



FIRE AUSTRALIA

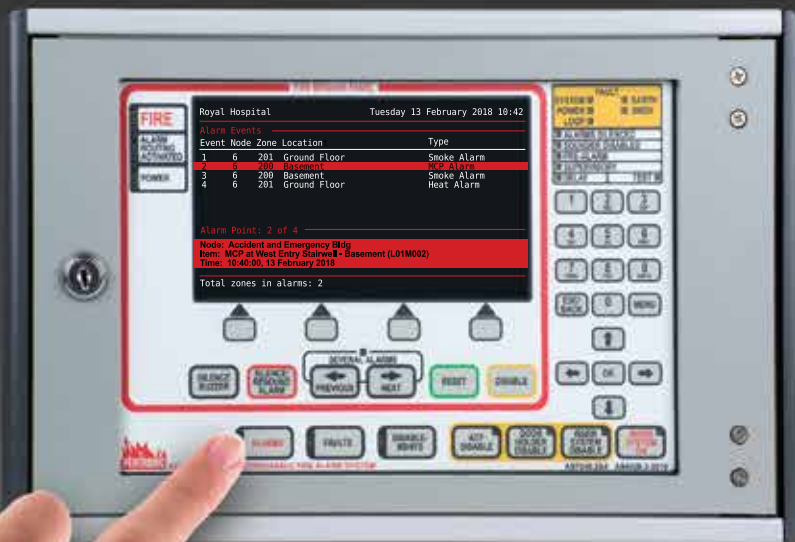
GLOBAL EYES ON AUSTRALIA'S VALVE MONITORS

Ethanol burners: an invisible danger

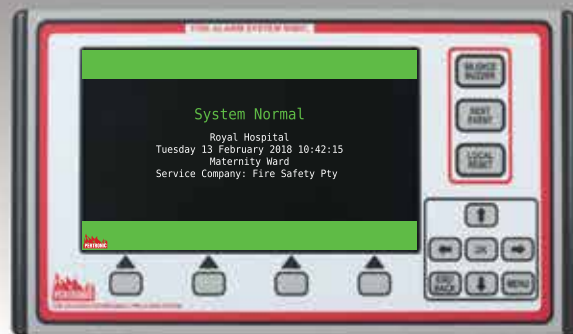
Research benefits flowing

Changing for the better at AFAC18

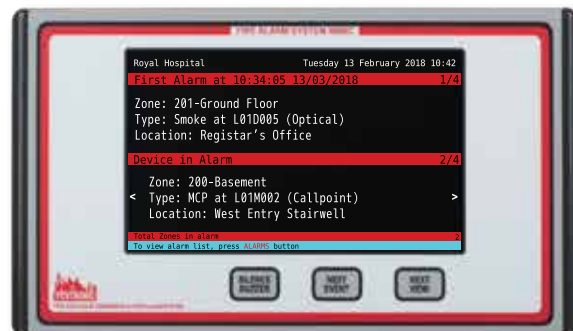
Pertronic F220: The right information in the right place at the right time



The F220 Full Function Mimic provides full system control and monitoring across the entire network. Alternatively, this unit can be programmed to control and monitor specific F220 panels



The F220 Enhanced Mini-Mimic provides a read-only display of all event information from the entire network, or from specific F220 panels



The F220 Alarm Mini-Mimic displays alarm-only information from all F220 panels in the network, or from specific F220 panels

- An F220 system provides quick, simple access to detailed, relevant information via user-friendly local and remote display units
- During an alarm incident the F220 identifies the location of the alarm signal in large, plain-language text
- The F220 product range includes three remote display units, F220 Full Function Mimic, F220 Alarm Mini-Mimic and F220 Enhanced Mini-Mimic
- All three F220 remote displays can be configured to display information from the entire network. These displays can also be programmed to monitor specific F220 panels
- Each F220 fire alarm control panel can support up to 32 panel-specific displays and multiple network-wide displays

The F220 is fully compliant with AS 7240.2 and AS 7240.4

Contact Pertronic for more information

PERTRONIC INDUSTRIES PTY LTD

Brisbane

3/43-49 Sandgate Road
Albion QLD 4010
Phone 07 3255 2222
sales.qld@pertronic.com.au

Sydney

19/287 Victoria Road
Rydalmere NSW 2116
Phone 02 9638 7655
sales.nsw@pertronic.com.au

Melbourne

B2/2a Westall Road
Springvale VIC 3171
Phone 03 9562 7577
sales.vic@pertronic.com.au

Adelaide

65 Manton Street
Hindmarsh SA 5007
Phone 08 8340 9533
sales.sa@pertronic.com.au

Perth

3/71 Beringarra Avenue
Malaga WA 6090
Phone 08 6555 3008
sales.wa@pertronic.com.au

www.pertronic.com.au

PERTRONIC
F220
FIRE ALARM SYSTEM

OWNERS ON THE HOOK

SCOTT WILLIAMS

Chief Executive Officer, Fire Protection Association Australia



As the work to identify, prioritise and rectify buildings with combustible cladding steadily progresses across Australia, a consistent and unfortunate trend has emerged. The responsibility for paying for rectification work is falling on the shoulders of building owners—who have inherited this problem through no failure of their own, but through a failure of the system meant to protect them.

In Victoria, the recent introduction of Cladding Rectification Agreements offers property owners and body corporates the use of low-interest loans, paid through their rates, to finance combustible cladding replacement. Owners will be charged loan repayments via their council rates over a minimum of 10 years, with costs transferred with a property if it is sold. While helpful, the scheme

places the onus squarely on owners.

In Queensland, the Department of Housing and Public Works is reportedly prepared to introduce legislation to require building owners to remove combustible cladding, if they don't act to do so on their own. In NSW, new legislation retroactively banning aluminium panels with a core of more than 30% polyethylene will enable local councils to issue rectification orders to owners of affected buildings. The orders will require owners to eliminate or minimise the risk posed by the cladding.

Over all of this is pressure from insurers, who have understandably raised premiums for affected buildings.

One of the saddest facts about the responsibility falling on owners is that, in order to have dangerous cladding replaced quickly and remove the risk it poses, there does not appear to be another option. Audits by governments at all levels have found that thousands of buildings around the country are likely to have combustible cladding installed. The risk that poses to Australians is immense, and it needs to be addressed as quickly and efficiently as possible.

Unfortunately, the legal wrangling to determine who is ultimately responsible for this dangerous material being installed on each of these buildings will take years. For instance, the process is still underway for Melbourne's Lacrosse building, having begun in 2014 after the building caught fire. That process will now need to be repeated potentially hundreds or even thousands of times over coming years, with proportional liability being determined anew for each unique case. In time, that process should hopefully allow building owners to recoup the cost of rectification from the liable parties.

But addressing the risk of another Lacrosse or Grenfell can't wait for that process to be completed. Sadly, that means action must be taken by those with the responsibility for these buildings right now: the owners. Frequently, the owners—many of them residents in apartment buildings—are also the ones facing the risk and are therefore the most motivated to address it.

This is not a situation building owners should be facing. They have become unfairly responsible for the cost of rectification through no fault of their own, let down by the failure of enforcement of and compliance with building standards. They deserve better from their government, their regulators, and the construction industry, of which fire protection is a part. We have some work to do to restore their trust and deliver the quality outcomes that consumers expect.

ADVERTISING LISTING

2 PERTRONIC	13 SECURITON
5 HOCHIKI	14 POWER EQUIPMENT
7 FIRESENSE	15 VICTAULIC
9 PACFIRE	25 ARCHER TESTING
11 SECURITON	51 PROVIDERS OF CHOICE
	52 VIKING

To advertise in *Fire Australia*, contact: **Tom Bicknell**, FPA Australia, PO Box 1049, Box Hill VIC 3128, Australia 1300 731 922 tom.bicknell@fpaa.com.au

FIRE AUSTRALIA



IN THIS ISSUE

- 16 Safe touchdown after overseas deployment
- 18 Encounter with an invisible danger
- 21 Changing for the better at AFAC18
- 26 Research benefits flowing
- 29 Global eyes on Australia's valve monitors
- 32 Lessons Management Forum 2018
- 34 Prepare for extended severe weather seasons
- 37 Queenslanders benefit from cyclone research
- 38 Uniting Australia on building compliance
- 42 Out with old, in with the green

REGULAR FEATURES

- 4 News
- 44 AFAC Q&A
- 46 Blast from the past
- 48 Standards Australia update
- 49 Calendar of events
- 50 Movers and shakers

OUR COVER

New global interest may reinvigorate Australia's world-leading valve monitors.

ILLUSTRATION: 123RF

ABOUT FIRE AUSTRALIA

Fire Australia is a joint publication of Fire Protection Association Australia, AFAC and the Bushfire and Natural Hazards CRC. We aim to bring the latest news, developments and technical information to the fire protection industry, emergency services and natural hazards research organisations. *Fire Australia* is produced quarterly and distributed throughout Australia and New Zealand. Editorial submissions are welcome and can be sent to: tom.bicknell@fpaa.com.au. For more details on submitting a contribution, please contact the editors.

JOINT EDITORS

Tom Bicknell (FPA Australia)
TEL +61 3 8892 3118 tom.bicknell@fpaa.com.au
Nathan Maddock (Bushfire and Natural Hazards CRC)
TEL +61 3 9412 9600 nathan.maddock@bnhrc.com.au
Zoe Kenyon (AFAC)
TEL +61 3 9419 2388 zoe.kenyon@afac.com.au

Fire Australia magazine is printed by a printer with ISO 14001 Environmental Management System Accreditation using vegetable-based inks onto FSC-certified paper.



ISSN 1032-6529 (Print)
ISSN 2200-9221 (Online)

DISCLAIMER ● The views expressed in this publication are not necessarily those of FPA Australia, AFAC or the Bushfire and Natural Hazards CRC. Articles and advertisements are published in good faith but *Fire Australia* magazine and its agents do not warrant the accuracy or currency of any information or data contained herein. *Fire Australia* magazine and its agents do not accept any responsibility or liability whatsoever with regard to the material in this publication. ● It is not possible for FPA Australia to ensure that advertisements published in this magazine comply in all respects with the *Competition and Consumer Act 2010* and the provisions which apply to advertising. Responsibility lies with the person, company or agency submitting the advertisement for publication. ● Material in *Fire Australia* magazine is subject to copyright. This publication may not be reproduced in printed or electronic form without permission. Contact 1300 731 922.

NCC TASKFORCE PROPOSED AT BMF INDUSTRY MEETING



PHOTO: BUILDING MINISTERS' FORUM

The Council of Australian Governments Building Ministers' Forum (BMF) meeting on 10 August included an industry forum of peak industry bodies and professional association representatives from the building and construction sector, of which Fire Protection Association Australia (FPA Australia) was one.

During the forum, representatives shared their views on the recommendations of the Shergold–Weir report, *Building confidence: improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia*. There was a consistent theme to responses, demonstrating a united resolve by industry to help governments implement the report's recommendations.

The industry presented a combined proposal to the BMF on how to address the next steps following Professor Peter Shergold and Ms Bronwyn Weir's recommendations. This included regular meetings between industry and the BMF, and critically, the establishment of a new taskforce between government and industry to oversee nationally consistent regulatory reforms.

The proposed taskforce is intended to draw together government and industry to manage the development of a model administrative code for the National Construction Code (NCC), which will harmonise requirements and compliance with the NCC across all states and territories wherever possible. Nationally consistent implementation is critical to the success of the Shergold–Weir report's recommendations.

Following the meeting, the BMF announced it would develop a paper setting out an implementation plan for reform, which will incorporate feedback from industry stakeholders and be considered at the next BMF meeting in December. The paper will focus on recommendations 9 to 11 from the Shergold–Weir report, which cover private building surveyors, with further consideration of recommendations 1, 2 and 13, which cover registration of building practitioners and building approval documentation.

"The Shergold–Weir report's recommendations set out a roadmap to improve the compliance and therefore safety of Australia's buildings," said Matthew Wright, FPA Australia's General Manager—Technical Services/Deputy CEO, who attended the BMF meeting.

"Successfully implementing them is only possible with a national approach that draws together both government and industry, however, and that is the goal of the proposed new taskforce.

"We're pleased the BMF is progressing the issue with the upcoming implementation paper, and encourage the ministers to adopt the holistic view needed to properly address the broad challenges to improving building compliance, rather than focusing on isolated areas.

"We also congratulate the BMF on acknowledging the need for regular and coordinated industry consultation, which will become an important mechanism for government to work together with industry on regulatory developments in the building and construction sector.

"Both government and industry

have a shared responsibility to provide leadership and restore confidence in the building and construction industry."

Other significant meeting outcomes for the fire protection sector were a directive to develop an Australian Standard for the permanent labelling of aluminium composite panels, and planning to nationally address professional indemnity insurance challenges facing building practitioners. ■

Industry and government representatives at the recent BMF meeting.



FPA AUSTRALIA MEMBER FORUMS GO ONLINE

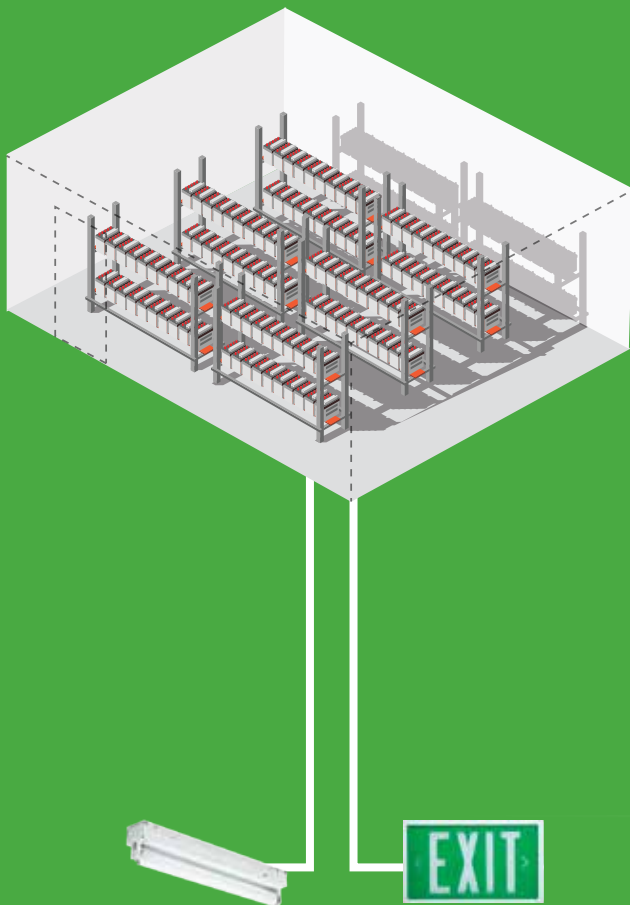
As part of FPA Australia's commitment to making industry updates more accessible—particularly for members in regional areas—the Association ran its first Member Forum webinar in July.

The webinar was well attended, and attendees were able to post questions for speakers during the event. It was also recorded, and is available for members to watch in the Members Lounge on the SPARK discussion platform at spark.fpaa.com.au.

Webinars will now become a regular part of the Association's engagement platform. ■

OLD

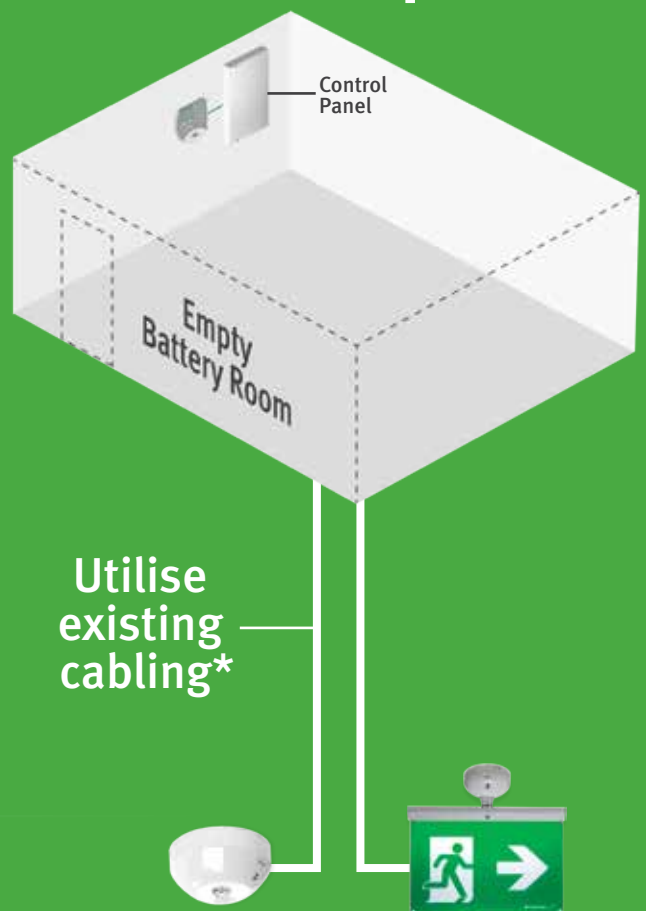
Central Battery Supplied
Emergency Lighting System



NEW

Extra Low Voltage (40V), Intelligent
Emergency Lighting System

FIREscape®



Utilise
existing
cabling*

There's never been a better time to replace your centrally supplied emergency lighting system.

Hochiki's monitored addressable single-point emergency lighting system is a seamless retrofit with existing centrally supplied emergency lighting systems. **No battery room or new cabling is required*.**



LED based



Massive savings on energy,
labour and CO₂e emissions



Self-contained lithium back-up
battery



Simple installation and maintenance



Extra Low Voltage (40V)



Life expectancy of the system
is at least 10 years



Automatic testing



Complies and certified to
Australian Standards (AS 2293)

*Subject to infrastructure and wiring integrity

STUDY WILL REDUCE MENTAL HEALTH RISKS, SAYS FORMER PM

A groundbreaking Bushfire and Natural Hazards CRC-linked project on the mental health of emergency service workers was highlighted by the former Prime Minister Julia Gillard AC, now chairperson of beyondblue, at the 2018 Emergency Management Conference in Melbourne in July.

With a funding contribution from the CRC, beyondblue has undertaken a world-first survey of the mental health and well-being of police and emergency service personnel across the country.

Thirty-three police, fire, ambulance and state emergency service agencies participated in the survey, with nearly 21,000 individuals taking part.

"Nothing so ambitious has been attempted before, and this research will be quoted and referenced and used by

mental health organisations, emergency service agencies and researchers across the globe for years to come," said Ms Gillard.

"This level of participation tells us that this topic is hugely important to those working in the field. What greater evidence could there be that people in your industry want to talk about their mental health—and want their leaders to listen to what they have to say—than this massive participation rate?

"The survey results will arm us with unprecedented national data, which we will analyse and use—in partnership with the sector—to further develop the strategies and actions to reduce the mental health risks of first responders."

The research will be complete and its findings released publicly at the end of the year. ■

Ms Julia Gillard AC explains the importance of a project on the mental health of emergency service workers at the 2018 Emergency Management Conference.



PHOTO: EMERGENCY MANAGEMENT CONFERENCE

DON'T MISS MORE VIDEO CONTENT

FPA Australia TV, the Association's YouTube channel, has recently featured discussions with a range of fire protection industry experts.

These include:

- ◆ 'Performance-based solutions' with Neil Savery from the Australian Building Codes Board
- ◆ 'Routine service and AS 1851' with Glenn Talbot
- ◆ 'Firefighting foams' with Mike Willson
- ◆ 'Choosing a firefighting foam' with Brett Staines
- ◆ 'Updating sprinkler standards' with Andre Mierzwa
- ◆ 'The role of research at Underwriters Laboratories Inc.' with Thomas Chapin
- ◆ A webinar with Fire Protection Industry (ODS & SGG) Board member Daniel Wilson on scheduled gas fire-suppression systems

Watch these and more at

FPA Australia TV on YouTube:

<http://ow.ly/e8Ga30mkQn9>. ■



Neil Savery of the Australian Building Codes Board presents on the FPA TV YouTube channel.

NSW RELEASES CONTAINMENT NETTING SAFETY ALERT

SafeWork NSW released a new safety alert on the fire hazards of containment netting in June. The alert followed a fire at a construction site in Sydney on 31 May, where containment netting attached to scaffolding ignited. The incident was the third time this year that containment netting has caught fire at a construction or demolition site. In the absence of a relevant Australian Standard, the safety alert outlines the duties of suppliers and principal contractors to manage the fire risks associated with containment netting. The alert is available at www.safework.nsw.gov.au. ■

By the Fire Industry, For the Fire Industry

We are *approved*, we are *certified*, and we are *compliant*.



Our Strobes & Speakers comply to AS7240; Part 23 & 24

All our cables are fully compliant with the latest markings & adhere to AS1670.1-2015 Standards

Technical Support available, Australia wide

A trusted business, with over 25 years experience within the fire industry

firesense.com.au

ISO 9001
AS/NZS 4801
ISO 14001
BUREAU VERITAS
Certification



sales@firesense.com.au
02 8850 2888

FireSense is a specialist supplier of electronic fire systems and fire rated cabling products to installers and wholesalers.

With an extensive range of products covering electronic fire detection systems, building evacuation systems, high sensitivity aspirated smoke detection systems, fire alarm control cabling and fire rated power and control cables, FireSense is the right partner for your next major project.

FireSense's head office and warehousing is located in North West Sydney and has regional sales offices and warehousing in Melbourne and Brisbane.



Detect | Connect | Protect





PHOTO: ADR

SUNSHINE COAST PRESCRIBED BURNING CLINIC

Participants in the Sunshine Coast prescribed burning clinic, hosted by the Centre of Excellence for Prescribed Burning, had the chance to see examples of successful burning projects.

A prescribed burning clinic on Queensland's Sunshine Coast has highlighted the positive working relationships between agencies, and promising examples of successful burning projects.

The Centre of Excellence for Prescribed Burning hosted the event for nine participants from Victoria, WA and Tasmania to engage with agencies involved in prescribed burning in Queensland.

A visit to a development site managed by Stockland was popular with the clinic participants. Bushfire mitigation is considered a part of everyday business on the site, and residents moving into the new development are advised that prescribed burning is a key component of risk management for the estate. Stockland is also working with the Bunya Bunya Country Aboriginal Corporation to increase their capacity for cultural

burning in conservation areas within the development site.

A field trip to Australia's longest running scientific plots was another clinic highlight. Since 1971, the effects of prescribed burning have been investigated by burning the plots every two or four years and comparing them with fire-excluded plots. Research currently shows that plots burnt every two years have their own species richness and can be considered unique ecosystems.

A diverse range of speakers and presenters came together for the clinic, assisted by the South East Queensland Fire and Biodiversity Consortium and fire management stakeholders.

Queensland Fire and Emergency Services and Queensland Parks and Wildlife Services shared their current planning and modelling tools alongside insights from Bush Heritage Australia, Powerlink, Department of Roads and Transport, Gold Coast City Council, Sunshine City Council and HQ Plantations.

The Centre of Excellence for Prescribed Burning will direct learnings towards the development of future clinics and forums to foster increasing national connectedness of people—both to each other and to country. ■

VICTORIAN CLADDING LOANS AN UNFORTUNATE NECESSITY

In late July, Victorian Planning Minister Richard Wynne announced the introduction of new legislation that will allow for 'Cladding Rectification Agreements'. This will allow property owners and body corporates to finance combustible cladding replacement via low-interest loans paid through their rates.

Under the scheme, owners will be charged loan repayments via their council rates over a minimum of 10 years, with costs transferred with a property if sold.

Fire Protection Association Australia (FPA Australia) welcomes the new legislation and the help it provides owners, but regrets that such a step is necessary.

"The key importance is on getting buildings rectified and addressing the safety concerns. Anything that helps achieves that is positive, and this move is likely to help increase the pace of cladding replacement in Victoria," said FPA Australia CEO Scott Williams.

"But that result doesn't change the fact that property owners have become unfairly responsible for the cost of rectification through no fault of their own, due to the failure of enforcement of and compliance with building standards." ■

EMERGING TECHNOLOGY FORUM

As more Australians embrace alternative energy in their homes, it is critical that emergency services understand the new technology and the risks it may pose to their work.

Australia currently has about 1.8 million photovoltaic solar panel installations. Around half of these are linked to a battery storage unit.

Solar panels are an electrocution risk to fire and emergency service personnel because the panels cannot be turned off during sunlight hours. Some anecdotal evidence suggests that floodlights used by emergency services at night can accidentally activate the panels.

Likewise, battery storage units pose a threat to emergency personnel because they can continue to feed power to a building after the solar panel isolation switch is turned off.

Acknowledging concern from within the sector, Fire and Rescue NSW and AFAC explored these issues at an Emerging Technology Forum in Sydney on 9 August, presenting insights from Underwriters Laboratories, the Clean Energy Regulator and the Environmental Protection Authority.

Attendees heard from keynote speaker and Vice President of Research at Underwriters Laboratories Dr Tom Chaplin, and participated in three panel discussions addressing energy production, battery storage, and legislation and standards.

The audience included representatives from the alternative energy industry, insurance industry, defence personnel and fire agencies in NSW, SA, Queensland and New Zealand. Discussion during the event was productive and reflected the importance of further discourse on the issue.

The Clean Energy Regulator is willing to provide data to agencies to identify properties with solar panels installed, which can be integrated into their computer-aided design systems. No complete data set for battery storage is currently available, and an Australian Standard addressing battery storage systems is yet to be published.

The forum was supported by the generous sponsorship of Underwriters Laboratories, PV Stop and Fire Rescue Safety Australia. ■

PHOTO: AFAC



Fire and Rescue NSW and AFAC explored the risk of electrocution from residential solar panels and battery storage to fire and emergency service personnel at the Emerging Technology Forum.

Battery storage units pose a threat to emergency personnel because they can continue to feed power to a building after the solar panel isolation switch is turned off.

PROTECTING AUSTRALASIAN FIREFIGHTERS HEAD TO TOE



PACFIRE

1300 731 800 sales@pacfire.com.au

pacfire.com.au @pacfire.australia

▶ watch our latest clip on YouTube



CRC MODELLING HIGHLIGHTED AS KEY TO MANAGING RISK

Sophisticated modelling software developed by the Bushfire and Natural Hazards CRC has been highlighted by the Investor Group on Climate Change (IGCC) as a key tool to help navigate future climate risk.

IGCC has produced a guide called *Investing in resilience: tools and frameworks for managing physical risk*, which lays out some of the key concepts, issues and challenges associated with adaptation to climate change. The guide also provides a snapshot of emerging tools and resources to help investors assess and manage physical climate risk for future resilience.

One of these is the UNHaRMED scenario risk modelling tool—otherwise known as the Unified Natural Hazard Risk Mitigation Exploratory Decision Support System—developed by the Improved decision support for natural hazard mitigation project led by Professor Holger Maier and Graeme Riddell (University of Adelaide).

UNHaRMED is helping governments, planning authorities and emergency service agencies think through the costs and consequences of various options

when preparing for the effects of major disasters on urban infrastructure and natural environments. Importantly, it also allows future changes to be taken into account, giving a complete picture of the impact of certain policies and land use management decisions.

“Being highlighted on such an important list shows the importance and versatility of the UNHaRMED software,” said Mr Riddell.

“The inclusion of UNHaRMED in IGCC’s *Tools and frameworks for managing physical risk* shows the broad appeal for improved risk information and better evidence-based decision-making for reducing risk into the future,” Mr Riddell said. “We are excited to continue to apply UNHaRMED to help governments, emergency service agencies and investor groups to better understand their exposure to climate risk—and to reduce it through better planning and investment.”

“As our population increases and our urban boundaries continue to expand, the ability to think long term is critical to get where we need to be as a society,” said Bushfire and Natural Hazards CRC CEO Dr Richard Thornton.

“The policies and settlement patterns of the past are proving inadequate for the challenges of the future, and in many instances are intensifying the exposure to risk,” explained Dr Thornton. “Tools such as UNHaRMED will help governments at all levels improve their policies around land use planning and infrastructure development, increasing the resilience of their communities. The software is also relevant to industry and investors.”

Investing in resilience: tools and frameworks for managing physical risk is the latest in a series of resources that IGCC has developed in recent years to assess key climate risks across major industry sectors and identify means of investing in adaptation. It was initially developed in a workshop, co-hosted with the National Australia Bank in June 2018, which mapped the landscape of emerging tools and resources for managing climate resilience. The guide has been shaped and framed by investors and the finance community to accelerate the management of resilience across the Australian economy. ■

Scenario risk modelling tools such as UNHaRMED will help assess future climate risks and build resilience.



PHOTO: BEN HOUJUK (CC-BY-NC 2.0)

AFAC TV LAUNCH

AFAC TV presenter
Anjali Rao



AFAC TV is an informative, innovative online news platform designed to share insights and experiences from fire and emergency service professionals, and educate the wider sector in an engaging way.

Attendees at the recent AFAC 18 conference in Perth were the first to tune into AFAC TV, broadcast publicly for the first time at the conference on 6 September.

AFAC TV is an informative, innovative online news platform designed to share insights and experiences from fire and emergency service professionals, and educate the wider sector in an engaging way.

The program has been created in partnership with ASN Media and is presented by Anjali Rao, an award-winning journalist who has previously worked on CNN, Sky News and *The Project*. Over three episodes, Rao interviews industry leaders, and presents news reports and in-depth profiles

of AFAC members and other leading organisations.

Each episode opens with an interview with AFAC CEO Stuart Ellis AM discussing the three key episode themes: 'Raising standards', 'Risk and resilience' and 'The national approach'.

'Raising standards' focuses on the professionalisation of the sector and the developments underway in personal protective equipment design, health and safety in fire stations and prescribed burning.

The second episode, 'Risk and resilience', looks at some of the biggest risks to the sector, such as cladding and waste. It also discusses the critical development of community resilience, portrayed through the latest resilience

research from Wellington, New Zealand.

'The national approach' is the final episode of AFAC TV, and takes a look at how agencies can come together to help each other and their overseas counterparts. It shares the groundbreaking technology that's monitoring bushfire risk in urban areas, and the push for greater gender and ethnic diversity in the sector.

The episodes also include insights from the AFAC Executive Forum and Council meetings, bringing the latest from the AFAC discussion table directly to the screens of fire and emergency service personnel. ■

AFAC TV is available to stream now on the AFAC website: www.afac.com.au/initiative/afac-tv.



How does Finn protect a cold store against fire?

SECURITON

For your safety

LAUNCH IMPROVES TEAMWORK

Two checklists to help incident controllers better deal with the stress of emergency management and improve teamwork before, during and after an incident were formally launched in August.

The Emergency Management Breakdown Aide Memoire and Team Process Checklist—previously featured in *Fire Australia* (Issue Two, 2018) and developed by the Bushfire and Natural Hazards CRC—are both backed by extensive research and testing. The lists enable incident controllers, and those in charge of a team during an incident, to recognise a breakdown in teamwork, and provide a health check to ensure teams are working at a premium when they are needed most.

“The checklists provide guidelines to improve team processes before, after and during an emergency,” said research leader Associate Professor

Chris Bearman (CQUniversity).

“The checklists were very much driven by a gap that we identified through our research in the ways that agencies operated at the time,” A/Prof Bearman said.

The two checklists are designed to shift the focus away from blaming people, and instead place an emphasis on error recovery and minimisation. They are a flexible way to closely examine teamwork from a range of perspectives.

“Teamwork will break down from time to time,” A/Prof Bearman explained. “So what we need to do is to be able to quickly and effectively detect and recover from these breakdowns.”

Mark Thomason, Manager of Risk and Lessons Management at the SA Country Fire Service, believes emergency management agencies have a lot to gain from using both of the checklists—particularly those who work in incident

management teams, strike teams and at regional and state operation centres.

“The tools are straightforward and practical, and adaptive to the needs of individual emergency managers,” Mr Thomason said. “They are invaluable not only during operational response but also in debriefs and training. I recommend you use it with your incident management teams.”

Both checklists have already been used by the SA Country Fire Service, Tasmania Fire Service and the NSW State Emergency Service.

The tools were launched in front of an audience of 100 researchers, end users and agency staff from around Australia at the AFAC Lessons Management Forum in Melbourne on 15 August. ■

Download the tools at www.bnhcrc.com.au/embam and www.bnhcrc.com.au/teamprocesschecklist.

“The checklists were very much driven by a gap that we identified through our research in the ways that agencies operated at the time.”

— Associate Professor Chris Bearman



PHOTO: BUSHFIRE AND NATURAL HAZARDS CRC

L to R—Manager of Risk and Lessons Management South Australia CFS—Mark Thomason; Associate Professor Chris Bearman; Bushfire and Natural Hazards CRC CEO—Dr Richard Thornton at the launch of the Emergency Management Breakdown Aide Memoire and Team Process Checklist.

ELECTRICITY IN THE ROOM AT WORKSHOP

The Energy Networks Australia (ENA) research priorities workshop, held in collaboration with the the Bushfire and Natural Hazards CRC and S&C Electric Company, was held on 14 August.

In attendance were 40 representatives from Essential Energy, United Energy, Ausgrid, Jemena, SA Power Networks, Western Power, TransGrid, Evoenergy, Endeavour Energy, Powercor Australia, AusNet Services, Energy Queensland, Tasmanian Networks and Horizon Power.

The day featured a morning of informative talks to set the scene, including guest speaker Ron Critelli, Senior Director from Florida Power and Light, alongside CRC CEO Dr Richard Thornton and Dr Jill Cainey from the S&C Electric Company.

Mr Critelli spoke about the important role that electricity networks play in



PHOTO: BUSHFIRE AND NATURAL HAZARDS CRC

increasing disaster resilience. This includes learning lessons from extreme weather events, and a partnership approach towards mitigation.

In an afternoon of group discussions, attendees explored challenges and opportunities for electricity networks regarding natural hazards, emergency management and resilience, and

sought consensus on turning those into research priorities for the sector. The priorities will be written up and made available in the coming months.

Complementing the written priorities is a new CRC research project, commissioned by ENA, which will start to address some of the knowledge gaps identified during the workshop. ■

Workshop attendees discussed the electricity sector's role in increasing disaster resilience and identified future research priorities.



Robust and reliable, even in freezing environments.



SecuriRAS ASD 535 aspirating smoke detector:

- ✓ Operates at a temperature as low as -30°C
→ ASD unit is installed inside deep-freeze area
- ✓ Pipe length of up to $2 \times 400\text{ m}$
- ✓ One of the most powerful and robust aspirating fans on the market



Authorised Business Partner: **incite** fire

Securiton AG, Alarm and Security Systems
www.securiton.com, info@securiton.com

A company of the Swiss Securitas Group



For your safety

TWENTY YEARS OF NORTHERN FIRE TALKS

Attendees at the 20th annual Northern Australia Fire Managers forum discussed the past, present and future of the group, which brings together fire managers from across the north of the country.

Held in Townsville in June, the 20th Northern Australia Fire Managers (NAFM) Forum prompted much discussion on the aims and achievements of the group over the past two decades. Several speakers reflected on how the original aims were still relevant, despite all the progress.

In what was the largest annual meeting of this group, more than 65 fire managers and researchers from across the north of Australia discussed the history and future of the forum, plus topics of current interest in the tropical savannas.

Chaired by the Bushfire and Natural Hazards CRC, this year's meeting marked the 20th anniversary of the three-day forum, which gathers fire managers from a range of public and private organisations from across northern Australia. The forum included an overnight field trip to view fire management issues at a large solar park, on defence land, at a nature sanctuary, and in a wetlands forest, a eucalypt forest and coastal woodlands.

The meeting was hosted by the Queensland members—Queensland Fire and Emergency Services (QFES) and the Department of Environment and Science—with the support of the CRC. Among other issues, the meeting compared fire preparations and compiled weather data to produce the annual Northern Australia Seasonal Bushfire Outlook.

QFES Deputy Commissioner Mike Wassing closed the forum with a summary that noted the healthy discussion of its past and future, and the focus on why it exists and how it can

have more impact.

"I think that doing the 'why' is really, really important," Mr Wassing said. "I am probably like a lot of you in this room; I spend a lot of time on committees, and a lot of those committees don't understand why they exist in the context of actually trying to resolve a problem."

He said this was not the case with NAFM.

"You don't actually have this amount of people in the room in northern Australia and have a forum like this for 20 years without having a real clear vision of 'why'."

Mr Wassing suggested the real challenge for the forum in the future was to better define how it organised itself for the greatest impact in each jurisdiction.

"My reflection in listening to you is that NAFM is a community of practice. In a community of practice, you don't need to have a formal governance arrangement around it; it is a group of people who share a craft. Whether you are a land manager or a fire manager, you are sharing a craft or a profession." ■



PHOTO: BUSHFIRE AND NATURAL HAZARDS CRC

Most often, you get what you pay for.
Fire pump engines are no exception.



Fire pumps are often the sole source of water and pressure for a fire protection system. Make sure that your fire protection installation has a premium high quality engine at its heart.
Nothing Runs Like A Deere™



JOHN DEERE



For more information contact
Power Equipment Pty Ltd:

email: info@powerequipment.com.au
web: www.powerequipment.com.au
phone: 1800 069 469

COMING SOON



THERE'S A BIG IDEA CHANGING
25mm SMALL
DIAMETER.
ARE YOU READY FOR IT?



No mess. No stress.

See a sneak peak of our new Innovative Groove System | **IGS**[™]
for 25mm pipe at Fire Australia 2018, Booth #111



FireLockIGS.com

© 2018 VICTAULIC COMPANY. ALL RIGHTS RESERVED.

victaulic[®]

SAFE TOUCHDOWN AFTER OVERSEAS DEPLOYMENT

More than 160 firefighters from Australia and New Zealand have landed safely on home soil after helping their North American counterparts battle wildfires across the United States and Canada.

BY **ALANA BEITZ**

AFAC

On 8 September, a team of 140 highly skilled Australian and New Zealand fire specialists arrived at Sydney International Airport after responding to a request for assistance from the US National Interagency Firefighting Centre more than a month earlier.

Two days later, the remaining 28 Australian firefighters returned home from Canada, bringing Australia's international assistance effort to a close for the season. Their deployment was in response to a request for assistance from the Canadian Interagency Forest Fire Centre. The contingent travelled from Sydney to Vancouver on 30 July to begin their orientation before deployment to British Columbia.

This season, British Columbia has seen approximately 1,973 fires burn over 1.3 million hectares of land. Since 1 April, Canada has experienced a total of 6,642

fires across 2.2 million hectares.

All Australasian firefighters who assisted overseas were deployed to the US and Canada through the National Resource Sharing Centre.

The Australasian contingent travelling to the US arrived in Boise, Idaho, on 3 August for orientation ahead of their deployment to wildfires burning across California, the North West and the Great Basin.

During the US fire season, approximately 140 uncontained wildfires stretched across 14 states, burning more than 730,573 hectares. Australian and New Zealand fire specialists arrived to weather and fuel conditions conducive to further wildfire ignitions, which challenged them in the first weeks of their deployment.

AFAC president and Fire and Rescue NSW Commissioner Paul Baxter was on the ground in Boise during the



PHOTO: EMERGENCY MANAGEMENT VICTORIA

Hardworking crews arrived safely in Melbourne (above) and Sydney (top right) after spending a month in the US at the request of the US National Interagency Firefighting Centre.

PHOTO: NSW RURAL FIRE SERVICE



deployment. He praised the consistent and complementary relationship between Australasian and North American firefighters.

"The partnership for the deployments from Australia and New Zealand up to the United States have been going on now for 18 years," Commissioner Baxter told the Mendocino unit of the California Department of Forestry and Fire Protection.

"The good thing about our people is they are trained to have the same knowledge of the same roles that the United States fire system uses, so they can be dropped in anywhere."

International agreements strengthen relationships

Commissioner Baxter said the relationship was strengthened by the first country-to-country International Agreement on Fire Management between the US and Australia, which was signed last year. The new agreement transitioned the previous longstanding agreement between Australia and the US to a national level, and complements a similar fire management agreement reached between Australia and Canada in 2016.

Then Emergency Management Australia Director-General Mark Croweller, AFAC CEO Stuart Ellis and Alan Goodwin from the National Resource Sharing Centre travelled to the US to finalise the agreement in 2017. The agreement is a collaboration between Emergency Management Australia, AFAC, the US Department of Interior and the National Interagency Fire Centre in Boise.

The agreement, signed by Mr Croweller and the US Embassy's Chargé d'Affaires, James Carouso,

ensures consistency through training, research and professional management, allowing Australian and United States firefighters to work together seamlessly.

Commissioner Baxter said the success of the renewed agreement showed the maturing relationship between Australian and US fire services.

"It is signed by both federal governments, and that has really solidified the arrangement we have and formalised it. We are now able to deploy more quickly and on a basis that both organisations understand very well," he said.

"We have got aviation specialists and overhead leadership personnel who are able to drop into those positions when people are getting really tired, so we're really happy to add that value immediately, as soon as we touch the ground here in the United States."

AFAC President and Fire and Rescue NSW Commissioner Paul Baxter commended the personal sacrifice made by the Australian and New Zealand contingent during the deployment.

"They are up here for a month, away from their families and loved ones and from work, so they could commit to that period of time and come here to do the job that needs to be done," he said.

The efforts of Australian and New Zealand firefighters did not go unnoticed by the communities under threat from the continuing fires. Members of the public sent in letters of appreciation and support for the visitors to their orientation base in Boise. ■

Help at hand for the upcoming bushfire season

Commissioner Baxter said the strengthened relationship between Australian and US firefighters offered extra protection ahead of a challenging fire season back home.

"We would like to be able to call on the United States crews to come down and do the same thing that we do for them," he said.

Mr Ellis is pleased that Australia and New Zealand can assist both Canada and the US during their time of need.

"The AFAC National Council has close relationships with our US and Canadian counterparts, with arrangements for international assistance well established to draw on when needed," he said.

At Sydney International Airport, National Resource Sharing Centre Senior Deployment Manager Paul Considine was pleased that the contingent arrived home safely. He said the work ethic and expertise shown by the Australians and New Zealanders was appreciated by their US colleagues. ■

In a letter of support, one community member wrote: "We just want you all to know how much we appreciate you leaving your own home to come halfway around the world to help."

ENCOUNTER WITH AN INVISIBLE DANGER



A clear flame presents a clear danger from ethanol heaters, as discovered first-hand by a Station Officer with the South Australian Metropolitan Fire Service.

BY **BRENTON HONOR**

CodeRed Emergency Management

On Wednesday 15 August, I was having my daily caffeine fix with a mate at a café in Brighton, Adelaide, when I heard a woman outside scream. I thought someone must have been having a heart attack or had collapsed, so I ran outside.

Through the window of the ice cream shop next to the café, I could see flames in excess of two metres high. I told my mate to go back to the café next door to find a fire extinguisher, while I went inside the ice cream shop to see what I could do. I found a girl standing there with burns to her face, neck and hands. She was obviously in a lot of pain and in shock. The woman who I heard scream turned out to be an ex-nurse; she ran inside with me and administered first aid to the young girl. A shop assistant was on the phone to the ambulance.

Once I was happy the girl was in good care, I searched the café for a fire extinguisher—luckily, I found one. I then returned to the fire and recognised it involved an ethanol heater. The correct extinguisher to extinguish these types of fires is a dry chemical extinguisher. The one I found was a carbon dioxide extinguisher, but as it was the only one available, I cautiously but successfully extinguished the fire with it.

The ambulance and fire services arrived after approximately seven minutes. The young girl (I later found out she was a staff member) and another patron both went to hospital. The young girl had serious burns, and at the time of writing this article is still in hospital.

As I am an operational firefighter, I knew of the dangers of ethanol heaters. I believed—incorrectly, as it turned out—that all portable and freestanding ethanol heaters were banned in Australia, and so was surprised to see one still being used.

The fire was caused by the young staff member refilling the ethanol heater. One of the dangers of fires involving polar solvents, such as alcohol, is that they burn very clean, with virtually no smoke or smell produced. As the fuel is consumed, the visible yellow flame burns down to a flickering blue flame that can hardly be seen. The girl obviously didn't see the flame, presumed the fuel was empty and

innocently decided to refill the device.

She used a five litre container of 100% ethanol and poured the contents directly into the fuel tray. To access the tray, she had to lean over the decorative glass panels to get herself into a position to fill the tray. The fuel vapour immediately ignited, exploding in her face. She dropped the nearly full fuel container inside the device, which continued to feed the fire.

Ethanol heater history

Between 2010 and 2016 there were 117 reported incidents involving ethanol heaters in Australia; these have resulted in 113 injuries and 36 house fires. These figures have prompted the recent introduction of regulations relating to ethanol heaters, but there is a question about whether they go far enough.

Several regulations have been introduced:

- ◆ On 21 December 2016, an interim ban was imposed in all states and territories on the sale of certain decorative alcohol-fuelled devices (i.e. ethanol heaters). The ban did not cover the use of existing devices.
- ◆ On 17 March 2017, the Federal Small Business Minister imposed a national interim ban on the sale of certain ethanol heaters.
- ◆ On 15 July 2017, the national interim ban was replaced by a mandatory safety standard: *Consumer goods (decorative alcohol fuelled devices) safety standard 2017*. The new standard included the following requirements—alcohol-fuelled devices:
 - ◆ must be installed in a fixed position, or have both a dry weight of at least 8 kg and a footprint of at least 900 cm²
 - ◆ whether freestanding or fixed, devices must meet a 'stability test' as set out in European Standard EN16647:2015
 - ◆ must come with a fuel container that incorporates a flame arrester or an automatic fuel pump system
 - ◆ must have display warnings on the device about refuelling hazards.

To me, it is incomprehensible that these ethanol heaters—which are essentially an open-pool flammable-

Ethanol heaters like this one must now meet a mandatory safety standard.

liquid fire—are still found in public places and in people’s homes. While the new mandatory safety standard is a positive start, I believe it has several shortcomings. Areas that could be improved include:

- ◆ The standard needs to reference the workplace—there is a presumption that the ban affects domestic devices only.
- ◆ There is no requirement to have an external filling cap integrated into an internal fuel reservoir—despite most refilling incidents being the direct result of a person having to fill a fuel tray that incorporates the fire.
- ◆ The standard needs to ban all portable devices, not just the freestanding devices that meet the stated parameters. Apart from the obvious dangers of portable devices, this would alleviate the need for a stability test.
- ◆ The stability test references a European Standard—is this because we don’t have an Australian Standard

equivalent? Since when has this country allowed the consumer to purchase a product that does not meet Australian Standards? Also, the European Standard refers to the use in ‘private households’: there is no reference to public places.

My own experience with the ethanol heater fire illustrates some of these shortcomings. That fire was in a workplace (non-domestic) and involved a portable device (freestanding, not fixed), which weighed more than 8 kg but did not have a footprint of 900 cm², and had no external filling cap (fuel was poured directly into fire area).

Speaking to patrons and staff of the ice cream shop since this incident, I have been told of a number of near misses since the ethanol heater was placed in the shop. These included children touching the hot glass, children and adults tripping and nearly falling in through the open top, and other refilling scares.

need for employees and the general public to be educated about different types of fire extinguishers. In this instance, two extinguishers were brought to the scene from adjacent workplaces once the fire was out. One was a dry chemical extinguisher, which was appropriate to the fire, while the other was a water-expelled extinguisher. Water does not extinguish these types of fires, because polar solvents (ethanol) mix readily with water. Applying water to this type of fire would have spread it further, causing significantly more damage and potentially more injuries.

Generally, workplaces and the community are now more aware of first-aid practices and have a better first-aid skillset, due to public campaigning and organisational commitment to staff training. This awareness needs to be extended to fire protection, and particularly fire extinguishers. We need more members of our community to be trained in the use of these critical, live-saving, first-response devices.

In the community at large, there is a distinct lack of knowledge and skill surrounding the use and application of portable fire extinguishers.

Community preparedness

In the community at large, there is a distinct lack of knowledge and skill surrounding the use and application of portable fire extinguishers. The sudden and shocking nature of the incident I experienced reinforces the need for staff to have awareness and confidence in how to respond to fire using mandatory, first-attack firefighting equipment (i.e. extinguishers and hose reels).

The incident also underlined the

Looking ahead

The statistics speak for themselves—ethanol heaters are dangerous, and people are continuously getting hurt. As such, all non-fixed (portable and freestanding) ethanol heaters need to be banned. This would ensure consumers will not be able to purchase these devices and place them in their homes or in workplaces, putting themselves and others at risk of serious injury. ■



About the author

Brenton Honor is a Station Officer with the South Australian Metropolitan Fire Service, and has 34 years of service. He is the Director of CodeRed Emergency Management and has been a sitting member of FPA Australia’s TAC/17 Emergency Planning since 2013.

The packed audience at AFAC18 enjoyed presentations based around the theme of 'Changing lives in a changing world'.

CHANGING FOR THE BETTER AT AFAC18

PHOTO: AFAC

This year the premier annual conference for the emergency management sector, AFAC18 powered by INTERSCHUTZ, returned to Perth for the first time in 6 years. More than 2,800 attendees came together to explore the changes to their industry and the communities they protect, informed by the latest in emergency management research and practice.

BY **ALANA BEITZ**

AFAC

AFAC18 powered by INTERSCHUTZ was held at the Perth Convention and Exhibition Centre in conjunction with the inaugural Australian Institute for Disaster Resilience (AIDR) Australian Disaster Resilience Conference (ADRC), bringing the critical topics of emergency services and disaster resilience under the one roof.

The four-day event, held from 5 to 8 September, centred on the theme 'Changing lives in a changing world'. It provided stimulating thought and discussion on how change is fast becoming the new normal for emergency services, and how the sector can change itself for the better.

"The conference theme of 'Changing lives in a changing world' encouraged attendees to think about the future of fire and emergency

services and the direction of our industry," said AFAC CEO Stuart Ellis AM.

"The impressive schedule of speakers on stage and an extensive display of technology and equipment at the expo, helped us to imagine what is possible for the sector, and the partnership with ADRC allows us to take a more holistic approach to protecting our communities."

The conference opened with the Bushfire and Natural Hazards CRC Research Forum, providing insight into the ways research shapes emergency services and how it can be embedded into practice.

Keynote speaker Dr Neil Burrows, Senior Principal Research Scientist of the Department of Biodiversity, Conservation and Attractions WA, opened the program by tackling the conflicting evidence

between bushfire observations and simulations. He urged land managers to question any bushfire science that contradicts their experience. Chief Executive of the Australian Academy of Science Anna-Maria Arabia was the second keynote speaker. She suggested that scientists deepen their relationships with policy leaders and improve their communication skills to better influence national and regional policy development.

In recognition of ADRC's launch, many speakers took the stage to address the importance of disaster resilience. Keynote speaker Craig Fugate, who was US President Obama's former Federal Emergency Management Agency Administrator, opened the proceedings by sharing the 'seven deadly sins' of emergency management he identified in more than 500 presidentially declared disasters. He said the public is a resource, not a liability, during disasters. And when it comes to saving lives, "it's not just uniforms and lights and sirens, it's

neighbours checking on neighbours."

Other 'sins' identified by Mr Fugate were the expectation for communities to fit disaster plans, rather than designing disaster plans for the communities in place; limiting emergency response planning and preparation to events we are capable of responding to; and ignoring building codes and land use planning in mitigating disaster costs.

Singapore's Civil Defence Force (SCDF) Commissioner Eric Yap offered another international perspective during the conference. He presented the innovations in emergency management driven by the complexities the sector faces on the densely populated and urbanised island state. SCDF is working towards a 'Nation of lifesavers' by 2025, engaging the public through mobile app MyResponder to report and respond to hazard and health emergencies in real time.

In the event of a minor fire, the MyResponder app alerts people within a 400 m radius and asks them if they



are capable of responding. Users can also share photos and videos with the SCDF for review. The app has been downloaded 92,327 times and has 30,893 active responders on the platform. It is estimated the app has prevented 1,000 call-outs to minor fires since its launch in 2015.

First Assistant Secretary of the National Resilience Taskforce Mark Croweller AFSM brought the topic back home, taking a philosophical perspective on the importance of identifying our vulnerabilities to develop our resilience. Individualism, materialism and a separation from nature have

Former NASA astronaut Mike Mullane gave an entertaining presentation focusing on safety, describing the 1986 Challenger disaster as a "predictable surprise".



PHOTO: AFAC



People call this a terrible accident, but we should never use the word accident when we are talking about the Challenger; it was a predictable surprise.

— Former NASA astronaut Mike Mullane

eroded social cohesion, in turn eroding community resilience.

"We need to prepare for a big season ahead, but we need to do it through a compassionate lens," Mr Croweller said. "Who you are matters, what you do matters, who others are and what others do matters."

Safety was the focal point of an entertaining presentation from former NASA astronaut Mike Mullane that opened the third day of the conference. He drew comparisons between space exploration and the emergency service sector: both high-risk, high-pressure environments where people must put their lives in their colleagues' hands.

Mr Mullane warned of the "normalisation of deviance" from best safety practice, using the 1986 Challenger tragedy, which crashed 73 seconds after lift-off and killed seven crew, as an example.

"People call this a terrible accident, but we should never use the word accident when we are talking about the Challenger; it was a predictable surprise," he said. Pressures push us to take shortcuts and risks in our work, but Mr Mullane reinforced that the safety responsibilities of our jobs are non-transferable, so we must own them.

Strong leadership is a key component of safety and the subject of Dr Dana Born's research at the Centre for Public Leadership at the US Harvard Kennedy School of Government. Although there have been more than 1,000 studies of leadership, there is little evidence that any particular set of traits ensures effectiveness. Dr Born said this was a good thing, because it destroys the concept of a leadership mould and celebrates distinctiveness.

The conference program was populated with panel discussions, inviting attendees to share and discuss issues at the centre of the emergency management sector. Prescribed burning, Indigenous partnerships,

PHOTO: AFAC



On the demonstration floor, delegates enjoyed seeing the latest emergency services innovations.



PHOTO: AFAC

Dr Dana Born gave an impassioned talk about how strong leadership is a key component of safety.

volunteering and public warnings were all debated, with positive engagement from the audience. Other topics popular with attendees included mental health and well-being, climate change and diversity within the sector.

Last year at AFAC17, Mr Ellis and AFAC President Paul Baxter announced a new partnership with Male Champions of Change, beginning an active effort to move towards gender equality, inclusion and a broader goal of culture change throughout the fire and emergency services sector. One year on, they returned to the stage to share insights from the 'listen and learn' engagement sessions undertaken across the industry.

The insightful panel discussion included emergency services representatives Dominic Lane, Chris Arnol, Bronwyn Jones PSM and Karen Roberts and was chaired by Victorian Human Rights and Equal Opportunity Commissioner and Male Champions of Change Convenor Kristen Hilton. The panel members said the 'listen and learn' exercises gave their staff guidance and permission to open the gender equality debate. An outcome of the initiative is the 'panel pledge', which ensures women are represented on all major panels and conferences, so sector discussions benefit from different perspectives.

Data and case studies are being collected from these sessions and figures will be released at the end of 2018. Mr

Baxter said Male Champions of Change was about more than meeting quotas: 'we are not here to do this because we have been directed by our ministers; it's because it is the right thing to do'.

The exhibition and demonstration floor was once again popular. Attendees interested in the latest emergency services innovations and developments were offered a chance to engage with exhibitors and products to equip their work for the future.

Three professional development workshops improved participants' skills and knowledge during the conference. An AIDR clinic aimed to better prepare agencies for spontaneous volunteers; Emergency Management Spatial Information Network Australia presented a workshop to increase awareness of mapping and location technologies; and the Third National Disaster Resilient Australia–New Zealand School Education Network (DRANZSEN) Forum discussed disaster resilience as a vital component in the education of children and young people.

Achievements in the sector were recognised at the opening ceremony. Dr Simon Heemstra of the NSW Rural Fire Service received the Laurie Lavelle Award for his dedication to fire behaviour research and the SA Metropolitan Fire Service received the Stewart and Heaton Award for leading practice in mental health. Zoe

PHOTO: AFAC



Mounsey of Fire and Emergency NZ was awarded the Individual Motorola Solutions Knowledge Innovation Award, and Bushfires NT were celebrated with the agency equivalent. Bushfire and Natural Hazards CRC awarded the Special Recognition Award for research support and advocacy to John Schauble from Emergency Management Victoria, the Outstanding Contribution to Research Award to Dr

Melanie Taylor, of Macquarie University, and the Special Recognition Award for Early Career Researcher to Dr Briony Towers, from RMIT University.

Barry Kennedy from the NSW Rural Fire Service Association won the AFAC and CRC lucky dip prize, taking home a large trauma first-aid kit donated by St John Ambulance WA.

The celebrations continued at the gala dinner event, offering attendees a

chance to relax and network with their peers and dress to the colourful theme of the evening: 'Kaleidoscope'.

The incredible success of the AFAC18 powered by INTERSCHUTZ conference and exhibition reflects the ongoing efforts of the host agencies—the Department of Fire and Emergency Services WA and the Department of Biodiversity, Conservation and Attractions WA. ■

The exhibition displays were popular, as always.

Automatic Sprinkler Testing

- Testing of Standard Response Automatic Sprinkler Heads to AS1851-2012
- Testing of Fast Response Automatic Sprinkler Samples (Sprinklers with an RTI rating of 50 or less) to: AS1851-2012 + (ISO 6182-1)
- Testing of Foam Concentrate to NFPA 11A



ARCHER TESTING PTY LTD
 PO Box 3657, Tuggerah NSW 2259 Australia
 Telephone: 61 2 4351 0460 - Email: info@archertesting.com
 Factory Address: 5/2 Joule Place Tuggerah NSW 2259 Australia



RESEARCH BENEFITS FLOWING

Five years into its tenure, the research of the Bushfire and Natural Hazards CRC is being applied in practice by the CRC's partners right across Australia, highlighting its vision: trusted research and knowledge across all hazards, developed for the benefit of the community.

BY **NATHAN MADDOCK**

Bushfire and Natural Hazards CRC

Bushfire and Natural Hazards CRC research is making a difference—saving lives and reducing disaster-related costs. Read on to find out more about the impact of research on fire modelling, emergency warnings, community engagement, youth-led disaster risk reduction, policy development, volunteering, and emergency planning for animals.

Better fire danger ratings

The latest fire science, including CRC research, has been used to develop the pilot National Fire Danger Rating System. Currently underway is the first

major update to the system since it was devised in the 1960s.

The new National Fire Danger Rating System prototype was trialled by the NSW Rural Fire Service over summer 2017–18 to better incorporate extreme fire behaviour.

In coming years, when the revised system is in operation around Australia, all fire agencies will be able to better predict bushfire danger.

This will improve warnings and increase community safety. The CRC has contributed contemporary science on fire weather, vegetation conditions (fuel), fire behaviour, ignition likelihood, fire suppression, fire impact, communicating risk, urban planning, decision-making and mitigation.

The trial of the prototype is a significant demonstration of the successful use of CRC research in the sector: CRC partners AFAC and the NSW Rural Fire Service now own the research outputs. As the new system is piloted and integrated into the sector, the CRC will continue to play a critical role, providing vital science and evidence that underpins the new system.

Improved warnings to ensure action

CRC research is shaping Australian public warnings and information campaigns that prepare and protect communities from flood, fire, heatwave and other natural hazards. Insights have combined to equip emergency

PHOTO: MICK REVOLDS, NSW RURAL FIRE SERVICE

water authorities and the media are also benefiting, with Bundaberg Regional Council, Seqwater and ABC local radio in Wide Bay, Queensland, all changing their warnings and broadcast of warnings based on the research.

The investigation of flood fatalities to inform community safety campaigns has seen close collaboration between operational emergency services staff and CRC researchers, headed by Macquarie University's Dr Katharine Haynes. This has helped the NSW State Emergency Service develop statewide education campaigns on flood warnings. The research findings have also enabled agencies to better target their warning messages to high-risk groups and high-risk behaviours based on evidence from more than a century of fatalities, injuries and building losses. Public information campaigns have also been improved by incorporating messages from the research.

The CRC research has also supported broader initiatives in emergency communications and warnings—for both individual organisations and those at the national level—by providing reviews and assisting with the development of evidence-based warning guidelines for all emergency service agencies. It has also contributed significantly to investigations by the Prevention of Flood Related Fatalities Working Group, which is part of the Community Engagement Sub-committee of the Australia and New Zealand Emergency Management Committee (ANZEMC).

Disaster-resilience education for young people

The importance of educating children and youth about disaster risk reduction and resilience is now front and centre around Australia, based on CRC research led by Professor Kevin Ronan (CQUniversity) and Dr Briony Towers (RMIT University). This change is based on research that identified the valuable role that children play in the safety of their household and their community.

The research has looked at how well disaster risk-reduction and resilience programs in Australian primary and secondary schools contribute to the mitigation and prevention of disaster impacts. Alongside this, the project team has been co-evaluating the reliability and outcomes of disaster-resilience

education programs to ensure that the intended outcomes are being achieved.

Collaboration is at the heart of this research at every stage—with researchers, emergency managers and educators involved in all aspects of the study.

'What if?' questions drive future policies

What if an earthquake hit central Adelaide? Or the Yarra River flooded Melbourne? And what if a bushfire on the slopes of Mount Wellington threatened Hobart?

'What if?' scenario modelling by the CRC is helping government, planning authorities and emergency service agencies think through the costs and consequences of various options when preparing for the effects of major disasters on urban infrastructure and natural environments, and how these might change into the future.

The research, headed up by Professor Holger Maier at the University of Adelaide, is based on the premise that an integrated approach is needed to reduce the risk and cost of natural disasters—an approach that considers multiple hazards and a range of mitigation options.

Taking into account future changes in demographics, land use, economics and climate, the modelling:

- ◆ analyses areas of risk both now and into the future
- ◆ tests risk-reduction options
- ◆ identifies mitigation portfolios that provide the best outcomes for a given budget
- ◆ considers single or multiple types of risk-reduction options, such as land use planning, structural measures and community education.

Case studies have modelled the expected impacts of hazards in Adelaide, Melbourne and Tasmania from 2015 to 2050, with an annual time step under different plausible future scenarios, showing the change in risks in different localities. Agencies will be able to use the system to help allocate budgets, demonstrating that they are using the best available science to inform decision-making.

A new model for helping

CRC research has highlighted that the nature of volunteering and community involvement in disaster management is



Fire danger ratings and, in turn, emergency warnings are being improved through implementation of research findings.

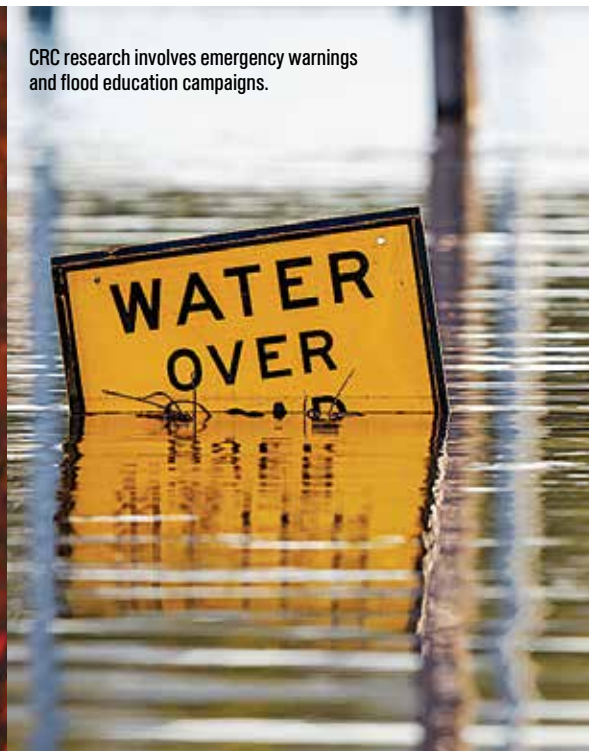
service agencies around Australia with better targeted, long-term public safety campaigns, as well as urgent warning messages delivered to at-risk populations in the face of imminent emergencies.

In the past, intuition, experience, anecdotal information and market research have shaped the design of public risk communication and education campaigns, both in Australia and around the world. However, this lack of rigour has potentially limited effectiveness.

State-based emergency service agencies have drawn from CRC research led by Professor Vivienne Tippet (Queensland University of Technology) and collaborated at the national level on their insights and experiences in their testing phases. Their aim is to determine a style and structure for their official public messages and information campaigns. Local councils,



PHOTO: BEN SHEPHERD, NSW RURAL FIRE SERVICE



CRC research involves emergency warnings and flood education campaigns.

PHOTO: REX BOGGS (CC BY-ND 2.0)

Emergency service agencies are changing their volunteering models thanks to research.

fundamentally changing. The research, led by Dr Blythe McLennan (RMIT University), has provided strategies that emergency service agencies can employ to help them adapt to this change. Guides and advice that inform policies on volunteering and spontaneous volunteering have also been developed.

Key national programs have been influenced by the study, with findings used extensively for the development of the National Spontaneous Volunteer Strategy by the ANZEMC.

The strategy provides advice to emergency service agencies about what they need to be aware of, and what they need to consider and plan for when working with spontaneous volunteers. Important issues, such as legal obligations and social media, are also covered.

Building on this strategy, the Australian Institute for Disaster Resilience drew directly on the research when developing their 2017 handbook on spontaneous volunteer management.

The handbook provides important guidance for organisations on how to incorporate the principles of the National Spontaneous Volunteer Strategy—and the most recent research on spontaneous volunteering—into their own plans and procedures.

Emergency services are also using the research, with the NSW State Emergency Service using the findings to shape how the organisation will recruit volunteers. Their latest volunteering

strategy was informed extensively by CRC research findings.

In WA, the Department of Fire and Emergency Services has used CRC research to develop new directions in volunteering, while SA's Department of Communities and Social Inclusion, Volunteering ACT and Volunteering Victoria have also been influenced by the work in developing policies and guides to volunteer management—both during emergencies and in recovery.

Be Ready Warrandyte, a community group in one of Melbourne's high-bushfire-risk suburbs, has drawn extensively on the research to help educate and support its local community.

Emergency planning for animals

Australians love their pets—and this influences how people behave during an emergency. Emergency services are incorporating findings from CRC research to influence their plans and policies during disasters.

Under the direction of Dr Mel Taylor (Macquarie University) the research identified best practice approaches to animal emergency management. This has provided emergency management agencies with the data they need to make better informed decisions on planning and targeting of resources.

Working with the Blue Mountains Animal Ready Community, a range of resources has been developed to highlight the importance of planning for animals during emergencies.

To date, 23 NSW Rural Fire Service brigades across the Blue Mountains have used the resources, as have the Springwood Neighbourhood Centre and the Mountains Community Resource Network.

In Tasmania, animal populations have been mapped in partnership with the Tasmania Fire Service and the Department of Primary Industries, Parks, Water and Environment. This has informed evacuation planning, traffic management plans and capacity planning.

RSPCA Queensland has used the research to inform its policies, while in Victoria, the Department of Environment, Land, Water and Planning has used the findings to inform its risk assessment processes. HorseSA used the research to support its emergency planning and gain funding for appropriate equipment.

Nationally, the Australian Institute for Disaster Resilience drew on the research to develop a section on animal management in its updated evacuation planning handbook, published in 2017.

In consultation with the CRC research team, state animal emergency management plans have also been revised at three primary industry departments—the Victorian Department of Economic Development, Jobs, Transport and Resources; WA Department of Primary Industries and Regional Development; and SA Department of Primary Industries and Regions. ■

GLOBAL EYES ON AUSTRALIA'S VALVE MONITORS

While Australia's world-leading valve monitor standards have been slowly eroding, new global interest may reinvigorate them.

BY **ANDRE MIERZWA**

Operations Chief Engineer FM Global

In today's uncertain times, the issue of security of vital infrastructure—such as power stations, oil refineries and data centres—and of places of public congregation, such as convention centres, stadiums, theatres, major shopping malls and high-rise buildings—is uppermost in many people's minds.

We all know that today's perpetrators of harm can be internal as well as external, and be very technology savvy—not just from the cyber side, but also the engineering aspects. The internet provides all the information needed to understand in detail how things work, and hence the workarounds. This is no time to become lax with monitoring and security. In fact, we should be more concerned, and we must ensure critical fire protection systems cannot be compromised.

Nowra aircraft hangar fire

Australia's interest in fire protection system security was sparked by an event that occurred in 1976. A deliberately lit fire at the Nowra aircraft hangar destroyed 12 Naval Grumman Tracker Aircraft. The sailor charged with the fire shut down the sprinkler system and opened the defueling valves on two aircraft before starting the fire.

After the hangar fire, the Australian Government, Department of Defence

and the Commonwealth Fire Board looked intensively into fire protection security of property and infrastructure at all Commonwealth agencies.

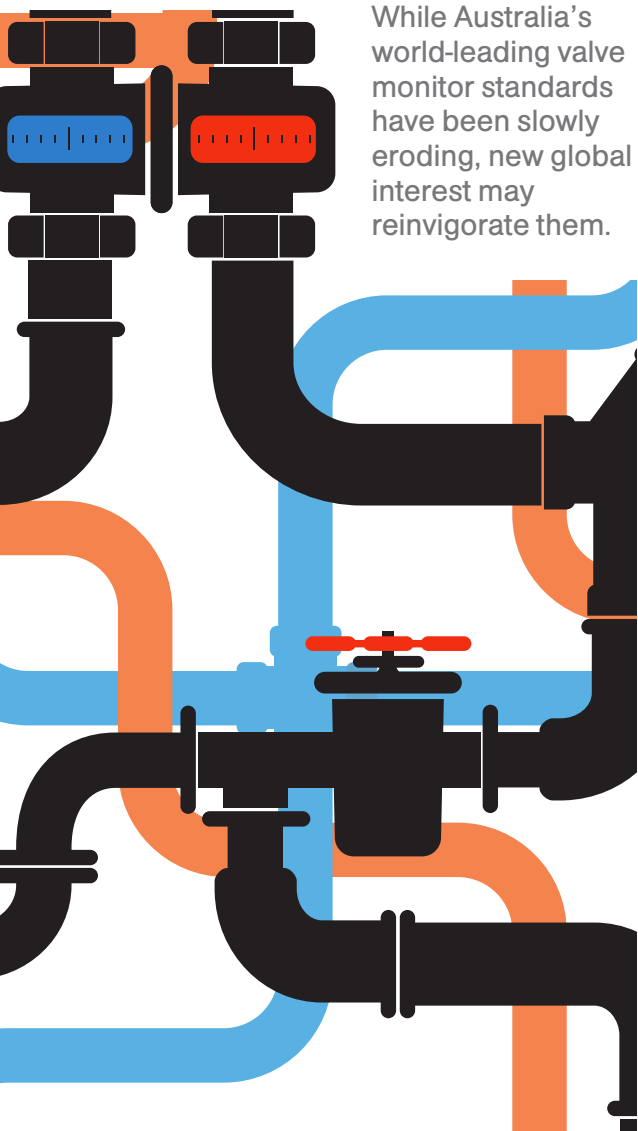
Around the same time, the Melbourne Metropolitan Fire Brigade (MFB) had grave concerns for their firefighters' safety. In the early 1980s, their Systems Engineering Group developed a specification for valve monitors, as well as making a version of their own. This specification became the basis for the Scientific Services Laboratory (SSL) document CLP 191—*Specification for tamper resistant valve monitoring switches*.

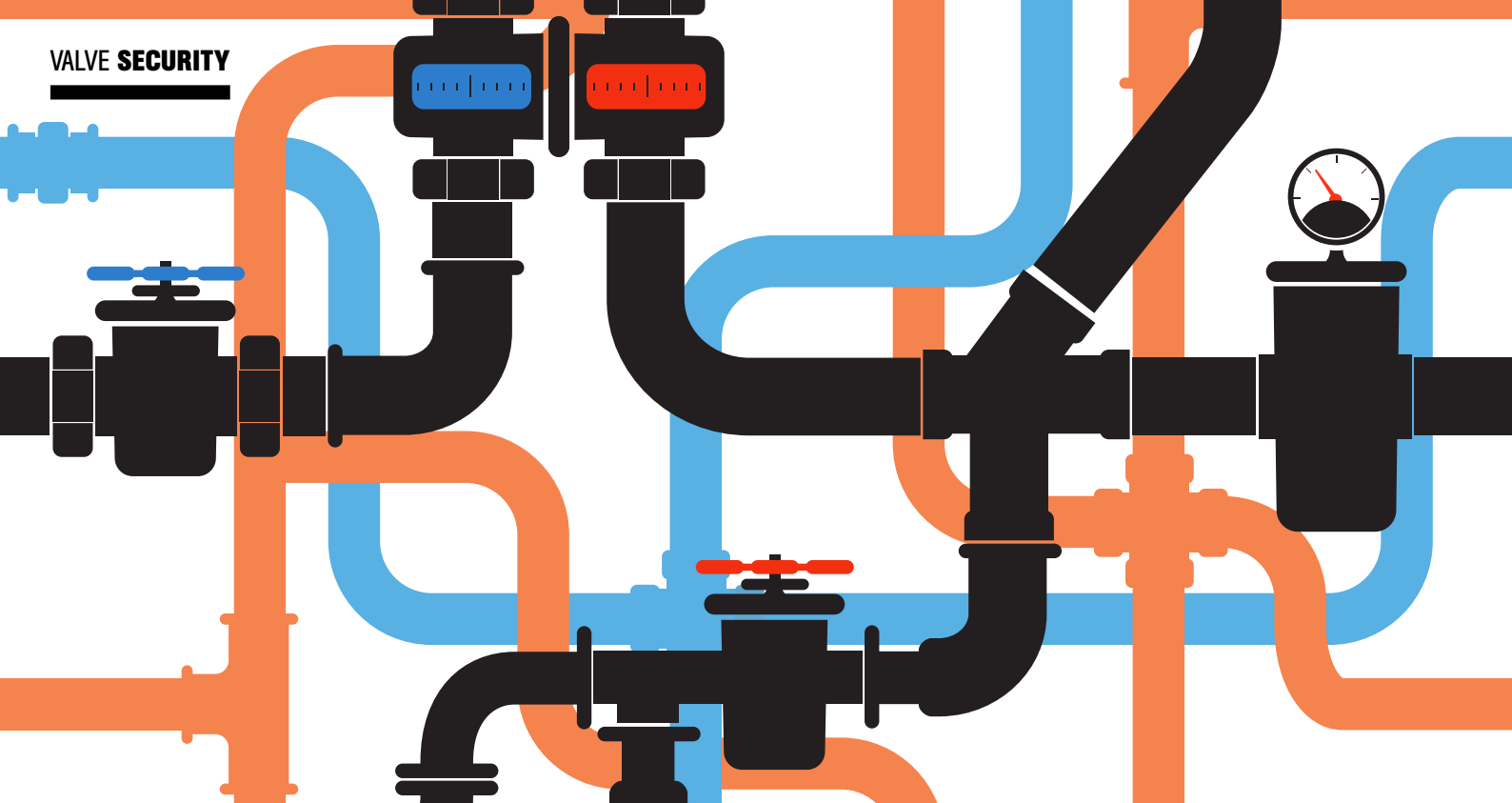
The SSL document, in turn, was used to develop a draft Australian Standard AS 4118.1.4 in 1991. By 1994, this had turned into the published standard, *Valve monitors for fire protection equipment*.

Valve monitor standard devolution

In Australia, we have been very fortunate to have had this world-leading technology for monitoring and security of fire protection valves for more than 30 years.

In the early days, three valve monitors were approved for use in the Metropolitan Fire District—the MFB valve monitoring device, the Amtron valve monitor we all know, and the ANSCAN valve monitor. Today, only the Amtron valve monitor has stood the test of time; a testament to its quality, robustness and fitness for purpose. It is the only one





listed by ActivFire as fully meeting all the requirements of AS 4118.1.4.

Of interest here is that AS 4118.1.4 only provides one set of requirements for a 'Valve monitor', which in Australian fire protection installation standards is referred to as a 'Class A valve monitor'. The original SSL specification included requirements for two classes of valve monitor—A and B—however, this was not taken up by the Standards Committee. The Commonwealth Fire Board was fully behind the new standard when it was published, but one year later identified a need for a lesser grade of monitoring for some of their facilities and applications. It then requested the SSL Class B requirements be added to the valve monitor standard.

The SSL requirement for a Class B valve monitor was still required to set off an alarm if an attempt was made to remove, open or tamper with the monitor. This is something that today's Class B valve monitors do not comply with. Both Class A and B valve monitors also had to meet all of the electrical and environmental requirements in AS 4118.1.4.

As it turned out, the Standards Committee decided against a change to the valve monitor standard. The 1995 version of AS 2118.1 only had provision for valve monitoring devices complying with AS 4118.1.4, but limited the requirement for monitoring to:

- ◆ high-hazard systems
- ◆ in buildings higher than 25 m
- ◆ where required by acts or regulation.

For the 1999 revision, the FP 4 Standards Committee did agree to specify what constituted a Class B

valve monitor and where it could be used. This was a much watered-down requirement compared with the original SSL specification, with the only tamper resistance being on the wiring back to the fire indicator panel (FIP).

This allowed all imported valve monitors and integral valve monitoring on butterfly valves to be acceptable for an exception that was also introduced in AS 2118.1-1999: "Class B devices are permitted where the monitored components are located within a secure area or room with access restricted by means of security or a system providing at least the same level of security as achieved with Class A monitoring".

The intent here was an area that was not only physically secured, but also monitored, with alarms back to the alarm panel and all the other features required by AS 4118.1.4 provided. Many people have misinterpreted this exception to simply mean a locked room or cage—and so the downward slide begins.

Unfortunately, as the years passed and memories faded, questions were raised, and economic pressures came to bear to undermine the high level of security we once had.

In the 2006 revision, the exception was watered down further to "a secure area or room with access restricted by means of a security device or system". What does this really mean? Gone was the requirement for monitoring of the area. The requirement for Class B monitors to have tamper resistance for the wiring was also dropped. It was fortunate in one respect that this version of AS 2118.1 was not called up in the Building Code of Australia.

This brings us to AS 2118.1-2017.

Once again, the exception has been expanded: "Class B devices are permitted where the monitored components are within a ceiling space, a secure area or a room with access restricted by means of a security device or system".

There was a proposal to include fire-isolated stairs as well, but that was rejected by the committee. Fortunately, the committee also decided to reinstate the requirement that Class B devices shall transmit a signal upon attempts to tamper with or bypass the connection to the FIP.

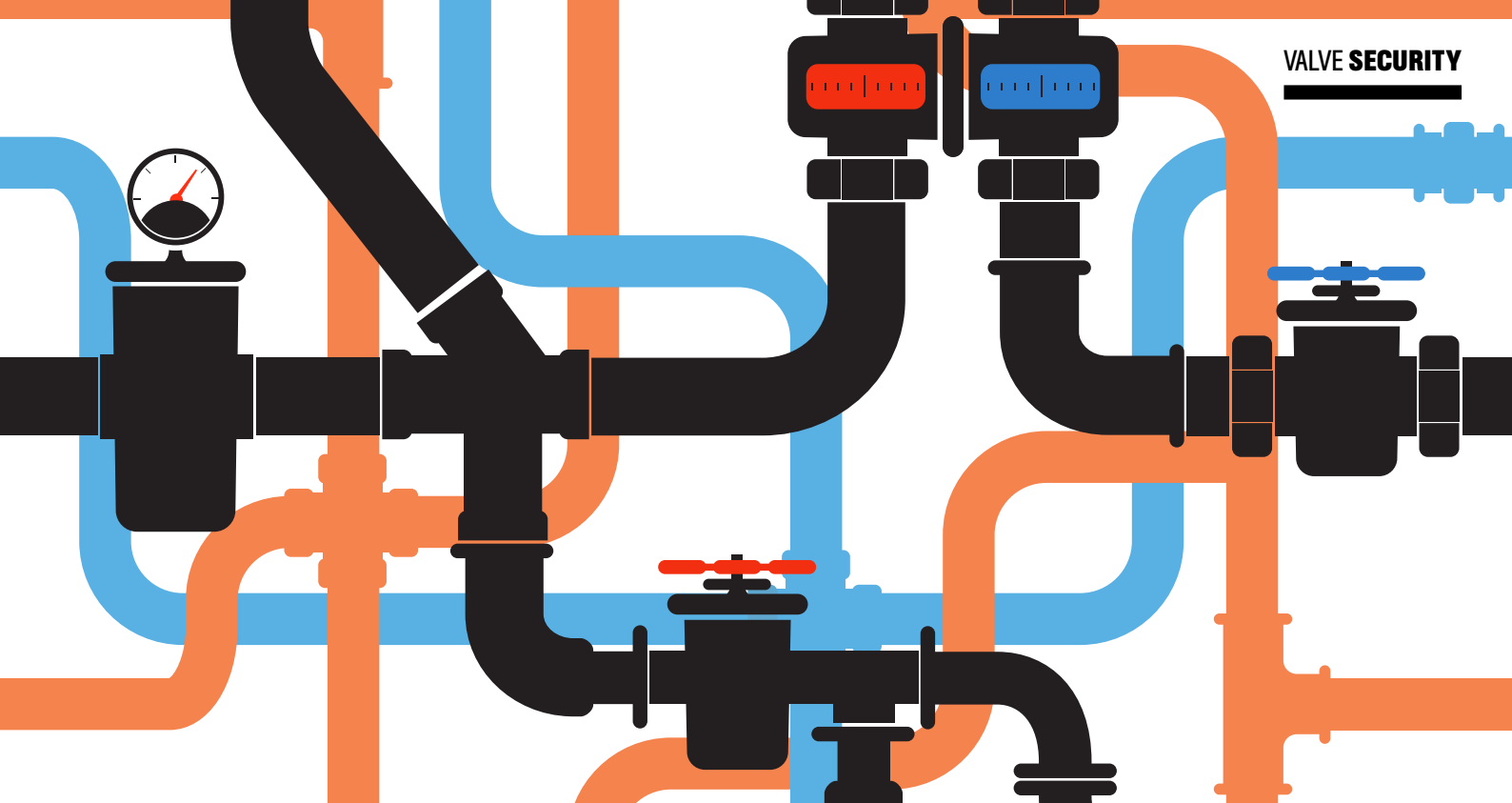
That is where we are at now. Is this acceptable, or are we going to see more erosion of our great valve monitor standard and fire protection system security?

The latter is already happening, with inferior substitute devices being used that ignore the key electrical and environmental requirements in AS 4118.1.4, and try to pass themselves off as the equivalent of Class A valve monitors, which they are clearly not.

Many people are also under the impression that enclosures or cabinets locked with a 003 key are secure, or that valve covers and other devices with anti-tamper headed bolts or screws are considered 'security devices'. Unfortunately, a quick look online will find for sale 003 keys and tools to undo anti-tamper bolts and screws.

The good news

With the ever-increasing need for greater security in all aspects of our lives, the rest of the world is now recognising what we have here in



Australia—and is showing great interest in catching up.

FM Approvals has recently issued Approval Standard 3135 for valve monitoring, incorporating a new category of 'enhanced security valve monitors' (ESVMs), which replicates all the key elements of AS 4118.1.4 and more. This standard is now published, and manufacturers of FM Approved valves have new guidance and an incentive to improve their offering to provide valves that include ESVMs. This is really good news for the industry.

Note that FM Approvals does not consider either 003 keys or anti-tamper headed bolts or screws to be acceptable security measures.

So what is the incentive for adoption? FM Global is considering changing its requirement for inspections of valves with ESVMs to a six-monthly physical check and test of valves! Such is the confidence in the new standard and quality required—something we have had here in Australia for more than 30 years.

If a change to six-monthly checks is good enough for FM Global, why shouldn't it be good enough for us? The maintenance standard AS 1851 is up for revision, and this change for Class A monitors will be proposed. If it gets through, it will mean a significant reduction in maintenance costs. In buildings where Class A monitoring is required, there will also be an incentive to forego some, if not all, of the current exceptions for both cost savings and improved security and monitoring of their fire protection systems.

The good news doesn't end there. In its data sheets, FM Global defines



The Nowra Naval Air Base Hangar after the fire.



A Grumman Tracker.

'smart valve monitoring' systems, which combine Class A monitors or ESVMs with a secure wi-fi interface for secure, real-time monitoring. This technology, already available in Australia, can greatly improve monitoring and security, as well as save money.

In today's difficult times, we should be proud of our world-best standards for this simple, but very strategic, element of fire protection system security. It

may well be one of the key reasons for Australia's excellent history of fire protection system effectiveness.

We now need to maintain our current minimum requirements, rather than continually diluting them. We must also take the opportunity to promote additional security by reducing the frequency of inspections of valves fitted with ActivFire listed valve monitors that fully comply with AS 4118.1.4. ■

LESSONS MANAGEMENT FORUM 2018

Increasingly, the emergency management sector is expected to respond not only to emergencies, but also to the lessons that arise during the response.

BY **NICOLA LAURENCE** AND **ALANA BEITZ**

AFAC

Lessons management is an emerging capability that supports the reflection on, and implementation of, lessons learned within an organisation or sector.

This idea was central to the Lessons Management Forum 2018. Held at the Windsor Hotel in Melbourne on 14 and 15 August, the event saw 110 delegates and presenters participate. Attendees came from across Australia, New Zealand, and as far as the United Kingdom (UK).

Presentations from keynote speakers provided insights and perspectives on effective lessons management across a range of sectors. These included agriculture, health, maritime, local government, the Bureau of Meteorology, defence, community and fire and emergency services.

Culture, methodologies, capability development and leadership were the recurring themes that arose in the presentations. Speakers addressed the topics of effective lessons management, resilience, teamwork, research use and innovative operational capability.

Grounding lessons in tangible, local contexts ensured the perspective of the community remained central to the forum. A flash-flooding event in the Dungog Shire and the devastating fires of the Blue Mountains were discussed in an armchair session with Dungog Shire Community Centre Manager Sarah U'Brien and Mountains Community Resource Network Executive Officer Kris Newton.

The discussion, facilitated by Louise Mitchell of the Victorian Department of



PHOTO: AFAC

Forum delegates shared insights through keynote presentations and workshops.

Health and Human Services, shared Ms U'Brien's and Ms Newton's experiences and learnings from a local response and recovery perspective. The format also allowed participants to ask questions of the speakers and develop a deeper appreciation for the lived experiences of the affected communities.

Identifying, sharing and implementing lessons

Learning from experience is one thing, but implementing the revisions into the operations of an organisation is quite another. How to introduce lessons at not only a tactical or operational level, but also at a strategic level, was keenly discussed as a key theme of the forum.

Emergency Management Australia's Acting Director-General Rob Cameron set the tone early on this topic, with a presentation on coordinating genuinely 'national' lessons management. Lead emergency management agencies from various states and territories followed suit, sharing trends and lessons identified as well as the challenges and opportunities around system-wide approaches.

A live cross to Brian Welsh from the Joint Emergency Services Interoperability Programme in the UK proved a highlight of the forum. Mr Welsh outlined how the UK developed a national online database

to capture lessons from multi-agency events, enabling emergency services to work better together through identifying and sharing lessons. The UK database ensures a collaborative approach is adopted. This improved both interoperability and understanding across the sector.

Another live cross came from Nick Milton, of knowledge management consultants Knoco. Also based in the UK, Dr Milton used his presentation to outline the organisation's national approach to evaluating lessons.

Eric Claussen from National Parks NSW highlighted the importance of after-action reviews following a major incident, and the benefits of reflection and storytelling in lessons management. He also touched on the importance of incident welfare checks to ensure the health and safety of affected personnel.

Breakout and post-forum workshops

Aside from the extensive selection of speakers, the event also offered three breakout workshops for practitioners. Mark Cuthbert of the Department of Home Affairs introduced an Observations, Insights and Lessons model, while David Bruce and Nathan Maddock from the Bushfire and Natural Hazards CRC discussed communications for

MANAGEMENT

PHOTO: AFAC



Logan City Council accept the inaugural AFAC Lessons Management Award.

The inaugural AFAC Lessons Management Award was presented to Logan City Council, an affirmation of the key role local government plays in the lessons space.

The award celebrated the development and delivery of a formal lessons management program, spearheaded by Carla Bailey, Laura Cooper and Margaretta Burton. The prize-winning program integrates smoothly and supports the council's existing disaster-management function. The Lessons Management Award was made possible this year by the generous support of ISW, a recognised leader in lessons management software solutions.

PHOTO: AFAC



Participants at AFAC's Lessons Management Forum 2018 heard about reflecting on and implementing lessons learned within an organisation or sector.

lessons management. Roger Strickland and Tammy Garrett from Victoria's Country Fire Authority (CFA) shared the preliminary results from a CFA program, showing the benefits of taking a 'no-blame' approach to lesson management.

The Lessons Management Forum 2018 was followed by a post-forum dedicated Lessons Analysis Workshop on 16 August. The two objectives of the workshop were to identify the recurring lessons across

sectors and jurisdictions and to identify any emerging lessons. Participants used lesson management processes to theme and analyse observations to produce their insights. Once finalised, the outcomes of this workshop will be made available on the AFAC website.

Further information

Presentations and informative resources from the Lessons Management Forum 2018 are available on the AFAC website

at www.afac.com.au/initiative/research.

To learn more about lessons management, explore the Lessons Management Collection on the Australian Disaster Resilience Knowledge Hub, which features the Lessons Management Handbook and resources from around Australia: www.knowledge.aidr.org.au/lessons-management. Stay in the loop by joining the Lessons Management Community of Practice on LinkedIn: www.linkedin.com/groups/13523669. ■

PREPARE FOR EXTENDED SEVERE WEATHER SEASONS

PHOTO: CARL COLEMAN, NSW RURAL FIRE SERVICE

Australia needs to prepare itself for the threat of year-round natural hazards that in the past were only associated with the summer months.

BY **DAVID BRUCE**

Bushfire and Natural Hazards CRC

Bushfires along the east coast was the topic of discussion when Bushfire and Natural Hazards CRC CEO Dr Richard Thornton was asked to comment to the media in August.

"Heat, drought, flood and fire are not new phenomena for Australia; we have seen these before and we will see them again," said Dr Thornton. "Although it is not common to have bushfires in northern NSW in August, it's certainly not unprecedented. It was the severity of the August fires that was exceptional.

"What is different now is that there is an underlying one degree Celsius increase in average temperatures, which means that the variability of 'normal' events sits on top of that. We are seeing weather records routinely being broken across the continent and indeed the world, and all indications are that we are on a trajectory that will see temperatures continue to increase.

"What this means for extreme hazards, we cannot be sure. This is an area in critical need of further research

into weather prediction, land planning, infrastructure development, population trends and community awareness. Climate change is causing more severe weather, but demographic changes are having an equal impact and deserve just as much of our attention.

"Here in Australia, it has been unusually dry and warm over the last few months. When preceding conditions have been like this, and the bush and grass is so dry, it does not take much for a fire to get going once the wind is up—regardless of the season."

Dr Thornton said Australia was familiar with year-round bushfires, which feature across the north of the continent in the middle of the year and move southwards at the end of the year and into the new year. However, these seasons are now getting longer—as are the fire seasons in the northern hemisphere.

"With fire seasons lengthening and overlapping across the globe, we need to think of new ways of dealing with bushfires, floods, cyclones and heatwaves," Dr Thornton explained. "The old ways of sharing resources around Australia and with the northern hemisphere may not always be possible,

so we need to discover better ways to manage all our resources."

Dr Thornton said this was not only a matter of managing resources, such as water-bombing aircraft and firefighting vehicles.

"Firefighting is still very much done by people, despite advances in technology—and a great many of these are volunteers from the community. Our research shows that those human resources are now being stretched with the bushfire seasons getting longer, while our emergency services still regularly deal with floods, cyclones and severe storms, plus other demands such as motor vehicle accidents and search and rescue."

The *Southern Australia Seasonal Bushfire Outlook*—released by the Bushfire and Natural Hazards CRC in September—is used by fire authorities to make strategic decisions on resource planning and prescribed fire management for the fire season. The map shows the bushfire outlook for southern Australia through to the end of 2018. This map has been combined with the outlook for the northern Australia bushfire season, which was released in July, to show the areas of fire potential for all of Australia.

A summary of the outlook for those areas covered is provided below.

Queensland

Dry conditions have led to areas in south-west Queensland enduring one of the most severe droughts in decades. As a result, almost all of inland southern Queensland has very sparse vegetation and fuel loads. While this reduces the potential for high-intensity grass fires, note that fully cured grass—even with low fuel loads—can carry fast-moving fires in hot, dry and windy conditions. Vegetation along the Coral Coast has experienced below-average rainfall over the past 12 months, with above-normal fire potential expected. Further south, forest and grassy vegetation has soil moisture much below the long-term average. Fuel loads in these areas are above the long-term average, with these areas likely to have above-normal fire potential for the 2018 fire season.

New South Wales

Weather conditions have been exceptionally dry over NSW during 2018, with the Murray–Darling Basin recording its driest January–July since 1965 (more than 50 years). This has allowed severe rainfall deficiencies to accumulate in many areas west of the Great Dividing Range, but also through the Greater Sydney region. At the end of August, the Department of Primary Industries mapped nearly all of

NSW as being in some state of drought, with 21% classified as in intense drought, 49% experiencing drought conditions, and a further 30% as drought affected. Windy conditions in August resulted in many significant bushfires in forested areas up and down the east coast, and there is significant concern for the potential of an above-normal fire season in forested areas on and east of the Divide. Reports of grassland fuel conditions west of the Divide have indicated that while grassy vegetation is cured, it is below average in quantity or load, resulting in an assessment of normal fire season potential for grassland areas west of the Divide. Note that while grass load is reduced and therefore the potential intensity of grass fires may be reduced, highly cured grass creates the potential for grass fires to spread rapidly.

Australian Capital Territory

The fire season was declared a month early in the ACT, on 1 September, with fires across NSW during August reinforcing the need to be prepared early. Large fires requiring regional-level bushfire-suppression operations can be expected. In grassland areas, both metropolitan and rural, grass fires could still be a problem due the ongoing drought conditions.

Victoria

Much of East Gippsland has experienced two consecutive years of record low rainfall

during autumn and winter. As a result, forests are significantly more flammable than normal, due to an increase in dead material in the near surface and elevated fuels. Unusually early bushfire activity occurred in East Gippsland during July and August, highlighting the severe level of dryness in forests. These dry conditions are likely to be exacerbated during spring and summer with the climate outlook for drier and warmer conditions. These areas can expect above-normal fire potential from August right through summer.

Further north, the Great Divide and Alpine regions are experiencing good levels of streamflow and snowfall. As a result, normal bushfire potential is expected across these regions.

In the west, south-west and central regions, normal bushfire potential is also expected, as rain has kept soil moisture at relatively high levels. However, there is some uncertainty around how much dryness may carry over from previous seasons, as well as how quickly warm and dry conditions expected in spring may increase flammability in forests.

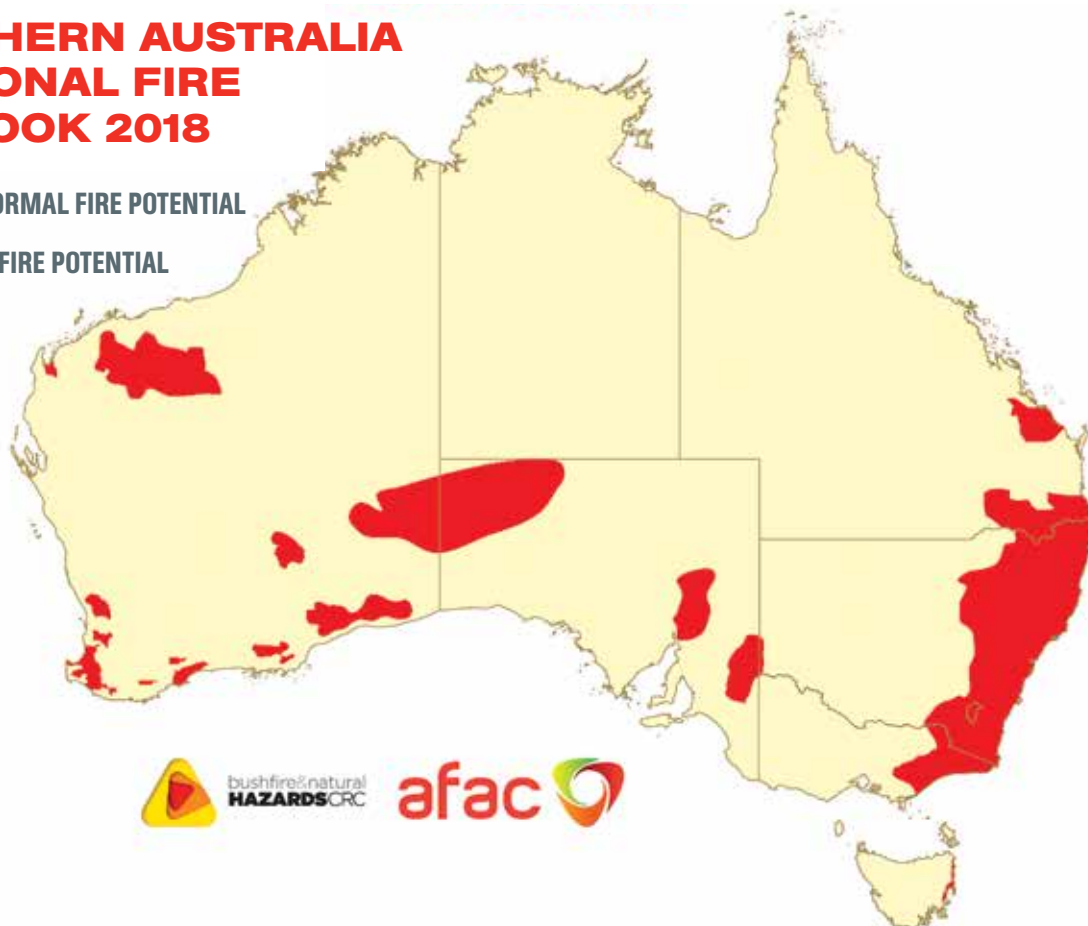
The timing and severity of grass fires will depend strongly on rainfall patterns during late summer.

North and north-western Victoria has experienced below-average rainfall during autumn and winter, resulting in reduced cropping activity and pasture growth. These areas are likely to experience a normal fire season.

**SOUTHERN AUSTRALIA
SEASONAL FIRE
OUTLOOK 2018**

■ ABOVE NORMAL FIRE POTENTIAL

■ NORMAL FIRE POTENTIAL



Tasmania

For the early part of Tasmania's fire season, most of the state has normal fire potential. The western half of the state is very wet, and only the strip between Orford and St Helens on the east coast is drier than average. This area has above-normal fire potential, and the area may expand without significant rain. As in recent years, increased fire activity will probably occur in this dry strip before December and will require considerable response efforts. The fire season in the remainder of the state will commence more normally, in late spring or early summer, and provide good conditions for planned burning.

South Australia

Large parts of SA have experienced drier than average conditions since the start of 2018, and with dry conditions forecast to continue, several areas have been identified as having above-normal fire potential. Parts of the Riverlands, Murraylands, and the Flinders Ranges are particularly dry, which means that areas of scrub and woodland have increased fire potential. Populated areas of the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, particularly those parts infested with buffel grass,

also have above-normal fire potential.

Despite average winter rainfall, the fuel growth and forecast dry conditions indicate that the potential for bushfire across the populated areas of the Mount Lofty Ranges remains.

The dry conditions in agricultural areas have resulted in less cropping activity, with SA forecast to record a decrease in areas planted and in yields from sown crops. This may reduce the risk of fires from agricultural activity in some areas.

Western Australia

As a result of bushfires in previous seasons and mitigation achieved by prescribed burning, higher fuel loads in the forests and shrublands across the Darling Range have been fragmented into smaller parcels. This has resulted in the break-up and reduction of above-normal fire potential areas within the Swan Coastal Plain, Avon Wheatbelt, Jarrah Forest and Warren regions.

Despite good winter rainfall, the underlying and persistent deep root-zone soil moisture deficits along the Darling Range, south-west corner, south coast, Mallee and Esperance Plains have resulted in the forest and shrubland vegetation in these areas being subject

to additional water stress. Above-normal fire potential is expected in these areas.

Further north, cooler and wetter wet season conditions were experienced in parts of the Pilbara, Gascoyne and Carnarvon regions, which contributed to the accumulation of higher-than-average grass fuel loads.

This has resulted in above-normal fire potential in these regions. The Gascoyne Coast missed the subtropical low rain that travelled further to the east, and is experiencing a rainfall deficit. This has affected grass growth and therefore the region is expected to experience normal fire potential.

Parts of south-eastern WA received significant rain in the early part of the year, which is evident in the elevated surface soil moisture in some areas. This has led to increased growth of the shrubs and grasses in these areas. Due to this increased vegetation growth, and therefore expected fuel loads, above-normal fire potential is expected in these parts of the Mallee, Coolgardie, Nullarbor, Hampton and Great Victoria Desert regions. ■

For the full *Southern Australia Seasonal Bushfire Outlook 2018*, visit www.bnhcrc.com.au/hazardnotes/51.



afac19

powered by **INTERSCHUTZ**

Co-located with the
IFE National Conference

**MELBOURNE CONVENTION
AND EXHIBITION CENTRE**

27 – 30 AUGUST 2019

➤ afacconference.com.au  **#afac19**



bushfire&natural
HAZARDS CRC



Deutsche Messe

QUEENSLANDERS BENEFIT FROM CYCLONE RESEARCH

A new grant will see some Queensland homes retrofitted to withstand the force of a tropical cyclone.



PHOTO: MICHAEL DAVIES (CC-BY:2.0)

BY **COSTA HARITOS**

Bushfire and Natural Hazards CRC

The Queensland Government Household Resilience Program, informed by research from the Bushfire and Natural Hazards CRC, will increase resilience towards tropical cyclones for eligible homeowners in Queensland.

Professor John Ginger and Dr David Henderson from the 'Improving the resilience of existing housing to severe wind events' project at the Cyclone Testing Station, James Cook University, have been working with the government to create the program.

"Houses built before the early 1980s may not be built to cyclonic building standards, and therefore may not have appropriate connections to resist cyclonic winds," said Dr Henderson.

The scheme will allow homeowners to receive government funding to upgrade roof structure, protect windows and strengthen doors—all of which can be damaged by internal pressures

during strong cyclonic winds.

"Protecting your windows with debris screens or shutters reduces the chances of windows breaking, which could double the uplift load on your roof by preventing the windward wall pressure from entering the house through a broken window," explained Dr Henderson.

Building improvements made under the scheme may also reduce home insurance premiums for residents.

"For homeowners undertaking retrofitting, benefits include greater security in sheltering, minimised damage to contents and potential reductions in insurance premiums," Dr Henderson said.

Some houses in the region may not have been built to withstand excessive winds. Cyclone Debbie, for instance, reached speeds of up to 195 km/h and destroyed more than 300 houses in March 2017.

The team's work at the Cyclone Testing Station has highlighted the dangers of not retrofitting susceptible homes. Extreme winds can create large internal pressures that push on

the internal structures of a property. This creates a negative pressure on the roof and has the potential to tear a home apart. The team also investigates damage after cyclones. This has revealed that poor maintenance of house components, such as rusted or rotted posts, barges and sills, can weaken the house.

The Queensland Government will provide a grant of up to 75% of the cost of improvements, to a maximum of \$11,250.

You may be eligible for the grant if you:

- ◆ live in a recognised cyclone risk area (from Bundaberg to the Queensland/Northern Territory border within 50 km of the coast)
- ◆ own or are the mortgagor of a house built before 1984
- ◆ live in the home (i.e. it is your primary place of residence)
- ◆ meet the income eligibility requirements. ■

CRC research has helped the Queensland Government provide funding to help homeowners strengthen their homes from cyclone damage.

Find out more at tinyurl.com/CycloneGrant

UNITING AUSTRALIA ON BUILDING COMPLIANCE

Australia's states and territories need to work together to overcome pressing issues, such as combustible cladding, by pushing for an effective, consistent national approach to building compliance.

BY **MATTHEW WRIGHT**

GM Technical Services and Deputy CEO Fire Protection Association Australia

In 2018, Australia's regulatory mechanisms for building control and compliance remain fragmented by the federated landscape of individual state and territory jurisdictions. Sure, our National Construction Code (NCC) applies nationwide—but it is confined to technical provisions for construction of new buildings. Unfortunately, the process for approval of such buildings to build and occupy, the roles and responsibilities of practitioners involved,

“Whatever the costs are in terms of work required by state and territory governments, these can be reduced by sharing the load with a supportive industry and by working with the federal government to finish the good work that started with the BCA.”

— Matthew Wright

the enforcement of compliance, requirements for retrospective upgrades and expectations for routine servicing and maintenance are anything but national.

Geographically, Australia is a big country. It's a continent where the tyranny of distance meant that at the dawn of states and territories, individual controls for regulating construction were more necessity than mere parochialism.

We still are a big country. Although our population is 25 million, we are more connected than ever, and the capital cities don't seem as far apart as they once did. Yet our population remains tiny by global standards, given the landmass we call home. For instance, the continental United States represents a comparable geographical size, but is home to 325 million people. Australia is almost 32 times larger in geographical size than the United Kingdom (UK), but has around 41 million fewer people.

This reality of connectivity and population size means that, when it comes to building control, individuality of states and territories is redundant in the 21st century. Our continued silo approach directly impacts compliance, productivity and economic prosperity, consumer confidence and safety. It does not matter one iota what we amend or insert into the NCC or Australian Standards if they are not consistently implemented—or not implemented at all. The combustible cladding issue is a perfect example. The NCC has appropriately prohibited use of combustible cladding for decades, but a

lack of vigilance in relation to education, compliance and enforcement is costing us all dearly now, and accountability seems difficult, rather than swift.

Not that this is news to those working in the industry long term. We've been grappling with this since the post-war construction boom. In the mid-1980s through the early 1990s, the work of the Australian Uniform Building Regulations Co-ordinating Council delivered us the *Building Code of Australia* (BCA). As a sign of broad acceptance, the state and territory variations to this technical code have continued to diminish ever since. However, for a national code to be implemented successfully, national administrative provisions are required. Any progress on this front has been extremely limited.

Following a recent spate of high-profile fire incidents at home and abroad regarding a single building component—and numerous other emerging issues that indicate systemic regulatory failures—public confidence is waning. As a result, in mid-2017, political attention escalated.

The Building Ministers' Forum (BMF) commissioned Professor Peter Shergold AC and Ms Bronwyn Weir to assess the effectiveness of compliance and enforcement systems for the building and construction industry across Australia. This appointment coincided with the UK Government's appointment of Dame Judith Hackitt DBE following the Grenfell tragedy to explore the health and appropriateness of their regulatory system and how this may have contributed or requires reform.

The most damning of Dame Hackitt's findings were that in the UK, “the current regulatory system for ensuring fire safety in high-rise and complex buildings is not fit for purpose,” and “there is a need for significant improvement in the current system in a number of areas.



These relate to matters of: regulation and guidance; roles and responsibilities; competence; process, compliance and enforcement; residents' voice and raising concerns; and quality assurance and products".

Dame Hackitt's final report was tabled on 17 May 2018. Among a number of key recommendations, it found that "... if there is to be a stronger focus on creating and maintaining safe buildings. It must strengthen regulatory oversight to create both positive incentives to comply with building safety requirements and to effectively deter non-compliance."

Meanwhile, Prof Shergold and Ms Weir made 24 recommendations in their report, released in February 2018 and tabled at the April 2018 BMF meeting. Their recommendations can be grouped into a handful of themes. Unsurprisingly, these themes echo the findings of Dame Hackitt.

Theme 1—Practitioners

What are the roles, responsibilities and expectations of individuals doing the work, and how are they consistently recognised?

Theme 2—Compliance culture and enforcement

Regulators need to be proactive in generating a compliance culture and empowering practitioners to deliver on this. At the same time, they must implement effective enforcement regimes and collect and exchange relevant data to inform decision-making.

Theme 3—Documentation quality

Appropriate documentation of design and expectations for ongoing lifecycle requirements is critical. This documentation must be available and respected by appropriate stakeholders and maintained for future reference.

Theme 4—Performance solutions

The philosophical concept of performance-based design remains appropriate and should continue to be pursued, but the process for approval and documentation must be more consistent.

Theme 5—Independent inspection and review

The privatisation of building approval can only continue if supported by independent inspection and review.

Theme 6—Product safety and consistent terminology

We need to improve confidence and vigilance regarding product safety. Surely we can also agree on some consistent national terminology.

So there you have it. Our national technical code is a great achievement—but publishing nationally consistent technical provisions doesn't mean these will actually be implemented without nationally consistent administrative provisions that prescribe expected process.

Why wouldn't the states and territories want consistency on national administrative provisions? Are their sovereign rights to govern as they see fit such a lucrative economic mechanism to grow economies that safety and consumer interests come second? Maybe it's the long tail of

Following a recent spate of high-profile fire incidents at home and abroad regarding a single building component—and numerous other emerging issues that indicate systemic regulatory failures—public confidence is waning. As a result, in mid-2017, political attention escalated.

legacy legislation that would need to be reconciled for any reform? Is the risk of offending their constituents with that other 'c' word—not cladding, but change—such a confronting exercise? Is it all just too hard?

When I talk to each jurisdiction individually as part of my role at Fire Protection Association Australia (FPA Australia), several things are common in terms of the attitude to change:

- ◆ We already have requirements in place; why do you want change and what's in it for the government?
- ◆ Who stands to benefit versus who misses out?
- ◆ Yes, we understand other jurisdictions do it differently, but this is [insert jurisdiction here].
- ◆ We don't have the resources.
- ◆ We need direction from the Minister to investigate that.
- ◆ Industry needs to improve.

I readily accept that it's always important for industry to strive for better outcomes, and that one of the key roles of peak industry bodies such as

FPA Australia and our counterparts is to lead and promote this. Regulation is not the only solution, and deregulation strategies have been welcomed to cut unnecessary red tape.

But some red tape—the right red tape—is necessary. It binds us together and builds confidence in technical and economic outcomes. Deregulation has a limit. My current observation is that there is unprecedented enthusiasm and agreement from industry bodies in the construction space to support the kind of change outlined by Prof Shergold and Ms Weir. And it's true that there is much more industry can do, but we cannot do it alone.

Reflecting back to the current UK climate post-Grenfell, the only resistance or disappointment from industry to Dame Hackitt's final report was that it didn't go far enough. There is consistency in the reported reactions from stakeholders that change is necessary; in fact, industry had been advocating for this long before the Grenfell tragedy.

If there is this sense of united industry desire for improvement, which I strongly believe there is, who are the

blockers? I don't think it's the consumers paying to remedy non-compliant or defective work, or the practitioners worried about their insurance. I don't think it's the community who expect that safety and compliance is a priority. It's certainly not the individuals in industry desperately trying to comply while facing a commercial avalanche of other individuals who aren't. Is it the investors seeking a quick bang for their buck before phoenixing their company of responsibility and moving on? How much influence do they have?

I don't have the readily available evidence either way. But what I do know is that state and territory governments have an opportunity—perhaps even a responsibility—to confront the lack of consistency in our administrative provisions. If this means an administrative war, where we enter combat over whose system works the best and why some referrals are appropriate and some aren't, or why some competency recognition processes are more rigorous than others, then so be it.

In some quarters, a sense of state

The use of combustible cladding has been prohibited for decades.

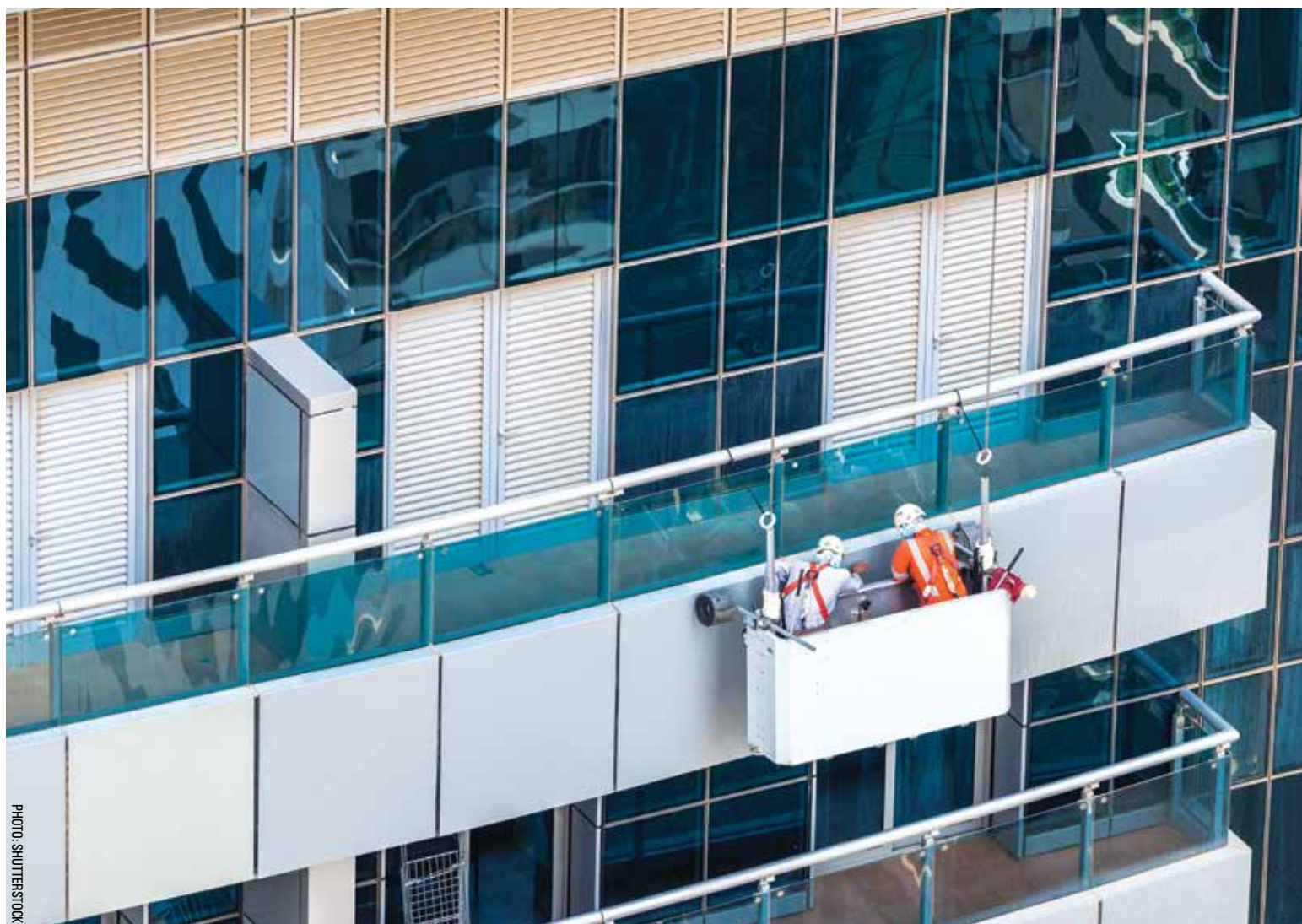


PHOTO: SHUTTERSTOCK

Matthew Wright speaks at the Fire Australia Conference and Tradeshow 2018.



PHOTO: FPA AUSTRALIA



pride will be at stake, or some may think that conceding to change means an admission of failure and the need to do unbudgeted or unforeseen work. I would argue that the opposite is true. Jurisdictions should have pride that they championed change. Ignoring the problems by putting their head in the sand to do nothing is failure. They must not be derelict in their duty to serve the governed. Whatever costs are associated with undertaking this work, it's fair to contend that they will be significantly less than those currently being experienced to rectify non-compliance.

It was recently mentioned to me that "sunlight is the best disinfectant". The Shergold-Weir report gives us the best opportunity in a generation to start shining a light on the areas that need to change. Whatever the costs in terms of work required by state and territory governments, these can be reduced by sharing the load with a supportive industry, and by working with the Australian Government to finish the good work that started with the BCA.

Plenty of the world's nations have a history of civil war stemming from a

desire for control. Australian states and territories have avoided such a history, and it has been said that perhaps this is simply because we've just been too laid back to care enough. It is quite possibly true that this also applies when it comes to national consistency for administration of building compliance. We are just too lazy—and now it's costing us. We must fight for meaningful change. Australians are entitled to expect compliance.

As referenced in the Shergold-Weir report, FPA Australia has stated that, "If there was one area of focus that could be immediately sought to pursue improvement, it should be seeking a commitment to develop a model NCC Administrative Code to harmonise expectations regarding the aspects identified in the terms of reference for this assessment". We will continue to pursue this vision with government and industry stakeholders alike, and challenge the BMF to seek a national process—not just a token acknowledgement from each jurisdiction that they will do some things independently. We just aren't

big enough to absorb the extent of existing differences any longer. A culture of compliance starts with nationally consistent administrative provisions.

To effect this change, we and others in the industry presented a combined proposal at the most recent BMF meeting on how to address the next steps following the Shergold-Weir recommendations.

The proposal includes regular meetings between industry and the BMF, and critically, the establishment of a new taskforce between government and industry to oversee nationally consistent regulatory reforms. The proposed taskforce is intended to draw together government and industry to manage the development of a model administrative code for the NCC. The aim is to harmonise requirements and compliance with the NCC across all states and territories wherever possible.

We're pleased to report that the BMF was receptive to the proposal, and further discussion along these lines is expected.

It's an important start. Both government and industry have a shared responsibility to provide leadership and restore confidence in the building and construction industry—and we can do that through national consistency. ■

Find the Hackitt report at tinyurl.com/HackittReport

Find the Shergold-Weir report at tinyurl.com/ShergoldWeirReport

OUT WITH OLD, IN WITH THE GREEN

Traditional scheduled extinguishing agents have been around for decades. But will an industry push towards environmentally acceptable alternatives see them become a thing of the past?

BY **DANIEL WILSON**

Fire Protection Industry (ODS & SGG) Board Member

FM-200, NAF-SII, Halon 1301. Generations of fire protection professionals have come to appreciate the effectiveness of these traditional ozone-depleting substances (ODS) and synthetic greenhouse gases (SGG). But as their names suggest, they're not so great for the environment.

ODS damage Earth's protective ozone layer, allowing more harmful ultraviolet (UV) radiation from the sun to reach the ground. SGG contribute to global warming, caused by extra heat trapped in the atmosphere. Despite this, ODS and SGG agents are still widely used across the industry—even though several environmentally acceptable alternatives are readily available.

For example, inert gases, FK-5-1-12 fluid, CO² fixed fire suppressions, water-sprinkler systems, water-mist systems, hybrid water-mist/inert-gas systems, condensed aerosols and oxygen-reduction fire-prevention systems are all available for a variety of uses. And unlike their predecessors, these alternatives have no ozone-depleting potential, and no or very little global warming potential.

The Fire Protection Industry (ODS & SGG) Board, also known as the FPIB, has been working hard to shed light on the benefits of using these alternatives when designing a new or upgrading an existing fire protection system. A webinar I hosted in May talked industry members through the benefits and uses of alternatives, and discussed the need for an industry-wide transition.

In the webinar, I gave the following example: a typical-sized system with about 250 kg of scheduled extinguishing

agent HFC-227ea relates to about 805 metric tonnes of CO² equivalent emissions. In terms of greenhouse gas emissions, this is equivalent to 172 passenger vehicles driven for a year, or 4.4 railcars' worth of coal burnt.

This is why we talk about transitioning.

FPIB's discussion couldn't have come at a better time. Australia's gradual hydrofluorocarbon (HFC) phase down began on 1 January 2018. The phase-down is part of a government push to convert industry away from the traditional agents through a gradual reduction in the maximum amount of bulk HFCs permitted to be imported into Australia.

The aim of the phase-down is to reduce HFC imports by 85% by 31 December 2035. It also involves a greater industry move towards environmentally acceptable alternatives, as agreed to in the Montreal Protocol.

The ODS and SGG alternatives each have their own extinguishing mechanisms, benefits and uses:

- ◆ Inert gases reduce the oxygen in a risk environment to the point that fire cannot be sustained. In most cases, they also prevent oxygen in the room from decreasing to an unsafe level.
- ◆ FK-5-1-12 fluid, of which Novec 1230 is a common brand name, is a synthetic clean agent that can be used in occupied areas. It suppresses the fire by removing the heat and interrupting the combustion process.
- ◆ CO² fixed fire-suppression systems contain liquid carbon dioxide. When released into the area being protected, they reduce the



PHOTO: FIRE PROTECTION INDUSTRY (ODS & SGG) BOARD

Australia will reduce HFC imports by 85% by the end of 2035.



PHOTO: FIRE PROTECTION INDUSTRY (ODS & SGG) BOARD

Numerous alternatives to scheduled extinguishing agents are available, such as this inert-gas system.

percentage of oxygen available for combustion.

- ◆ Water-sprinkler systems are still one of the most useful and cost-effective ways to put out a fire. They control the spread of fire to allow egress from the building, protect the building from fire growth, and can be used for Class A fires involving combustible materials. They are not suitable for Class B liquid fires.
- ◆ Water-mist systems discharge very fine water droplets. The mist controls, suppresses or extinguishes fires by cooling the flame and surrounding gases by evaporation. Environmentally friendly, these systems are highly effective at extinguishing large, flammable-liquid fires.
- ◆ Hybrid water-mist systems are a

combination of clean-agent inert gas and water. The mist is produced by injecting nitrogen into the water stream at the nozzle. This creates extremely small droplets and reduces the oxygen concentration in the protected risk.

- ◆ Condensed-aerosol fire-extinguishing agents consist of very fine, usually potassium-based, particles suspended in a gas. The particles interfere with and stop the fire chain reaction. While very efficient, condensed aerosols are not classed as clean agents, as they leave a residue after discharge.
- ◆ Oxygen-reduction fire-prevention systems prevent fires, rather than suppress them. The systems produce

hypoxic air by partly filtering out oxygen from the ambient atmospheric air to below 15%. At this level, common flammable solid materials and liquids cannot ignite.

While the industry should consider these systems, rest assured that there is no urgency to do anything. You do not need to immediately go out and replace systems that you have because of this phase-down. Supply will continue, and HFCs already in the country won't be affected. However, alternatives can, and in my opinion should, be considered at several points along the life of current systems.

Possible times to switch to an alternative include: during a facility upgrade or change, during ten-yearly pressure testing of cylinders, when there is a change in the fire risk of the protected areas, or following a discharge. However, any changeover requires proper planning and consideration.

Plans should include an analysis of the alternatives to determine the best system for the job. This should take into account cost, application, space and storage needs, amount of agent required, discharge time, and speed and maintenance. You must also engage with your service provider to ensure a smooth transition and the safe decommissioning of an existing system.

If you haven't got a plan and you have a discharge, you're then under a lot of time pressure to come back and make sure your system or facility is protected. ■

More information can be found at: tinyurl.com/FPIBalternatives

PERSPECTIVES ON THE SECT WITH STEVE WARRINGTON

**STUART
ELLIS AM**

Chief Executive Officer,
AFAC



In this regular series, AFAC CEO Stuart Ellis interviews a senior AFAC leader for each issue of *Fire Australia*. This issue he caught up with Country Fire Authority Chief Officer Steve Warrington AFSM.

You have been with the Country Fire Authority (CFA) for many years. Was being Chief Officer a long-term ambition? If not, what attracted you to the role now?

It's been my personal experience that career aspirations evolve as your career develops. I'm not sure anyone aspires to be a Chief Officer or Commissioner when they are first recruited. I recall at one stage my only aspiration was to be a Senior Station Officer at one of our busier stations. While I was fortunate enough to achieve this appointment, it resulted in opportunities to act in different positions with different challenges. My advice would be to explore and enjoy opportunities,

challenges and different experiences as they present themselves and see where life takes you.

CFA has long had both a CEO and Chief Officer. Describe that partnership.

It is essential for the partnership that the CEO and the Chief Officer work as one, and in our case, we do. It is unfortunate that there have been periods of time where many of the emergency service organisations in Australia, and probably New Zealand, have not developed the business acumen of their operational leaders. CFA's budget is now more than \$600 M per year. A budget and business the size of CFA requires

Steve Warrington shares insights into his role as Chief Officer of CFA in Victoria.



PHOTO: COUNTRY FIRE AUTHORITY

solid business acumen, including an understanding of risk and finance and the business of government. Our model ensures the Chief can focus on operational service delivery while the CEO has the accountability for running the business. The business must therefore be aligned to the primary function of service delivery. This is achieved through a solid partnership between the CEO, Paul Smith and me.

Together with the CEO, Paul Smith, you have recruited a formidable team of Deputy Chief Officers. How important are they to achieving your goals and progressing the CFA?

A strong team certainly assists when driving change and demonstrating organisational leadership. However, beyond the obvious, it's my view that one of the important roles as a leader is to have a succession plan. This approach achieves a couple of outcomes. One is obviously a ready-made replacement. However, I think more importantly, that by having a collective team vision, strategy and objectives, succession planning ensures a degree of consistency, drive and direction with your organisation as you transition through leaders. It's fair to say that a strong team also makes leadership much easier and I am fortunate to have that.

Next year is the 10-year anniversary of Black Saturday. What does that mean for the CFA?

You would appreciate that this event impacted our communities much more broadly than just the CFA. So, it will be a time to reflect and remember the 173 people that lost their lives. From a CFA perspective, many of us still carry baggage associated with this event, so there will be a real focus on ensuring we are supporting the mental well-being of our people. Rightly or wrongly, these events become benchmark events, so at a sector level we take the opportunity to look at the changes that have been made, such as advances in community warnings.

You have expressed strong views on diversity and inclusion. Why is this important to you?

I've spent 40 years in the sector and I, like others of my vintage, think we know a fair bit. We were taught fire by other blokes before us, never really challenging our forefathers. Recently, the CFA sent 30 people to Queensland to learn how our Indigenous community does fire—and it's different from what we've been taught. We also recently employed women with a community background as external (non-operational) staff to lead our volunteer sustainable team. They are coming up with innovative ideas that challenge our thinking, and they're showing leadership in communities that we haven't walked up to before. Black Saturday, along with other such events, taught us all a strong message—we operational people cannot save everyone's lives with a truck. An empowered and resilient community is also crucial, and a diverse workforce is much better equipped to develop this resilience. That's our job.

“Black Saturday...taught us all a strong message—we operational people cannot save everyone's lives with a truck. An empowered and resilient community is also crucial, and a diverse workforce is much better equipped to develop this resilience.”

— Steve Warrington



PHOTO: COUNTRY FIRE AUTHORITY

Steve Warrington is the new Chief Officer of the Country Fire Authority.

Chief Officer is a high-profile and demanding job. What do you do to de-stress and recuperate?

For me, it's about balancing the four main aspects in life: vocation, family, self and social. It's fair to say I don't always get this right, however. Vocationally, I delegate as much as reasonably possible. Family, I blank out weekends from the diary where I can to ensure time with them. Self, I attend fit-for-life sessions and take part in non-fire activities, such as fishing, when I can. Socially is the quarter I struggle with the most. Where previously I have been involved with administrative roles at sporting clubs and the like, I now find it difficult to find the time. ■

FIRE IN THE TOWER OF LONDON — 1841

BY **BARRY LEE OAM**

Fire struck the Tower of London on the evening of 30 October 1841. Likely originating in an armourer's forge in the Bowyer Tower, the fire was first noticed just after 10.30 pm by a sentinel on duty near the Jewel Office. He sighted a light in the Round Tower, and fired his musket to turn out the fusiliers in the Tower barracks. Flames soon issued from the Round Tower, which was situated near the north side of the Armoury, facing Trinity House.

The nine small Tower fire pumps were immediately pressed into service. Help was requested from the London Fire Engine Establishment in Watling Street, which responded promptly. Reinforcements also arrived from Allhallows in Barking. Within an hour, the Armoury was engulfed in flames and the Clock Tower was rapidly becoming involved. The fire intensity was such that "small print could easily be read [nearby] as if it were daylight in Tower Hill, Minories and Lower Thames Street", according to reports from the time. The spectacle drew crowds from all over London. Southwark and London bridges were said to be full to overflowing with spectators.

The whole of the northern wing of the Armoury was soon alight, threatening magazines containing 100,000 rounds of ball cartridges and many hundreds of barrels of gunpowder. At about 12.30 am, the Clock Tower fell in with a tremendous crash, and flames blew in the direction of the White Tower and the Church of St Peter. Both were saved with great difficulty, with one firefighter killed by falling masonry.

Water supply was a major problem. Underground water tanks—intended for just such an emergency—were inexplicably all but dry. Water had to be relayed from floating fire engines moored off Traitor's Gate, more than 200 m from the fireground.

The Crown Jewels were kept in iron cages, the keys to which were held by the Lord Chamberlain. When he could not be found, the master of the Jewel House with warders and police worked to force the bars open. After 20 minutes of strenuous effort, the jewels were rescued. Around 1.00 am the Armoury roof collapsed, sealing the fate of the 200,000 items of arms and armour kept there, some of which were priceless antiques. Lost was a series of cannon dating from 1422 to 1769, carbines taken from the Scottish Highlanders in 1715, arms taken from those involved in the attempted

assassination of William III in 1696 and much else.

The last place to be threatened was the Map Office, containing valuable maps and records. After a struggle, the fire there was extinguished and the property placed in safety. By 4.00 am the flames were subsiding, and mopping-up operations could begin. Total losses were estimated to be in the order of £800,000—well over £70 million today. ■



IMAGE: WILLIAM C SMITH

In the middle of the 19th century, several great fires in London prompted the formation of the Metropolitan Fire Brigade. Fire not only ravaged the Tower of London but also Westminster Palace, the Tooley Street warehouse complex and other prominent structures. Losses were spectacular in each case.



PHOTO: DUN CAN (FLIXR)

The Tower of London in the present day.



The spectacle of the Tower fire drew crowds from all over London. Reports of the fire's great intensity stated that "small print could easily be read [nearby] as if it were daylight".



**FIRE PROTECTION
INDUSTRY AWARDS**



GALA DINNER 2018

**AN EVENING TO CELEBRATE, NETWORK &
SOCIALISE WITH YOUR INDUSTRY PEERS**

FRIDAY 9 NOVEMBER – SHANGRI LA HOTEL, SYDNEY

Hosted by Ed Phillips | Live music by “Let’s Groove Tonight”
3 course dinner & drinks | “Gold” cocktails

**TICKETS ON SALE NOW AT
WWW.FIREPROTECTIONAWARDS.COM.AU**



BY IAN FINDLAY

Technical Coordinator, FPA Australia

CE-030 Maritime structures

A project was approved late last year for a revision of AS 3962 *Guidelines for design of marinas*. Work is currently underway to review the fire protection requirements within this standard.

FP-002 Fire detection and alarm systems

As noted previously, publication of the AS 1670.1, AS 1670.3 and AS 1670.4 revisions has been approved, but delayed to December 2018 to allow time for adoption of updated direct text adoptions of ISO standards and other referenced standards. These include direct adoptions of ISO 7240 parts 1, 2, 5, 6, 8, 10, 11, 12, 17, 18, 22 and 24; modified adoptions of ISO 7240 parts 4, 7, 15 and 27; and revisions of AS 1603.11, AS 1603.13 and AS 4428.16. The AS 4428.6 revision and Amendment 2 to AS 3786 are still awaiting publication.

FP-003 Fire extinguishers

This committee has recently been reconstituted and met in late August to review the aged standards (standards more than 10 years old) under their scope.

FP-004 Automatic fire sprinkler installations

Work continues strongly on Amendment 2 to AS 2118.1-2017. Work is yet to begin on recently approved projects for the revision of AS 2118.2-2010 (Drencher systems) and HB 147 (Sprinklers simplified).

FP-008 Fire pumps & tanks

The public comment from the combined procedure for AS 2304 (Tanks) has been considered by FP 008, who are now working on inputting the changes from the resolutions of these comments.

FP-017 Emergency management planning—Facilities

Amendment 2 to AS 3745 was published on 29 June.

FP-018 Fire safety

FP-018 reviewed the public comments from the combined procedures for AS 5113 Amendment 1, AS 1530.8.1 and AS 1530.8.2 in late June. In an extraordinary move to ensure the public is aware of the changes from the committee's resolutions, all three standards have gone to another round of public comment. Public comment on AS 5113 Amendment 1 closed 16 July, while AS 1530.8 parts 1 and 2 were at public comment which closed 13 September.

FP-020 Construction in bushfire-prone areas

Similar to FP-018, in an extraordinary move to ensure the public is aware of the changes from the committee's resolutions, AS 3959 went to another round of public comment from 22 August to 19 September.

LG-007 Emergency lighting in buildings

AS/NZS 2293.1 and AS/NZS 2293.3 were published on 29 June. FPA Australia submitted a negative vote on AS/NZS 2293.2 and is now working with LG-007 to work through the issues identified to ensure that the standard will be suitable for reference by regulators in jurisdictions that currently reference the 1995 edition.

TECHNICAL ADVISORY COMMITTEES

The most recent round of TAC meetings was held in July and August.

TAC/1 Maintenance of fire protection systems and equipment

First drafts of three short new technical documents have been developed, including replacement of detection devices; fire doors and exit doors; and external barriers to evacuation.

TAC/2 Fire detection and alarm systems

FPA Australia is having discussions with the fire services, which are seeking to gather more information from fire detection systems than simply the building being in alarm, so that they are better informed and can respond appropriately based on the information provided.

The TAC reviewed the FP-002 project program for product standards being revised, amended or new ISO versions adopted for reference in AS 1670.1, AS 1670.3 and AS 1670.4; see FP-002 update.

TAC/3/7 Portable and mobile equipment

TAC/3/7 reviewed the aged standards under FP-003 and determined that most require revision. This will be conveyed by FPA Australia representatives at FP-003. Also discussed was the need for a document on when extinguisher service tags are stamped.

TAC/4/8/9 Fire sprinkler and hydrant systems, tanks and fixed

The TAC/4/8/9 discussion focused on the changes in the National Construction Code (NCC), FP-004 projects (particularly AS 2118.1 Amendment 2), FP-009 projects, the fire protection requirement of AS 3962 and concerns raised in the field regarding valve monitoring.

TAC/11/22 Special hazards fire protection systems

A TAC/11/22 working group has drafted a project proposal for the revision of AS 4587-1999 (Water mist systems), which was endorsed by the TAC and is being circulated to relevant stakeholders before submission to Standards Australia by the end of August. Work on a project proposal for revision of AS 3772 (Kitchen systems) is also underway, and an updated version of Information Bulletin IB-02 on the use of genuine parts in pre-engineered systems has been published.

TAC/17 Emergency planning

TAC/17 discussed the development of a seminar on the release of AS 3745-2010 Amendment 2.

TAC/18/19 Passive fire protection

The TAC discussed the changes to the notes on AS/NZS 1530.4 and AS 4072.1 in the NCC Public Comment Draft and the need to develop guidance for the industry if the changes are made. They also discussed the need to develop guidance on the mandatory passive inspections now required in NSW and Victoria. A working group on fire doors has been created and is looking at both a project proposal for the revision of AS 1905.1 and technical documents to provide guidance to industry.

TAC/20 Bushfire safety

Work on a stalled document on sarking has started again. The TAC identified the need for training in the new bushfire verification method in the NCC 2019 Public Comment Draft. The TAC also debriefed on the development of AS 3959 and agreed to maintain an active issue register for AS 3959 to ensure records of what has been raised and addressed.



FIRE PROTECTION INDUSTRY AWARDS GALA 2018

9 November 2018, Shangri-La Hotel, Sydney

Join us in recognising and awarding business and individuals leading the professional standard of commitment, excellence and contribution to the fire protection industry.

For more information, visit:
www.fireprotectionawards.com.au.

FIRE AND FUELS CONFERENCE 2019

29 April–3 May 2019, International Convention Centre Sydney, and Albuquerque and Marseille

The International Association of Wildland Fire, with support from the Bushfire and Natural Hazards CRC, will host the 6th International Fire Behaviour and Fuels Conference, held concurrently in Albuquerque, Marseille and Sydney from 19 April to 3 May 2019. The conference will explore the theme 'Fuels of today–fire behaviour of tomorrow'.

For more information, visit:
www.bnhcrc.com.au/events/2019-fireandfuels.

FIRE AUSTRALIA CONFERENCE & TRADESHOW 2019

14–16 May 2019, Melbourne Convention & Exhibition Centre

Fire Australia is the largest dedicated fire protection industry event in Australasia. It provides a platform for information exchange, showcasing new services and technology and providing solutions to the challenges facing the industry.

For more information, visit:
www.fireaustralia.com.au.

12TH AUSTRALASIAN NATURAL HAZARDS MANAGEMENT CONFERENCE

17–19 June 2019, Canberra

The Bushfire and Natural Hazards CRC will host the 12th Australasian Natural Hazards Management Conference in Canberra from 17 to 19 June 2019. The annual international conference was recently hosted in Wellington where research and utilisation around emergencies, disasters and resilience was high on the agenda.

For more information, visit:
www.bnhcrc.com.au/events/2019-anhmc.



PHOTO: FPA AUSTRALIA

Scene from the 2018 Fire Australia Conference & Tradeshow.

JOINT EDITORS

Tom Bicknell (FPA Australia)

TEL +61 3 8892 3118
tom.bicknell@fpaa.com.au

Nathan Maddock (Bushfire and Natural Hazards CRC)

TEL +61 3 9412 9600
nathan.maddock@bnhrc.com.au

Zoe Kenyon (AFAC)

TEL +61 3 9419 2388
zoe.kenyon@afac.com.au



Fire Protection Association Australia (FPA Australia)

ABN 30 005 366 576
PO Box 1049,
Box Hill VIC 3128,
Australia
TEL +61 3 8892 3131
FAX +61 3 8892 3132
fpaa@fpaa.com.au
www.fpaa.com.au



Bushfire and Natural Hazards Cooperative Research Centre

ABN 21 163 137 979
Level 1, 340 Albert Street,
East Melbourne VIC 3002,
Australia
TEL +61 3 9412 9600
office@bnhrc.com.au
www.bnhrc.com.au



AFAC

ABN 52 060 049 327
Level 1, 340 Albert Street,
East Melbourne VIC 3002,
Australia
TEL +61 3 9419 2388
FAX +61 3 9419 2389
afac@afac.com.au
www.afac.com.au

Production and design: Coretext
TEL +61 3 9670 1168 www.coretext.com.au



FIRE

To submit a contribution or to advertise in *Fire Australia*, please contact the editor:

Tom Bicknell
FPA Australia
PO Box 1049
Box Hill VIC 3128
Australia

tel +61 3 8892 3131
tom.bicknell@fpaa.com.au



Andrew Crisp

Andrew Crisp

Andrew Crisp has been appointed Victoria's new Emergency Management Commissioner, after almost 40 years with Victoria Police. Commissioner Crisp was awarded the Australian Police Medal in 2012 and previously worked with the Royal Papua New Guinea Constabulary and the United Nations in East Timor. Commissioner Crisp replaces Craig Lapsley, who held the position since 2014.



Rob Cameron

Rob Cameron

Rob Cameron OAM has been appointed Director-General of Emergency Management Australia (EMA) within the Department of Home Affairs. Mr Cameron has been acting Director-General since April 2018. He has previously held several senior emergency management roles in EMA and the Department of Health.



Greg Crossman

Greg Crossman

SA Metropolitan Fire Service Chief Officer Greg Crossman has retired after 40 years of service. He began as dux of his recruitment intake and was named Chief Officer in 2015. During his career, Chief Officer Crossman was awarded the Australian Fire Service Medal and the Australian National Medal and Clasp.



Chris Hardman

Chris Hardman

Chris Hardman has assumed the role of Executive Director of the Forest and Fire Operations Division and Chief Fire Officer of Forest Fire Management Victoria. Chief Hardman has more than 30 years' experience at Parks Victoria, and acted as an incident controller during the 2010 floods, the 2009 Black Saturday bushfires and the 2006–07 fires.



Michael Morgan

Michael Morgan

Michael Morgan has stepped into the SA Metropolitan Fire Service Deputy Chief Officer role to replace Mr Crossman. Chief Officer Morgan has been a member of the SA Metropolitan Fire Service since 1986. He was awarded the SA Emergency Services Medal in 2017 and the Australian Fire Service Medal in 2014.



Craig Oakley

Craig Oakley

Craig Oakley has been appointed A/g Executive General Manager Aviation Rescue Fire Fighting Service for Airservices Australia. He leads a team of professional fire fighters, emergency vehicle technicians and support staff at 26 locations in Australia. Mr Oakley has 18 previous years' experience as an army officer.



Paul Waterhouse

Paul Waterhouse

Paul Waterhouse has been appointed as the new State Manager New South Wales for Fire Protection Association Australia. Paul brings to the Association more than two decades of experience in advocacy and policy development, with a strong background in the building and construction sector.



Looking for quality fire protection service providers?

FIND THEM ON THE PROVIDERS OF CHOICE SEARCH TOOL

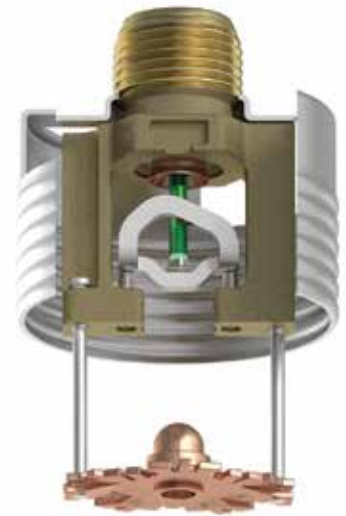
FIRE PROTECTION SERVICE PROVIDERS IN YOUR AREA, OFFERING THE SERVICES YOU NEED.

Developed by peak industry body Fire Protection Association Australia (FPA Australia), Providers of Choice makes it easy to find quality fire protection service providers in your area that offer the areas of work you're looking for.

As Corporate Members of FPA Australia, all listed companies:

- Hold a minimum of \$10m in Public and Product Liability insurance;
- Are bound by a stringent Code of Practice; and
- Are required to hold all necessary state and federal licences or certifications.

Visit www.fpaa.com.au/provider-of-choice/



Residential | Freedom® VK494 Flat Plate Concealed Pendent Sprinkler

The new Freedom® Model VK494 is Viking's next generation residential concealed pendent sprinkler, featuring "ultra-fast" glass bulb technology. The 4.9 K-factor sprinkler is the first residential concealed sprinkler with the same cULus Listed flow rates for both ordinary and intermediate temperature ratings. As a result, you can now standardize on an intermediate temperature-rated sprinkler without sacrificing either performance or aesthetics.

Rated for ambient temperatures up to 150°F, the intermediate temperature VK494 model offers greater flexibility when positioning sprinklers around potential heat sources.

- Flat plate concealed design with a nearly unlimited variety of custom color finishes, for a smooth ceiling look that doesn't compromise aesthetics.
- Available in both ordinary (155°F) and intermediate (200°F) temperature ratings.
- Minimum achievable flow rates for 16' x 16', 18' x 18', and 20' x 20' coverage areas at both temperature ratings (0.05 gpm/sq. ft. density requirements).
- Because VK494 ordinary and intermediate temperature flow rates are identical, you can standardize on the intermediate temperature models, simplifying inventory and reducing job site confusion.

Model Number: VK494

Base Part Number: 20759

Listings/Approvals: cULus

K-factor: 4.9 (70.6)

Connection: 1/2" NPT

Temperature: 155°F (68°C)
200°F (93°C)

Operating Element: Glass bulb

Finish: Brass

Technical Datasheet: F_012116

Viking Fire Protection Supplies Pty. Limited

95-99 Hardy's Road, Underdale SA 5032 Australia

Telephone: (+61) 8 8352 2888

Facsimile: (+61) 8 8352 2755

www.vikingfire.com.au

Trusted above all.™

VIKING®