continuing smoke and manage their health would be to temporarily relocate.

Over the past two weeks Dr Lester has been advising people in 'at risk' groups to reduce their exposure to smoke and ash. Given this exposure is now likely to continue, advice to temporarily relocate has been issued as a sensible precaution.

"I am making this recommendation as a precaution. We are not currently seeing serious health effects from the smoke, such as an increase in ambulance callouts or hospital attendances," Dr Lester said .

"Health impacts may change if vulnerable people continue to be exposed to the smoke – so I am recommending temporary relocation for people aged over 65, pre-school aged children, pregnant women and anyone with a pre-existing heart or lung condition living or working in Morwell South."

People in these more vulnerable groups should call **1800 006 468** to seek advice and make arrangements for temporary relocation.

Officers from the Department of Human Services are also on hand at the Community Information and Recovery Centre (22 Hazelwood Rd, Morwell, from 9–6 daily), to advise residents on their eligibility for travel, accommodation and financial assistance.

The Red Cross *Register.Find.Reunite.* service is also operating at the centre, to help residents let family and friends know where they will be, if they decide to take a break away from Morwell.

Anyone planning to leave Morwell overnight, or for a longer period, is urged to register in person at the centre, online at **www.redcross.org.au** or by ringing **1800 727 077**.

"The Department of Human Services is working closely with Latrobe City Council and other support agencies to identify and inform all potentially vulnerable residents in Morwell South, and advise them of the range of support available if they choose to relocate," Dr Lester said.

"Relocation arrangements should continue until advised that air quality has improved.

"The remainder of the Morwell population should follow health advice – that is to stay indoors where possible, take regular breaks out of the smoke-affected area if possible and to avoid prolonged or heavy physical activity.

"Wherever possible, we would urge anyone planning to leave to go and stay with family or friends outside the smoke-affected area. But if you want to relocate, but need some sort of help to do so, then I urge you to contact DHS," Dr Lester said.

Residents who want further information, but cannot attend the Morwell Community and Information Centre in person, can contact the Department of Human Services on **1800 006 468** and make an appointment to discuss their particular needs.

Media inquiries

Health

Bram Alexander
Department of Health Media Unit
Telephone: +61 3 9096 8803
Mobile: 0412 260 811
Email: bram.alexander@health.vic.gov.au

DHS

Dr Geoff Russell 0407 520 851

From: ECC (Emergency Command Centre)
Sent: Tuesday, 4 March 2014 5:05:07 PM (UTC+10:00) Canberra, Melbourne, Sydney
To: All Stations, All Platoons
Subject: safety Officer

The ICC at Hazelwood require an SSO, CMDR, Acting CMDR to act as a Safety Officer for the nights of 6,7,8,9 night shift covered as a block

As the CFA are unable to fill the position

Please contact the ECC 4545
ASAP

ATTACHMENT 5.1.12

PROTECT THE PROTECTORS

United Firefighters Union
Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811
Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

6 March 2014

Principal Registrar
Coroners Court of Victoria
Level 11, 222 Exhibition Street
Melbourne VIC 3000

By fax: 1300 546 989

Dear Registrar

Re: Hazelwood coal mine fire 2014

We write to request the Coroner pursuant to section 31 of the *Coroners Act 2008* (Vic) ('the Act') to investigate the one or more fire(s) at Hazelwood coal mine and/or Morwell since 9th February 2014 which is still burning. The fire spread into the mine on the 9th of February 2014 as a result of a bushfire that started west of Morwell which the police allege was started by an arsonist. We request the coroner to investigate this fire '...to contribute to the reduction of the number of preventable...fires through the findings of the investigation of... fires, and the making of recommendations" as pursuant to the purpose of the act section 1.

Approximately 403 hectares has been burnt in the open cut mine fire and it is proving to be a complex and challenging fire emergency that the State of Victoria and it's fire agencies have ever faced. The Hazelwood plant generates an estimated 24% of Victoria's power generation. Last Tuesday the fire escaped from the mine and came within metres of the power station and also the raw coal bunker. On the 5th March 2014 it has been reported in the Age that the CFA are apprehensive of 45km/h winds expected after 9am on Wednesday which may fan the fire on the southern cliff of the Hazelwood mine and once again threaten Hazelwood power station. This is of grave concern. The potential business interruption as a result of a loss of a state asset such as Hazelwood has significant consequences for the whole state of Victoria which

rely upon this asset to generate a substantial proportion of its electricity needs and it is vital this essential infrastructure and it's coal reserves are protected to enable continuing power generation.

We are concerned about the medium and long term exposure and health effects to Fire Fighter's and the Morwell community to Particulate Matter as reported by the EPA especially PM 2.5 which is '[f]ine particles that are believed to have the highest health risks, because they can lodge deep into the lungs due to their small size (approximately 1/30th the average width of a human hair)' and PM10 which is '...larger in size. They are found in road dust, and in burnt and combusted material, such as coal. They can also create health concerns, because they can be inhaled into the respiratory system'. This is another reason why firefighters' presumptive legislation should be implemented in order to protect Fire Fighters and their health needs if they contract cancer and other associated diseases due to their working lives in protecting the Victorian community.

As communicated in UFU Bulletin No: 52, Volume 20 on Thursday 6th March 2014 a safety alert for water contamination was identified at Hazelwood. Following UFU members informing the UFU of a series serious safety breaches at the Hazelwood incident the UFU undertook to have its own independent testing of the water being used at Hazelwood in fire fighting operations including the H.A.R.A or ash pit area. This testing was undertaken by a Senior Occupational Hygienist who has provided to the UFU, this afternoon, the initial test results. The results have indicated that the water contains high levels of coliforms and E.Coli. Pseudomonas aeruginosa was also detected. Based on the information we have the advice to UFU members is that any person with a burn, or cut or any sort of open wound should not come into contact with the water. We also have advised the highest level of personal hygiene should also be observed and members should take extra precautions in ensuring hands are fully washed after coming into any contact with any water at the site. Appropriate Personal Protective Equipment (PPE) in particular gloves should be worn and no water should be ingested or inhaled. The UFU has advised if any member comes into primary contact with the water - ie. it comes into contact with eyes, nose, mouth or open wound, members should seek urgent medical assistance and to contact the UFU. Additionally we advised members that anyone who has been or is deployed Hazelwood sends an email to their employer seeking that a note is placed on their personal record that they have been deployed if they have come into contact with contaminated water. The UFU is seeking high level discussion with the Chief Officers of both the CFA and MFB and the Fire Services Commissioner in regards to the results of our testing. An urgent Health and Safety Representatives telephone conference has also been held to discuss appropriate measure to be put in place to maximise members protection.

Due to the large scale, intensity and duration of the fire it has placed a significant strain on our other most important asset - our Fire Fighters who are experiencing fatigue in combating this large scale fire. It has been reported that some Fire Fighters have worked 22 hours shifts which is 12 hours more than a normal 10 hour day shift. Fire Fighters are not getting their allotted 30 minute breaks after fighting the fire in the mine pit. In the first few weeks of the fire Carbon Monoxide safe working levels were not communicated to Fire Fighters. One of our Fire Fighters was left fighting the fire in the mine for 8 hours on the first day without a break and he ended up with high CO2 levels and was sent to hospital for treatment. Fire Fighters have also reported that after working 6 hours straight in the mine they have suffered headaches and nausea during the night when trying to rest and recuperate. Fire fighters have reported high CO2 levels whilst fighting the mine fire from a range of 140 parts per million (ppm) to 200 ppm. Fire Fighters have been advised that safe CO2 levels should be 35 ppm over an 8 hour day and at 50 ppm Fire Fighters should retreat or wear Breathing Apparatus (BA) by their respective fire services. Fire Fighters have reported they have not received health and safety information on Particulate Matter from their respective fire services.

The Carbon Monoxide as well as large quantities of smoke and ash are of key concern to Fire Fighters and the Morwell community at large. The local Morwell community is experiencing high levels of stress in relation to the ongoing environmental conditions and potential health impacts in regards to the air quality and associated Particulate Matter.

Last Friday the Chief Health Officer Rosemary Lester issued an advice for vulnerable people to temporarily relocate away from the smoke. The advice concerns people aged over 65, pre-school aged children who are under 5 years of age and includes babies and infants, pregnant women and anyone with a pre-existing heart or lung condition who live or work in Morwell South.

Based on the evidence available, we believe these fires, which involve burning large quantities of coal are having severe health impacts on our Fire Fighters and the local community in Morwell. Fire Fighters have reported that lack of water main and/or sprinklers which have been reported as being removed and/or are non-operational from the disused area of the mine is an issue of alarming concern. This coupled with lack of rehabilitation with the mine soil and clay to reduce fire risks highlights the need for stronger regulation and enforcement to ensure foreseeable fire risks are mitigated sufficiently.

Further, there have been issues with excessive Carbon Monoxide levels that Fire Fighters have had to endure in fighting the fire which has led to a significant number of our Fire Fighters being hospitalised. A Fire Fighter received a small cut whilst at Hazelwood site and within 2

days he was sick and was hospitalised with a severe blood infection and he needed surgery. Other issues are that Fire Fighters have been dealing with a mixture of water and coal sludge whilst fighting the fire. There has been significant operational issues including communication issues and lack of clear chain of command between the various fire agencies which has significantly hampered the fire fighting effort at Hazelwood. An example of communication issues that outgoing shifts were not able to brief oncoming shifts regarding the current issues they will face fighting the mine fire. Please find enclosed completed copies of Form 16 relating to this request.

If the Coroner commences an investigation into a fire at Hazelwood coal mine and/or Morwell which is the subject of our request under section 31, we request that an inquest to be held pursuant to section 53(2) of the Act. Please find enclosed completed copies of Form 27 to this effect.

If you have any inquires about this application contact Martin Davis at the UFU offices on 03 9419 8811 or via email io1@ufuvic.asn.au

Yours faithfully,

Peter Marshall
Branch Secretary

Coroners Court of Victoria

Court Reference [*if known*]: /

REQUEST FOR INQUEST INTO FIRE

Form 27 Rule 49(2)
Section 53(2) of the Coroners Act 2008

DETAILS OF APPLICANT	
Title (*Mr, Mrs, Ms, Dr, etc.*)	Mr
Surname	Marshall
Given name	Peter
Organisation (if applicable)	United Firefighters Union of Australia
Postal address	410 Brunswick St, Fitzroy 3065
Email	p.marshal@ufuvic.asn.au

request that the Coroner hold an inquest into the fire at:

DETAILS OF FIRE	
Location of fire	Hazelwood coal mine, Morwell, Victoria
Fire occurred *on/*about/*between	9/2/2014 - ongoing

Reason(s) for this application:
Please see cover letter

(attach additional pages if insufficient space)

Signature of applicant:

Date: 4 / 3 / 2014

Please lodge this form with the relevant Coroners Court

*Delete if inapplicable

Coroners Court of Victoria

Court Reference [*if known*]: /

REQUEST TO INVESTIGATE A FIRE

Form 16 Rule 39(1)
Sections 30 and 31 of the Coroners Act 2008

I Peter Marshall

from the:
*Country Fire Authority
*Metropolitan Fire and Emergency Services Board
*Other, please specify: **United Firefighters Union of Australia**

of 410 Brunswick St, Fitzroy 3065
request the Coroner to investigate:

DETAILS OF FIRE	
Location of fire	Hazelwood coal mine, Morwell, Victoria
Fire occurred *on/*about/*between	9/2/2014 - ongoing

for the following reason(s):
Please see cover letter

(attach additional pages if insufficient space)

Signature:

Date: 4 / 3 / 2014

Please lodge this form with the relevant Coroners Court

*Delete if inapplicable

TRANSMISSION VERIFICATION REPORT

TIME : 06/03/2014 14:28
NAME :
FAX :
TEL :
SER.# : E69538E1J178055

DATE,TIME	06/03 14:27
FAX NO./NAME	1300546989
DURATION	00:01:35
PAGE(S)	08
RESULT	OK
MODE	STANDARD ECM

http://www.australasianscience.com.au/article/issue-march-2014/hazelwood-coal-fire-health-impacts.html

Hazelwood coal fire health impacts

The Victorian government may announce a partial evacuation of residents from the smoke-affected town of Morwell. Australian experts comment on the health impacts of coal fires.

"Coal smoke is very dangerous to health; we know this from some of the earliest epidemiological studies in this field on the London coal smoke smog of 1952 that killed around 12,000 people. This high number of deaths comes from a relatively low individual risk (around a 10 per cent increase in mortality during the London smog episode) applied to a large city population. So the more people who are exposed in Morwell, the greater the overall health problem will be. We would also expect emergency hospital admissions to rise, especially for respiratory conditions such as asthma and bronchitis. Those at greatest risk are children, the elderly and those with pre-existing chronic disease. Pregnant women would also be advised to keep away from the smoke. Staying indoors or wearing masks does not offer complete protection from some of the smoke particles, which can be tiny and easily penetrate inside homes. If I lived in the area I would move my family away until the fire was out."

Associate Professor Adrian Barnett is a Principal Research Fellow at the Queensland University of Technology

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"In case of fires, usually particulate matter is the biggest concern, and specifically the PM2.5 fraction (particles smaller than 2.5 microns). Their concentration in the air could be high, and above the WHO health guideline levels even if air pollution is not obvious. However, if smoke is seen, it normally means that the concentrations are very high. I understand some authorities yesterday were trying to calm the public by saying that so far the duration of the exposure (since the beginning of the fire) would classify it as 'short term', and therefore is not expected to cause problems. This is not true. The duration of the London smog incident in 1952 was about two weeks and caused so much mortality. The London fire duration is comparable to the Hazelwood fire. There are many examples of health impacts due to much shorter exposure to combustion products than this fire."

Professor Lidia Morawska is a Professor in the School of Chemistry, Physics and Mechanical Engineering, Faculty of Science & Engineering at the Queensland University of Technology and the Director of the International Laboratory for Air Quality and Health (ILAQH) at QUT, which is a WHO Collaborating Centre on Air Quality and Health

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"This fire is difficult to extinguish because it is deep seated within the coal seam and the coal seam is very extensive both vertically and horizontally. The scale of the control process makes it difficult as well as complicated, due to the need to manage the water runoff, to prevent ancillary issues like flooding the operating mine or bogging the firefighting equipment. To control this fire, the heat must be removed from the coal and the air must be stopped from reaching the coal. This sounds simple in theory but in practice, given the scale of this event, it is not.

The potential hazards of such a fire are quite varied. The obvious ones relate to the particulate matter, especially the fine particle sub 2.5 microns in diameter, as these can cause acute respiratory effects. These fine particles are generated by combustion processes such as diesel

vehicles and make up a component of urban smog such as what is coating Beijing at present. There is no absolute safe concentration for these particles as they can affect sensitive sectors of the population (eg the infirm, the young and the elderly) at very low concentrations. There is an advisory standard for this pollutant which currently is regularly being exceeded in Morwell. Other pollutants include carbon monoxide, oxides of nitrogen and oxides of sulphur. Potentially more worrying is the possibility of long term chronic health effects if the coal undergoes significant distillation and produces measurable quantities of hydrocarbons such as benzene, toluene and xylene, as well as the poly cyclic aromatic hydrocarbons. No doubt the EPA and the health department are monitoring for these."

Professor David Cliff is a Professor of Occupational Health and Safety in Mining and Director of the Minerals Industry Safety and Health Centre at the University of Queensland

Source: Australian Science Media Centre

ATTACHMENT 5.1.13

United Firefighters Union
Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
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BULLETIN

Bulletin No: 052 **Volume:** 20 **Thursday 6 March 2014**

To ALL UFU MEMBERS

SAFETY ALERT:

WATER CONTAMINATION IDENTIFIED AT HAZELWOOD

Following UFU members informing the UFU of a series serious safety breaches at the Hazelwood incident the UFU undertook to have its own independent testing of the water being used at Hazelwood in firefighting operations including the H.A.R.A or ash pit area.

This testing was undertaken by a Senior Occupational Hygienist who has provided to the UFU, this afternoon, the initial test results.

The results have indicated that the water contains high levels of coliforms and E.Coli. Pseudomonas aeruginosa was also detected.

Based on the information we have to date the advice to the UFU is that any person with a burn, or cut or any sort of open wound should not come into contact with the water.

The highest level of personal hygiene should also be observed and members should take extra precautions in ensuring hands are fully washed after coming

into any contact with any water at the site.

Appropriate PPE in particular gloves should be worn and no water should be ingested or inhaled.

If any member comes into primary contact with the water- i.e. it comes into contact with eyes, nose, mouth or open wound, members should seek urgent medical assistance and please contact the UFU.

Members will be updated more fully as further results of our testing is obtained by the UFU.

Additionally we request that anyone who has been or is deployed Hazelwood sends an email to their employer seeking that a note is placed on their personal record that they have been deployed and come into contact with contaminated water.

In the meantime the UFU is seeking high level discussion with the Chief Officers of both the CFA and MFB and the Fire Services Commissioner in regards to the results of our testing.

An urgent Health and Safety Representatives telephone conference has also been held to discuss appropriate measure to be put in place to maximise members protection.

Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.14

AMCOSH Pty Ltd
Occupational Health
& Safety Consultants
ABN 63 102 169 371

Suites 3&4/112 Synnot Street
PO Box 686
Werribee VIC 3030
Ph: (03) 9731 1744
Fax: (03) 9742 2098
Email: enquiries@amcosh.com.au
Web: www.amcosh.com.au
[redacted]

[redacted]
MFB Regional Control Centre
Latrobe Valley Coal Mine Fires

13 February, 2014

Dear [redacted]

Re: Occupational Hygiene Advice (Health Monitoring Process) – Hazelwood Coal Mine Fire

At your request, I attended the Hazelwood mine yesterday evening and had discussions with [redacted] (Operations Officer), [redacted] (Operations Officer) and [redacted] (Scientific Officer) to review the health monitoring process for firefighters involved in fighting the mine fire. I understand that the process involves measurements of carboxy-haemoglobin (COHb) of the fire-fighters using a portable Masimo Rad-57 Pulse Oximeter fitted with SpCO sensor and that testing takes place at the ICC. The fire-fighters are monitored when they first arrive on site and prior to entry to the mine. The tests are repeated when the crews come back to the ICC for their breaks or if the atmospheric monitoring indicates that they have been exposed to CO above the action limits which were set at >50ppm for 60 minutes or >150 ppm at any time. The following COHb action levels were in use at the time of the review:

COHb Concentration	Action
≤5 %	OK to enter/re-enter
>5 %	No entry. O_2 Treatment for 20 minutes and retest. If repeat test ≤5 %, OK to return to the fire ground or go home. If repeat test >5 %, repeat O_2 Treatment for 20 minutes and retest etc.
5-8 %	Send crew member home and refer to GP if symptomatic
>8 %	Refer crew member to paramedics

Monitoring of atmospheric CO levels was being undertaken using Drager PAC personal gas detectors (one per 4 man crew) with readings recorded every 15-minutes and radioed back to the ICC every 1-hour. Additionally, AreaRae Multi-gas/PID monitors with wireless remote monitoring capability back-were being deployed in strategic positions to supplement the personal monitoring and provide spacial CO concentration information.

I observed the testing process and noted that there were a number of members who were being administered oxygen at the time (I observed 9 members at one time on O_2 therapy). During subsequent discussions, was advised that some of the members were arriving on site redeployed from other sites and had elevated COHb levels on arrival and that some (as high as 8 to 10% - a level that would require them to be referred to paramedics). I also understand that some of the members

smoked following their tests before re-entering the fire ground, which would contribute to an elevation of their COHb.

Discussion

Safe Work Australia (formerly the National Occupational Health and Safety Commission – NOHSC) states in its documentation to the Occupational Exposure Standard for carbon monoxide that: "*A level of 2.5-3% COHb is the lowest level at which clearly adverse health effects have been well-documented. These health effects are adverse cardiovascular effects on persons with pre-existing clinically overt coronary artery disease, giving rise to symptoms of angina pectoris*" and that there are stidies showing :" *adverse effects in middle-aged clinically healthy men at 5% COHb, and one study showing non-specific effects suggestive of cardiac ischaemia in healthy young men at a level of 2-4%*".

Safe Work Australia has set its Occupational Exposure Standard of 30 ppm for carbon monoxide in the breathing zone as an 8-hour time-weighted average concentration to maintain the COHb 5% to or below under normal temperatures, workloads and atmospheric pressures to minimise the risk to those persons with subclinical CAD and to foetuses of exposed pregnant women and also to protect against adverse behavioural effects arising from carbon monoxide exposure.

The setting of a COHb action limit of ≤5 % as a "Safe to Enter/Re-Enter" level in the Carbon Monoxide Exposure Management guideline for this incident appears to have no clear rationale or justification. Although loosely based on the Safe Work Australia standard, setting of this limit is inconsistent with the goal of maintaining a COHb level well below 5% to minimise the risk symptoms of CO poisoning. It also appears contrary to the advice provided by the MFB Medical Officer (Michael Sargeant) regarding the use of COHb limits as a decision making tool for this purpose. Under these limits, it is likely that members who are at or just below the 5% COHb level will be deployed in areas where their CO exposure will cause it to rapidly rise above this limit and thus potentially put them at risk of CO poisoning. This is particularly true given that the health-status of the members are unknown (particularly with respect to cardiovascular conditions) and that they will also be potentially exposed to depleted oxygen levels and elevated carbon dioxide levels (as well as airborne fine particulates and other airborne contaminants) and be undertaking increased levels of physical activity and elevated tempuratures, all of which increase physiological stress and contribute to an increased risk of elevated levels. This was evident in my observations of the number of members being administered oxygen therapy, some with symptoms, during my review. The cumulative effects of repeated elevated COHb levels followed by recovery and subsequent CO re-exposure cannot be predicted and make the use of a strict COHb limit as a decision making tool questionable. Additionally, the accuracy and efficacy of using a portable COHb pulse oximeter for use in this scenario has not been validated and adds to the uncertainty of applying such limits.

A meeting was convened late on the 12th February with the Deputy Incident Controller ([redacted], operations officers, the MFB scientific officer and paramedic representatives to discuss the above issues. The participants agreed that the situation with respect to potential CO exposure risk was untenable and that immediate action was required. The following resolutions were made at the meeting and were to be implemented on the night shift that evening:

- A strict "No Smoking" policy was to be enforced;
- Any entry into the mine would require compulsory SCBA use;
- Work around the perimeter of the mine fire where CO levels were low could be undertaken without SCBA;
- Atmospheric monitoring, both personal using Drager personal gas detectors and AreaRae monitors for CO was to continue on an ongoing basis and results were to be collated and analysed for both spacial mapping and to correlate COHb levels with CO exposure levels;
- COHb levels screening was to continue, both initially when entering the site and periodically, but this was to be used as a surveillance tool to assess the risk to individuals rather than as a decision limit for re-entry;
- The above was to apply to all personnel working at the mine fire site including mine personnel as well as fire crews;
- Where practicable, the use of fire fighting and asset protection methods which did not involve personnel entering high atmospheric CO levels would be employed.

It is believed the implementation of the above recommended actions would significantly reduce the potential for elevated CO exposure and ensuing risks of adverse health effects. However, continued evaluation of the situation and refinement of the implementation of these control and surveillance measures will ensure that the risk to fire crews and mine personnel are minimised.

Yours sincerely,

Robert Golec FAIOH, COH
Principal Occupational Hygienist

Membership ATTACHMENT 5.1.15

From: Michelle Baldini
Sent: Monday, 24 March 2014 9:25 AM
To: 'denise_cosgrove@worksafe.vic.gov.au'
Cc: Peter Marshall
Subject: Unsafe carbon monoxide levels at Hazelwood
Attachments: 14-03-23 Letter to WorkSafe investigate alleged OHS issues Hazelwood.pdf; Amcosh Letter re Occupational Hygiene Advice - Hazelwood.pdf

Dear Ms Cosgrove,

Please see attached correspondence from Peter Marshall, Branch Secretary.

Yours sincerely,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

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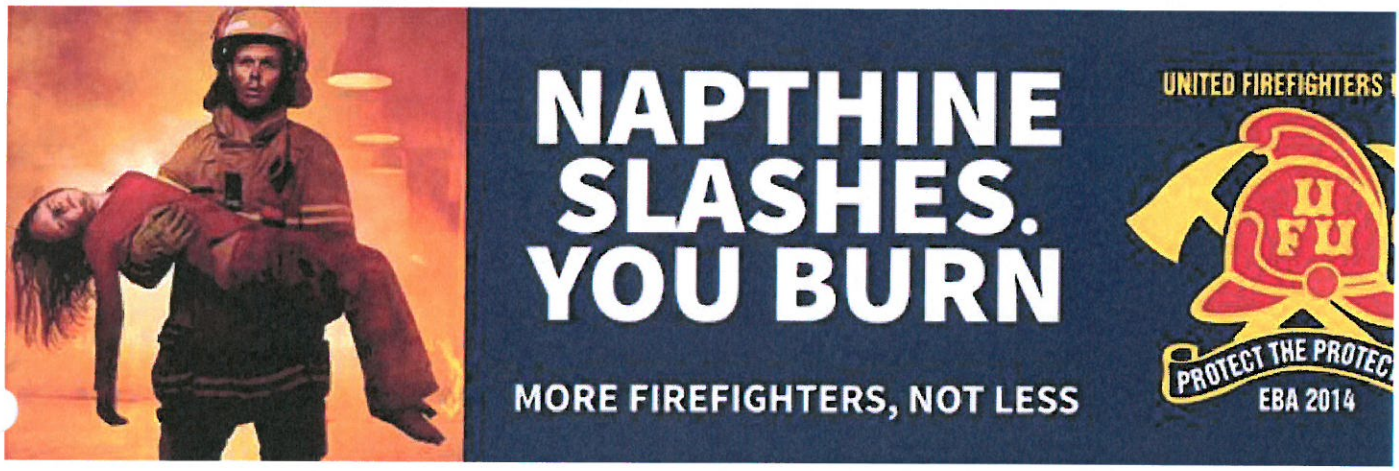

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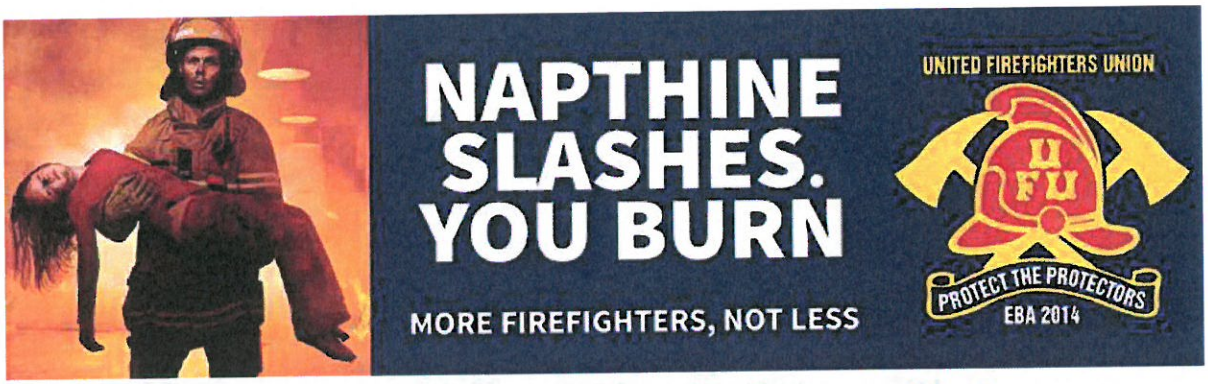
ATTACHMENT 5.1.15



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23 March 2014

Denise Crosgrove
Chief Executive
WorkSafe Victoria
Ground Floor
222 Exhibition Street
Melbourne VIC 3000

By email: denise_cosgrove@worksafe.vic.gov.au

Dear Ms Cosgrove

UNSAFE CARBON MONOXIDE LEVELS AT HAZELWOOD

The United Firefighters Union - Victoria Branch represents amongst others, recruits and professional/career firefighters employees by both the CFA and MFB.

We refer to recent media reports that allege that there are serious health risks with firefighters being exposed to high levels of Carbon Monoxide whist fighting fires at Hazelwood. Further, the Metropolitan Fire Brigade (MFB) requested Amcosh Pty Ltd, Occupational Health & Safety Consultants, Mr Robert Golec the Principal Occupational Hygienist to review the health monitoring process for firefighters fighting the mine fire on the 12th February 2014.
Mr Golec provided a letter to the MFB on the 13th February 2014 in regards to Carbon Monoxide levels of firefighters, namely, Carboxy-Haemoglobin (COHb).

Mr Golec reported the following COHb levels were utilised at the time of the review:

COHb Concentration	Action
Below or equal to 5%	Ok to enter/re-enter
Above 5%	No entry. O2 treatment for 20 minutes and retest. If repeat test below or equal to 5%, OK to return to the fire ground or go home. If repeat test above 5%, repeat O2 treatment for 20 minutes and retest etc.
5-8%	Send crew member home and refer to GP if symptomatic
Above 8%	Refer crew member to paramedics

Mr Golec observed the testing process and noted that members were being administered oxygen at the time. Mr Golec also found out via discussions that some members arriving on scene redeployed from other sites had elevated COHb levels on arrival and some were as high as 8 to 10% - a level that would require them to be referred to paramedics. Mr Golec also understood that some members smoked following their tests before re-entering the fire ground, which would contribute to an elevation of their COHb.

Mr Golec reported that Safe Work Australia documentation stated that "[a] level of 2.5-3% COHb is the lowest level at which clearly adverse health effect have been well-documented. These health effects are adverse cardiovascular effects on persons with pre-existing clinically overt coronary artery disease, giving rise to symptoms of angina pectoris" and that there was studies showing: "adverse effects in middle-aged clinically healthy men at 5% COHb, and one study showing non-specific suggestive of cardiac ischaemia in healthy young man at a level of 2-4%".

Mr Golec stated that "the setting of a COHb action limit of less than or equal to 5% as a 'Safe to Enter/Re-Enter' level in the Carbon Monoxide Exposure Management guidelines for this incident appears to have no clear rationale or justification". He went to say "...setting of this limit is inconsistent with the goal of maintaining a COHb level well below 5% to minimise the risk symptoms of CO poisoning. It also appears contrary to advice provided by the MFB Medical Officer (Michael Sergeant)".

"Under these limits, it is likely that members who are at or just below the 5% COHb level will be deployed in areas where the CO exposure will cause it to rapidly rise above this limit and thus potentially put them at unknown (particularly with respect to cardiovascular conditions) and that they will be potentially exposed to depleted oxygen levels and elevated carbon dioxide levels (as well as airborne fine particulates and other airborne contaminants) and be undertaking increased levels of physical activity and elevated temperatures, all of which

increase physiological stress and contribute to an increased risk of elevated levels". Mr Golec also questioned the use of the COHb limits as a decision making tool where members are repeatedly exposed to elevated COHb levels after recovery and noted the cumulative effects cannot be predicted. Mr Golec also stated "the accuracy and efficiency of using a portable COHb pulse oximeter for use in this scenario has not been validated and adds to the uncertainty of applying such limits".

On the 12th February 2014 a meeting commenced with the MFB with the following resolutions which were to be implemented on the night shift evening:

- A strict "No Smoking" policy was to be enforced;
- Any entry into the mine would require compulsory Self Contained Breathing Apparatus (SCBA) use;
- Work around the perimeter of the mine fire where CO levels were low could be undertaken without SCBA;
- Atmospheric monitoring, both personal using Drager personal gas detectors and AreaRae monitors for CO was to continue on an ongoing basis and results were to be collated and analysed for both spacial mapping and to correlate COHb levels with CO exposure levels;
- COHb levels screening was to continue, both initially when entering the site and periodically, but this was to be used as a surveillance tool to assess the risk to individuals rather than as a decision limit for re-entry;
- The above was to apply to all personnel working at the mine fire site including mine personnel as well as fire crews;
- Where practicable, the use of fire fighting and asset protection methods which did not involve personnel entering high atmospheric CO levels would be employed.

In conclusion Mr Golec stated he "...believed the implementation of the above recommendations would significantly reduce the potential for elevated CO exposure and ensuring risks of adverse health effects. However, continued evaluation of the situation and refinement of the implementation of these control and surveillance measurers will ensure that the risk to the fire crews and mine personnel are minimised".

Unfortunately, despite numerous concerns raised by the UFU to the MFB, CFA and the Fire Services Commissioner on behalf of its members after the 13th of February in relation to the Hazelwood incident, including requests for documentation and testing, the letter and the information contained within the letter was not provided to the UFU by the MFB, CFA or the Fire Services Commissioner, nor has it been distributed or available employees.

The actions and resolutions contained in Mr Golecs' letter **have not been fully implemented**.

The UFU is deeply concerned that the MFB and the CFA have known for some time about the CO levels testing regime may not have met the required standard and the high levels of elevated CO exposure risks to firefighters. We are deeply concerned that the MFB and CFA may not have provided and maintained a working environment that is safe and without risks to health pursuant to s 21 *Occupational Health and Safety Act 2004* (Vic).

In addition the MFB and CFA also appear to have failed to notify staff of the report and its findings regarding the associated risks with CO and other related matters by Amcosh Pty Ltd conducted by Mr Robert Golec, in breach of their statutory obligations under the *Occupational Health and Safety Act 2004* (Vic) pursuant to s 22.

Given the gravity of the allegations, and the treatment and hospitalisation of a number of firefighters due to this incident, the UFU requests the WorkSafe immediately conduct a thorough investigation of this matter and assess whether it is appropriate in the circumstances to issue any enforcement proceedings regarding the MFB and CFA's statutory obligations under the *Occupational Health and Safety Act 2004* (Vic).

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall
Branch Secretary

Attachment: Letter from Robert Golec, Amcosh Pty Ltd dated 13 February 2014

Membership ATTACHMENT 5.1.16

From: Michelle Baldini
Sent: Monday, 24 March 2014 9:25 AM
To: 'denis.napthine@parliament.vic.gov.au'
Cc: Peter Marshall
Subject: Unsafe carbon monoxide levels at Hazelwood
Attachments: 14-03-23 Letter to Premier alleged OHS issues Hazelwood.pdf; Amcosh Letter re Occupational Hygiene Advice - Hazelwood.pdf

Dear Mr Premier,

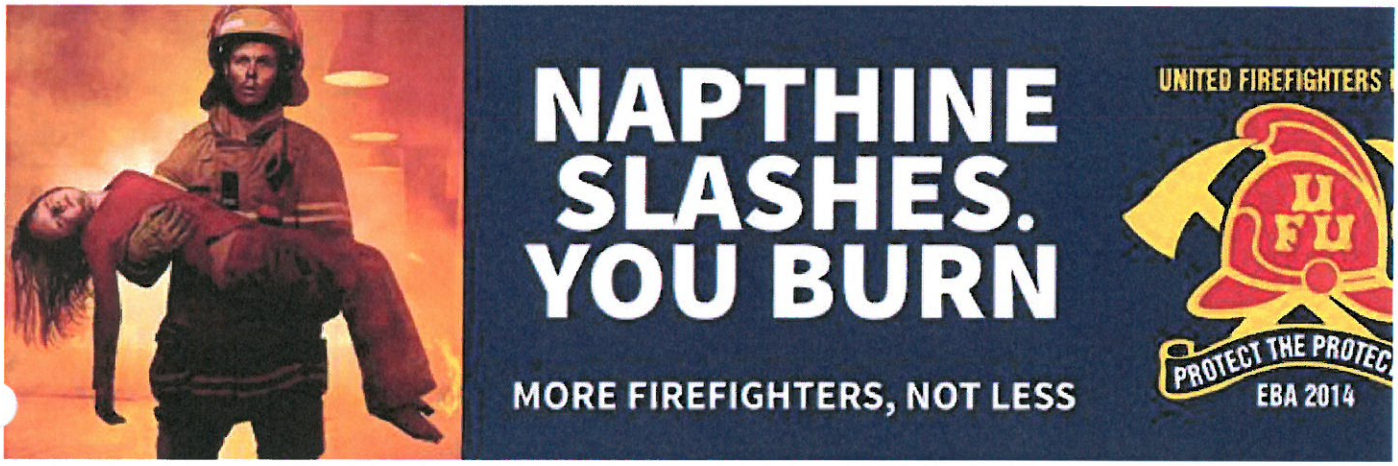
Please see attached correspondence from Peter Marshall, Branch Secretary.

Yours sincerely,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

410 Brunswick Street, Fitzroy 3065
Victoria Australia
T (03) 9419 8811 | F (03) 9419 9258



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ATTACHMENT 5.1.16

NAPTHINE SLASHES. YOU BURN

MORE FIREFIGHTERS, NOT LESS

UNITED FIREFIGHTERS UNION

PROTECT THE PROTECTORS

EBA 2014

United Firefighters Union

Victorian Branch ABN 74 030 569 265

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Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811

Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

23 March 2014

Dennis Napthine
Premier of Victoria
Level 1
1 Treasury Place
Melbourne, Victoria
Australia, 3002

By email: denis.napthine@parliament.vic.gov.au

Dear Mr Premier,

UNSAFE CARBON MONOXIDE LEVELS AT HAZELWOOD

We write to you today to raise serious concerns regarding the conduct of the CFA and the MFB in relation to the significant incident at the Hazelwood mine.

The UFU has become aware of a potentially serious breach of MFB's and CFA's obligations under this Act. The UFU is aware that the Metropolitan Fire Brigade (MFB), after discussions with Country Fire Authority (CFA) personnel, requested Amcosh Pty Ltd, Occupational Health & Safety Consultants, Mr Robert Golec the Principal Occupational Hygienist to review the health monitoring process for firefighters fighting the mine fire on the 12th February 2014. Mr Golec provided a letter to the MFB, who undoubtedly passed the letter onto the CFA, on the 13th February 2014 in regards to Carbon Monoxide levels of firefighters, namely, Carboxy-Haemoglobin (COHb). This letter also has not been provided to the UFU by the MFB nor the CFA or the Fire Services Commissioner, nor has it been distributed or available to employees.

The CFA and MFB are also aware of numerous concerns raised by the UFU to the CFA and MFB and the Fire Services Commissioner on behalf of its members after the 13th of February in relation to the Hazelwood Incident, including requests for documentation and testing.

The actions and resolutions contained in Mr Golecs' letter **have not been fully implemented**.

The UFU is deeply concerned that the MFB and CFA have known for some time that the CO levels testing regime may not have met the required standard and of the high levels of elevated CO exposure risks to firefighters. We are deeply concerned that the MFB and CFA may not have provided and maintained a working environment that is safe and without risks to health pursuant to s 21 *Occupational Health and Safety Act 2004* (Vic).

In addition the CFA and MFB also appear to have failed to notify staff of the report and its findings regarding the associated risks with CO and other related matters by Amcosh Pty Ltd conducted by Mr Robert Golec, in breach of their statutory obligations under the *Occupational Health and Safety Act 2004* (Vic) pursuant to s 22.

The CFA and MFB are clearly looking out for the bottom dollar instead of complying with their obligations under Occupational Health and Safety legislation by ensuring a safe workplace for employees and third parties. Clearly there appears to have been a cover up by not disclosing vital information which is required by law.

The UFU have referred concerns outlined in this letter to WorkSafe for immediate investigation and possible prosecution.

Given the seriousness of these apparent breaches, their likely consequences (including the treatment and hospitalisation of a number of firefighters due to this incident) and the apparent cover up of this information by the CFA and MFB we expect your full support of a WorkSafe investigation of this matter and prosecution if necessary.

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall
Branch Secretary

ATTACHMENT 5.1.17

Membership

From: Michelle Baldini
Sent: Monday, 24 March 2014 9:25 AM
To: 'craig.lapsley@firecommissioner.vic.gov.au'
Cc: Peter Marshall
Subject: Re: Hazelwood Coal Mine Fire 2014 - Potential Breaches of OHS Act by CFA and MFB
Attachments: 14-03-23 Letter to Lapsley re breach of OHS Act.pdf; Amcosh Letter re Occupational Hygiene Advice - Hazelwood.pdf

Dear Mr Lapsley,

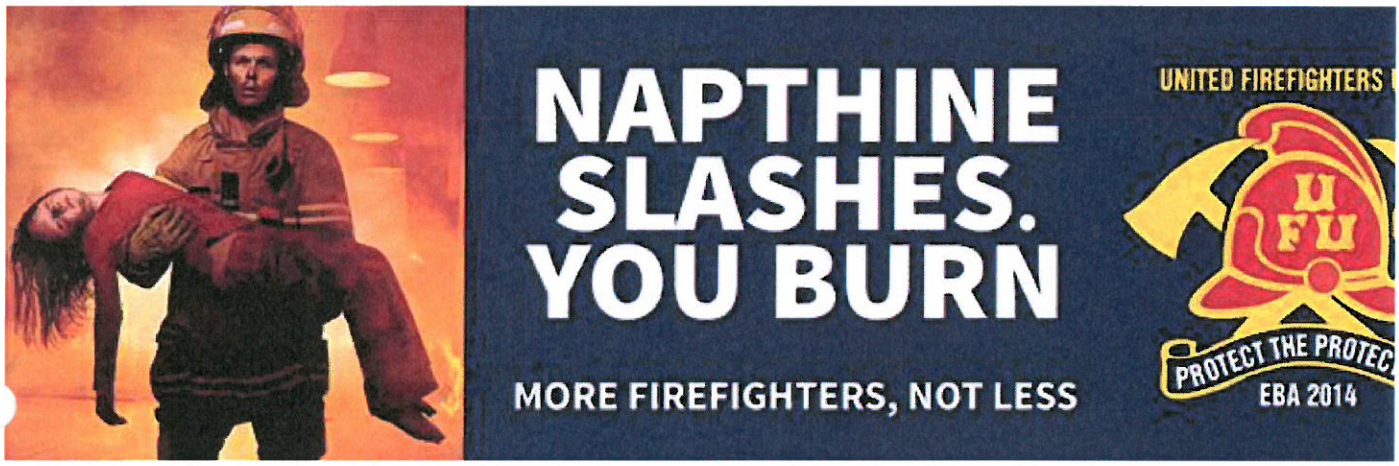
Please see attached correspondence from Peter Marshall, Branch Secretary.

Yours sincerely,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

410 Brunswick Street, Fitzroy 3065
Victoria Australia
T (03) 9419 8811 | F (03) 9419 9258



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ATTACHMENT 5.1.17

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EBA 2014

United Firefighters Union

Victorian Branch ABN 74 030 569 265

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Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

23 March 2014

Craig Lapsley
Fire Services Commissioner

By email: craig.lapsley@firecommissioner.vic.gov.au

Dear Mr Lapsley,

Re: Hazelwood Coal Mine Fire 2014 - Potential Breaches of OHS Act by CFA and MFB

As you are aware, under the *Fire Services Commissioner Act 2010* (Vic), the Fire Services Commissioner has specific duties and obligations, including to have overall control of the response to major fires.

In addition to these duties held by the Fire Services Commissioner, the CFA and MFB also have duties and obligations in relation to their employees. These duties are set out in the *Occupational Health and Safety Act 2004* (Vic) (**the OHS Act**). In this regard we specifically refer to:

a) sections 21, 22 and 23 with regard to employers;
b) section 26 with regard to a manager or controller of a workplace;
c) sections 144-145 in relation to officers.

You will also be fully appraised of other sections in the OHS Act which impose obligations on the CFA and MFB with regard to ensuring a safe workplace for employees and third parties.

The Fire Services Commissioner is also aware of numerous concerns raised by the UFU to the MFB, CFA and the Fire Services Commissioner on behalf of its members after the 13th of February in relation to the Hazelwood incident, including requests for documentation and testing.

The UFU has become aware of a potentially serious breach of the MFB and CFA's obligations under the OHS Act. The UFU is aware that the Metropolitan Fire Brigade (MFB), after discussions with Country Fire Authority (CFA) personnel, requested Amcosh Pty Ltd, Occupational Health & Safety Consultants, Mr Robert Golec the Principal Occupational Hygienist to review the health monitoring process for firefighters fighting the mine fire on the 12th February 2014. Mr Golec provided a letter to the MFB, who undoubtedly passed the letter onto the CFA and the Fire Services Commissioner, on the 13th February 2014 in regards to Carbon Monoxide levels of firefighters, namely, Carboxy-Haemoglobin (COHb). This letter has not been provided to the UFU by the MFB, CFA or the Fire Services Commissioner, nor has it been distributed or available to employees.

The actions and resolutions contained in Mr Golecs' letter **have not been fully implemented**.

The UFU is deeply concerned that the Fire Services Commissioner, MFB and CFA have known for some time about the CO levels testing regime may not have met the required standard and the high levels of elevated CO exposure risks to firefighters. We are deeply concerned that the CFA and MFB may not have provided and maintained a working environment that is safe and without risks to health pursuant to s 21 *Occupational Health and Safety Act 2004* (Vic).

In addition the CFA and MFB also appears to have failed to notify staff of the report and its findings regarding the associated risks with CO and other related matters by Amcosh Pty Ltd conducted by Mr Robert Golec, in breach of their statutory obligations under the *Occupational Health and Safety Act 2004* (Vic) pursuant to s 22.

Given the seriousness of these apparent breaches and the treatment and hospitalisation of a number of firefighters due to this incident and the apparent cover up of this information when the UFU was discussing this matter with the Fire Services Commissioner, the MFB and CFA, the UFU have referred these allegations to WorkSafe for immediate investigation and possible prosecution.

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall
Branch Secretary

Attachment: Letter from Robert Golec, Amcosh Pty Ltd dated 13 February 2014

Membership

ATTACHMENT 5.1.18

From: Michelle Baldini
Sent: Monday, 24 March 2014 9:25 AM
To: 'reddington@mfb.vic.gov.au'
Cc: Peter Marshall
Subject: Re: Hazelwood Coal Mine Fire 2014 - Potential Breach of OHS Act
Attachments: 14-03-23 Letter to MFB re breach of OHS Act.pdf; Amcosh Letter re Occupational Hygiene Advice - Hazelwood.pdf

Dear Mr Eddington,

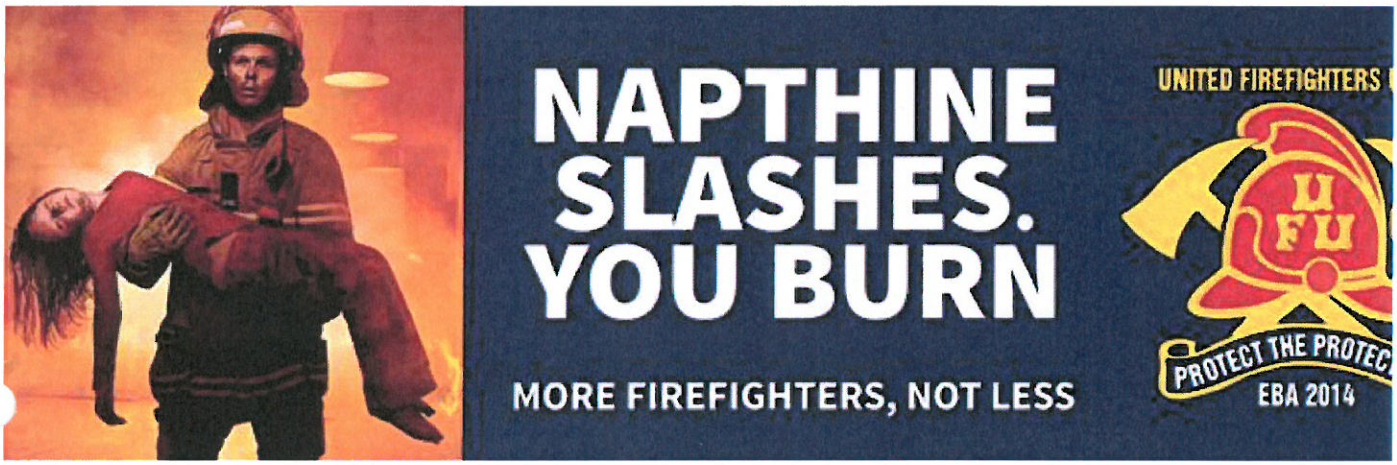
Please see attached correspondence from Peter Marshall, Branch Secretary.

Yours sincerely,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

410 Brunswick Street, Fitzroy 3065
Victoria Australia
T (03) 9419 8811 | F (03) 9419 9258



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Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811

Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

23 March 2014

Russell Eddington
Chief Executive Officer
Metropolitan Fire Brigade
456 Albert St
East Melbourne VIC 3000

By email: reddington@mfb.vic.gov.au

Dear Mr Eddington,

Re: Hazelwood Coal Mine Fire 2014 - Potential Breach of OHS Act

The MFB, its directors and officers have specific duties and obligations in relation to their employees, including firefighters. These duties are set out in the *Occupational Health and Safety Act 2004* (**the OHS Act**). In this regard we specifically refer to:

a) sections 21, 22 and 23 with regard to employers;
b) section 26 with regard to a manager or controller of a workplace;
c) sections 144-145 in relation to officers.

You will of course be fully appraised of other sections in the OHS Act which impose obligations on the MFB, its directors, board members and officers with regard to ensuring a safe workplace for employees and third parties.

The MFB is also aware of numerous concerns raised by the UFU to the MFB and the Fire Services Commissioner on behalf of its members after the 13th of February in relation to the Hazelwood incident, including requests for documentation and testing.

The UFU has become aware of a potentially serious breach of MFB's obligations under this Act. The UFU is aware that the Metropolitan Fire Brigade (MFB) requested Amcosh Pty Ltd, Occupational Health & Safety Consultants, Mr Robert Golec the Principal Occupational Hygienist to review the health monitoring process for firefighters fighting the mine fire on the 12th February 2014. Mr Golec provided a letter to the MFB on the 13th February 2014 in regards to Carbon Monoxide levels of firefighters, namely, Carboxy-Haemoglobin (COHb). This letter has not been provided to the UFU by the MFB or the Fire Services Commissioner, nor has it been distributed or available to the members.

The actions and resolutions contained in Mr Golecs' letter **have not been fully implemented**.

The UFU is deeply concerned that the MFB have known for some time about the CO levels testing regime may not have met the required standard and the high levels of elevated CO exposure risks to firefighters. We are deeply concerned that the MFB may not have provided and maintained a working environment that is safe and without risks to health pursuant to s 21 *Occupational Health and Safety Act 2004* (Vic).

In addition the MFB also appears to have failed to notify staff of the report and its findings regarding the associated risks with CO and other related matters by Amcosh Pty Ltd conducted by Mr Robert Golec, in breach of their statutory obligations under the *Occupational Health and Safety Act 2004* (Vic) pursuant to s 22.

Given the seriousness of these apparent breaches and the treatment and hospitalisation of a number of firefighters due to this incident and the apparent cover up of this information when the UFU was discussing this matter with the MFB, the UFU have referred these allegations to WorkSafe for immediate investigation and possible prosecution.

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall

ATTACHMENT 5.1.19

Membership

From: Michelle Baldini
Sent: Monday, 24 March 2014 9:25 AM
To: 'm.bourke@cfa.vic.gov.au'
Cc: Peter Marshall
Subject: Re: Hazelwood Coal Mine Fire 2014 - Potential Breach of OHS Act
Attachments: 14-03-23 Letter to CFA re breach of OHS Act.pdf; Amcosh Letter re Occupational Hygiene Advice - Hazelwood.pdf

Dear Mr Bourke,

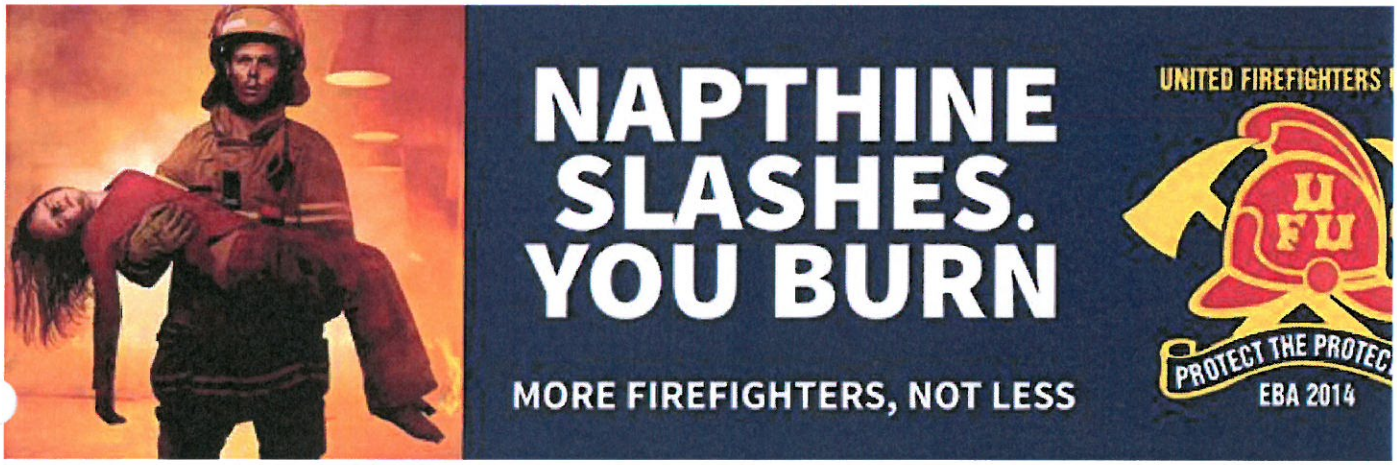
Please see attached correspondence from Peter Marshall, Branch Secretary.

Yours sincerely,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

410 Brunswick Street, Fitzroy 3065
Victoria Australia
T (03) 9419 8811 | F (03) 9419 9258



www.firecrisis.com.au | www.ufuvic.asn.au
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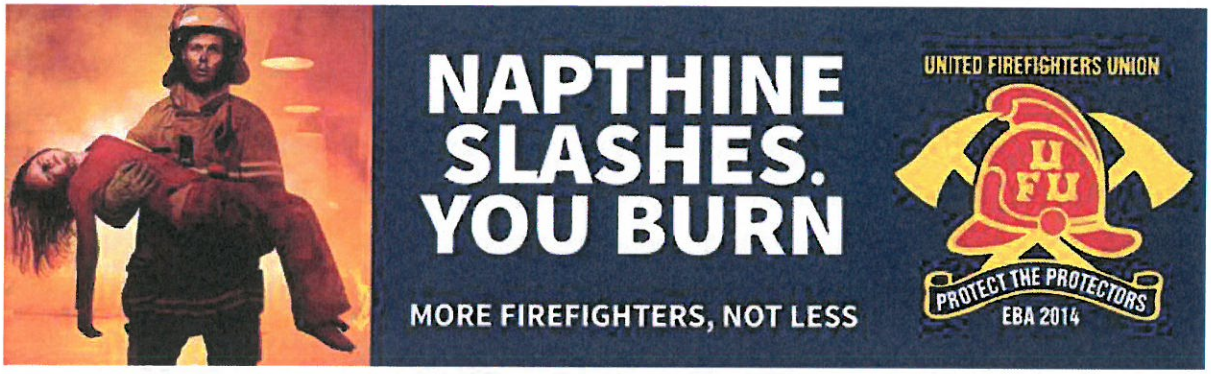
ATTACHMENT 5.1.19



United Firefighters Union
Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811
Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

23 March 2014

Mick Bourke
Chief Executive Officer
Country Fire Authority

By email: m.bourke@cfa.vic.gov.au

Dear Mr Bourke,

Re: Hazelwood Coal Mine Fire 2014 - Potential Breach of OHS Act

The CFA, its directors and officers have specific duties and obligations in relation to their employees, including firefighters. These duties are set out in the *Occupational Health and Safety Act 2004* (Vic) (**the OHS Act**). In this regard we specifically refer to:

a) sections 21, 22 and 23 with regard to employers;
b) section 26 with regard to a manager or controller of a workplace;
c) sections 144-145 in relation to officers.

You will of course be fully appraised of other sections in the OHS Act which impose obligations on the CFA, its directors, board members and officers with regard to ensuring a safe workplace for employees and third parties.

The CFA is also aware of numerous concerns raised by the UFU to the CFA and the Fire Services Commissioner on behalf of its members after the 13th of February 2014 in relation to the Hazelwood incident, including requests for documentation and testing.

The UFU has become aware of a potentially serious breach of CFA's obligations under this Act. The UFU is aware that the Metropolitan Fire Brigade (MFB), after discussions with Country Fire Authority (CFA) personnel, requested Amcosh Pty Ltd, Occupational Health & Safety Consultants, Mr Robert Golec the Principal Occupational Hygienist to review the health monitoring process for firefighters fighting the mine fire on the 12th February 2014. Mr Golec provided a letter to the MFB, who undoubtedly passed the letter onto the CFA, on the 13th February 2014 in regards to Carbon Monoxide levels of firefighters, namely, Carboxy-Haemoglobin (COHb). This letter has not been provided to the UFU by the CFA or the Fire Services Commissioner, nor has it been distributed or available to employees.

The actions and resolutions contained in Mr Golecs' letter **have not been fully implemented**.

The UFU is deeply concerned that the CFA have known for some time about the CO levels testing regime may not have met the required standard and the high levels of elevated CO exposure risks to firefighters. We are deeply concerned that the CFA may not have provided and maintained a working environment that is safe and without risks to health pursuant to s 21 *Occupational Health and Safety Act 2004* (Vic).

In addition the CFA also appears to have failed to notify staff of the report and its findings regarding the associated risks with CO and other related matters by Amcosh Pty Ltd conducted by Mr Robert Golec, in breach of their statutory obligations under the *Occupational Health and Safety Act 2004* (Vic) pursuant to s 22.

Given the seriousness of these apparent breaches and the treatment and hospitalisation of a number of firefighters due to this incident and the apparent cover up of this information when the UFU was discussing this matter with the CFA, the UFU have referred these allegations to WorkSafe for immediate investigation and possible prosecution.

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall
Branch Secretary

ATTACHMENT 5.1.20

NAPTHINE SLASHES. YOU BURN

MORE FIREFIGHTERS, NOT LESS

UNITED FIREFIGHTERS UNION

PROTECT THE PROTECTORS

EBA 2014

United Firefighters Union

Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811
Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

24 March 2014

Craig Lapsley
Fire Services Commissioner

By email: craig.lapsley@firecommissioner.vic.gov.au

Dear Mr Lapsley,

Re: Hazelwood Coal Mine Fire 2014 - Fire Agencies Acting on Advice

I refer to your media interviews today regarding the Hazelwood Coal Mine Fire and your statement to the effect that the fire services acted on further advice following the Amcosh letter.

As you may be aware, neither the Amcosh letter nor this further advice you refer to was provided to the UFU who was consulting with the agencies and yourself on this matter, nor was it provided to the exposed firefighters or relevant HSRs.

Therefore we request a copy of the written further advice that you have referred to. If the advice you referred to is not in writing, please provide details of the advice including:

a) exact details of the advice;
b) who the advice was from;
c) when the advice was provided;
d) who the advice was provided to; and
e) what witnesses were present.

In any event, given that neither the Fire Service Commissioner nor the Fire agencies have provided the reported further advice to employees, as agencies are required to do under the Occupational Health and Safety Act, the agencies appear to have further failed their occupational health and safety obligations.

We notify you that if you have any further information in relation to this matter, you should pass this information on immediately, including to the HSRs. We request that you and the fire agencies immediately provide all documentation, rather than selectively releasing certain documentation in an inconsistent manner.

I can be contacted at the UFU office on 9419 8811 should you wish to discuss this matter.

Yours faithfully,

Peter Marshall
Branch Secretary

ATTACHMENT 5.1.21

The Hazardous Health Effects of Coal Tar Emitted From Coal Seam Fires

Declan Z. Clark, John Monash Science School
Major Bursary Winner STAV Science Talent Search 2013
Semi-Finalist BHP Billiton Science and Engineering Awards 2014
Under the Supervision of Bradley Clark DipAppSci;AdvDipEnv;GradDipESH;MSIA;MHFESA

On 20th February 2014 the ABC News stated in an article titled '*Hazelwood and Yallourn Coal Mine Fires Emit Strong Tar-Like Smell*' that 'The EPA says it does not know what is causing a strong tar-like smell coming from the Hazelwood and Yallourn coal mine fires'. They go on to say that the EPA are monitoring for carbon monoxide and smoke plumes. The EPA allegedly doubts that there is any serious health risk. The ABC's source is the Traralgon Incident Control Centre. *The Age* reiterates the tar-like smell inference on 1st March 2014.

The purpose of this paper is to discuss the potential emission of carcinogenic aromatic compounds from the Hazelwood/Yallourn coal seam fire. The government have not yet discussed the serious nature of the long term health effects and are not yet monitoring for carcinogens which may be placing the community at long-term risk.

Materials

Databases including the Latrobe University Online Library, The International Agency for Research on Cancer, The International Program for Chemical Safety and various Google searches have been used to inform this paper. No physical chemistry has been carried out.

Discussion

Dorland's Medical Dictionary defines a carcinogen as 'any cancer producing substance'[1] According to the International Agency for Research on Cancer, coal tar is a category 1 carcinogen.[2] The Hazardous Substances Information System[3] states that the 8 hour (time weighted average) exposure limit is 0.2 mg/m^3. A crude analogy using water weight as a constant, gives an exposure limit of 0.2 parts per billion (ppb). Likewise, benzene is also a category 1 carcinogen[4] with an exposure limit of 3.2 ppb. These numbers are for the 8 hour/day occupational exposure limit for 5 days per week and do not take into account the fact that most residents spend 24 hours/day 7 days a week in the town. The limits, given 24 hour exposure, should be 0.07 ppb for coal tar and 1 ppb for benzene compounds.

Coal tar and benzene have been discussed above for a specific reason. Coal tar is a by-product of the incomplete combustion of coal. It contains aromatic chemicals such as benzene, toluene, naphthalene, anthracene, xylene, phenol, cresol, ammonia and pyridine. It has a characteristic smell of tar.[5] The evidence for the presence of coal tar, aside from the characteristic smell, may be the presence of unusually high levels of carbon monoxide. This may signify incomplete combustion and therefore the potential production of these chemicals. Further, coal seam fires in the USA have demonstrated the production of coal tar.[6]

Benzene is a common constituent of smoke, emanating from coal seam fires.[7] One particular fire, Ankney Vent 9, Iowa, is producing 3800 ppb[8] benzene, 3800 times the safe exposure limit. Data

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[1] Editor WB Saunders (1994). *Dorlands Illustrated Medical Dictionary.* ED 28. P191. Philadelphia PA
[2] IARC (1987). *Coal-Tars.* Viewed at <http://www.inchem.org/documents/iarc/suppl7/coaltars.html>
[3] EPA (2014). *Hazelwood open cut mine fire.* Viewed at <http://www.epa.vic.gov.au/aq-latrobe-valley-mine-fire/current-air-quality
[4] Safework Australia (2014). *Hazardous Substances Information System Benzene.* Viewed at < http://www.safeworkaustralia.gov.au/sites/SWA>
[5] Editor O'Neil (2001) *Coal Tar* in the Merck Index. 13 ED. P425. Merck & Co Inc. Whitehouse Station NJ.
[6] EMSBO-Mattingly and Stout (2011). *Semivolatile Hydrocarbon Residues of Coal and Coal Tar* in Coal and Peat Fires-A Global Perspecive. P195. Elsevier
[7] Engle et al (2012) *Gas Emissions, Minerals, and tars associated with three coal fires, Powder River, Basin, USA.* Science of the Total Environment Vol 420. P146-159. Elsevier

obtained from the EPA website shows that the department is monitoring carbon monoxide, particulates (PM2.5, PM10), and the reduction in visibility. Nowhere on the website do they address aromatic hydrocarbons (benzene, coal tar, ethyl benzene, toluene, xylene, propylbenzene, ethyltolluene and trimethybenzene) all known constituents of coal seam smoke.[9]

Conclusion

The characteristic smell of coal tar likely suggests that the population of Morwell and the Latrobe Valley are exposed to category 1 carcinogens above the Australian Safe Working Standards.[10] Neither the Chief Medical Officer, the Premier nor the EPA have addressed the long term health effects of the potential exposure to category 1 carcinogens. The community update from the Health Department of Victoria specifically states that they do not expect long term health effects from the smoke.[11] There is no evidence which has been made public for the health department to make that assertion. Gaseous benzene is unlikely to be detected as particulate matter PM2.5 and PM10.[12] Benzene exists in its gaseous state at measurements of Angstroms, and not micrometres which are on an order of magnitude 10 000 times greater. The CDC state people who breathe in high levels of benzene may develop signs and symptoms including:[13]

- Drowsiness
- Dizziness
- Rapid or irregular heartbeat
- Headaches
- Tremors
- Confusion
- Unconsciousness
- Death (3.8 ml/kg body weight)

They also state that eating foods or drinking beverages containing high levels of benzene can cause symptoms including:

- Vomiting
- Irritation of the stomach
- Dizziness
- Sleepiness
- Convulsions
- Rapid or irregular heartbeat
- Death (3.8 ml/kg body weight)

The conclusion drawn from the discussion above is that specialist occupational hygienists, registered with the Australian Institute of Occupational Hygienists, should carry out air monitoring for aromatic compounds including coal tar and benzene for the long term health of the local community.

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[8] Engle et al (2012) *Gas Emissions, Minerals, and tars associated with three coal fires, Powder River, Basin, USA.* Science of the Total Environment Vol 420. P146-159. Elsevier

[9] O'Keefe et al (2011) Old *Smokey Coal Fire, Floyd County, Kentucky: Estimates of Gaseous Emission Rates.* International Journal of Coal Geology Vol 87. P150-156

[10] Safework Australia (2014). *Hazardous Substances Information System Coal Tar.* Viewed at < http://www.safeworkaustralia.gov.au/sites/SWA>

[11] Health Department of Victoria (2014) *Hazelwood open Cut Mine Fire.* Viewed at <http://www.health.vic.gov.au/hazelwood/community-update.htm#>

[12] Department of Health. NY State (2011) *Fine Particles (PM2.5) Questions and answers.* Viewed at <https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm>

[13] CDC (2013) *Facts About Benzene.* Viewed at <http://www.bt.cdc.gov/agent/benzene/basics/facts.asp>

From: HOLLOWAY, Elizabeth **On Behalf Of** RAU, Peter
Sent: Wednesday, 26 March 2014 4:50 PM
To: Exchange Mailboxes (all)
Subject: Operations Update from the Acting Chief Officer

26 MARCH 2014

Update from Acting Chief Officer

Colleagues

I'd like to provide some additional information and clarification in light of recent media reports about health monitoring of carbon monoxide at Hazelwood, the 13 February letter by Robert Golec of AMCOSH to fire services, and the UFU bulletin issued yesterday.

During the Hazelwood incident, State, Regional and Incident control centres and their MFB and CFA staff have gone to significant lengths to protect the safety of our firefighters.

On 12 February, three days into the fire, fire services initiated a review of the health monitoring process at Hazelwood. A number of firefighters working at Hazelwood had presented to hospital for observation, either sent by us because they had elevated carbon monoxide (CO) readings found during routine individual CO blood level testing, or because they felt unwell after leaving their shifts at the mine.

This was to become a turning point where fire services began to treat Hazelwood not only as fire, but as a hazardous materials incident, with the associated protocols.

As part of the review, a meeting was held at the ICC at the Hazelwood mine, attended by Rob Golec, Deputy Incident Controller Commander Mitch Simons and his team and CFA's Brigade Medical Officer Dr Michael Sargeant. The outcome of the meeting formed the basis of the AMCOSH letter and its recommendations.

As a result of that meeting, all firefighters were immediately instructed from that night to wear breathing apparatus at all times when in the mine as per the recommendations of the letter. **Any claims that firefighters were never instructed to wear BA are incorrect.**

On 13 February, the Incident Controller was CFA Operations Manager Barry Foss and the Deputy Incident Controller was ACFO Darren Davies. At approximately 1500 hrs, some firefighters were observed not wearing breathing apparatus in the mine and Darren Davies immediately instructed all staff not wearing BA to evacuate the mine.

In order to establish a safe and practical system of work, the IC Barry Foss called a meeting which included Dr Michael Sargeant, senior operational staff from both MFB and CFA, MFB Scientific Officer Craig Tonks, the CEO from the mine, health commander from Ambulance Victoria and DCO Mike Smith from South Australia,

who is regarded as an expert in CO exposures to firefighters.

At this meeting, the team considered how to minimise firefighters' CO exposure to an equally safe level but in a more practical ways, such as based on atmospheric levels of CO, given operational limitations of using BA at all times. The group applied their combined expertise to determine the appropriate protocol.

At the conclusion of this meeting, decisions were taken and the following instruction for carbon monoxide management was issued:

- All crew must be checked by Health Monitoring personnel prior to entering the mine
- All crew leaders were to:
    - collect carbon monoxide detectors and ensure there is one per appliance (note this was modified to one per person on 28 February)
    - Log the detector reading every 15 minutes on a log sheet
    - Provide average and peak readings and map grid reference of location to the DivComm every hour via radio.
- Crews must not work in the mine for a continuous period greater than two hours without leaving the mine. These two hour periods of operation within the mine must not exceed four in any 12 hour period.
- If in any one-hour period there are two measurements greater than 50 ppm but less than 75 ppm, workers must withdraw from the area or immediately don breathing apparatus to remain working in this location
- At any time a carbon monoxide reading of 75 ppm or greater is recorded, BA must be immediately donned or workers must withdraw from this area. This must be immediately reported to DivComm.
- All crew must be rechecked by Health Monitoring personnel at the conclusion of their shift prior to leaving the site. Personnel will not be permitted to leave the site without appropriate clearance provided by the Health Monitoring personnel.

These protocols were instigated for night shift on the 13 February, captured in the Health Monitoring Plan, and operations resumed.

Health and Safety Representatives were on site and aware of the implementation of these protocols. These protocols have been in place continuously since 13 February.

The standard these processes adhere to is SafeWork Australia's National Occupational Health Exposure Standard, specifically set for working populations who are assumed to be healthy, physiologically resilient and supervised. That standard is 30 parts per million **averaged** over an eight hour day*, set to ensure the individuals COHb does not exceed 5%. The combination of tests is recommended where exposure may be prolonged.

This standard was developed specifically for the workplace and for that reason, has been deemed the appropriate standard to be applied, not the 2.5 to 3% set for the general population.
As an additional precaution, the State Controller issued a health and safety bulletin on 13 February that individuals suffering from cardiovascular or respiratory conditions should not be deployed to the incident. I included this advice in my Acting Chief Officer Update sent to all staff on 13 February.

Attached for your information is a further full report on medical monitoring on 20 March, also from AMCOSH, which states:
"It is my opinion that the medical monitoring program currently in place is robust and professionally conducted..."

As we at MFB are all aware, it takes time to set up an ideal structure in a crisis situation. All levels of the operation were involved in developing a model to create a safe working environment for our people and the community while we worked to get the fire under control.
In fact, from an Occupational Health and Safety perspective, this incident has been managed extremely successfully; in an incident without precedent, no one was seriously injured. This was due to the extraordinarily hard work and commitment of all involved.

Regards,

Peter Rau
Acting Chief Officer

*The time-weighted average of 30 ppm must be carefully controlled and there are 'excursion' limits listed in the SafeWork documentation. Please note we are applying a more conservative 50 ppm concentration as a maximum for any 1-hour period of exposure and 75 ppm concentration for any single peak exposure:

Concentration [(a)] **(ppm)**	**Total Exposure** [(b)] **(min)**
200	15
100	30
60	60

(a) Short-term excursions should never exceed 400 ppm.

(b) This duration represents the sum of exposures at this level over an 8-hour workday, and assumes no other exposure to carbon monoxide.

Membership ATTACHMENT 5.1.23

From: Peter Marshall
Sent: Wednesday, 2 April 2014 12:09 PM
To: Casey Lee; Joanne Watson
Subject: FW: Health Management and Decontamination Plan V1
Attachments: Version 1.pdf

FYI

From: HOLLOWAY, Elizabeth [redacted] **On Behalf Of** RAU, Peter
Sent: Tuesday, 1 April 2014 4:29 PM
To: Peter Marshall
Subject: Health Management and Decontamination Plan V1

Dear Peter

Please see attached Version 1 of the Health Management and Decontamination Plan for the Latrobe Valley Coal Mines Fires.

Kind regards

Peter Rau | Acting Chief Officer
Metropolitan Fire and Emergency Services Board
456 Albert Street, East Melbourne, Victoria, 3002.
T: (03) 9965 4490 | M: 0417 567 834 | E: prau@mfb.vic.gov.au

ATTACHMENT 5.1.23
VI

FIRE SERVICES COMMISSIONER VICTORIA

Health Management & Decontamination Plan

Latrobe Valley Coal Mines Fires

WORKING IN CONJUNCTION WITH CFA MFB Victoria Department of Environment and Primary Industries

This Plan including all Attachments has been approved and endorsed by the following:

Approved by:

.....
Regional Controller
[date]

.....
Incident Controller
[date]

.....
CFA Medical Officer
[date]

Endorsed by:

.....
State Controller
[Date]

.....
CFA Chief Officer
[Date]

.....
MFB Chief Officer
[Date]

.....
VICSES Chief Officer
[Date]

This Plan will be formally reviewed and where required amended every three days.

Contents

Context

On Sunday 9 February 2014, a large number of grass fires started around Morwell. As a result, fires impacted a range of infrastructure, including the Hazelwood Power Station and Yallourn Power Station. Fire remains in the area around Morwell, including inside the Hazelwood mine site and in proximity to the Yallourn Power Station. There are complex health and safety issues specific to the environment. The fires are expected to burn for a number of weeks. Incident Control planning has been extended to 28 February and will be reviewed every three days.

Purpose

The Health Management & Decontamination Plan for the Latrobe Valley Coal Mine Fire (the Plan) has been developed to manage the health and safety of all personnel on the fireground at the Hazelwood and Yallourn Mines.

The Plan documents the health, safety and welfare arrangements in relation to:

- General Health and Crew Selection requirements for deployment to Hot Zones
- The health monitoring process for personnel that have been deployed to the mine fire due to the risk posed by elevated levels of Carbon Monoxide
- The management of Personal Protective Clothing & Equipment used in the Hot Zones.

Validation and Audit of Plan

Following approval and endorsement this Plan, it is intended that independent validation through of the implementation of the Plan and associated processes be undertaken by a third party to monitor compliance. There will also be random audits undertaken to validate that the Plan and associated processes have been implemented and are followed for the duration of the event.

Carbon Monoxide Information

Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death. Exposure to high levels of Carbon Monoxide have significant health impacts. The use of 5% as the limit for operational activity has been determined by a range of Health Professionals including the CFA Medical Officer and MFB Brigade Medical Officer.

This amount is half the recommended level of NIOSH and Safe Work Australia. This level was also determined with consideration given to previous protocols set in past incidents at this site.

Crew Selection

General Health Issues

Individuals, who are heavy smokers, have a history of cardiovascular or respiratory conditions should not be deployed to this incident.

This is due to the increased physiological sensitivities that might be attributable from increased carbon monoxide levels in the open cut fire.

Crews planning to be deployed for a shift in the open cut fires should have 24hrs of "clear time" away from smoke logged incidents (e.g. prior deployments).

Female Personnel

Due to the increased presence of carbon monoxide within the Open Cut Hot Zone there is a risk to the foetus of pregnant women exposed to high levels of concentrations from the carbon monoxide at this incident.

Due to this risk any female fire-fighter who is pregnant or there is any chance they may be pregnant, should not attend this incident due to the increased potential exposure to carbon monoxide.

It is the responsibility of staff who are allocating members to this incident to ensure that the above guideline is followed and ensure that all personnel have been clearly briefed.

Pre Deployment, Pre Entry, Pre Tasking,

Prior to deployment personnel are given a Carbon Monoxide Information Sheet (Refer Attachment 2) and briefed of the risks and safe work practices prior to deployment.

At the commencement of shift crew leaders are given a Crew Leader Instruction for Carbon Monoxide Management (Refer to Attachment 3)

Crew Health Management

The following is to occur:

- Agencies providing crews for deployment are to ensure the crew selection criteria are met.
- The Incident Controller will determine the Hot Zone and Warm Zone.
- The Incident Controller will identify 'Dirty' and 'Clean' areas and appropriate areas for decontamination and disrobing.
- Crew health observations are to occur and be recorded in accordance with the Health Monitoring Process (Attachment 4).

- Crew Health Observations may be undertaken by first aiders under the supervision of a Health Professional
- Where any results do not meet the criteria established they are not to be deployed.
- Crew deployment shift times are to be recorded and monitored to ensure they do not exceed the maximum timeframes (Refer to Attachment 3)
- There will be ambient gas monitoring in Hot and Warm Zones.
- A 'bagging' and 'tagging' process will be followed.
- The incident is to be deemed a non-smoking site to reduce the impact of CO build up in individual's
- All gas monitoring results are to be logged and maintained. Results that exceed defined levels are to be investigated to ensure crew welfare is not placed at risk and appropriate control strategies are in place
- All injuries, near misses or hazards are to be notified via the chain of command, recorded and action taken where deemed appropriate
- The importance of eating well, being properly hydrated – for every two litres of water consumed, 1 litre of electrolytes should be consumed.
- Rest breaks should be taken and crews should not undertake any strenuous activity during this period.
- At the commencement of each shift crew leaders are given a Crew Leader Instruction for Carbon Monixide Management (Refer to Attachment 3)

Personal Protective Clothing (PPC)

- Bushfire protective clothing is to worn at all times.
- Crews are to use BA in accordance with Attachment 3
- Crews operating outside the Hot Zone are to use a P2 particulate filter in accordance with Attachment 4
- Where appropriate open up PPC clothing to allow adequate ventilation

Shift Arrangements

Maximum shift durations for this incident are outlined in Attachment 3 Crew Leader Instruction

These shifts arrangements should be regularly reviewed and will be modified based on risks identified such as:

- extreme heat
- heavy smoke logging
- work activity
- work rate
- on the recommendation of the CFA Medical Officer or MFB Brigade Medical Officer.

Shift Release

Prior to release crews should be made aware of the symptoms of CO exposure and advise to present to hospital should these occur. Symptoms include headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. (Refer to Attachment 2 & 4)

PC/E Management

To ensure ongoing availability of fit for purpose PPC for rotating crews at the Latrobe Valley open-cut mine. The following plan is proposed to ensure required quantities of PPC remains available for the duration of this incident.

Key areas requiring direct management:

- Onsite cleaning of PPC
- Offsite cleaning of PPC
- Staging area PPC resupply point
- SLC ongoing resupply
- Disposal of unserviceable items

Onsite cleaning of PPC

The following items of PPC can generally be cleaned on site:

- Bushfire Helmet (including Head Cradle/Harness)
- Goggles

Use a mild detergent pH range 6.0 to 10.5 with warm water and a soft cloth to wipe. Dry in well-ventilated area not in direct sunlight.

- General Purpose Leather Firefighting Boots (external contamination only)

Hose off and/or scrub with brush as required, air dry.

Offsite cleaning of PPC

Where any of the below items of PPC are heavily soiled the following offsite decontamination arrangements can be implemented:

- Bushfire Jacket (24 hours)
- Bushfire Trousers and Braces (24 hours)
- Bushfire Helmet Neck Protector (24 hours)
- General Purpose Leather Firefighting Boots (48 hours)

The contracted Decontamination and Cleaning Service Provider can attend and collect items from the staging area. Cleaned items will be returned to the staging area within 24 hours (excluding boots which will take 48 hours due to drying time).

Staging Area PPC Resupply Point

A cache of the following items can be established at the Staging Area for managed allocation:

- Bushfire Jackets x 200

- Bushfire Trousers and Braces x 200
- Bushfire Helmet Neck Protector x 100
- General Purpose Firefighting Boots x 100
- Goggles x 300
- Bushfire Gloves x 300
- P2 Respirators x 1000

Cache quantities would be established to cater for approximately 200 wearers to support crew rotation frequencies and cleaning processes.

A cache will be drawn from both CFA and MFB stores.

It is recommended that all items issued from the staging area resupply point (as appropriate) be issued on a one for one replacement basis.

State Logistics Ongoing Resupply

Incident duration will determine the need for any additional supplies which would be arranged directly with the State Logistics Centre (SLC) and/or MFB equivalent.

Disposal of Unserviceable Items

Items deemed unserviceable should be consolidated at the staging area for later disposal in accordance with local industrial waste arrangements.

PPC/E Planning Considerations

The following PPC/E is immediately available and should be considered:

- Significant quantities of FirePro (Level 2) gloves are immediately available from the SLC and should be considered for this incident.
- Significant quantities of Bushfire Overalls are immediately available from the SLC and should be considered for this incident.
- Detailed steps, processes and responsibilities require documenting upon acceptance of any or all of this proposed Management Plan.

Breathing Apparatus

Arrangements for the maintenance, filling and supply of breathing apparatus will be established in light of the expected incident duration and volume of B/A being used. The Incident Controller should liaise with PPE/C Management Centre or MFB Protective Equipment Manage to enable appropriate planning.

Vehicles & Appliances

CFA, MFB, SES and contractor vehicles and appliances MUST be signed off by a CFA District Mechanical Officer (DMO) or MFB mechanic, as appropriate, prior to returning 'home' or being redeployed due to the fire risk caused by coal dust in the brakes.

The Incident Management Team via the Resourcing Unit will be required to supply vehicle numbers, types and names to the Fleet Services Duty Officer prior to demobilising from the incident. As much forward notice should be given to ensure DMOs are prepared.

All vehicles deployed to the mines must have a full decontamination wash to the body, pump, cabin interior and underside of vehicle, prior to leaving the mine site.

All vehicles will be delivered by CFA 'Operations' to CFA workshop at Moe to have wheels and brake drums removed for inspection and cleaning prior to returning 'home' or redeployment. This task will be organised by CFA Fleet Services to ensure vehicles are prepared for redeployment in the shortest possible time frame.

Attachment 1 - Carbon Monoxide Specific Information

Background

Carbon monoxide (CO) has a high affinity for haemoglobin (Hb) in blood. Hb is the compound that transports oxygen (O2) in the blood stream. CO is absorbed via the lungs into the blood stream where it forms carboxy-haemoglobin (COHb). CO has 240 times the affinity for Hb than oxygen so that:

$$\frac{\text{CO Hb}}{\text{O2Hb}} = \frac{240\ \text{pCO}}{\text{pO2}}$$

In basic terms, low levels of CO will rapidly displace O2 from Hb and rapidly reduce the bloods oxygen carrying capacity. Small quantities of carbon monoxide (CO) are produced in the human body naturally. This leads to a background level of 0.3 – 0.7% COHb in normal individuals.

Ambient air that has a CO level of 35 ppm will result (under normal circumstances) in a CO Hb concentration of 5 %.

The half-life of COHb is 2 – 5 hours.

CO – Acute poisoning:

The appearance of symptoms in someone suffering from acute exposure is dependent on the following:

- The concentration of CO in air breathed
- The exposure time
- The degree of physical exertion
- Individual susceptibility

Susceptible individuals include the following:

- Pregnant females – toxicity to foetus
- People with anaemia (low blood count)
- People who have cardio –vascular or blood vessel disease(CVD)
- Smokers and those with respiratory disorders

Acute effects are summarised in the following:

CO Hb Concentration %	Principal signs and symptoms
0.3 – 0.7	No signs or symptoms, normal endogenous background
2.5 – 5	No symptoms. Compensatory increase in blood flow to vital organs. People with CVD may lack compensatory reserve and experience chest pain.

5 – 10	Visual light threshold increased
10 – 20	Headache ("frontal tightness"), possible shortness of breath. May be lethal for someone with severe heart disease.
20 – 30	Moderate headache, nausea, flushing
30 – 40	Severe headache, dizziness, nausea
>40	Collapse, coma, convulsion, death

N.B. This is given as a guide only and there may be considerable variation depending individual history.

Acute poisoning

Acute CO poisoning may result in neurological problems.

Primary recovery may be followed by a subsequent neuropsychiatric relapse days or even weeks after poisoning. The degree of brain damage after CO poisoning is determined by the intensity and duration of exposure.

Repeated exposure

CO does not accumulate in the body, it is completely excreted after each exposure if sufficient time in air is allowed. Remember half life of CO in blood is 2 – 5 hours. However it is possible that repeated mild / moderate poisonings can lead to permanent nervous system damage (headaches, dizziness, impaired memory, personality changes and weakness in limbs).

Attachment 2 – Carbon Monoxide Information Sheet for Personnel

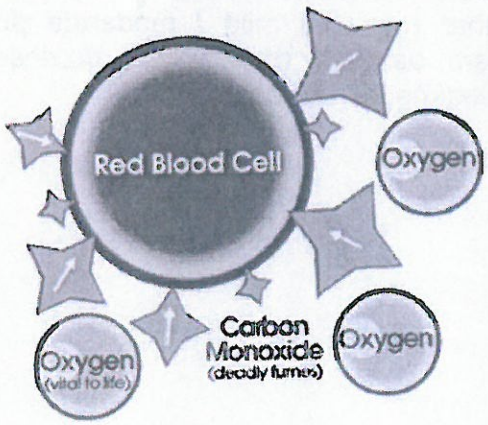
Frequently Asked Questions

What is carbon monoxide?
Carbon monoxide, or CO, is an odorless, colorless gas that can cause sudden illness and death.

Where is CO found?
CO is found in combustion fumes, such as those produced by cars and trucks, small gasoline engines, stoves, lanterns, burning charcoal and wood, and gas ranges and heating systems. CO from these sources can build up in enclosed or semi-enclosed spaces. People and animals in these spaces can be poisoned by breathing it.

What are the symptoms of CO poisoning?
The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. Unless suspected, CO poisoning can be difficult to diagnose because the symptoms mimic other illnesses. People who are sleeping or intoxicated can die from CO poisoning before ever experiencing symptoms.

How does CO poisoning work?
Red blood cells pick up CO quicker than they pick up oxygen. If there is a lot of CO in the air, the body may replace oxygen in blood with CO. This blocks oxygen from getting into the body, which can damage tissues and result in death. CO can also combine with proteins in tissues, destroying the tissues and causing injury and death.



Reference: Centers for Disease Control http://www.cdc.gov/co/faqs.htm

Attachment 3 – Crew Leader Instruction for Carbon Monoxide Management

All crew must be checked by Health Monitoring personnel prior to entering the mine.

All crew leaders are to collect carbon monoxide detectors and ensure there is one per appliance

Log the detector reading every 15 minutes on the attached sheet.

Provide average and peak readings and map grid reference of location to the DIVCOM every hour via radio.

Crews must not work in the mine for a continuous period of greater than 2 hours without leaving the mine. These 2 hour periods of operation within the mine must not exceed 4 in any 12 hour period.

If in any 1 hour period there are two measurements greater than 50ppm on the personal monitoring device but less than 75ppm, workers must withdraw from the area immediately don CABA to remain working in this location.

At any time a carbon monoxide reading of 75ppm or greater is recorded, CABA must be immediately donned or workers must withdraw from this area. This must be immediately reported to the DIVCOM.

All crews must be rechecked by Health Monitoring Personnel at the conclusion of their shift prior to leaving the site. Personnel will not be permitted to leave the site without appropriate clearance provided by the Health Monitoring personnel.

Attachment 4 – Latrobe Valley Coal Mine ICC – Heath Monitoring Process

The following process is being undertaken to monitor and manage the health of all personnel on the fireground at the Hazelwood & Yallourn Mines. The process will be overseen by a qualified Health Professional to ensure the protocol is followed.

On Arrival

1. Personnel (emergency service organisation personnel, mine workers and contractors) enter the staging area and hand in 'T cards' to the Staging Officer
2. Personnel are directed to enter the official entrance of the DIVCOM building.
3. Hygiene stations have been established at the DIVCOM entrance for personnel to wash hands before entry.
4. Personnel enter the Health Monitoring (HM) assessment area via cordoned walkway and sit with available HM team member.
5. HM team member (HM team member includes CFA Health member with appropriate qualifications or Health Professional) attaches Pulse Oxymeter probe to personnel's third finger and obtains a CO reading.
6. HM team member records:
   - CO reading
   - Time
   - Name
   - Smoker or non – smoker status
   - Previous activity associated with fire in the last 24 hours
7. Based on the CO reading, the HM team member directs the person to take the specific actions.

CO READINGS	ACTIONS
Reading is less than 5%	• Person is released from HM assessment area via designated exit and instructed to: - enter the incident control centre for tasking, or - return to staging area for deployment to the Hot Zone, and/or - rest, and/or - eat.
Reading is equal to or greater than 5%	The person is unable to start work in the Hot Zone. Will either be reassigned or released.

Table 1 – On Arrival – CO Readings & Actions

8. All personnel that have a reading under 5% are approved to enter the staging area for deployment to the Hot Zone.

During Shift (Hot Zone & Warm Zone)

9. Over a 12 hour shift, allow for 4 by 2 hour work shifts, includes break times and travel in and out of the mine two levels of monitoring are provided:
    - personal monitors for a crew member who is active outside the vehicle
    - remote monitoring and recording of CO plus H_2S O_2 and VOC from 'Area Rae' remote monitors back to the monitoring station.
10. Wear SCBA at all times in the Hot Zone

Atmospheric Carbon Monoxide (CO) Action Levels

11. Atmospheric monitoring, personal and remote monitoring will continue on an ongoing basis and results will be collated and analysed for both special mapping and to correlate COHb levels with CO exposure levels.
12. Crew member CO concentrations are to be recorded every 15 minutes and results relayed every hour to the DIVCOM with both average and peak readings and provide map grid reference.
13. If in this hour period, there are two measurements exceeding 50 ppm (parts per million) but less than 75 ppm on personal monitoring device, workers must withdraw or utilise CABA.
14. Any single measurement exceeding 75ppm, CABA must be immediately used or workers must withdraw from the area. This result must be reported to the DIVCOM immediately.
15. Any crews registering 150ppm or above must immediately move out of the area into clean air, contact DIVCOM and report to the Health Monitoring team.

Blood Carbon Monoxide (COHb) Action Levels

16. At any time during monitoring of COHb during a shift if the 5% level is exceeded, the worker will not be allowed back to work in areas of CO contamination.

Shift Completion

17. At the completion of shift, all personnel are required to undertake the health monitoring process. The process is the same as 'On Entry'. The following actions are taken based on the CO reading.

CO READINGS	ACTIONS
Shift Completion Reading Less than 5%	• Person is informed they can leave the site via designated exit. • HM team member briefs person of potential health issues and to seek further medical advice if required.
Shift Completion Reading equal to or greater than 5%	• Person receives a cable tie wrist band (indicating excessive CO reading) and is assessed by a Heath Professional and managed accordingly.

Table 2 – Exit from the Hot Zone at Shift Completion

18. Personnel who exit the area of operations will be wrist tagged.

CO Reading of Equal to or Greater than 8%

19. Any person with a reading equal to or above 8% at entry or exit stage, are immediately referred to Ambulance Victoria where they will be assessed and either sent home or to hospital for further assessment and monitoring. Exposures over 8% are to be reported as a 'Health Issue'.

Briefings – Pre Entry, Pre Tasking and Pre Release

20. On change of shift, strike teams are given a specific briefing on health and CO issues.

Post Deployment Medical Monitoring

21. Agencies Health and Safety representative should undertake the following post deployment medical monitoring:

Membership ATTACHMENT 51.24

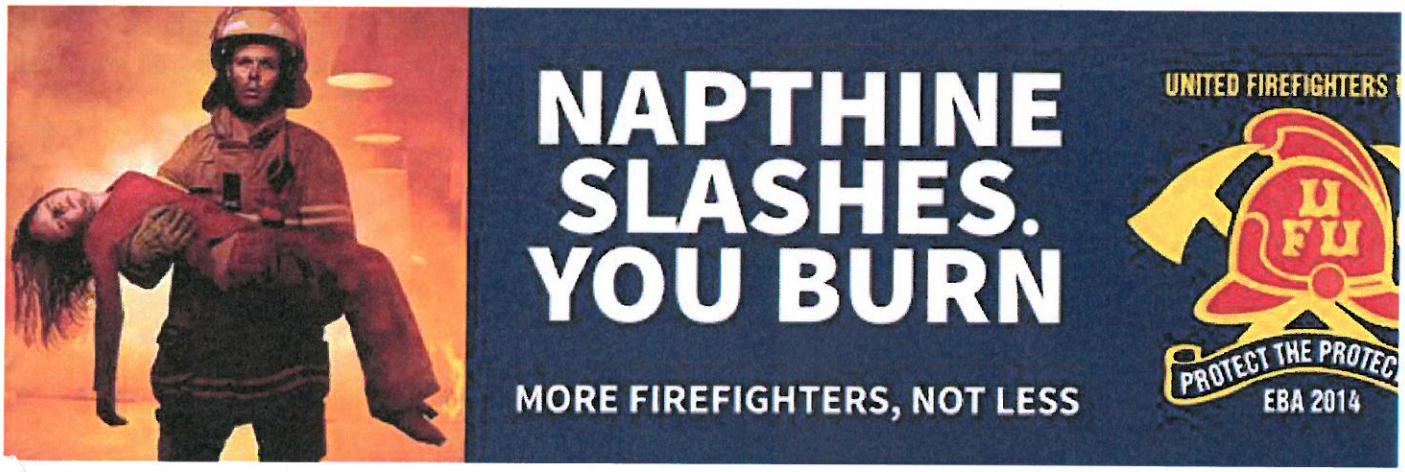
From: Michelle Baldini
Sent: Tuesday, 1 April 2014 5:35 PM
To: Peter Marshall; Casey Lee; [redacted] Martin Davis; Rini Krouskos; Joanne Watson
Subject: FW: Response in relation to letter 23 March - Hazelwood Coal Mine Fire 2014 - Potential Breaches of OHS Act by CFA and MFB
Attachments: Letter - Outward Initiated - Response to Peter Marshall letter bc 14 5819.pdf

Regards,

Michelle Baldini
Industrial Officer

United Firefighters Union
Victorian Branch

10 Brunswick Street, Fitzroy 3065
Victoria Australia
T (03) 9419 8811 | F (03) 9419 9258



www.firecrisis.com.au | www.ufuvic.asn.au
--

From: [redacted]
Sent: Tuesday, 1 April 2014 5:31 PM
To: Peter Marshall; Michelle Baldini
Subject: Response in relation to letter 23 March - Hazelwood Coal Mine Fire 2014 - Potential Breaches of OHS Act by CFA and MFB

Good Afternoon Peter and Michelle

Please find attached an endorsed copy of correspondence as a response to the above named letter. Please note the original will follow by mail.

Kind regards

Sally Waring

------< TRIM Record Information >------

Record Number : CD/14/113286
Title : Letter - Outward / Initiated - Response to Peter Marshall letter bc/14/5819

Sally Waring
Executive Assistant to Craig Lapsley
Fire Services Commissioner
❖ Level 26, 121 Exhibition Street, Melbourne 3000
[redacted]
www.firecommissioner.vic.gov.au
Please consider the environment before printing this email

ATTACHMENT 5.1.24

FIRE SERVICES
COMMISSIONER
VICTORIA

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T +613 8684 1388
F +613 8684 1399
E admin@firecommissioner.vic.gov.au
DX 210077

www.firecommissioner.vic.gov.au

25 March 2014

Our ref: CD/14/113286

Mr Peter Marshall
Branch Secretary
United Firefighters Union
410 Brunswick Street
Fitzroy Vic 3065

Dear Mr Marshall

I have reviewed both AMCOSH reports on the health management procedures at Hazelwood and the documents issued by the UFU in their Bulletin this afternoon.

The first AMCOSH report dated 13th February and the second is dated 20th March. Both reports focus on the health monitoring and there is little mention of atmospheric monitoring. This is not a criticism of Mr Golec's reports as it is my understanding the scope of his reviews was to assess the health monitoring process.

In addition to health monitoring, there was a constant and substantial atmospheric monitoring program undertaken that has a direct relationship to the health surveillance program. The air monitoring was undertaken to assess CO concentrations throughout the mine and ensure that firefighters were not overexposed to atmospheric CO. Action limits were set for CO concentrations derived from National Occupational Exposure Standards that would, therefore minimise the blood COHb level.

Key Issues Raised:

- The report dated 13th March, recommends "any entry into the mine would require compulsory SCBA use".
- The report also discusses the 5% COHb limit and is critical of this value and refers to a level of 2.5-3.0% COHb that may be more appropriate. Both levels are found in the SafeWork Australia Occupational Exposure Standard documentation for Carbon monoxide.
-

Practical issues using SCBA and why P2 respirators are appropriate:

- The use of SCBA is an impractical resource and logistical control measure in this event as cylinders have short duration and need to be refilled in clean air. The number of cylinders required would be well beyond state resource capacity.
- There is no air purifying respirator commercially available that will filter CO for more than 20-minutes and that is certified to Australian Standards.
- P2 respirators were provided to minimise dust exposure.
- Based on an assessment of the coal chemistry it was determined that CO would be the only gas or vapour at hazardous concentrations. To validate this qualitative risk assessment, quantitative gas testing for Sulphur dioxide, Nitrogen dioxide, Carbon dioxide and Hydrogen cyanide confirms that these gases were not detected with hand-held gas detectors. In addition, personal occupational hygiene sampling for inhalable particulate (,100 micron) plus heavy metals, respirable particulate (<10 micron) plus silica, aldehydes, polycyclic aromatic hydrocarbons and volatile organic compounds confirms these substances were not present in the atmosphere at

hazardous concentrations. SafeWork Australia Occupational Exposure Standards were applied to assess the risk of exposure to these contaminants.

Practical Control Measures:

- In place of SCBA, the most practical control measure was to limit exposure to CO by conducting personal and static atmospheric monitoring and comparing the measured concentrations to the SafeWork Australia Occupational Exposure Standard for CO of 30 ppm 8-hour Time Weighted Average.
- This 30 ppm air standard is set to keep the blood COHb level below 5%.
- Properly worn P2 dust masks prevent exposure to the particulates.
- There were no other gases or vapours present that require respiratory protection as validated by personal atmospheric monitoring to National Standards.
- Using strict time rotation policies and CO concentration action limits based on SafeWork Australia Exposure Standards, the health plan provides a practical control of CO exposure to prevent exceedance of the 5% COHb value.
- There were several layers of CO monitoring conducted; personal CO monitors provided to fire fighters, personal CO monitors provided to mine workers and wireless gas monitors including CO were spread out through the mine, that were constantly monitored by HazMat Technicians and Scientific Advisors.
- All crew leaders were instructed to record personal CO levels every 15-minutes and report the results to Communications hourly.
- Crews were instructed to move to clean air when certain thresholds were reached and report to Communications immediately.

COHb Concentration Action Limit

- The argument now is academic as to whether the exposure standard of 5%COHb or 2.5-3.0%COHb is appropriate.
- Key information within the SafeWork Australia Carbon monoxide exposure standard documentation states for working populations, the World Health Organisation (WHO) recommend that exposure limits should ensure that COHb levels were kept below 5%. The basis of the recommendation was that individuals in working populations are assumed to be healthy, physiologically resilient, and under regular supervision. In the occupational context, where exposure may be prolonged, the Working Group recommends that 5% COHb be used as a guideline for workplace control. The supervision, or health surveillance, has included continuous atmospheric and biological monitoring for CO and therefore COHb of 5% is appropriate.
- Further information within the documentation that has been highlighted by concerned stakeholders states that the WHO recommend a range of concentrations of 2.5-3.0% COHb as a standard for the protection of the general population, including those who have impaired health. The range of 2.5-3.0% is also recommended for persons with "overt coronary artery disease". The basis for these recommendations differs from the basis of the occupational exposure standard as it applies to public health, not occupational health.

Despite two of Mr Golec's recommendations from 13th February not being implemented these were substituted with alternative practical control measures derived from National Occupational Exposure Standards and risk assessment by professional scientists with qualifications and/or experience in occupational hygiene consulting, with health professionals and the incident management team.

Mr Golecs report of 20th March states, "It is my opinion that the medical monitoring program currently in place is robust and professionally conducted. Many of the issues with the medical monitoring process which were experienced during the initial phases of the incident, when the staging area was located at the mine training centre, have been rectified."

In my opinion, this statement acknowledges that other control measures were implemented as he recommended. I also believe the CFA health team has a massive amount of data that demonstrates a substantial reduction in COHb concentrations measured after Mr Golec's recommendations and other practical control measures were implemented into the incident health management plan.

I believe the occupational health surveillance including atmospheric and biological monitoring conducted at Hazelwood not only meets Australian Standards, it is best practice.

Yours sincerely

Craig Lapsley PSM
Fire Services Commissioner, Victoria

ATTACHMENT 5.1.25

Coroners Court of Victoria
Level 11, 222 Exhibition Street Melbourne 3000
T 1300 309 519
F 1300 546 989
W www.coronerscourt.vic.gov.au

10 APR 2014

Ref: COR 2014/1256

8 April 2014

Mr Peter Marshall
United Firefighters Union, Victorian Branch
410 Brunswick Street
Fitzroy VIC 3065

Dear Mr Marshall

Investigation into the fire at Hazelwood Coal Mine/Morwell 2014

We refer to your application for an investigation and inquest into the Hazelwood Coal Mine/Morwell fire, which commenced on or about 9 February 2014.

We note that since your application the Government has announced a Board of Inquiry into this fire, published terms of reference and set timeframes for the inquiry. We note that the Hon. Bernard Teague AO has been appointed to head the inquiry and the terms of reference are publicly available.

Section 7 of the *Coroners Act 2008* provides that a coroner must avoid unnecessary duplication of inquiries and investigations. Therefore, the State Coroner will not commence investigating this fire pending the publication of the Board of Inquiry's report.

Please contact me if you have any queries regarding this matter.

Yours sincerely,

Clare Mullen
State Coroner's Solicitor

ATTACHMENT 5.1.26

222 Exhibition Street Melbourne VIC 3000
GPO Box 4306 Melbourne VIC 3001
Tel/ 03 9641 1555 Fax/ 03 9641 1222
worksafe.vic.gov.au

10 April 2014

Mr Peter Marshall
Branch Secretary
United Firefighters Union
Victorian Branch

Via Email

Dear Mr Marshall

Your Correspondence

Thank you for your correspondence dated 23 March 2014 in which you raise concerns on behalf of the United Firefighters Union (UFU) regarding firefighters being exposed to carbon monoxide while fighting fires at Hazelwood.

Your correspondence has been referred to the Enforcement Group for a comprehensive investigation to be undertaken in relation to the allegations raised by the UFU to establish whether any contraventions of the *Occupational Health and Safety Act* 2004 (the OHS Act) have occurred.

I note for completeness that given six months has not elapsed since the occurrence of the alleged contraventions, this matter is not being treated as a request for prosecution pursuant to section 131 of the OHS Act.

If you have any questions in relation to this matter, please contact Adam Watson, Manager Investigations on telephone (03) 8663 5231.

Yours sincerely

Denise Cosgrove
Chief Executive

LET043/02/01.08

ATTACHMENT 5.1.27

Parliamentary Secretary to the Premier of Victoria

Level 1
1 Treasury Place
Melbourne Victoria 3002
GPO Box 4912
Melbourne Victoria 3001
Telephone: +61 3 9651 5000
Facsimile: +61 3 9651 5054
DX210753

14 APR 2014

MCP14/2842

10 APR 2014

Mr Peter Marshall
Branch Secretary
United Firefighters Union Victorian Branch
410 Brunswick Street
FITZROY VIC 3065

Dear Mr Marshall

Thank you for taking the time to write to the Premier of Victoria.

Your correspondence has been referred to the Minister for Bushfire Response, the Hon Kim Wells MP, for a direct response.

Yours sincerely

Craig Ondarchie MP
Parliamentary Secretary to the Premier

State Government Victoria

ATTACHMENT 5.1.28

AIIMS Companion for Victoria

Reference Manual

SAFETY FIRST

AIIMS Companion for Victoria

Reference Manual

Draft 5

1 July 2012

CFA acknowledges the assistance and contributions of its members, volunteer and staff, in the development of this reference manual.

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

First published June 2011 in Australia by Learning Systems, Operational Training and Volunteerism, CFA Headquarters, 8 Lakeside Drive, Burwood East, Victoria 3151.

For any matters relating to this publication, contact: Manager Learning Systems, Operational Training and Volunteerism, CFA Headquarters, 8 Lakeside Drive, Burwood East, Victoria 3151.

Contents

Foreword

Purpose

This document describes how the Australasian Inter-service Incident Management System (AIIMS) is applied in Victoria. The application of AIIMS within Victoria varies from other states and jurisdictions due to Victoria's emergency management arrangements.

Guide to Using this Document

Each chapter in this document is aligned with a corresponding chapter with the same title found in the *Australasian Inter-service Incident Management System Manual Third Edition 2011 Revision (AIIMS 3rd Edition 2011 Revision)*. These chapters need to be read in conjunction with each other.

The information contained in this document is a summary of emergency management arrangements in Victoria. It is correct at the time of publication; however, the reader should refer to the sources cited throughout this document for the most up to date information. As of 17 June 2012 policy to undertake major reform of Victoria's emergency management arrangements is still to be released by the Victorian Government.

The following websites will assist in finding the most up-to-date documents:

- www.legislation.vic.gov.au – Emergency Management Act 1986, Fire Services Commissioner Act 2010 and Country Fire Authority Act 1958.
- www.oesc.vic.gov.au – Emergency Management Manual Victoria, Victorian Warning Protocol, Practice Note: Emergency Management Team and Practice Note: Operation of a Municipal Emergency Coordination Centre.
- cfaonline.cfa.vic.gov.au – IMT Toolbox, Chief Officer's Standard Operating Procedures (SOPs), Department of Sustainability and Environment and CFA Joint Standard Operating Procedures (Joint SOPs), Fire Services Commissioners Policies, the State Command and Control Arrangements for Bushfire in Victoria and the Victorian Fire Agency Bushfire Handbook.

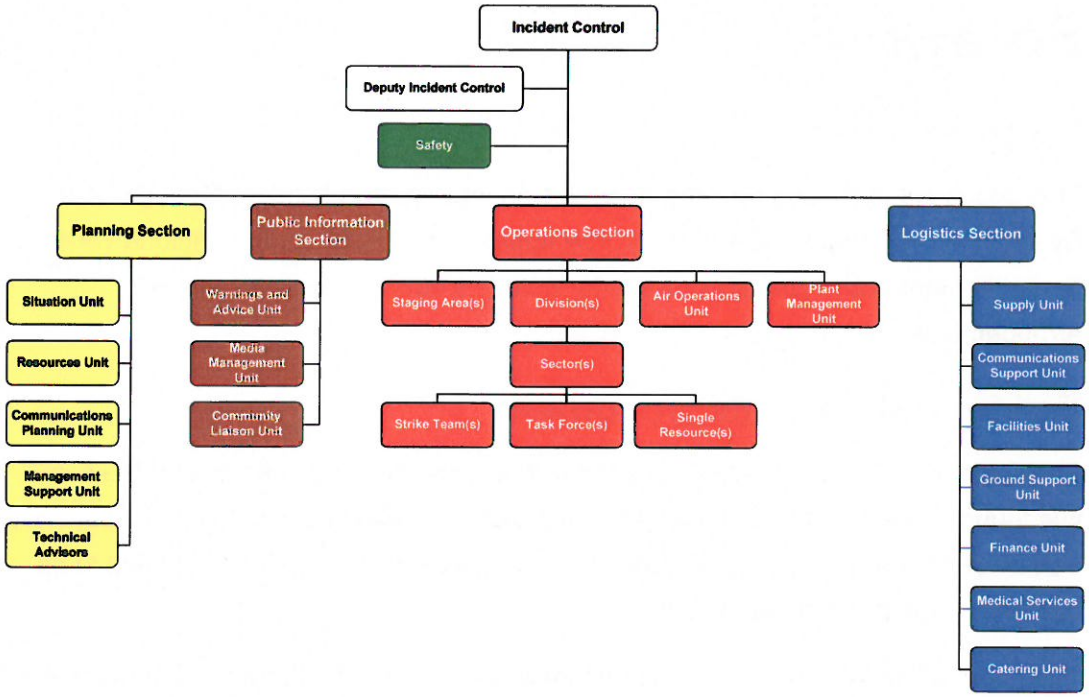


Figure 1 – AIIMS structure applied in Victoria as at 17 June 2012

Chapter 1
Introduction to the Australasian Inter-service Incident Management System

This chapter provides information about:

- **Victoria's emergency management arrangements;**
- **State Emergency Response Plan;**
- **control and support agencies;**
- **the Emergency Response Coordinator;**
- **the Emergency Management Team;**
- **the role of municipalities;**
- **issuing of warnings; and**
- **evacuations.**

Introduction

While *AIIMS 3rd Edition 2011 Revision* emphasises that "AIIMS is designed to work within legislative, policy and operational arrangements applying within any particular organisation or jurisdiction,"[1] it has been necessary to vary the application of AIIMS in Victoria. The variations are necessary either because of legislation unique to Victoria or because of unique interagency agreements that exist between Victoria's fire and emergency services.

[1] *AIIMS 3rd Edition 2011 Revision*, page 2

Victoria's Emergency Management Arrangements

Victoria's emergency management arrangements are governed by the *Emergency Management Act 1986 (Vic).* This Act establishes the legislative requirements for managing emergencies in Victoria. The *Emergency Management Manual Victoria* (EMMV) provides guidance to agencies on the implementation of the Act and is the basis for this chapter.

The EMMV defines three phases of emergency management. These are:

- prevention being the elimination or reduction of the incidence or severity of emergencies and the mitigation of their effects;
- response being the combating of emergencies and the provision of rescue and immediate relief services; and
- recovery being the assisting of people and communities affected by emergencies to achieve a proper and effective level of functioning[2].

Victoria's fire services use AIIMS to undertake response phase activities.

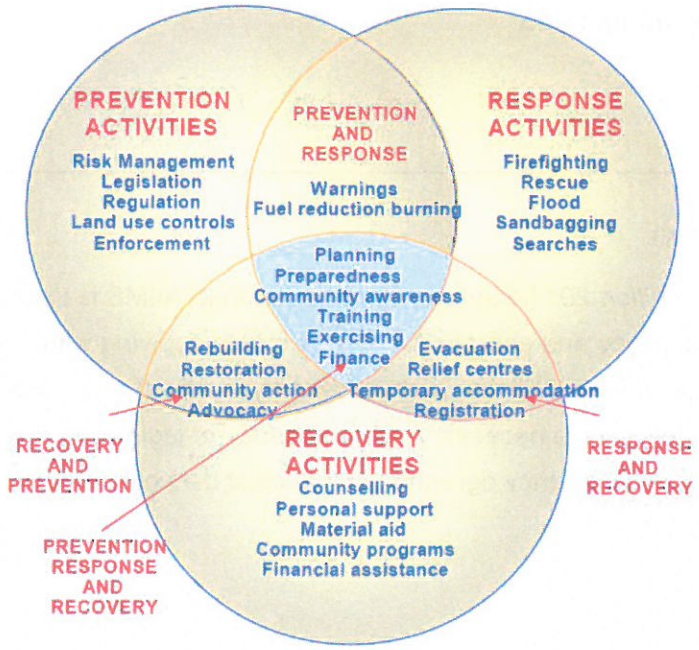


Figure 2 – Prevention, response and recovery phases. Diagram originally from the *Emergency Management Manual Victoria: Part 1 Emergency Management in Victoria*[3]

[2] *Emergency Management Manual Victoria: Part 1 Emergency Management in Victoria*. October 2009. Page 1-5.

State Emergency Response Plan

A key element of the *Emergency Management Act 1986 (Vic)* is the requirement for the appointment of the Chief Commissioner of Police as the State Emergency Response Coordinator and the preparation of a *State Emergency Response Plan* (SERP). This plan can be found in the EMMV[4].

The SERP contains provisions related to:

- the identification of response agencies for each form of emergency; and
- the co-ordination of the activities of other agencies in support of a control agency in the event of an emergency; and
- the specific roles undertaken by agencies in the event of an emergency; and
- the specific roles and responsibilities of emergency response co-ordinators.

Control and Support Agencies

The *Emergency Management Manual Victoria: Part 7, Emergency Management Agency Roles* nominates control agencies and support agencies in relation to emergencies.

In the case of every emergency a response agency is nominated as the control agency[5]. During an emergency the control agency has the responsibility to appoint the Incident Controller. The SERP provides for the control agency to change during the response to an incident, depending on the circumstances[6].

Certain types of emergency may have more than one control agency nominated, as the number of response agencies may vary by location. Regional and municipal response plans identify the relevant control agencies for their areas.

In the event of uncertainty as to which response agency should be the control agency, the relevant Emergency Response Coordinator may nominate one of the response

[3] *Emergency Management Manual Victoria: Part 1 Emergency Management in Victoria.* October 2009.Page 1-6.

[4] *Emergency Management Manual Victoria: Part 3 State Emergency Response Plan.* October 2010.

[5] *Emergency Management Manual Victoria: Part 7 Emergency Management Agency Roles.* December 2011.

[6] *Emergency Management Manual Victoria: Part 3 State Emergency Response Plan.* October 2010. Page 3-5.

agencies to be the control agency. The exception to this is in the case of a fire where there is uncertainty in relation to the control agency. In such circumstances the Fire Services Commissioner, or the State Fire Controller, has the power to nominate a response agency to be the control agency. Where the Fire Services Commissioner, or State Fire Controller, fails to discharge this duty the State Emergency Response Coordinator may nominate a control agency[7 and 8].

A support agency is defined in the EMMV as an agency which provides essential services, personnel, or material to support or assist a control agency or affected persons. Any agency or organisation might be asked to assist in any emergency if it has skills or resources that may contribute to the response[9].

The Emergency Response Coordinator

Victoria Police has the responsibility under the *Emergency Management Act 1986 (Vic)* for emergency response coordination at municipal, regional and state level for most emergencies. Emergency Response Coordinators are responsible for ensuring the coordination of the activities of agencies having roles or responsibilities in response to emergencies.

As a result, Emergency Response Coordinators are appointed at:

- state level, referred to as the State Emergency Response Coordinator (SERC); and
- regional level, referred to as the Regional Emergency Response Coordinator (RERC); and
- municipal level, referred to as the Municipal Emergency Response Coordinator (MERC); and
- field level (usually Level 1 incidents), referred to as the Field Emergency Response Coordinator.

[7] *Emergency Management Act 1986 (Vic)*.

[8] *Emergency Management Manual Victoria*: *Part 3 State Emergency Response Plan*. October 2010. Page 3-6.

[9] *Emergency Management Manual Victoria*: Part 3 State Emergency Response Plan. October 2010. Page 3-7.

The SERC, RERC and MERC usually fulfil their roles from their respective police headquarters, but during an emergency may activate or attend either:

- the State Emergency Support Centre (SESC);
- a Regional Emergency Response Coordination Centre (RERCC); or
- a Municipal Emergency Coordination Centre (MECC).

During an emergency, Emergency Response Coordinators at each level carry a broad range of responsibilities. These include:

- ensuring that the appropriate control and support agencies are in attendance or have been notified by the Incident Controller; and
- ensuring that effective control has been established by the control agency; and
- in consultation with the Incident Controller, ensuring an Emergency Management Team (EMT) has been formed or in the absence of an Incident Controller, form an EMT; and
- ensuring the effective co-ordination of resources and services in responding to an emergency; and
- arranging for the provision of resources requested by the control agency and support agencies; and
- ensuring allocation of resources on a priority basis; and
- in the event of uncertainty, determining which agency is to perform its statutory response role within a region or other specified area, where more than one agency is empowered to perform that role; and
- ensuring that the Recovery Coordinator has been notified by the Incident Controller of the emergency; and
- ensuring timely information and warnings are provided to the community and support agencies by the control agency; and
- considering registration of persons evacuated or otherwise affected; and
- considering the provision of relief needs to evacuees and agency personnel where necessary and advise the Recovery Coordinator of requirements; and

- in consultation with the control agency, considering the need for the declaration of an emergency area; and
- co-operating with all participating agencies and authorities.

In maintaining these responsibilities Emergency Response Coordinators provide essential support to personnel from the control agency and support agency.

The Emergency Management Team

The EMT may comprise[10] of:

- Incident Controller; and
- Emergency Response Co-ordinator; and
- support agency Commanders; and
- other specialist persons as required.

The function of an Emergency Management Team is to support the Incident Controller in determining and implementing appropriate incident management strategies for the emergency.

During a major emergency an Emergency Management Team may need to be established at Incident, Regional or Area of Operations and State level. Refer to the *Emergency Management Manual Victoria: Part 3 State Emergency Response Plan*[11] and the *Office of the Emergency Services Commissioner's (OESC) Practice Note: Emergency Management Team*[12] for more information.

[10] *Emergency Management Manual Victoria*: Part 3 State Emergency Response Plan. October 2010. Page 3-18.

[11] *Emergency Management Manual Victoria*: Part 3 State Emergency Response Plan. October 2010. Page 3-18.

[12] *Office of the Emergency Services Commissioner Practice Note: Emergency Management Team.* May 2009.

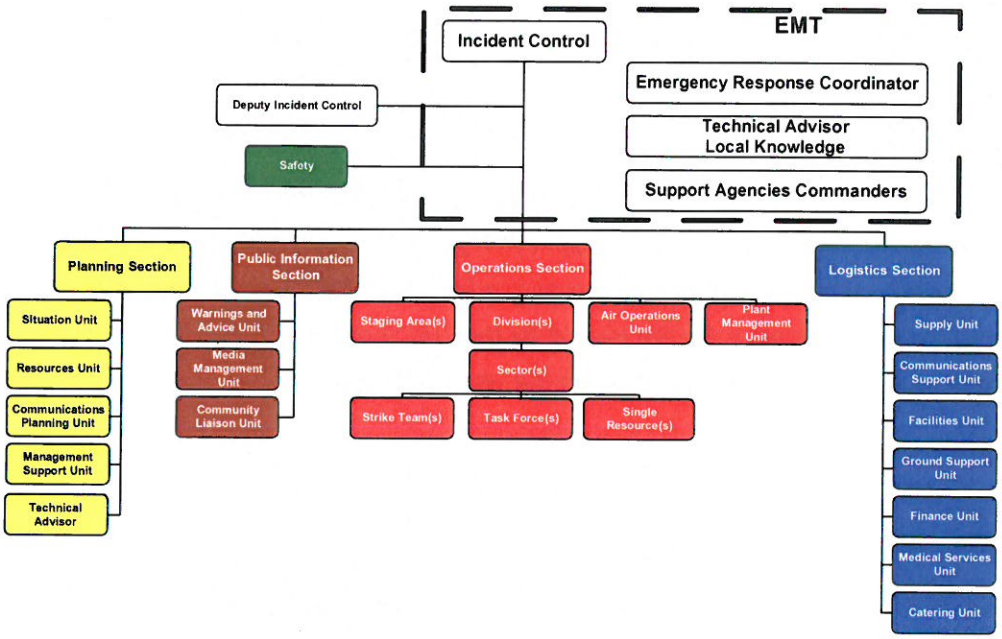


Figure 3: illustration of the Emergency Management Team

The role of municipalities

To ensure emergency management arrangements are effective at the municipal level the *Emergency Management Act 1986 (Vic)* requires municipal councils in Victoria to appoint a Municipal Emergency Management Planning Committee (MEMPC). This committee is comprised of members of the municipal council, response and recovery agencies and local community groups involved in emergency management issues. The role of this committee is to prepare a Municipal Emergency Management Plan (MEMP). The MEMP is the overarching emergency management plan for the municipal district and provides information to emergency services, other organisations and the community on how risks will be dealt with and the management arrangements for emergencies.

It provides the context for the development and integration of risk specific response and recovery plans. The plan identifies what hazards are likely to impact the municipal district, what steps are to be taken to prevent, respond to and recover from emergency events and the role of organisations in relation to emergencies[13].

[13] *Emergency Management Manual Victoria: Part 6 The Municipal Emergency Management Plan.* January 2011. Page 6-7.

Municipalities are also required to appoint a person to the position of Municipal Emergency Resources Officer (MERO), whose role is to coordinate the use of resources identified in the MEMP.

The MEMP also identifies Municipal Emergency Coordination Centre(s) which may be utilised by the MERC and the Municipal Emergency Resources Officer to coordinate resources used in emergencies. Refer to the *Practice Note: Operation of a Municipal Emergency Coordination Centre* issued by the Office of the Emergency Services Commissioner for more information on the use of a MECC[14].

Issuing of Warnings

The control agency has the responsibility to issue warnings to the communities potentially affected by an emergency, and to other agencies involved in the response. Warnings and the release of other public information should be authorised by the Incident Controller prior to dissemination. Where an extreme and imminent threat to life exists and authorisation from the Incident Controller is not practicable in the circumstances, warnings may be issued by any response agency personnel[15].

Although the Incident Controller holds the primary responsibility for the issue of warnings, the Regional Controller or Area-of-Operations Controller and/or State Controller may issue warnings on behalf of the control agency[16]. This may occur in the event that the Incident Controller is unable to do so in a timely manner. The warning arrangements for use by fire services in Victoria are set out in the *Victorian Warning Protocol*, the *Victorian Fire Agency Bushfire Handbook 2011-12* and in *SOP J4.01 Incident Warnings and Advice*.

Evacuations

Evacuation is a risk management strategy which may be used as a means of mitigating the effects of an emergency or disaster on a community. It involves the movement of people to a safer location. However, to be effective it must be correctly planned and

[14] *Office of the Emergency Services Commissioner Practice Note: Operation of a Municipal Emergency Coordination Centre*. August 2010.

[15] *SOP J4.01 Incident Warnings and Advice*. Version 6.0. November 2011.

[16] *Victorian Warning Protocol Version* 1.0. November 2009.

executed. The process of evacuation is usually considered to include the return of the affected community. As with all emergency response activities, the main priority when deciding to undertake an evacuation is protection of life[17].

The decision to recommend that people evacuate is made by the Incident Controller. In making this decision, the Incident Controller should, if time permits, consult with police and consider other expert advice. The implementation of the withdrawal, shelter and return stages of the evacuation are managed by Victoria Police.

In Victoria, evacuation is largely voluntary. The Incident Controller makes a recommendation to evacuate and it is the choice of individuals as to how they respond to this recommendation. However, in particular circumstances legislation provides some emergency service personnel with authority to remove people from areas or prohibit their entry.

The evacuation arrangements for use by fire services in Victoria are set out in the *Emergency Management Manual Victoria: Part 8 Appendices and Glossary: Appendix 9 Evacuation Guidelines*, the *Victorian Fire Agency Bushfire Handbook 2011-12* and further detailed in *SOP J3.12 Evacuation During Bushfires*[18].

[17] *Emergency Management Manual Victoria: Part 8 Appendices and Glossary: Appendix 9 Evacuation Guidelines.* August 2011.

[18] *SOP J3.12* Evacuation During Bushfires. Version 3.0. November 2011.

Chapter 2
Incident Management

This chapter provides information about:

- **variation in terms;**
- **relationship between command, control and co-ordination; and**
- **locations for incident management in Victoria.**

Introduction

Within Victoria certain terms used within AIIMS have a slightly different meaning due to the provisions of the *Emergency Management Manual Victoria* and interagency agreements between the fire services. These variations are listed below.

Variation in Terms

Command

Command involves the direction of personnel and resources of an agency in the performance of that organisation's role and tasks. Authority to command is established in legislation or by agreement within an agency. Command relates to agencies and operates vertically within an agency.

However, where there are agreed, pre-existing arrangements, a functional commander can direct personnel and resources of more than one agency in accordance with those arrangements[19].

[19] *Emergency Management Manual Victoria*: *Part 3 State Emergency Response Plan.* October 2010. Page 3-4.

Control

Control involves the overall direction of response activities in an emergency. Authority for control is established in legislation or in an emergency response plan, and carries with it the responsibility for tasking other agencies in accordance with the needs of the situation. Control relates to situations and operates horizontally across agencies[20].

In Victoria emergency response agencies are designated, in respect of particular types of emergencies, as either control agencies or support agencies[21]. An agency may also be both a control agency and a support agency under different circumstances. For details of these arrangements refer to the *Emergency Management Manual Victoria: Part 7 Emergency Management Agency Roles*.

Co-ordination

Co-ordination involves the bringing together of agencies and resources to ensure effective response to and recovery from emergencies. The main functions of co-ordination are:

- to ensure effective control has been established and maintained in response to an emergency; and
- to ensure effective information sharing; and
- to ensure systematic acquisition and allocation of resources in accordance with the requirements imposed by emergencies.

Co-ordination operates throughout the management of response (including immediate relief) and recovery activities. Victoria Police are responsible for co-ordination of emergency response activities within Victoria. The Department of Human Services (DHS) is the co-ordination agency for relief and recovery activities within Victoria.

[20] *Emergency Management Manual Victoria*: *Part 3 State Emergency Response Plan*. October 2010. Page 3-5.

[21] *Emergency Management Manual Victoria*: Part 7 Emergency Management Agency Roles. December 2011.

Relationship between Command, Control and Coordination

The *Emergency Management Manual Victoria* provides the following diagram to depict the relationship between command, control and coordination.

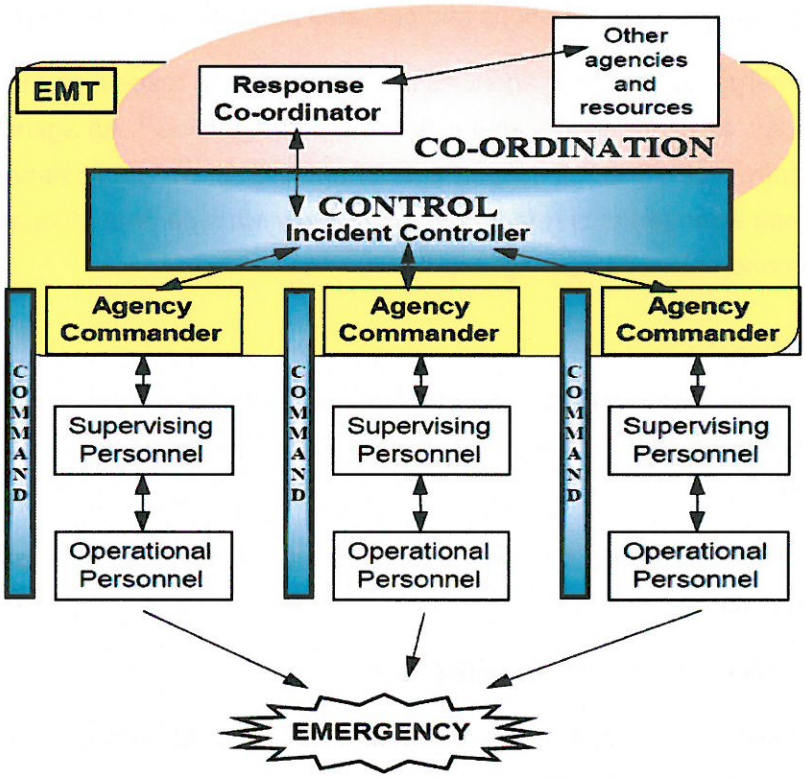


Figure 4 – command, control and coordination[22]

Command and Control Arrangements for Bushfire

The *State Command and Control Arrangements for Bushfire in Victoria*[23] provide a framework and principles for command and control of, preparedness for, and response to, bushfires in Victoria. The document details the roles, responsibilities and reporting arrangements at the State, Regional or Area-of-Operations and incident levels. To gain a better understanding of the specific bushfire arrangements that exist within Victoria, refer to the *State Command and Control Arrangements for Bushfire in Victoria* and SOPJ 3.01 *Determining the Control Agency*

[22] *Emergency Management Manual Victoria* Part 3, October 2010, page 3-4

[23] *State Command and Control Arrangements for Bushfire in Victoria*. August 2011. Page 3.

Locations for Incident Management in Victoria

In addition to the incident management locations and facilities described in the *AIIMS 3rd Edition 2011 Revision*, Victoria uses the following locations to support incident management[24].

- Incident Control Centre (ICC); and
- Municipal Emergency Coordination Centre (MECC); and
- State Control Centre (SCC); and
- Regional Control Centre (RCC); and
- District Command Centres (DCC).

Incident Control Centre

Across Victoria there are a number of predetermined Level 2 and Level 3 Incident Control Centres (ICCs). These facilities provide all the facilities and services required to support the operation of a multi-agency Incident Management Team (IMT) managing a large or complex incident, including those facilities required by support agencies.

Municipal Emergency Coordination Centre

The Municipal Emergency Coordination Centre (MECC) is a facility where coordination of municipal resources used for emergency response and recovery operations take place. Municipalities will usually have a MECC activated ahead of, or in response to, a bushfire. The Municipal Emergency Response Coordinator (MERC) and the Municipal Emergency Resource Officer (MERO) along with Emergency Management Liaison Officers (EMLO) from support agencies may be located at the MECC. Refer to *Practice Note: Operation of a Municipal Emergency Coordination Centre* issues by the Office of the Emergency Services Commissioner for more information.

State Control Centre

The State Control Centre (SCC) is the hub of a network of Regional and Incident Control Centres around the State of Victoria. The SCC operates for the management of state-level emergencies or potential emergencies that fall under the jurisdiction of its partner agencies.

[24] *Victorian Fire Agency Bushfire Handbook 2011-12*. Edition 1 February 2012.

The partner agencies include the:

- Fire Services Commissioner (FSC); and
- Department of Sustainability and Environment (DSE); and
- Country Fire Authority (CFA); and
- Metropolitan Fire and Emergency Services Board (MFB); and
- Victoria State Emergency Service (VICSES); and
- Department of Transport (DOT) – Security and Emergencies Division (Marine Pollution).

Regional Control Centre

The Regional Control Centre (RCC) is a facility that enables the implementation of the Command and Control arrangements within a set regional boundary or declared Area-of-Operations. It is essential that the RCC functionality is maintained at all times to ensure immediate capability to all control agencies, as well as all threats and hazards within the community. Refer to the *State Command and Control Arrangements for Bushfire in Victoria.*

District Command Centre

The District Command Centre (DCC) is established to coordinate all operational activity throughout CFA Districts. The DCC is a purpose built facility that is available to operate 24 hours a day, 365 days a year. During the Fire Danger Period (FDP) predetermined trigger points require the DCC to be staffed and at other times it is staffed on an as needs basis.

The *Victorian Fire Agency Bushfire Handbook 2011-12* will confirm the operational management structures and systems for the current fire season.

Chapter 3
The Control Function

This chapter provides information about the:

- **appointment of Incident Controllers; and**
- **appointment of Deputy Incident Controllers; and**
- **appointment of Safety Officers; and**
- **appointment of Field Safety Advisors.**

Introduction

The *2009 Victorian Bushfires Royal Commission* made specific recommendations relating to Incident Controllers, Deputy Incident Controllers and Safety Officers. These recommendations have varied the application of AIIMS within Victoria.

Incident Controller

The process for the appointment of Incident Controllers in relation to multi-agency fires, including those fires classified as Level 1, Level 2 or Level 3, is set out in *SOP J3.08 Appointment of Incident Controllers.*

In summary SOP J3.08 states[25]:

- the control agency must appoint (from either of the fire agencies) a suitably experienced, qualified and competent person as Incident Controller for each multi-agency incident; and
- except for Level 1 incidents, the appointed Incident Controller should be located in the nominated ICC at the earliest opportunity; and
- the Incident Controller is appointed for a tour of duty/deployment and retains the responsibility and accountabilities of the Incident Controller position throughout the entire tour; and

[25] *Joint Standard Operating Procedure J3.08 Appointment of Incident Controllers.* Version 3.0. September 2011.

- the Incident Controller may delegate some or all of the powers and responsibilities of their position to a Deputy Incident Controller(s) during those times that the Incident Controller is absent from the ICC. Some exceptions and limitations apply to this power of delegation; and
- the Incident Controller will generally work during the day, and be represented by a Deputy Incident Controller at night.

Deputy Incident Controller

SOP J3.08 also details the requirements for the appointment of a Deputy Incident Controller(s) to support the Incident Controller in the management of the incident.

In summary *SOP J3.08* states[26]:

- the Incident Controller may appoint one or more Deputy Incident Controllers from either the control agency or support agencies to a Level 2 or Level 3 incident; and
- any Deputy Incident Controller appointed to a Level 3 incident must be endorsed as a Level 2 Incident Controller as a minimum; and
- the Deputy Incident Controller(s) may not alter the incident objectives in the Incident Action Plan (IAP); and
- the Deputy Incident Controller(s) may amend the incident strategies within the parameters provided by the Incident Controller; and
- where two or more Deputy Incident Controllers are appointed, the Incident Controller must specify who will be the lead Deputy Incident Controller when the Incident Controller is absent from the ICC; and
- the Incident Controller may assign a Deputy Incident Controller oversight of one or more tasks, including, but not limited to:
  - evacuation liaison with Victoria Police; and
  - authorisation of community warnings and advice; and

[26] *CFA and DSE Joint Standard Operating Procedure J3.08 Appointment of Incident Controllers.* Version 3.0. September 2011.

- media spokesperson; and
- Incident Management Team (IMT) contact for Traffic Management Points.

***Note**: The preceding information is correct as at 17 June 2012. However, SOP J3.08 Appointment of Incident Controllers may have been amended since this time. Always refer to the latest version rather than relying on this document alone.*

Safety Officer

AIIMS 3rd Edition 2011 Revision allows the interchangeable use of the terms Safety Officer and Safety Advisor[27]. Within Victoria these two terms have been developed into separate roles. A summary of these roles is provided below. However, personnel must make themselves familiar with *SOP J3.04 Safety Officer*[28] and *Chief Officers SOP 11.07 Safety Officer/Field Safety Advisor – Role and Responsibilities*[29].

The Safety Officer reports to the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident. The Safety Officer is responsible[30] for:

- monitoring the development and implementation of the Incident Action Plan (IAP), considering the risks to the health, safety and welfare of incident personnel; and
- monitoring the development and implementation of the Incident Action Plan (IAP), considering measures to eliminate, prevent or mitigate risks; and
- supporting the IMT to ensure that the relevant safety components are incorporated into SMEACS briefings delivered to all incident personnel; and
- assisting with the conduct of risk assessments and the development of risk controls and mitigation measures; and
- advising the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident; and
- reviewing the operational aspects of the medical plan for the incident; and

[27] *AIIMS 3rd Edition 2011 Revision*. Page 32.
[28] *SOP J3.04 Safety Officer*. Version 3.0. September 2011.
[29] *SOP 11.07 Safety Officer/Field Safety Advisor – Role and Responsibilities*. Version 2. February 2011.
[30] *SOP J3.04 Safety Officer*. Version 3.0. September 2011.

- *SOP J3.04 Safety Officer* explicitly states that the Safety Officer cannot veto an operational decision, but must raise any operational issues identified with the appropriate personnel.

***Note**: The preceding information is correct as at 17 June 2012. However SOP J3.04 Safety Officer may have been amended since this time. Always refer to the latest version rather than relying on this document alone.*

Field Safety Advisors

Within *Chief Officer's SOP 11.07 Safety Officer/Field Safety Advisor – Role and Responsibilities* exist provisions for the appointment of a Field Safety Advisor(s) at an incident. *SOP J3.04 Safety Officers* recognises this and references the Chief Officer's SOP.

A Field Safety Advisor may be appointed by the Incident Controller as an advisor to the Operations Officer, Division Commander, Sector Commander, Strike Team Leader or Task Force Leader. The Field Safety Advisor provides advice to the designated commander or supervisor on all aspects of potential and current safety and risk management issues present in the designated area of responsibility.

SOP J3.04 Safety Officer and *Chief Officer's SOP 11.07 Safety Officer/Field Safety Advisor – Role and Responsibilities* explicitly state that the Field Safety Advisor cannot veto an operational decision, but must raise any operational issues identified with the appropriate commander or supervisor.

***Note**: The preceding information is correct as at 17 June 2012. However, SOP J3.04 Safety Officer and Chief Officers SOP 11.07 Safety Officer/Field Safety Advisor – Role and Responsibilities may have been amended since this time. Always refer to the latest versions rather than relying on this document alone.*

Chapter 4
The Planning Function

This chapter provides information about:

- **responsibilities of the Resources Unit; and**
- **requirements for Incident Action Planning in Victoria.**

Introduction

Within Victoria there have been some variations made to *AIIMS 3rd Edition 2011 Revision*. These variations are detailed in *SOP J3.03 Incident Action Planning* and *SOP J3.09 Management of Resources*.

Resources Unit

SOP J3.09 Management of Resources explicitly states that the Resources Unit in the Planning Section is responsible for requesting Incident Management Team personnel, incident-ground personnel and appliances[31].

In Victoria the term appliance may be used to describe physical resources including:

- tankers; and
- pumpers; and
- slip-ons; and
- pumps; and
- boats; and
- rescue vehicles; and
- command vehicles.

[31] *SOP J3.09: Management of Resources*. Version 1.0. November 2011.

Requests for resources other than those listed above will be dealt with by other Units within the AIIMS structure. These Units are detailed in other chapters, but in short they include the Air Operations Unit in the Operations Section, the Plant Management Unit in the Operations Section and the Supply Unit in the Logistics Section.

Incident Action Planning

The *2009 Victorian Bushfires Royal Commission* made specific recommendations in relation to the requirements for Incident Action Plans (IAP) prepared during bushfires in Victoria. These recommendations have been adopted and are detailed in *SOP J3.03 Incident Action Planning*. In relation to the response to bushfire within Victoria, Incident Action Planning is based on the following priorities[32], unless otherwise directed by the State Fire Controller.

- Protection and preservation of life is paramount;
- issuing of community warnings and community advice;
- protection of critical infrastructure and community assets;
- protection of residential property;
- protection of assets supporting individual livelihoods and economic production;
- protection of environmental and conservation assets.

For incidents of limited spread and low potential the IAP may be recorded in a logbook or over radio transmissions back to the communications centre. In all other cases the Incident Action Plan (IAP) must be documented using a Summary IAP format, an IAP format or an Incident Shift Plan (ISP) format[33]. These formats are defined as:

- IAP Summary is a concise IAP format produced in the first four (4) hours of an incident and approved by the Incident Controller that details the incident objective and summarises the incident situation, strategies adopted, resources deployed and key information regarding administration, logistics, command and communication and safety.

[32] *Fire Services Commissioner Policy FSCPOLICY001/2011 Strategic Control Priorities – State Controllers Intent.* January 2011.

[33] *SOP J3.03 Incident Action Planning.* Version 5.0. November 2011.

- IAP: The plan used to describe the incident objectives, strategies, structures, resources and other information relevant to the control of the incident.
- ISP: The key components of the IAP that are essential for field operations. The documentation follows the SMEACS format, and is accompanied by maps and any other supporting documentation relevant to field operations.

Chapter 5
The Public Information Function

This chapter contains information about:

- **activation of the Public Information Section in Victoria; and**
- **titles of Units within the Public Information Section in Victoria.**

Introduction

Within Victoria the arrangements related to the provision of public information are found within the *Emergency Management Manual Victoria*, *Victorian Warning Protocol* and *SOP J4.01 Incident Warnings and Advice*.

Activation of Public Information Section

The Public Information Section is activated in accordance with *SOP J4.01 Incident Warnings and Advice*, which describes the requirements for warnings and advice within Victoria, emphasises the need for timely, tailored and relevant information, the responsibilities of Units within the Public Information Section and the types of messaging and products that will be produced[34].

Titles of Units within the Public Information Section

Within Victoria some of the titles of Units within the Public Information Section differ to those described in *AIIMS 3rd Edition 2011 Revision*. The differences in these titles are detailed in Table 1 below[35]:

[34] *SOPJ J4.01 Incident Warnings and Advice*. Version 6.0. November 2011.

[35] *SOP J4.01 Incident Warnings and Advice*. Version 6.0. November 2011.

SOP J4.01 Incident Warnings and Advice	AIIMS 3rd Edition 2011 Revision
Warnings and Advice Unit	Information and Warnings Unit
Media Management Unit	Media Unit
Community Liaison Unit	Community Liaison Unit

Table 1 – difference in titles of Units in the Public Information Section

Chapter 6
The Operations Function

This chapter contains information about:

- **function of the Plant Management Unit; and**
- **function of the Aircraft Operations Unit.**

Introduction

Within Victoria there have been some variations to the Operations Section compared to *AIIMS 3rd Edition 2011 Revision*. These changes relate to the addition of the Plant Management Unit and the structure of the Air Operations Unit.

Plant Management Unit

The Plant Management Unit is generally activated when five or more plant are deployed or working at an event, which is usually a Level 2 or Level 3 incident. The Plant Manager reports to the Operations Officer and is responsible for providing support for large, heavy plant. The Plant Manager monitors the location of plant and operators at an incident, provides advice on available and working plant to the Operations Section. The Plant Manager works closely with the Supply and Finance Units in the Logistics Section on requests for plant and contract management, and the Resources Unit in the Planning Section for tracking and recording of the deployment of plant and plant operators. For further information on the Plant Management Unit refer to the *DSE Fire Management Manual: 8.1 Fire Suppression Manual*[36].

Examples of plant

Examples of plant include dozers, excavators, harvesters, backhoes, graders, floats, slashers and tractors.

[36] *DSE Fire Management Manual: 8.1 Fire Suppression Manual.* October 2011. Page 4-34.

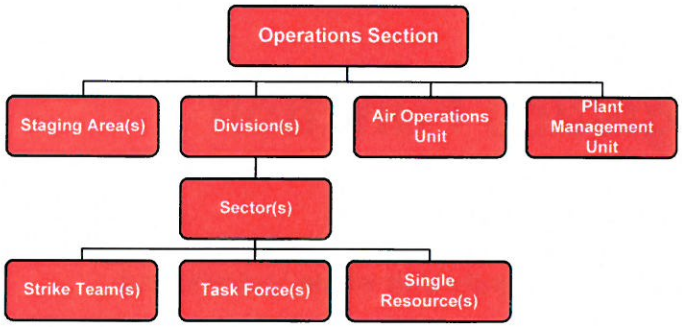


Figure 5 – The Plant Manager manages the Plant Management Unit.

Air Operations Unit

Within Victoria fire agencies utilise aircraft supplied by the State Air Desk. The Incident Controller may in the initial stages of an incident, request aircraft for use at an incident. However, as the incident develops or complexity increases an Air Operations Unit will be established in accordance with *State Aircraft Unit Policy 01 Air Operations* and *State Aircraft Unit Procedure AM 1.05 Management of Aircraft at Incidents.*

The Aircraft Officer, or where appointed, the Air Operations Manager, will request all aircraft used during Level 3 fires and incidents. For further details on the structure of the Air Operations Unit refer to Figure 6[37] below.

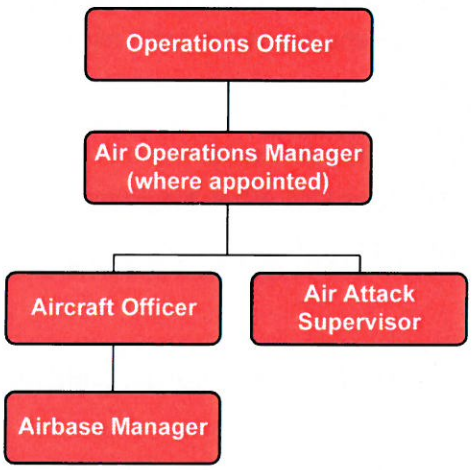


Figure 6 – Structure of the Air Operations Unit

[37] *State Aircraft Unit Policy 01 Air Operations.* January 2010.

Chapter 7
The Logistics Function

This chapter contains information about:

- **responsibilities of the Supply Unit within Victoria; and**
- **responsibilities of the Medical Services Unit within Victoria.**

Introduction

Within Victoria there are variations to *AIIMS 3rd Edition 2011 Revision* that alter the operation of the Logistics Section. These changes include amendments to the responsibilities of the Supply Unit and the addition of some specialist services provided by the Medical Services Unit.

Supply Unit

The role of the Supply Unit within the Logistics Section has been amended in Victoria. The function of the Supply Unit is consistent with *AIIMS 3rd Edition 2011 Revision*, however, the supply of certain items is **not** the responsibility of the Supply Unit. These are listed below.

- The supply of IMT personnel, incident-ground personnel and fire agency appliances is undertaken by the Resources Unit within the Planning Section[38].
- The supply of aircraft is usually arranged by the Air Operations Unit in the Operations Section[39].
- The supply of plant and heavy equipment may be undertaken by the Plant Manager where appointed.

[38] *SOP J3.09 Management of Resources.* Version 1.0. November 2011.

[39] *DSE Fire Management Manual: 8.1 Fire Suppression Manual.* October 2011. Guideline 8.1.24 Supply Officer Checklist.

Medical Services Unit

Welfare Services

Chief Officer's SOP 14.02 Welfare Services – Activation of and *DSE Fire Management Manual: 9.1 Recovery Manual* require personnel involved in a critical incident to be offered welfare services and counselling. During an incident these procedures may need to be activated by the Medical Services Unit within the Logistics Section. Critical incidents may be defined as[40]:

- line of duty death; and
- serious injuries directly to personnel; and
- suicide; and
- prolonged incidents; and
- multiple deaths, serious casualties or death of children; and
- death or injury of persons known to agency personnel at an incident; and
- major incidents; and
- if a member requests welfare services.

***Note**: Welfare Service providers do **not** self-activate; they need to be requested before support can be provided.*

Health Support Team

A Health Support Team (HST) is defined in *Chief Officers SOP 9.08 – Health Support Team*. These teams consist of personnel who are deployed to ensure that advice can be provided on the health and wellbeing of personnel whilst working at incidents and during rest periods. The Health Support Team may also respond to assist injured or ill personnel on the fireground in the absence of ambulance or other first aid support[41]. The HST reports to the Medical Services Unit Leader.

[40] *Chief Officers SOP 14.02 Welfare Service – Activation of.* Version 2. November 2011.

[41] *SOP 9.08 Health Support Teams.* Version 2. December 2007.

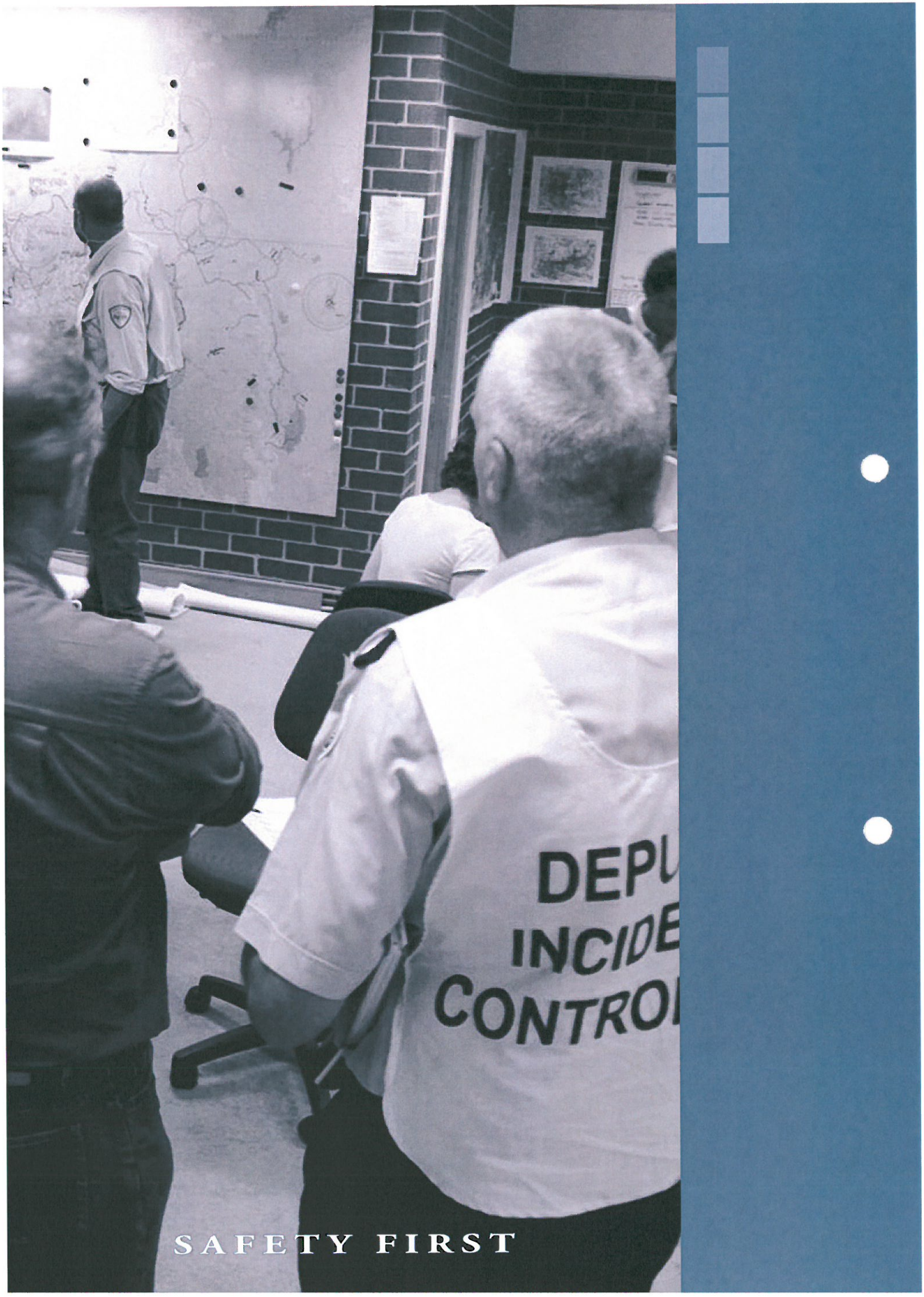
Abbreviations

Table 2 lists the abbreviations and acronyms commonly used.

Abbreviation	Meaning
AIIMS	Australasian Inter-service Incident Management System
CFA	Country Fire Authority
CIS	Critical Incident Stress
CISM	Critical Incident Stress Management
DCC	District Command Centre
DHS	Department of Human Services
DOT	Department of Transport
DSE	Department of Sustainability and Environment
EMLO	Emergency Management Liaison Officer
EMMV	Emergency Management Manual Victoria
EMT	Emergency Management Team
FDP	Fire Danger Period
FERC	Field Emergency Response Coordinator
FSC	Fire Services Commissioner
HST	Health Support Team
IAP	Incident Action Plan
IC	Incident Controller
ICC	Incident Control Centre
IMT	Incident Management Team
ISP	Incident Shift Plan
MECC	Municipal Emergency Coordination Centre
MEMPC	Municipal Emergency Management Planning Committee
MEMP	Municipal Emergency Management Plan
MERC	Municipal Emergency Response Coordinator

Abbreviation	Meaning
MERO	Municipal Emergency Resources Officer
MFB	Metropolitan Fire and Emergency Services Board
OESC	Office of the Emergency Services Commissioner
RCC	Regional Control Centre
RERC	Regional Emergency Response Coordinator
RERCC	Regional Emergency Response Coordination Centre
SCC	State Control Centre
SERC	State Emergency Response Coordinator
SERP	State Emergency Response Plan
SESC	State Emergency Support Centre
SOP	Standard Operating Procedure
SOP J	Joint Standard Operating Procedure. Issued by the Fire Services Commissioner, CFA and DSE.
VicPol	Victoria Police
VICSES	Victoria State Emergency Service

Table 2 – abbreviations and acronyms



SAFETY FIRST

ATTACHMENT 5.1.29

FIRE SERVICES COMMISSIONER VICTORIA

Standard Operating Procedure

CFA

State Government Victoria

Department of Sustainability and Environment

SOP

J3.04

Safety Officer

Scope

This Standard Operating Procedure applies to all CFA and DSE members engaged in integrated responses to bushfire.

Definitions

The following definitions apply to this Standard Operating Procedure:

- **Field Safety Advisor**: An advisor to the Sector or Division Commander on all aspects of potential and current safety and risk management issues present at the sector or division.
- **Incident Management Team (IMT)**: The group of incident management personnel comprising the Incident Controller, and the personnel they appoint to be responsible for the functions of Operations, Public Information, Planning and Logistics.
- **Incident Personnel**: All personnel assigned to a role in the AIIMS structure, those they supervise, and those authorised to act in support or to operate on the fire ground.
- **Multi-agency incident**: A situation that occurs when more than one agency, eg. DSE and CFA, have suppression responsibilities or when both agencies' areas of responsibility are threatened or included within the operational area of a fire incident.
- **Safety Officer**: The Safety Officer reports to the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident.
- **SMEACS**: A briefing format incorporating: Situation, Mission, Execution, Administration and Logistics, Command and Communications, Safety and Questions.

Objective

To define the deployment and role of Safety Officers to enhance the management of safety at bushfires.

Procedure

1. In relation to preformed IMTs, Regional Controllers are responsible for ensuring that the Safety Officer position is filled as required by Joint SOP 2.03 – *Incident Management Team – Readiness Arrangements*. Incident Controllers for Level 3 incidents are

responsible for ensuring that the function is carried out within their IMT in accordance with this Joint SOP. The person appointed as Safety Officer must not have other responsibilities within the IMT while the incident remains at Level 3.

2. Appointment of a designated Safety Officer at Level 1 and 2 multi-agency incidents remains at the discretion of the Incident Controller. At such incidents, the Safety Officer role may be allocated to a person performing other functions, but not to the Operations Officer.

3. The Incident Controller may appoint an assistant to the Safety Officer as required.

4. Personnel undertaking welfare, medical or OHS reporting tasks report through the Logistics Officer, but should communicate closely with the Safety Officer.

5. The Safety Officer is responsible for:

   5.1 Monitoring the development and implementation of the Incident Action Plan, considering:

      5.1.1 Risks to the health, safety and welfare of Incident Personnel; and
      5.1.2 Measures to eliminate, prevent or mitigate risks.

   5.2 Supporting the IMT to ensure that the relevant safety components are incorporated into SMEACS briefings delivered to all Incident Personnel;
   5.3 Assisting the Incident Controller in the provision of the safety briefings and advice;
   5.4 Assisting with the conduct of risk assessments for the incident and assists with the development of risk controls and mitigation measures;
   5.5 Assisting with monitoring of the effectiveness of incident communications and information flow;
   5.6 Assisting with monitoring the health, safety and welfare of personnel;
   5.7 Advising the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident;
   5.8 Reviewing the operational aspects of the medical plan for the incident; and
   5.9 Maintaining a log book.

6. Safety Officers cannot veto an operational decision, but must raise any operational issues identified with the appropriate role.

7. To undertake the Safety Officer role:

   7.1 At a Level 3 multi-agency incident:

      7.1.1 A DSE (including PV & DPI) officer must be qualified under the Fire Training Management System as a Level 2 Incident Controller or Level 2 Operations Officer or higher, or Level 2 Planning Officer or higher, or Level 3 Situation Officer, or of equivalent skill designated by the Chief Fire Officer.

      7.1.2 A CFA volunteer or staff member must be endorsed as a Level 2 Incident Controller or Operations Officer or higher, or of equivalent skill designated by the Chief Officer.

   7.2 At Level 1 and 2 multi-agency incidents:

      7.2.1 A DSE (including PV & DPI) officer must be qualified under the Fire Training Management System as a Level 1 Incident Controller or higher, or of equivalent skill designated by the Chief Fire Officer to undertake the Safety Officer role at multi-agency incidents.

      7.2.2 A CFA volunteer or staff member must be qualified as Crew Leader or above, or of equivalent skill designated by the Chief Officer to undertake the Safety Officer role at multi-agency incidents.

8. The Safety Officer must ensure that any OH&S incidents, including near misses, that they become aware of are reported according to the established agency systems.

9. The Safety Officer must provide a report to the Incident Controller summarising issues that have been identified and actions taken during the shift or tour. The Safety Officer should participate in any incident debrief or performance improvement forum.

10. Field Safety Advisors

    Note: CFA SOPs provide for the appointment of Field Safety Advisors. It is possible that Field Safety Advisors may be in place at a multi-agency incident. The following is provided for information. Refer to CFA SOP's for details regarding appointment and operation of Field Safety Advisors.

    10.1 Field Safety Advisors report through the chain of command. Depending on the circumstances of the particular incident, the Incident Controller should determine which field commander the Field Safety Advisor will report to.

10.2 The Field Safety Advisor is responsible for:

10.2.1 Monitoring and reports on operational activities;
10.2.2 Monitoring the use of safe working practices, including appropriate Protective Equipment and Personal Protective Clothing;
10.2.3 Correcting any unsafe work practices observed, through the appropriate commander;
10.2.4 Keeping the Safety Officer advised of any issues identified; and
10.2.5 Maintaining a log book.

10.3 Field Safety Advisors cannot veto an operational decision, but must raise any operational safety issues identified with the appropriate commander or supervisor.

Relevant agency Safety Protocols	▪ Safety of personnel tasked to an incident and protection of members of the community are the identified priorities for fire control.
Relevant agency Environmental Protocols	▪ Nil.

Related Documents	Other Links and References	SOPs
Emergency Management Act 1986 Fire Services Commissioners Act 2010 State Emergency Response Plan October 2010 (EMMV Part 3) State Command and Control Arrangements for Bushfire in Victoria August 2011 Safety Officer Checklist Field Safety Advisor Checklist	Joint Agency - Incident Management Team Tool Box	J2.04 - Local Knowledge J3.06 - Briefings

Approved by:		Date:
Ewan Waller Chief Fire Officer DSE	Ewan Waller	14 Sept 2011
Euan Ferguson Chief Officer CFA	Euan A. Ferguson	14 Sept 2011
Craig Lapsley Fire Services Commissioner	Craig Lapsley	14 Sept 2011

Date to be reviewed:
14 Sept 2014
Date to cease:
N/A

ATTACHMENT 5.1.30

CFA Standard Operating Procedure

Safety Officer/Field Safety Advisor – Role and Responsibilities

CFA SOP 11.07

Scope	This Standard Operating Procedure applies to all CFA members involved in operational activities.
Definitions	The following definitions apply to this Standard Operating Procedure:

- **CFA member**: A person who is registered by the Authority as a volunteer officer or member of a brigade and/or a person who is employed by CFA.
- **Field Safety Advisor**: An advisor to the Sector or Division Commander on all aspects of potential and current safety and risk management issues present at the sector or division.
- **Fire/Incident ground**: The area identified by the Incident Controller or CFA Commander as the fire or incident ground. As a guide, it may include the area involved in the actual fire or incident; the area where firefighters, appliances, hoses, hydrants and other firefighting equipment are located; and may extend to adjoining properties threatened by the fire, the staging area, control point and Incident Control Centre.
- **Incident Management Team (IMT)**: The group of incident management personnel comprising the Incident Controller, and the personnel he or she appoints to be responsible for the functions of Operations, Planning, Information and Logistics.
- **Incident Controller**: The individual designated by the control agency to have overall management of the incident and responsibility for all incident activities.
- **Level one (1) incident**: A Level 1 incident is characterised by being able to be resolved through the use of local or initial response resources only. In a Level 1 incident the major function is operations, that is, to resolve the incident. Control of the incident is limited to the immediate area, and, therefore, the operations function can usually be carried out by the Incident Controller. Being relatively minor, the other functions of Planning, Information and Logistics will, generally, be undertaken concurrently by the Incident Controller.
- **Level two (2) incident**: Level 2 incidents are more complex in size, resources or risk. They are characterised by the need for:

- Deployment of resources beyond the initial response; or
- Sectorisation of the incident; or
- The establishment of functional sections due to the levels of complexity; or
- A combination of the above.

- **Level three (3) incident**: Level 3 incidents are characterised by degrees of complexity that may require the establishment of Divisions for effective management of the situation. These incidents will, usually, involve delegation of all functions.

- **OIC (Officer-in-Charge) Brigade**: The Captain or CFA appointed officer in charge of a brigade. In the absence of these persons or other brigade officers, this definition includes a member of the brigade below the rank of officer.

- **Operational activities**: CFA approved, coordinated or pre-planned action, or series of actions, in response to and in support of a potential or existing emergency incident, including training and exercises.

- **Safety Officer**: The Safety Officer reports to the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident.

Objective	To provide guidance regarding the role and responsibilities of Safety Officers and Field Safety Advisors.

Procedure

1. Appointment of a Safety Officer

   1.1 The Incident Controller must appoint a Safety Officer to all level 3 IMTs to provide advice and guidance on safety issues at a fire or incident. The person appointed as Safety Officer must not have other responsibilities within the IMT while the incident remains at Level 3.

   1.2 The Incident Controller may appoint a Safety Officer at level 1 or 2 incidents, complex or protracted operations and large incident sites.

   1.3 A Safety Officer may also be appointed during other operational activities (such as training exercises or hazard reduction activities). The appointment of a Safety Officer in these circumstances shall be at the discretion of the OIC Brigade.

   1.4 Safety Officers shall be appropriately qualified and trained in accordance with Schedule 1.

   1.5 Safety Officers operate within the IMT.

1.6 The Incident Controller may appoint an assistant to the Safety Officer as required.

1.7 Where possible, the Safety Officer will provide an oversight of potential or existing hazards and advise the Incident Controller on available risk management options.

2. The Safety Officer is responsible for:

2.1 Monitoring the development and implementation of the Incident Action Plan, considering:

2.1.1 Risks to the health, safety and welfare of Incident Personnel;

2.1.2 Measures to eliminate, prevent or mitigate risks; and

2.1.3 Operational aspects of the medical plan for the incident;

2.2 Supporting the IMT to ensure that the relevant safety components are incorporated into SMEACS briefings delivered to all Incident Personnel;

2.3 Assisting the Incident Controller in the provision of the safety briefings and advice;

2.4 Assisting with the conduct of risk assessments for the incident and assists with the development of risk controls and mitigation measures;

2.5 Assisting with monitoring of the effectiveness of incident communications and information flow;

2.6 Assisting with monitoring the health, safety and welfare of personnel;

2.7 Advising the Incident Controller on all aspects of potential and current safety and risk management issues identified at the incident; and

2.8 Maintaining a log book in accordance with Chief Officer's SOP 9.13 – *Keeping Logs and Documents*;

3. Safety Officers cannot veto an operational decision, but must raise any operational issues identified with the appropriate role.

4. The Safety Officer must ensure that any OH&S incidents, including near misses, that they become aware of are reported and actioned according to the established system.

5. The Safety Officer must provide a report to the Incident Controller summarising issues that have been identified and actions taken during the shift or tour. The Safety Officer should participate in any incident debrief or performance improvement forum.

6. Appointment of a Field Safety Advisor

6.1 The Incident Controller may appoint a Field Safety Advisor(s) to operate at operations points, division, sector or strike team level.

6.2 Field Safety Advisors shall be appropriately qualified and trained in accordance with Schedule 1.

6.3 The Field Safety Advisor (where appointed by the Incident Controller) shall:

6.3.1 Report through the chain of command. The Incident Controller should determine which field commander the Field Safety Advisor will report to. Where a Field Safety Advisor believes safety advice is not being acknowledged, accepted or actioned by a commander, and such inaction may impact upon the life or safety of CFA or other agency members, may consult a higher level of control (eg. the Incident Controller);

6.3.2 Monitor and report on operational activities;

6.3.3 Monitor the use of safe working practices, including appropriate PE and PPC;

6.3.4 Correct the use of unsafe work practises identified, through the appropriate commander;

6.3.5 Monitor the rotation, catering and recuperation of personnel;

6.3.6 Keep the Safety Officer advised of any issues identified; and

6.3.7 Maintain a log book in accordance with Chief Officer's SOP 9.13 – *Keeping Logs and Documents*;

6.4 Field Safety Advisors cannot veto an operational decision, but must raise any operational safety issues identified with the appropriate commander or supervisor.

Safety notes	▪ Nil.
Environmental notes	▪ Nil.

Related Documents			Other Links and References	Delegations
Policies	**Standing Orders**	**SOPs**		
	Fires and Incidents – Management of Health and Safety		Country Fire Authority Act 1958 Country Fire Authority Regulations 2004 CFA/DSE Heads of Agreement Safety Officer Checklist Field Safety Advisor Checklist CFA-DSE Joint SOP – Safety Officer	Incident Controller

Date to be Reviewed:	Date to Cease:	Date Endorsed:	Endorsed By:
TBA	N/A	17 Jan 2011	Euan Ferguson Chief Officer

Schedule 1 – Safety Officer and Field Safety Advisor Appointment Protocol

Safety Officer	
Incident Level	**Minimum Requirement**
Level 3 Incidents	Endorsed Level 2 Incident Controller / Level 2 Operations Officer Note: Completion of Safety Officer training is preferred.
Level 1 and 2 Incidents	Endorsed Crew Leader / Level 1 Incident Controller Note: Completion of Safety Officer training is preferred.
Field Safety Advisor	
Incident Level	**Minimum Requirement**
All Incident Levels	Crew Leader / Level 1 Incident Controller

Note: A Field Safety Advisor may perform the role of a Level 1 and 2 Safety Officer. A Level 1 and 2 Safety Officer may function as a Field Safety Advisor at all incident types.

Martin Davis ATTACHMENT 5.1.31

From: BROWN, Kenneth [redacted]
Sent: Thursday, 27 February 2014 7:10 PM
To: (MediaComms)LapsleyCraig; RAU, Peter; Euan Ferguson
Cc: Peter Marshall; MARSHALL, Peter (Gmail); ZAMMIT, Andrew; [redacted] Joanne Watson
Subject: RE: MASK PROTECTION AT HAZELWOOD

Dear Commissioner and Chiefs,

I have made some enquiries re the information that has been received by the mining union about the P2 to P3 masks. I contacted the Operations Point at the Hazelwood Mine and asked them to speak directly with the Mine Operations Office to confirm what masks the mine staff is wearing during these operations.

At the same time I requested through the ICC mines representative confirmation from mine management of the type of mask the mine staff were using.

.ıe report back so far from the mine operations is that the mine staff are wearing P2 masks. I'm awaiting confirmation from mine management.

I have also spoken with Warren Glover and he has informed me that he has not witnessed the wearing of any P3 masks by mine staff.

The advice received from Warren is that P2 masks are appropriate for this incident based on the testing results.

Regards
Ken Brown
RCC Hazelwood Traralgon.

ɔm: Joanne Watson [mailto:ufunational@ufunat.asn.au]
Sent: Thursday, 27 February 2014 2:55 PM
To: (MediaComms)LapsleyCraig; RAU, Peter; Euan Ferguson
Cc: MARSHALL, Peter (UFU Office); MARSHALL, Peter (Gmail); ZAMMIT, Andrew; BROWN, Kenneth; [redacted]
Subject: MASK PROTECTION AT HAZELWOOD

**** MFB: external message processed. Details at bottom of email ****

Dear Fire Services Commissioner and Chief Officers

We have been informed by the union that looks after some of the mining staff that those staff at Hazelwood have been issued P3 as opposed to P2 masks to provide a higher level of protection.

We respectfully request a consideration be given to implementing for all firefighters and all others at the mine if indeed this level of mask does provide better protection.

Sent on behalf of Secretary Peter Marshall

Joanne (Wattie) Watson
National Industrial and Research Officer
United Firefighters Union of Australia
410 Brunswick Street, Fitzroy, Victoria 3065

W: 03 94198811
F: 03 86720457
M: 0431 728271
E: ufunational@ufunat.asn.au

STRENGTH IN UNITY - PROUD TO BE UNION

ATTACHMENT 1.5.3

7 March 2014
2741667 L.2.0

Michael Tisbury
Fire Fighters Union
410 Brunswick Street
Fitzroy 3065

Email: [redacted]

Dear Michael

Re: Hazelwood Coal Mine – Microbiological Water Analysis

INTRODUCTION

On the 28th of February 2014, a representative of Bureau Veritas HSE Pty Ltd attended the Hazelwood coal mine. The purpose of the site visit was to collect water samples from the following areas:

Sample Number	Sample Location
HD-280214 (Lab ID: 3811530)	Hara dam
DAM5-280214 (Lab ID: 3811531)	Dam 5

It is understood that during the current firefighting operations, fire fighters are required to pump the water collected in the mine pits and as such primary contact with the water occurs during this activity. The collection and analysis of the water samples was performed following concerns over exposure to potential contaminants present in the water.

Following collection, the samples were forwarded to Australian Laboratory Services Pty Ltd, where in addition to chemical analysis, they underwent microbiological analysis for Total Plate Count, Total Coliforms, Escherichia coli (E.coli), Pseudomonas Aeruginosa and Legionella.

The only guidelines available for comparison of the results are the Australian Drinking Water Guidelines (ADWG), 6 (2011), Version 2.0 (Updated December 2013). Other relevant guidelines are the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZGFMWQ).

RESULTS

The results of the laboratory analysis together with the relevant reference standards are tabulated below file (please also see the attached laboratory report).

Characteristic	Results		Australian Drinking Water Guidelines		ANZGFMWQ (Primary Contact)
	Sample HD-280214 (3811530)	Sample DAM5-280214 (3811531)	Health	Aesthetic	
Total Coliforms (MPN/100ml)*	>24000	>24000	**	**	–
E.coli (MPN/100ml)*	4900	240	< 1	-	150
Total Plate Count (Heterotrophic colony count)(Orgs/mL)	530000	420000	**	**	–
Pseudomonas Aeruginosa (MPN/100ml)	<100***	500	**	**	–
Legionella	Pending	Pending	**	**	–

Orgs/mL: Organisms per millilitre of water.

* MPN: The most probable number (MPN) of coliform or faecal coliform bacteria per 100 ml of a sample. It is expressed as the number of organisms which are most likely to have produced the laboratory results noted in a particular test.

* * The Australian Drinking Water Guidelines [NHMRC, 2011] do not specify a value for this parameter. Refer to discussion for details.

* ** Reported as < 100 Orgs/100 mL due to the presence of interfering organisms.

DISCUSSION

Specific Discussion

The analysis confirmed the following:

- E.coli was detected in both samples. E.coli is the most common thermotolerant coliform present in faeces and is regarded as the most specific indicator of recent faecal contamination because generally it is not capable of growth in the environment. E.coli is a normal inhabitant of the intestine generally present in high numbers in human and animal faeces. While most E.coli are non pathogenic, there are some pathogenic subtypes that can cause enteric illness. The Australian Drinking Water Guidelines state that E.coli should not be detected in any 100 mL of drinking water. The Australian and New Zealand Guidelines for Fresh and Marine Water Quality state that faecal coliforms should not exceed 150 organisms/100mL for primary contact with the water.

- Total coliforms were also detected in the samples. Coliform bacteria other than E.coli form a small component of the normal intestinal population in humans and animals, and many have an environmental origin and are inhabitants of soil and water. Due to their widespread occurrence in soil and water environments, total coliforms (in the absence of E.coli) are not regarded as a specific indicator of faecal contamination. Due to the lack of direct health significance, no guideline value has been assigned by the Australian Drinking Water Guidelines [NHMRC, 2011] for total coliforms (excluding E.coli).

- The Australian Drinking Water Guidelines [NHMRC, 2011] do not specify a value for a total plate count. Discussions with a microbiological laboratory and the Department of Human Services indicated that levels up to 100 organisms/mL are acceptable in drinking water. Another microbiological laboratory suggested that levels up to 1000 organisms/mL are also acceptable.

  The total plate count measures a broad group of heterotrophic microorganisms that are defined by their ability to grow under certain laboratory conditions. These microorganisms have no direct relationship to faecal contamination or health risks but are used as a general indicator of the microbiological content of the water, and the levels of nutrients that can support bacterial growth (i.e. total plate count is used to determine the presence of organic matter in the water and as an indicator of the general water quality).

  Microbiological analysis (total plate count) for both samples indicated high levels of heterotrophic microorganisms.

- Pseudomonas aeruginosa was also detected in the water samples. This is an opportunistic pathogen which rarely infects the intact host but colonises damaged systems such as burn wounds, cuts, the respiratory tract of people with underlying disease, damaged eyes etc. From these areas it may invade the body, causing lesions or septicaemia.

- *The* Legionella analysis results are pending and will be available week commencing the 10th of March 2014.

Recommendations

Based on the above information and the results of the sample analysis the following comments/recommendations are provided:

1/. Personnel with burns, cuts etc. should not come in contact with the water.

2/. The water should not be ingested or inhaled.

3/. Appropriate personal protective equipment should be used.

4/. Good personal hygiene should be observed (washing of hands prior to eating, drinking, smoking etc.).

It is hoped the information contained in this report will be of assistance to you. Please contact me should you have any queries in relation to the information provided.

Yours faithfully

Nick Harisis
Senior Occupational Hygienist/OHS Unit Team Leader

Attachment 1: Analytical Results

ATTACHMENT 1

ANALYTICAL RESULTS

ALS Group
Environmental Division (Water Resources Group)

NATA Accredited Laboratory No. 992
Accredited for compliance with ISO/IEC 17025

CERTIFICATE OF ANALYSIS

Batch No:	**14-10740**	*Page*	**Page 1 of 3**
Interim Report	**421334**	*Laboratory*	**Scoresby Laboratory**
		Address	**Caribbean Business Park, 22 Dalmore Drive, Scoresby, VIC 3179**
Client:	**Australian Laboratory Services Pty Ltd**	*Phone*	**03 8756 8000**
Contact:	**Carol Walsh**	*Fax*	**03 9763 1862**
Address:	**4 Westall Road SPRINGVALE VIC 3171**	Contact:	
Client Program Ref:	**EM1401842**	Date Sampled:	**28-Feb-2014**
ALS Program Ref:	**ALS**	Date Samples Received:	**28-Feb-2014**
PO No:	**355236**	*Date Issued:*	**04-Mar-2014**

The sample(s) referred to in this report were analysed by the following method(s):
- NATA accreditation does not cover the performance of this service

Analysis	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*	*Analysis*	*Method*	*Laboratory*
Colilert (2000)	**MM514**	**Scoresby**	**Legionella**	**MM527**	**Scoresby**	**Plate Count**	**MM524**	**Scoresby**
Ps aeruginosa	**MM528**	**Scoresby**						

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Analysis of E.coli, Total Coliforms, Total Plate Count at 36°C, Legionella and Pseudomonas aeruginosa commenced on 28/02/2014.

Pseudomonas aeruginosa reported as <100 Orgs/100ml due to the presence of interfering organisms.

NATA Accredited Laboratory No. 992
Accredited for compliance with ISO/IEC 17025

Signatories
These results have been electronically signed by the authorised signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11

Name	*Title*	*Name*	*Title*
Natacha Begue	**Deputy Team Leader Microbiology**	**Tanya Dukhno**	**Analyst**

Batch No: 14-10740
Report Number: 421334
Client: Australian Laboratory Services Pty Ltd
Client Program Ref: EM1401842

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	3811530	3811531
					Client Sample ID	001	002
					Sample Date	28/02/14	28/02/14
					Sample Type	WATER	WATER
Analysis	**Analyte**	**CAS #**	**LOR**				
Plate Count	Plate Count 36C	PLATE_COUNT	0	orgs/mL		530000	420000
Colilert (2000)	Coliforms MPN Colilert	Coliform	0	orgs/100mL		>24000	>24000
Colilert (2000)	E.coli MPN Colilert	E.Coli	0	orgs/100mL		4900	240
Legionella	Legionella pneumophila serogroup 1		<10	orgs/mL		Pending	Pending
Legionella	Legionella pneumophila serogroup 2-14		<10	orgs/mL		Pending	Pending
Legionella	Legionella spp		<10	orgs/mL		Pending	Pending
Legionella	Legionella Total		<10	orgs/mL		Pending	Pending
Ps aeruginosa	Pseudomonas aeruginosa		0	orgs/100mL		<100 COMM	500

COMM See comments on report cover

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data

QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

					Value
Lab Sample ID	Client Sample ID	Analysis	Analyte		
3801645	QC - Blank	Plate Count	Plate Count 36C	orgs/mL	0
			Plate Count 37C	orgs/mL	0
3801645	QC - Blank	Colilert (2000)	Coliforms MPN Colilert	orgs/100mL	0
3801645	QC - Blank	Colilert (2000)	E.coli MPN Colilert	orgs/100mL	0
3801646	QC - Blank	Plate Count	Plate Count 36C	orgs/mL	0
			Plate Count 37C	orgs/mL	0
3801647	QC - Blank	Plate Count	Plate Count 36C	orgs/mL	0
			Plate Count 37C	orgs/mL	0
3801649	QC - Blank	Colilert (2000)	Coliforms MPN Colilert	orgs/100mL	0
3801649	QC - Blank	Colilert (2000)	E.coli MPN Colilert	orgs/100mL	0
3801650	QC - Blank	Plate Count	Plate Count 36C	orgs/mL	0
			Plate Count 37C	orgs/mL	0

QUALITY CONTROL - MPN-DUPLICATES

					Sample Value	Duplicate Value	95% Compliance
Lab Sample ID	Client Sample ID	Analysis	Analyte				
3811543	NCP	Colilert (2000)	Coliforms MPN Colilert	orgs/100mL	2400	2400	Yes
3811543	NCP	Colilert (2000)	E.coli MPN Colilert	orgs/100mL	0	0	Yes
3811544	NCP	Colilert (2000)	Coliforms MPN Colilert	orgs/100mL	0	0	Yes
3811544	NCP	Colilert (2000)	E.coli MPN Colilert	orgs/100mL	0	0	Yes

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise. Microbiological testing was commenced within 24 hours of sampling unless otherwise stated. VIC-MM524: Plate count results <10 per mL and >300 per mL are deemed as approximate. VIC-MM526: Plate count results <2,500 per mL and >250,000 per mL are deemed as approximate. Calculated results are based on raw data.

ATTACHMENT 5.1.33

United Firefighters Union
Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811
Website: www.ufuvic.asn.au
Fax: (03) 9419 9258

BULLETIN

Bulletin No: 039 **Volume:** 20 **Wednesday 19 February 2014**

To ALL UFU MFB OPERATIONAL MEMBERS

OFF-DUTY MEMBERS ENCOURAGED TO ACCEPT RECALL TO YALLOURN

Members are advised that negotiations with MFB and CFA regarding safety issues at Yallourn have been resolved. Improved procedures and systems are in place.

The UFU is encouraging all off duty MFB Operational members to accept recall to ensure that 270 minimum staff is not impacted upon.

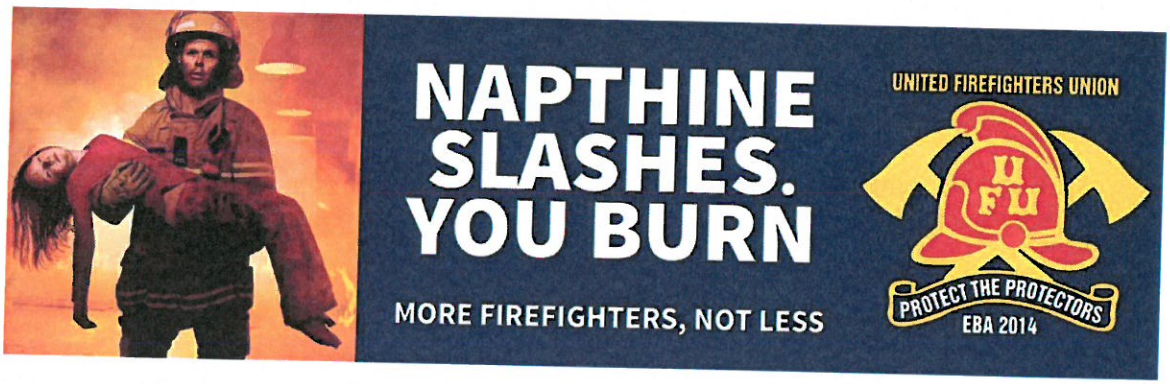
Strength in Unity
READ OUT AT MUSTER AND PIN ON NOTICE BOARD
Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.34

United Firefighters Union
Victorian Branch ABN 74 030 569 265

410 Brunswick Street
Fitzroy Victoria 3065
Australia
Email: officeadmin@ufuvic.asn.au
Phone: (03) 9419 8811

Website: www.ufuvic.asn.au
Fax: (03) 9419 9258



BULLETIN

Bulletin No: 48 **Volume:** 20 **Tuesday 4 March 2014**

To ALL UFU CFA MEMBERS

CHIEF OFFICER EMERGENCY ROSTER DISCUSSIONS

The UFU has been approached by the CFA for high level discussions regarding the possible operation of the Chief Officer's Emergency Roster in relation to the Yallourn-Hazelwood Incident.

The Chief Officer Emergency Roster is contained in the agreement. A full copy of the text of this clause is contained at the end of this bulletin.

These discussions have commenced because of the protracted nature of the Incident, issues of fatigue, sustainability, specialist equipment, staffing, and the possible release of NSW firefighters.

The UFU notes that no decision has been made at this stage and further discussions are occurring.

Discussions are also occurring regarding the commencement of the 10/14 roster at the Rowville Fire Station.

Members will be provided with further detail as soon as practicable.

In the meantime if you have any queries please contact the UFU office or your Shop Steward.

78. CHIEF OFFICER'S EMERGENCY ROSTER - FIREFIGHTERS AND STATION OFFICERS

78.1. When so determined by the Chief Officer, employees may be required to work an emergency roster to cover protracted major fires or incidents.

78.2. The following general conditions shall apply:

78.2.1. The hours of duty shall be twelve hours on and twelve hours off.

78.2.2. All travelling time to be deemed as "on duty".

78.2.3. All on duty hours shall be cumulative in regard to the average weekly hours normally worked, calculated over their respective hours of duty clause.

78.2.4. When an employee is placed on the emergency roster whilst on duty at their respective place of work, then the hours already worked for that shift shall be cumulative in regard to clause 78.2.3 hereof.

78.2.5. In respect of clause 78.2.3 hereof any hours calculated to be in excess of the normal weekly average shall be paid at overtime rates.

78.2.6. When an employee is normally rostered for duty at their respective place of work on the day following stand down from the emergency roster, then they shall not be required to work that shift unless they have been off duty for a minimum of twelve hours before the starting time of that shift. The time off the normal shift shall be included as

normal time worked.

78.2.7. Employees will be reimbursed for the cost of meals and accommodation. This provision shall not apply if meals and accommodation are provided by the employer.

Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.35

United Firefighters Union
Victorian Branch ABN 74 030 569 265

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Fitzroy Victoria 3065
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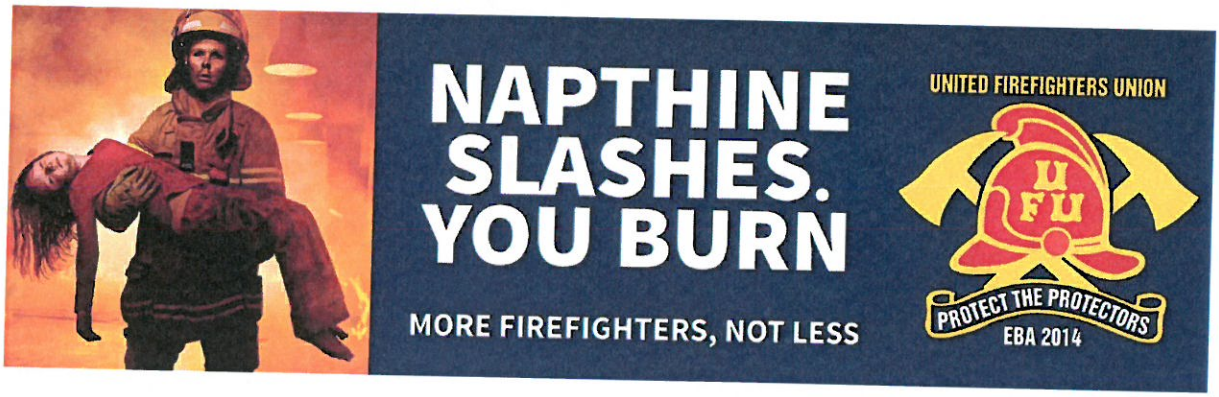


BULLETIN

Bulletin No: 53 **Volume:** 20 **Thursday 6 March 2014**

To ALL UFU CFA MEMBERS

STAFFING OF THE AERIAL PUMPER AT HAZELWOOD INCIDENT

Agreement was reached between the UFU and the CFA regarding the commissioning of the new aerial pumpers (snozzle) for use at Hazelwood incident.

The staffing levels for this appliance were to be 1 SO, 1 LFF and 2 FFs.

The operation of this appliance requires two endorsed and incremented operators at any given time, one of which must be a crew leader. That is, the SO and the FF will operate together for a maximum of two hours, both of which have to be endorsed and incremented operators, followed by the LFF and the FF operating the following two hours both of which have to be endorsed and incremented operators.

This is for the safe and effective operations of this appliance.

There have been numerous discussions between the Secretary and the DCO regarding this matter of which both were in agreement that this is the way the appliance will operate at Hazelwood.

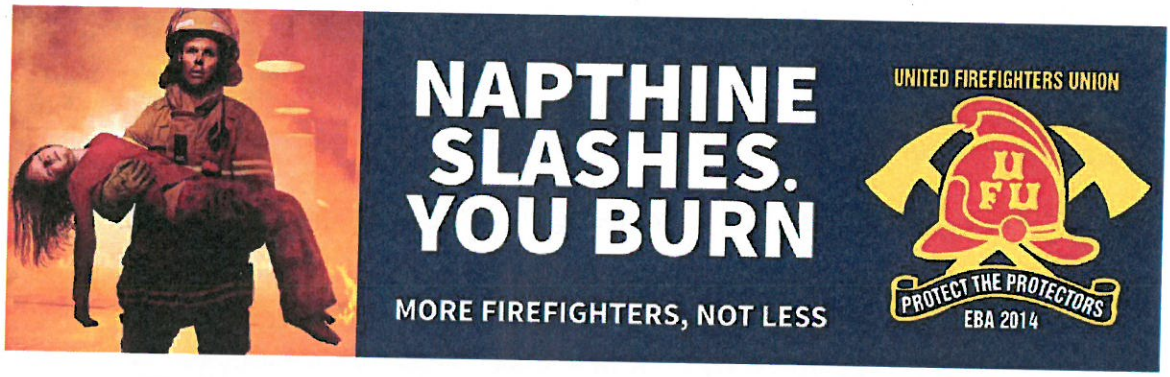
Please contact your shop steward should you have any further questions.

Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.36



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BULLETIN

Bulletin No: 060 **Volume:** 20 **Wednesday 19 March 2014**

To ALL UFU MEMBERS

SECTOR COMMANDERS AT HAZELWOOD
IMMUNITY FROM PROSECUTION

Members are reminded that under no circumstances should any member engage on an operational activity without the proper processes for command and control, including sector command.

For those members who are directed to perform the role of sector commander and who are not qualified to do so, please be advised that should you undertake that role you may forgo your immunity to prosecution for acting outside your competencies.

OHS requirements

As previously advised and agreed by the Fire Services Commissioner, if any members believe that their health and safety is directly or indirectly affected, they are not required to perform that direction and should discuss this matter with the HSR on duty.

The level of competency for sector commanders at Hazelwood is **minimum SSO**. CFA

sector commanders are required to be mentored and endorsed to perform the role.

This means that if members are not at this level of competency and perform the role of sector commander, they may not be protected for any coronial inquest or other inquiry.

Any queries regarding this matter, please contact Peter Marshall on 0419 127 004.

Strength in Unity

READ OUT AT MUSTER AND PIN ON NOTICE BOARD

Authorised by Peter Marshall, Branch Secretary

ATTACHMENT 5.1.3

HAZELWOOD FIRE
UFU/OH&S SITE VISIT
20 February, 2014

On behalf of UFU firefighters, Secretary Peter Marshall and OH&S Co-ordinator Tony Branchflower visited the Hazelwood Power Station, considering the health & safety management of the site during current firefighting operations. From commencement the emergency management of the site has been continually evolving in collaboration with all concerned parties, including the UFU. As part of the visit, conversation was had with on scene firefighters to establish their concerns. All other feedback from firefighters was taken into account. ACFO Darren Davies, ACFO Alan Quinton & SSO Colin Rose also accompanied us on our tour.

This fire is unprecedented in MFB/CFA history and on a global scale; Hazelwood is the only brown coal mine of its type in the world.

The major concerns of this incident are being dealt with in a dynamic manner and in consultation. Attention to Health and Safety must be adhered to. Carbon monoxide is a primary hazard identified on this fire ground, exposure to various levels of toxic fumes, fatigue, hydration, radiated heat, coal face collapse and agreed crewing of appliances also require constant vigilance.

Carbon Monoxide; CO absorption and exposure is constantly monitored. In collaboration with the onsite monitoring, firefighters should be aware of any symptoms that may present due to CO exposure. Increased CO exposure may amplify vulnerability to hearing impairment, when exposed to high noise levels. Fire crews should consider hearing protection when working in close proximity to noisy machinery (pumps). Female firefighters should also take into consideration the particular guidelines for their response to this fire ground.

Toxicity; Implicitly firefighters are exposed to toxic environments. At times we must manage and work within these environments. There is no doubt that toxic chemicals and gases are present at the Hazelwood fires. Testing has been undertaken and exposure levels have been recorded to varying degrees, no high levels were noted in these tests. However the unique nature of this fire must be noted. As well as soot and ash, incomplete products of combustion such as tarry droplets, resulting from the burning of brown coal can be present. The consequence of exposure to these elements, as with all fire environments can be dire and cumulative. Operational hygiene management procedures for fire ground exposures have been introduced at the Hazelwood fires. Compliance with hot, warm and cold zone requirements for PPE hygiene management is imperative to prevent spreading contamination. Appliance cabin hygiene should be maintained. P2 masks are for particulate protection from inhalation only and do not provide protection from a low oxygen atmospheres (CO) or toxic gasses, which can be the products of combustion. Due to normal mining work processes at this complex mercury and arsenic is present in the water table. However they are concentrated in the silt levels of the holding ponds. Both mercury and arsenic are cumulative toxins and present a hazard by ingestion and absorption. To minimise this exposure keep clear of the aerosol sprays resulting from firefighting activities and wear appropriate respiratory protection. Water at the staging area and the town, is not affected.

HAZELWOOD FIRE
UFU/OH&S SITE VISIT
20 February, 2014

Rehabilitation; The rehabilitation area is a clean area and must be strictly adhered to. NO PPE is allowed in this area. From our observations this system is being strictly monitored. While in the rehabilitation area, take the opportunity to hydrate as much as possible. An alternate rehabilitation/staging area should be considered in case of changing weather conditions.

Fatigue; Fatigue management has been an issue at this incident. Consequently it has been agreed that only one shift every eight days can be worked by any firefighter. Recall to Hazelwood is a huge day and consideration must be given to the availability of a taxi or other means to get home from the training college after completion of a shift at Hazelwood.

Batters collapse; The chance of a coal face (batters) collapse during firefighting operations is real. Fire crews must be constantly aware of this situation and have the availability of mine engineers for consultation of the risk.

Manning of Appliances; To maintain safe operation, crewing of appliances attending the Hazelwood fire must comply with agreed manning charts.

Emergency Evacuation; I may have missed it. There were no identified emergency assembly areas, emergency evacuation site maps, exit signs or installed extinguishers at the rehabilitation site. Please show me I am wrong.

Overall and in consideration of the uniqueness of this incident, health and safety management appears to be proactive and I'm pleased, to say consultative. To a high degree this has been achieved by the positive input and feedback of firefighters.

Thankyou All

ATTACHMENT 5.1.38

CFA Standard Operating Procedure

Staging Area Management

S O P 9.27

Scope	This Standard Operating Procedure applies to all CFA members involved with operational activities.
Definitions	The following definitions apply to this Standard Operating Procedure:

- **CFA member**: A person who is registered by the Authority as a volunteer officer or member of a brigade and/or a person who is employed by CFA.
- **CFA vehicles**: All vehicles owned or used by CFA or any brigade or group. This does not include any privately or community owned vehicles, unless approved for use by the OIC Brigade/Incident Controller.
- **Control point**: The location at a fire or incident, established by the OIC of the first arriving brigade or most senior CFA member, from which control is exercised.
- **Crews**: Two or more people competent to undertake tasks.
- **Division command point**: The location at a fire or incident from which command is exercised and operations are directed within a functional or geographic area as identified in the incident action plan.
- **Division Commander**: The officer responsible for implementing the Incident Action Plan in relation to the division they are appointed.
- **Incident Control Centre (ICC)**: The location where the Incident Controller and the appointed members of the Incident Management Team provide overall direction of response activities in an emergency situation
- **Incident Controller**: The individual designated by the control agency to have overall management of the incident and is responsible for all incident activities.
- **Incident Management Team (IMT)**: The group of incident management personnel comprising the Incident Controller, and the personnel he or she appoints to be responsible for the functions of Operations, Planning and Logistics.

- **Operational activities**: CFA approved, coordinated or pre-planned action, or series of actions, in response to and in support of a potential or existing emergency incident, including training and exercises.
- **Operations Officer**: The officer responsible for directing and supervising all work on the fire and incident ground under the direction of the Incident Controller.
- **Operations point**: A focal point where the operations section of the incident control system has effective access to subordinate operational personnel. Functions covered at the operations point must include tactical, administrative and administrative management tasks.
- **Personal Protective Clothing (PPC)**: Includes clothing used to provide protection to CFA members from the risks associated with performing a specific operational task for which they are competent and endorsed.
- **Sector Commander**: The officer responsible for implementing the Incident Action Plan in relation to the sector they are appointed.
- **SMEACS**: A briefing format incorporating: Situation, Mission, Execution, Administration and Logistics, Command and Communications, Safety, Questions.
- **Staging Area Manager**: The officer designated to have responsibility for management of a staging area.
- **Staging area**: A location designated and used during an emergency for the assembly of control and support agency resources prior to deployment.

Objective

To describe the procedures to be followed by all CFA members involved in incident management or use of staging areas.

Procedure

1. Establishment of a staging area

   1.1 The Incident Controller shall consider establishing a staging area where:

   1.1.1 More than ten (10) resources are en-route to a fire or incident; and/or

   1.1.2 The size or duration of the incident is likely to make effective control of incoming resources difficult.

1.2 A staging area should be established whenever an operations point or divisional command point is in place.

1.3 Staging areas may be established:

1.3.1 Separate from the control point/operations point.

1.3.2 At the control point/operations point.

1.3.3 At any other location around the incident as required.

2. The radio call sign for a staging area shall be a geographic name followed by "staging" (e.g. "Falls Road Staging").

3. Management of a staging area

3.1 Staging Areas shall have a manager appointed by the Incident Controller. The Staging Area Manager shall report to the Operations Officer or, where established, a Sector of Division Commander (refer to Schedule 1).

3.2 The Staging Area Manager shall be a person who has the necessary competencies and endorsements to perform the role.

3.3 The Staging Area Manager shall assemble a staging Area Team to assist with the management of the staging area. The preferred minimum number of Staging Area Team members is five (5) and should include:

3.3.1 A Deputy Staging Area Manager.

3.3.2 Logistics support.

3.3.3 Communications.

3.3.4 An Entry Officer.

3.3.5 An Exit Officer.

3.4 The Staging Area Team must establish communications with and provide information to:

3.4.1 The control point/operations point;

3.4.2 The resources unit at the ICC; and

3.4.3 The logistics section at the ICC.

4. Key tasks of the staging area include:

4.1 Develop a staging area plan, site plan and functional tasks.

4.2 Receive arriving/departing resources.

4.3 Record details of arriving/departing resources.

4.4 Brief and deploy resources at the direction of the Operations Officer.

4.5 Keep other members of the IMT advised of the resources that are in the staging area and what resources have been deployed from the staging area;

4.6 Deal with the logistical needs of resources passing through the staging area including fuel, feeding and first aid.

4.7 Ensure that crews deployed to the incident from the staging area:

4.7.1 Receive a SMEACS briefing;
4.7.2 Wear the appropriate PPC; and
4.7.3 Are provided with copies of the relevant sections of the Incident Action Plan, including mapping.

5. If the Staging Area Manager determines that a vehicle or person(s) is not properly equipped or competent to perform the assigned task, they may stand down either the vehicle and/or the individual(s). The authority to make this determination is irrespective of rank. Only the Incident Controller or the Operations Officer may override such a determination.

6. Staging Area Resources

6.1 Staging areas should be located where possible to:

6.1.1 Utilise existing fixed communications, phone, fax, data lines.
6.1.2 Utilise existing facilities such as buildings, water, toilets.
6.1.3 Have sufficient area to accommodate anticipated numbers of vehicles.

6.2 Staging area locations should be pre-planned to enable the requirements of Procedure 6.1 to be met in the shortest time frame.

7. All staging area documents should be retained and stored appropriately in accordance with Chief Officer's SOP 9.13 – *Keeping Logs and Documents*.

Safety notes

- The staging area should be located to ensure the safety of their CFA and other agency members due to the dynamic fire or incident conditions that may exist.

Environmental notes

- The Staging Area Team shall make appropriate arrangements to collect and remove, and where possible recycle, rubbish and other debris resulting from the use of the staging area.

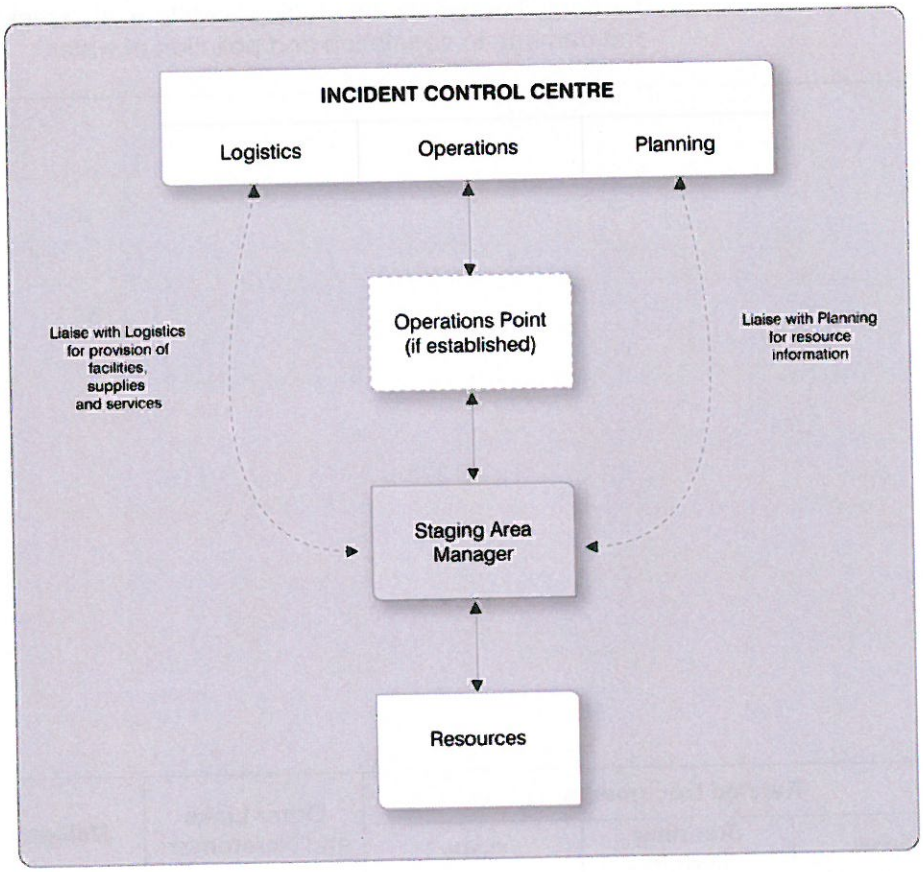
- Where possible, the Staging Area Team shall arrange the traffic flow within the staging area to avoid erosion and damage to vegetation and pollution of water.

Related Documents			Other Links and References	Delegations
Policies	**Standing Orders**	**SOPs**		
	Fires and Incidents – Management of Health and Safety	Briefings Strike Team/Task Force/Support Force – Role, Management and Deployment Health Support Team	Country Fire Authority Act 1958 Country Fire Authority Regulations 2004 Multi Agency Cooperative Agreement (between CFA and DSE) CFA Staging Area Management Learning Manual and Workbook	Incident Controller CFA Commander Operations Officer Staging Area Manager

Date to be Reviewed:	Date to Cease:	Date Endorsed:	Endorsed By:
TBA	N/A	24 Jan 2005	Russell Rees Director of Operations/Chief Officer

S O P 9.27

Schedule 1 Staging Area Structure



ATTACHMENT 5.1.39

CFA Standard Operating Procedure

Incident Controller (CFA as Control Agency)

SOP 8.02

Scope

This Standard Operating Procedure applies to all CFA members who are endorsed by the Chief Officer, in accordance with these Standard Operating Procedures, to exercise those powers described in Section 30 of the Country Fire Authority Act 1958 at fires and incidents for which CFA is the control agency.

Definitions

The following definitions apply to this Standard Operating Procedure:

- **CFA member**: A person who is registered by the Authority as a volunteer officer or member of a brigade and/or a person who is employed by CFA.
- **Control agency**: The agency nominated to control the response activities to a specified type of emergency.
- **Control**: Overall direction of response activities in an emergency situation.
- **Incident Controller**: The individual designated by the control agency to have overall management of the incident and responsibility for all incident activities.
- **Level two (2) incident**: Level 2 incidents are more complex in size, resources or risk. They are characterised by the need for:
  - Deployment of resources beyond the initial response; or
  - Sectorisation of the incident; or
  - The establishment of functional sections due to the levels of complexity; or
  - A combination of the above.
- **Level three (3) incident**: Level 3 incidents are characterised by degrees of complexity that may require the establishment of Divisions for effective management of the situation. These incidents will, usually, involve delegation of all functions.

Objective

To provide a process for the identification of the Incident Controller at fires and incidents where CFA is the control agency.

Procedure

1. A person shall be identified as the Incident Controller for each fire or incident where CFA is the control agency.

SOP 8.02

2. The crew leader of the first arriving appliance at a fire or incident for which CFA is the control agency is the Incident Controller.

3. The Incident Controller of a pre-deployed IMT may decide to assume control of any fire within the ICC footprint, either of their own determination or under the direction of the Rostered Duty Officer or Regional Controller.

4. Control of a fire or incident may be transferred from one Incident Controller to another in accordance with Chief Officer's SOP 8.04 – *Transfer of Control.*

5. The Incident Controller shall:

   5.1 Identify themselves as the Incident Controller;
   5.2 Establish control of all resources; and
   5.3 Make contact with Commanders of any support agencies.

6. If the Incident Controller is not a qualified and endorsed Level 1 Incident Controller, or does not believe they have the appropriate skills and experience, he/she shall:

   6.1 Take all reasonable steps to identify a qualified and endorsed or the most senior/experienced person to fulfil the role of Incident Controller; and
   6.2 Remain in the role of Incident Controller until control is transferred in accordance with Chief Officer's SOP 8.04 – *Transfer of Control.*

7. Appointment of Incident Controllers at Level 3 multi-agency bushfires shall be managed in accordance with DSE-CFA Joint SOP 3.08 – *Appointment of Incident Controllers.*

8. A Deputy Incident Controller appointed to a Level 3 incident must be endorsed as a Level 2 Incident Controller as a minimum.

9. The Chief Officer may endorse CFA members who hold the appropriate competencies and experience for the role of Incident Controller in accordance with Chief Officer's SOP 8.03 – *Incident Management Team Members – Endorsement of.*

Safety notes	▪ Nil.
Environmental notes	▪ Nil.

SOP

8.02

Related Documents			Other Links and References	Delegations
Policies	**Standing Orders**	**SOPs**		
	Chain of Command Fires and Incidents – Management of	CFA Commander (CFA as Support Agency) Transfer of Control Incident Management Team Members – Endorsement of Incident Classification	Country Fire Authority Act 1958 Country Fire Authority Regulations 2004 AIIMS Manual DSE/CFA Joint SOP 3.08 – Appointment of the Incident Controller	Chief Officer Operations Manager OIC Brigade Incident Controller

Date to be Reviewed:	Date to Cease:	Date Endorsed:	Endorsed By:
TBA	N/A	2 Nov 11	Euan A. Ferguson Euan Ferguson Chief Officer

SOP
8.02

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ATTACHMENT 5.1.40