UNITED FIREFIGHTERS UNION OF AUSTRALIA

Submission to the 2019 Review of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011
Summary of UFU recommendations

**Recommendation 1:** The Department of Jobs and Small Business should consider the inclusion of **stomach cancer and all skin cancers and melanoma** in the list of prescribed cancers at subsection 7(8) of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011.

**Recommendation 2:** Female career firefighters should not be penalised for the fact that there are simply too few numbers worldwide for conclusive scientific research. The Department of Jobs and Small Business should consider the inclusion of **female reproductive (ovarian and cervical) cancers** in the list of prescribed cancers at subsection 7(8) of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011.

**Recommendation 3:** The Department should commence a process for defining the term "non-smoker" for the purposes of lung cancer as a matter of urgency.

**Recommendation 4:** Existing research does not demonstrate an overall increased risk of cancer for volunteer firefighters compared to the general population. If the Department of Jobs and Small Business were minded to include volunteer firefighters, the Department should consider a **tiered model for access to compensation, inclusive of an independent review panel or committee**, to preserve the integrity of the legislation and the scientific evidence on which it is based, and to ameliorate the disadvantage of there being no research that demonstrates an overall increased risk of cancer in volunteer firefighters.
Introduction

1. The United Firefighters Union of Australia ("UFUA") is a registered federal union for professional career firefighters in Australia.

2. The UFUA has eight branches: Tasmania, South Australia, Victoria, ACT, New South Wales, Western Australia, Queensland and an Aviation sector branch. Each branch has a very high level of union membership, with the majority of branches averaging 95 to 100 per cent membership of the relevant workforce.

3. The UFUA represents career firefighters employed on a full-time basis, part-time basis and on a retained/casual basis. The UFUA also represents fire service support personnel.

4. The UFUA has long advocated for increased awareness and strong legislation to recognise career firefighters’ exposure to carcinogens and other toxic agents in the course of their duties and their profession. As a result of this exposure, it is scientifically proven that career firefighters have an elevated risk of contracting some cancers.

5. These cancers are deemed occupational diseases for firefighters, and career firefighters are now afforded legislative protections, following the work and subsequent reports of the 2011 Inquiry of the Senate Standing Committee on Education, Employment and Workplace Relations Committee into the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Bill 2011 ("2011 Senate Inquiry").

6. On 6 December 2011, the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011 was amended to include 12 prescribed cancers suffered by firefighters ("the Act").

7. In 2013, the UFUA contributed to a Review of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2013 ("2013 Review").

8. In April of this year, the Department of Jobs and Small Business ("the Department") invited the UFUA to make a submission in relation to this current 2019 review. The UFUA thanks the Department for this opportunity. The UFUA will be contactable should the Department require any further information.
A toxic workplace

9. As a result of extensive data collection and scientific analysis, it is globally accepted that firefighting is a dangerous profession with an unavoidable risk of exposure to toxins and carcinogens. Career firefighters forego quantity and quality of life in order to protect life and property of the communities that they serve.

10. In the UFUA’s submission to the 2011 Senate Inquiry, the UFUA detailed the extensive personal protective equipment (“PPE”) including breathing apparatus, flash hoods and personal protective clothing (“PPC”) worn by career firefighters when attending fires.

11. The PPC worn by career firefighters conforms with Australian standards and is regarded as industry best worldwide. PPC, by the very nature of its design however, is a compromise to firefighter health.

12. PPC contains an outer shell that protects the firefighter from radiated heat and direct flame whilst at the same time being ‘breathable’ to release metabolic heat build-up of the environment and the firefighter’s body. It was accepted by the Senate Committee in the 2011 Senate Inquiry that the very design and nature of PPE, though world best practice, “prevents ... complete protection and isolation from toxic smoke”.¹

13. Despite the precautions career firefighters take wearing PPE, they are still exposed to toxic carcinogens and other chemicals. The average household fire exposes responding firefighters to an estimated more than 70,000 toxins and chemicals. These toxins and chemicals, when burning and when burning together, are significantly more toxic.

14. The International Agency for Research on Cancer (“IARC”) is the specialised cancer research agency within the World Health Organization. IARC developed a classification system to evaluate the carcinogenicity of an agent to humans based on scientific evidence.

15. IARC has confirmed that firefighters are exposed to toxins and chemicals that have been classified as carcinogenic to humans (Class 1), probably

carcinogenic to humans (Class 2A), and possibly carcinogenic to humans (Class 2B).2

16. Indeed, all fires release toxic carcinogenic substances which could include, for example, benzene and formaldehyde (both Class 1 carcinogens)3. However, IARC has also considered the carcinogenic exposures to firefighters at modern structural fires. IARC has accepted research that suggests products and combustion from newer building materials and furnishings are more toxic than fire smoke in buildings constructed before newer materials became more commonly used.4

17. Firefighter-specific studies and the research by IARC into carcinogens, demonstrate a nexus between firefighter exposures and occupational cancer. This nexus is an incredible achievement particularly in the context of the "healthy worker effect" and the relatively small study sample size, as outlined below:

18. As noted in the 2006 Lemasters study5, the actual risk of cancer to career firefighters could very well be underestimated due to the healthy worker effect. The healthy worker effect describes the "strict physical entry requirements, maintenance of better physical fitness, and good health benefits" attached to the career firefighter as compared to the general population.6

19. The 2014 Australian Firefighters' Health Study ("Monash study")7 also acknowledged the healthy worker effect and its impact on findings, stating that the overall mortality rate in career firefighters is affected by the healthy worker effect partly as a "result of the selection of fit and healthy people to become firefighters".8

20. Secondly, and in addition to the above, the firefighter cohort is a relatively small sample size for studies – even for the male career firefighter cohort. The

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4 Above n 2.
7 "Final Report Australian Firefighters' Health Study", School of Public Health & Preventative Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, December 2014.
strong scientific link between firefighter exposures and some cancers in a relatively small firefighting cohort further suggests that the risk of cancer to career firefighters is perhaps higher than the research suggests or, at the very least, underestimated.

**Additional prescribed cancers at subsection 7(8) of the SRC Act**

21. The Act lists 12 prescribed cancers in section 7(8), in accordance with the evidence presented to, and accepted by, the 2011 Senate Inquiry.

22. Contemporary scientific research supports the inclusion of further prescribed firefighter cancers. Since both the passing of the Act and the 2013 Review, further studies have been undertaken to build upon the convincing body of research already in existence. This submission will rely on various research however we bring the following two studies to the attention of the Department:

*"The Monash Study"*

23. The Monash Study was a ground-breaking Australian study undertaken by Monash University. The study comprised male and female full-time career, part-time career, and volunteer firefighters across the country.

24. The Monash study involved the single largest firefighter cohort ever undertaken in the world and was a significant leap forward in global and Australian firefighter research. There is no other study that comprises a larger single firefighting cohort than the Monash study. The study comprised 9 fire and rescue services across the country and included over 230,000 past and present career and volunteer firefighters.10

25. The Monash Study confirmed that overall the cancer incidence for male career firefighters was significantly increased compared to the Australian population. Male career firefighters had an increased risk of being diagnosed with certain cancers including prostate, melanoma, kidney and stomach cancer.11

26. There was no overall increased risk of cancer for volunteer firefighters compared to the Australian population.12 There were too few deaths or cancer

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9 Ibid.
10 Ibid.
11 Ibid, pages 11-12.
cases in female career and volunteer firefighters involved in the study for meaningful analyses.13

"2015 NIOSH study"14

27. The 2015 NIOSH study built upon an earlier 2013 study of the same cohort of career firefighters.

28. The 2013 NIOSH study15 examined the relationship between the mortality patterns and cancer incidence in a pooled cohort of almost 30,000 career firefighters in San Francisco, Chicago and Philadelphia employed since 1950 through to 2009.

29. Building upon this, the 2015 NIOSH study examined the relationship between firefighters' level of exposure and cancer incidence. The 2015 NIOSH study added to "evidence of causal association between firefighting exposures and cancer" and also found "previously unreported modest exposure-responses for lung cancer and leukaemia mortality".16

Stomach cancer

30. The "2006 Lemasters study"17 was a meta-analysis review of 32 studies involving more than 110,000 firefighters. Among other findings, the Lemasters study showed "significant meta-SIR for cancers of the stomach (1.58) and prostate (1.29), and testis (1.83) for career firefighters.18

31. The Lemasters study analysed standardised incidence ratio ("SIR") per cancer, which was the observed number of cases in career firefighters as compared to the expected number of cases. The expected number of cases utilises data from a reference population, in this case non-career firefighters.

32. Both testicular cancer and prostate cancer were accepted for the list of prescribed cancers in the 2011 Senate Inquiry due to the scientific evidence presented. Given its SIR as confirmed in the Lemasters study and particularly

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12 "Final Report Australian Firefighters' Health Study Summary", School of Public Health & Preventative Medicine, Faculty of Medicine, Nursing and Health Sciences, December 2014, page 7.
16 Above n 14, page 1.
17 Above n 6.
18 Ibid, page 1192.
in comparison to prostate cancer, we respectfully submit that this justifies the inclusion of stomach cancer in the list of prescribed cancers.

33. The Monash study found that overall cancer incidence was significantly raised for male career full-time firefighters as a whole and for those who had worked for longer than 20 years, when compared to the general Australian population.

34. The Monash study also found that stomach cancer, though not increased overall in career firefighters, was “significantly raised for those firefighters who worked before 1985”. There was a two-fold elevation in stomach cancer for this pre-1985 group. This finding, coupled with the fact that cancer incidence was raised significantly for male career firefighters in the profession for more than 20 years, supports the inclusion of stomach cancer.

35. “The Korean study” is a study of Korean male professional emergency responders which included professional firefighters. This study found that SIRs of all cancers and a number of specific ones, including stomach cancer, were increased for emergency responders with fewer than 10 years of employment. The Korean study also found an increase, albeit “non-significant”, for stomach cancer in male career firefighters as compared to the non-firefighters within the study.

36. Though each of the above studies present slightly different conclusions, they are all consistent in their findings: stomach cancer is observed in the career firefighter cohort. While there are differences in the detail, the studies replicate each other’s findings which provides consistency and scientific certainty in the link between the firefighting profession and this additional occupational cancer.

37. The UFUA respectfully submits that the presence of this particular cancer in firefighting cohorts, coupled with the healthy worker effect and how it impacts on prevalence of diseases in career firefighters, supports its inclusion in the Act.

19 Above n 8, page 12.
23 Above n 21, page 773.
Skin cancer and melanoma

38. The Lemasters study pointed to an overall likelihood of cancer risk for skin cancers and malignant melanoma as "possible".24

39. In the meta-analysis of studies using a proportional mortality ratio ("PMR"), Lemasters et al. found that these studies demonstrated that two of the three "significantly elevated meta-PMR values" were skin cancer and malignant melanoma.25

40. It is also noted that in this study, skin cancer had a summary risk estimate of 1.39 which, to make a comparison, is slightly higher than that of prostate cancer which had a summary risk estimate of 1.28.26

41. Additionally, the Monash study found that the risk of melanoma was "significantly increased" for full-time career firefighters and in all eras of first employment.27 The actual occurrence of melanoma in career firefighters compared to the Australian population was significantly higher with an SIR of 1.45 for full-time career28 and 1.43 for part-time firefighters.29

42. Further, when comparing melanoma incidence amongst firefighters of different states, the risk of melanoma was "significantly increased" for full-time career firefighters from New South Wales, Victoria and Western Australia.30

43. A limitation to the Monash study was the fact that an Australian database on skin cancers other than melanoma is not kept. As such, findings were limited to melanoma only.31 The findings regarding melanoma were nonetheless still telling.

44. The 2009 Nordic Study32 examined, among other groups of workers, SIRs of public safety and protection workers including career firefighters.33 In this study, data from five Nordic countries was analysed of workers employed between 1960 and 2005.

24 Above n 6, Table 5, pages 1199 – 1200.
26 Ibid, page 1200.
27 Above n 8, page 11.
28 Ibid, Table 9, page 48.
29 Ibid, Table 10, page 49.
33 Ibid, Appendix 2.
45. In this study, the highest SIRs for skin melanoma in men were observed among dentists, possibly due to UV light exposure, with a SIR of 1.65. Public safety workers, inclusive of career firefighters, also had a "significant elevated risk" of contracting skin melanoma with an SIR of 1.31. Non-melanoma skin cancer in public safety workers had an SIR of 1.25. According to this study, both non-melanoma skin cancer and skin melanoma have similar SIRs.

46. A 2014 follow-up study of 16,422 Nordic male career firefighters, using the same data as the 2009 Nordic study, found "statistically significant excesses in the age category of 20-49 ... in skin melanoma" and an "increased risk" mainly in ages 70 or higher in skin melanoma.

47. The 2009 Nordic study mentions that several chemical compounds have been associated with increased risk of skin cancer, such as arsenic and arsenic compounds, and combustion products. Arsenic, for example, is a Class 1 carcinogen and can be detected at modern day fires.

48. The 2009 Nordic study also indicates that cumulative solar exposure is also considered a skin carcinogen. The Monash Study suggested the different rates of melanomas across Australian states may be because of UV exposure from sunlight. Though excessive solar exposure is considered to be a skin carcinogen, career firefighters are exposed to thousands of chemicals at modern day fires and skin cancer and melanoma should not be associated solely with excessive UV exposure.

49. The above studies demonstrate a scientific connection between firefighter exposures and skin cancer and melanoma. Skin cancer and melanoma is already prevalent within the Australian population. The elevation of risk to male career firefighters as reported in all three studies but particularly, and relevantly, the Monash study further highlights the gravity of toxic, carcinogenic exposures to career firefighters and the strong connection between these exposures and skin cancer and melanoma.

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34 Ibid, Table 54, page 729.
37 Ibid, page 734.
38 Ibid, page 734.
39 Above n 8, page 36
Recommendation 1: The Department should consider the inclusion of stomach cancer and all skin cancers and melanoma in the list of prescribed cancers at subsection 7(8) of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011

Female cancers

50. To the knowledge of the UFUA, there is limited research into the effects of firefighting exposures on female career firefighters, primarily due to the overall low numbers of female firefighters globally.

51. The Monash study, for example, identified one study of Florida career firefighters that identified “higher than expected rates of cervical cancer”. However, the Monash study did not identify the same risk\(^4\) as “numbers were limited” for female career firefighters.\(^5\)

52. It is accepted that there are known and unknown exposures to career firefighters and those exposures put career firefighters at risk of some cancers. Although the female-specific firefighter research is lacking, the UFUA anticipates that it is likely that female career firefighters have the same or similar cancer risks as male career firefighters given that they perform the same duties in the course of their profession.

53. It is accepted that environmental impacts, such as toxic carcinogens, have a role to play in exposures to career firefighters. IARC has reported that a form of ovarian cancer has been previously linked to exposure to benzene\(^6\), which is a common carcinogen at modern day fires.

54. The UFU respectfully submits that female career firefighters should not be penalised for the low numbers of females in the profession and for not having sufficient numbers to provide the scientific, statistical certainty between firefighter exposure and certain female cancers.

55. The UFUA fully supports the inclusion of female reproductive cancers, including cervical and ovarian cancers, in the prescribed list of cancers in section 7(8) of the Act. By enshrining these cancers in legislation, federal legislation would fall in line with progressive and contemporary legislation in certain provinces of

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\(^4\) Above n 8, page 73.
\(^5\) Ibid, page 15.
Canada, and would also recognise that firefighting is an inherently dangerous job for female and male career firefighters alike.

**Recommendation 2:** Female career firefighters should not be penalised for the fact that there are simply too few numbers worldwide for conclusive scientific research. The Department of Jobs and Small Business should consider the inclusion of *female reproductive (ovarian and cervical) cancers* in the list of prescribed cancers at subsection 7(8) of the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Act 2011.

**Lung cancer for non-smokers**

56. The final report of the 2011 Senate Inquiry recommended that primary site lung cancer in non-smokers be included in the Safety, Rehabilitation and Compensation Amendment (Fair Protection of Firefighters) Bill 2011.44

57. This cancer was the only cancer recommended by the Committee that was not ultimately included in the final version of the Bill.

58. In the 2013 Review, the Reviewer noted the Senate Committee's reference to the complexities with defining a "non-smoker" in a compensation claim for a career firefighter with lung cancer.45 The Reviewer recommended a term of reference be to consider whether lung cancer in non-smokers should be included in the list of prescribed cancers.

59. The Reviewer further stated, "I strongly suggest that consideration of the issue begin well before the review is finalised".46 The UFUA agreed with the Reviewer that this issue be dealt with sooner rather than later and proposed commencing discussions.

60. The scientific link between lung cancer and firefighter exposure was accepted by the Senate Committee in the 2011 Senate Inquiry. The UFUA respectfully maintains that there is an urgent need for the inclusion of lung cancer for non-smokers in the Act and that a decision on the definition of 'non-smoker' should be consulted on and finalised as a matter of priority.

**Recommendation 3:** The Department should commence a process for defining the term "non-smoker" for the purposes of lung cancer as a matter of urgency.

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44 Above n 1, Recommendation 1, page 13, paragraph 2.19.
Whether the determination process applied to claims by firefighters for the prescribed cancers continue to achieve the efficiencies intended by the Act

61. It has been consistently demonstrated that the performance of firefighters’ duties in protecting the community can come at a devastating cost. Career firefighters forego quality and quantity of life to protect the communities that they serve.

62. Career firefighters must be aware of the legislation including how it can be accessed. This is particularly so for new firefighters (recruits) and retired firefighters. It should not be solely the responsibility of the Union to facilitate understanding of the legislation and scheme.

63. The UFUA respectfully submits that a bi-partisan information campaign should be established to facilitate firefighters’ understanding of the legislation and how the scheme can be accessed. The current lack of awareness can result, and has resulted, in the following unintended consequences we provide by way of example:

- A career firefighter, diagnosed with one of the prescribed cancers, only signed the relevant claim documentation weeks before passing away and after being contacted by the union and made aware of how the scheme worked. Though the firefighter’s widow ultimately received a compensation payout, it would have benefited the sick firefighter and his family to have been aware of how the legislative scheme operates and to have lodged a compensation claim much earlier than his final weeks of life.

- After the union held an information session for retired members in 2018, up to 10 retired career firefighters and potential claimants came forward to the union. Had it not been for the union’s information session, these sick retired firefighters would have otherwise either not been aware of the compensation scheme or understood how it can be accessed.

The inclusion of volunteer firefighters in the Firefighters Act

64. The Monash Study involved a total of 232,871 firefighters, of which 201,132 were volunteer firefighters. The Monash Study was the first to include specific analysis of a volunteer firefighter cohort.
65. Monash University was initially sent 305,000 volunteer firefighter records from the relevant participating fire agencies. However, approximately 45,000 volunteer firefighters were eliminated from the study cohort as they had never been on at an incident or fire scene in any capacity and a further 55,000 volunteers were then eliminated as they did not meet the criteria of attending one fire in a year.

66. As previously mentioned, the Monash Study demonstrated a scientific link between firefighting exposures and occupational cancer for male career firefighters.

67. The Monash Study also found that for male volunteer firefighters there was no overall increase of risk of cancer when compared to the general population and no trend of increase of cancer incidence with increasing duration of service.

68. Other specific findings in relation to the male volunteer firefighter cohort include:
   - Kidney cancer was not elevated
   - Volunteers who attended fires had greater incidence of testicular than those that didn’t but that did not equate to an elevation when compared to the general population
   - Risk of prostate cancer was increased for those that had volunteered as a firefighter for 10-20 years
   - Lip cancer incidence was raised for those who had volunteered for more than 20 years and were first recorded as a volunteer pre-1970
   - Melanoma does not appear to be related to volunteer firefighting
   - No increase in the risk of digestive cancers
   - Significantly higher risk of death at a fire (this finding relates to deaths of volunteer firefighters in bushfires).

69. Since the introduction of the federal Act, 6 states and territories have enacted similar presumptive legislation: Tasmania, Western Australia, South Australia, Northern Territory, Queensland and New South Wales.

70. In the context of presumptive legislation, the scientific conclusion that there is no overall increased risk of cancer for volunteer firefighters understandably creates an impediment to volunteer firefighters if they were to make a compensation claim because the legislation is evidentiary-based and rebuttable. This means that the claim process could result in a protracted and stressful legal battle, negating the very purpose of the legislation.
71. To avoid litigation and to instead provide certainty to volunteer firefighters, it would be a necessary requirement for that volunteer firefighter to demonstrate repeated exposure to the hazards of a fire scene.

72. This could be done by providing records detailing when the volunteer firefighter had attended a fire scene or fire scenes in order to demonstrate that that volunteer firefighter has attended the required number of fire incidents. The volunteer may also provide any evidence to demonstrate that they were actively serving as a volunteer firefighter.

73. If the Act were to be amended to include volunteers in addition to career firefighters employed, the UFUA supports the establishment of an independent review panel or committee to review the above-mentioned documentation provided by volunteer firefighters and to decide whether to accept the claim or provide a rebuttal.

74. This replicates the Queensland system, which was developed following the release of the final report of the Monash Study, and considered and developed a process in accordance with the study’s findings regarding volunteer firefighters.

75. The safeguards provided in legislation to facilitate certainty for volunteer firefighters, like those included in the presumptive legislation scheme seen in Queensland, provide a basis for the presumption to apply via a two-tier model that allows volunteer firefighters to make their case. Indeed, without such a safeguard, it is likely that volunteer firefighter claims would be rebutted or rejected due to the lack of evidence.

76. The UFUA is able to provide a detailed comparative analysis of the various state and territory legislation upon the request of the Department.

**Recommendation 4:** Existing research does not demonstrate an overall increased risk of cancer for volunteer firefighters compared to the general population. If the Department of Jobs and Small Business were minded to include volunteer firefighters, the Department should consider a **tiered model for access to compensation, inclusive of an independent review panel or committee**, to preserve the integrity of the legislation and the scientific evidence on which it is based, and to ameliorate the disadvantage of there being no research that demonstrates an overall increased risk of cancer in volunteer firefighters.
Conclusion

77. In 2011, the Act was passed in both the House of Representatives and the Senate. The flow-on effects since the enactment of this legislation have been enormous and have undoubtedly made a positive impact on the Australian firefighting community. Since 2011, almost every state and territory in Australia has enacted presumptive legislation for their firefighters.

78. The career firefighters covered by this Act have both peace of mind and access to a real, workable compensation in the unfortunate event that they are diagnosed with a prescribed cancer.

79. The UFUA is certain that the introduction of this legislation has saved lives already, as it allows career firefighters to focus on getting well and provide income for their families as they receive cancer treatment.

80. The Act has also acted as an impetus for prevention and minimisation of firefighter cancer. The ground-breaking, Australian Monash Study is one such example of this willingness to understand more about the effects of firefighting exposures. The legislation has overall increased awareness and prompted better firefighting and fire service procedures such as decontamination procedures.

81. To build upon this progressive legislation, the UFUA respectfully recommends the inclusion of:
   - Stomach cancer;
   - All skin cancer and melanoma;
   - Female reproductive cancer (ovarian and cervical); and
   - Lung cancer.

82. Existing research does not demonstrate an overall increased risk of cancer for volunteer firefighters compared to the general population. However, if volunteer firefighters are to be included in the legislation, a tiered model for access to compensation inclusive of an independent review panel/committee, such as that seen in Queensland, should be considered to preserve the integrity of the federal legislation and the scientific evidence on which it relies, and in an attempt to ameliorate the disadvantage of there being no research that demonstrates an overall increased risk of cancer in volunteer firefighters.

83. The UFUA thanks the Department for the opportunity to provide this submission and will be contactable should the Department require any further information.
Dated 17 May 2019

Peter J Marshall
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United Firefighters Union of Australia
List of references in order of appearance


5. ‘Final Report Australian Firefighters’ Health Study’, School of Public Health & Preventative Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, December 2014.

6. ‘Final Report Australian Firefighters’ Health Study Summary’, School of Public Health & Preventative Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, December 2014.


