LPG FIRE AUSTRALIA

1st July 2018

Submission to the Joint Standing Committee on Foreign Affairs, Defence and Trade Inquiry into the management of per- and polyfluoroalkyl substances (PFAS) contamination in and around Defence bases

Dear Joint Standing Committee Members,

Thank you for the opportunity to make this submission into the management of per- and polyfluoroalkyl substances (PFAS) contamination in and around Defence bases.

LPG Fire Australia Pty Ltd is an Australian family owned company comprised of a dedicated team of fire protection professionals with a combined 100 years' experience in designing fire protection systems for Special Hazard risks.

Our company is a leading supplier of inert and synthetic gas suppression systems, water mist and water spray systems, fixed foam systems, oxygen reduction systems and specialty detection systems in the Australian and New Zealand markets.

Over the last 50 years, members of our team have been involved in the design, import, supply, installation, commissioning and routine maintenance of fixed foam fire suppression systems for special hazard type risks such as tank farms, in-rack flammable goods warehouses, commercial hangars and Australian Defence Force hangers (most recently the RAN Sikorsky Hangar Yerriyong, RAAF Base Amberley and RAAF Base Williamstown).

Defence hangar specifications, in particular, typically require compliance with NFPA Standards which mandate the use of MILSPEC foams; including the use of International Civil Aviation Organization (ICAO) tested and approved foam concentrates. Such foam concentrates are, upon fire detection and system actuation, discharged and proportioned into foam solutions which are delivered into the critical risk area via fixed foam deluge systems, fixed high expansion foam systems, or pop up, floor mounted, fixed foam sprinkler pipe distribution networks. The fixed fire foam system types, and the mandated MILSPEC foam agents, are globally recognised as being reliable, proven, and effective in protecting the expensive and critical assets of our nation's defence force.

Through our partnership with Danish water mist manufacturer *VID FireKill Aps* LPG Fire Australia was introduced to a low pressure, open nozzle, pop up water mist system (Model F-102 -1 and F102-2) which was fire tested by SINTEF and approved by the Norwegian Military and Air Force for the protection of military air craft in Defence hangars. The design application is Indoor Aircraft Hangars where the fire risk is at floor level and the risk areas are categorised as NFPA13, Special Hazard and EN12845, Special Hazard. The test standard for the system is based on CEN/TS 14972 Annex B + SINTEF Test method for aircraft hangars 2002 (classified).

The system was developed for the Norwegian Military and Air Force and these same were the witnesses and approval authority for the system fire tests. The results of the full scale live fire tests involving hydrocarbon pool fires such as Jet Fuels, Heptane and Diesel oil in trays up to 6m² met the requirements of the onerous test standard and on this basis the performance-based design system, was accepted by the Norwegian Military and Air Force. This system has now been installed into several NATO hangars where it actively protects their critical Defence assets, using only water as the firefighting medium. The Model F102-1 can protect floor areas in any size aircraft hangar. By way of example the Model F102 nozzles protect small hangars where F16 fighter jets are tested to very large hangars where NATO Boeing AWAC planes are stored.

Given the current Inquiry into the management of per- and polyfluoroalkyl substances (PFAS) contamination in and around Defence bases we would like to bring to the attention of the Joint Standing Committee on Foreign Affairs, Defence and Trade of this environmentally friendly and highly effective solution for protecting Defence aircraft hangars. We acknowledge that this system cannot reverse any environmental impacts considered to be associated with PFAS contamination, however we would like to bring to your attention a live fire tested, NATO

Mail: PO Box 1257
Coolangatta
QLD 4225 Australia
Office: 1/10 Fremantle St
Burleigh Heads
QLD 4220 Australia
Email: info@lpgfire.com.au
Phone: +61 7 5522 1953
Fax: +61 7 5593 8906
ABN: 91 100 460 311
QBCC No: 1168429

partner approved and environmentally friendly alternative to the current MILSPEC mandated foam systems for hangars.

It is our opinion that, given the current discussion surrounding foams containing PFAS contamination, the Australian Defence Force has a duty of care to investigate all bone fide, environmentally friendly and equally effective alternative fire systems to the current MILSPEC approved foam systems for hangar fire protection. The VID FireKill Model F-102 -1 and F102-2 is extensively fire tested and proven to be effective in addressing hangar fires without the risk of the potential for spills potentially containing PFAS residual waste waters. Whilst we openly acknowledge that not all firefighting foams contain PFAS, and that fixed fire fighting foam systems have been globally effective for years in this application, we would like to highlight that the use of water only in a fire tested, approved hangar fire protection system eliminates any potential PFAS contamination risks generated by the firefighting medium itself.

The VID FireKill Model F-102 -1 and F102-2 use only water as a suppression medium and can be tested regularly by Defence emergency personnel without the complex foam bunding requirements and complicated PFAS contaminated waste water run off removal costs and potential PFAS risks associated with some of the currently nominated MILSPEC foam systems. The safe and easy testing process of the VID FireKill Model F-102 -1 and F102 systems provides Defence with assurance that numerous Defence emergency personnel can routinely train and be familiar and confident with this particular system operation in the worst- case event of a real fire scenario in a Defence hangar.

In new build installations, the VID FireKill Model F-102 -1 and F102-2 pipe distribution network can be installed set into the concrete floors of hangars. In retrofit scenarios, the pipe distribution network can either be installed on top of the concrete hangar floors and covered with protective heavy duty steel speed humps, or the concrete hangar floors can be cut open to allow the below floor installation.

Powered by AS 2941 compliant diesel and/or electric pumps, the system can be readily understood and maintained by qualified Australian fire protection contractors engaged by Defence. The system is typically comprised of VID FireKill stainless steel solenoid operated deluge valves, a stainless-steel distribution pipe network and the VID FireKill Model F-102 -1 and F102-2 pop up low-pressure water mist nozzles.

We would welcome further discussion on this viable environmentally friendly alternative to the current MILSPEC nominated foam systems for hangars as it is our professional opinion that transitioning to the VID FireKill Model F-102 -1 and F102-2 hangar protection system for new installations and retrofit scenarios would immediately and robustly address further contamination issues whilst providing the required level of fire system performance.

References:

1. “Performance Based Design” Installation, Operation and Maintenance (DIOM) Manual For VID Fire-Kill Model F102-1 and Model F102-2 systems.
2. Datasheet Hangar Protection System Model: F102-1
3. Datasheet Hangar Protection System Model: F102-2
4. SINTEF NBL10 F02115 (Classification: Restricted)

Sincerely,

Karl Peek
General Manager
LPG Fire Australia Pty Ltd.