ROYAL AUSTRALIAN AIR FORCE
AIR FORCE HEADQUARTERS

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Mr Greg Russell
Chief Executive Officer
Air Services Australia
25 Constitution Ave
Canberra ACT 2600

Dear Mr Russell Greg,

Thank you for your letter dated 19 August 2011 proposing a replacement of Aqueous Fire Fighting Foam (AFFF) capability at the joint user airfields Darwin and Townsville by 1 November 2011.

The procurement, use and disposal of AFFF has been an issue of ongoing concern to Defence and the subject of extensive discussions between Airservices Australia (ASA) and Defence Support Group (DSG). You may be aware that Defence undertook a National AFFF product recall and replacement program in 2008 after extensive toxicity and environmental testing by the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE). This testing concluded that the Ansulite product was free from the highly toxic and persistent Perfluorooctane Sulfonate (PFOS) and was the least toxic and persistent in the environment of the products available.

Following discussions between Defence and ASA regarding its proposed use of an alternative AFFF product, Defence has initiated comprehensive testing of the proposed product for toxicity, biodegradability and persistence. Early results from this testing, which is being undertaken by CRC CARE, indicate there may be issues with toxicity, but comprehensive results will not be available until early 2012.

In view of ASA's concerns regarding Ansulite, Defence had this product re-tested during 2010. This testing confirmed that Defence's Ansulite stocks were free of the highly toxic PFOS component, and based on the preliminary testing of the product preferred by ASA, the Ansulite appears to be the less toxic of the two products. These results were conveyed by Mr Terry Weston (DSG) to Mr Terry Soutberg (ASA) on 1 September 2011.

Without clearance of the alternative product on environmental grounds from CRC CARE, Defence remains concerned that this product has the potential to cause more harm when compared to Ansulite. For these reasons we request that ASA does not use an alternative product at joint user facilities until we have an informed and shared understanding of any consequential risks.

I am confident that should the alternative product be found equivalent to that of the Ansulite product, in terms of environmental impacts, Defence would not preclude its use. I would propose that further discussions take place following receipt of the final test results expected in early 2012.

We look forward to continuing to work collaboratively with ASA in relation to AFFF usage and other environmental initiatives. I invite you to call the Defence point of contact for this matter, Mr Terry Weston, Assistant Secretary Estate Policy and Environment, on (02) 6266 8051 should you have any questions.

s47F [redacted]

s47F [redacted].C. BROWN, AM
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7 NOV ~~September~~ 2011

Enclosures:
1. Defence AFFF Procurement and Usage Interim Policy (Version 1.0, August 2008).

Greg,
Defence Support Group has responsibility for the effect on the environment. The brief I received from them indicated that [illegible] CARE stated that "tests showed Solberg RF is more toxic than Ansulite to earthworms. All the earthworms were killed at 0.5% Solberg (weight/weight) in OECD recommended soil where as Ansulite, even at 1%, did not cause mortality in worms"
While the environment issues are important, does your data indicate that Solberg RF is less of a problem from an OH&S perspective?
I'm not sure the two organisations are well connected on this issue. Happy to discuss a way forward

Regards
s47F [redacted]

Australian Government

Department of Defence
Defence Support Group

AQUEOUS FILM FORMING FOAM (AFFF) PROCUREMENT AND USAGE *INTERIM* POLICY

Version 1.0; August 2008

Objective

This policy sets out the minimum environmental requirements for AFFF products that may be purchased by Defence staff or contractors. Its purpose is to reduce the risk of environmental impacts arising from AFFF use, storage, handling and disposal within Defence.

Given the rapid advances in fire fighting foam technology, alternative products may be proposed in lieu of the products nominated in this policy. Any alternative fire fighting foam product purchase proposal must establish that the environmental and fire fighting performance of the alternative foam is better than or equivalent to the products nominated in this policy.

Where compliance with this policy cannot be assured, AFFF usage must cease or an alternative method must be proposed to, and agreed by, the Technical Authority for infrastructure engineering and environmental policy.

Environmental Obligations

Legislation - While there is no Federal or State/Territory government legislation that specifically addresses AFFF products, Defence and its contractors are bound by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to prevent significant environmental impacts and must take actions to prevent pollution of the environment in accordance with the Government's National Environmental Protection Measures.

Policy - In the absence of specific regulation on AFFF products, this policy sets out Defence's requirements in relation to AFFF products that may be procured and used in Defence, in order to meet environmental obligations. The policy applies to all Defence staff and contractors, and must be implemented with the *Defence Environmental Guidelines for Management of Fire Fighting Aqueous Film Forming Foam (AFFF) Products*, June 07 (AFFF guidelines).

Authority - The Assistant Secretary, Estate Policy and Environment (EPE) is the Technical Authority for infrastructure engineering and environmental policy in Defence. The Senior Environmental Manager (SEM) or Regional Environmental Officer (REO) facilitates implementation of environmental management at the regional and site level.

Toxicity Warning

All AFFF products are to be treated as potentially toxic substances and appropriate safeguards to protect human health and the environment are essential in all stages of their lifecycle.

Product Differentiation

AFFF products must comply with DEF (Aust) 5706 or equivalent MIL specifications and be suitable for fighting Class B fires such as hydrocarbon or fuel fires.

Defence has undertaken environmental toxicity testing of three AFFF products currently on the market, the results of which are produced in the AFFF Guidelines. On the basis of this initial environmental evaluation, the following two AFFF products provide improved environmental performance and may be procured by Defence for actual fire fighting and testing/calibration of fire fighting equipment:

- *Ansulite* 3% AFFF (Formula 1559-26 ICAO-B); and
- *Ansulite* 6% AFFF (Formula 1559-22 ICAO-B).

Defence policy aims at minimising the use of AFFF products within Defence, preferring their use only for real and emergency fire fighting purposes. For training, suitable and more environmentally-friendly fire fighting training foams should be used as an alternative. However, any training foam proposed shall be subject to the same environmental performance requirements and usage restrictions that apply to AFFF foam products.

Environmental Performance Criteria

In the event that AFFF products other than the two mentioned above are considered for procurement, the following environmental performance criteria must be met as a minimum. The Defence procurement officer must request the product supplier provide this information, so that the product's suitability for procurement and use by Defence may be assessed.

Surfactants
May comprise non-fluorinated or fluorinated compounds but must not contain: Perfluorooctane Sulfonate (PFOS), Perfluoroalkyl Sulfonate (PFAS), or Perfluorooctanoic Acid (PFOA).
Toxicity
May be expressed as EC50 (microbial toxicity), LC50 (aquatic toxicity) or LD50 (acute oral toxicity) values for each surfactant composition of the product. Select the product that has the highest EC50, LC50 or LD50 value.
May be expressed in Biological Oxygen Demand (BOD) or Chemical Oxygen Demand (COD). Select the product which has the lowest BOD and/or COD value.
Persistence/Degradation
Products should be highly degradable in freshwater within the first week, with a performance of at least 99% percent degraded after 4 weeks. Other values for persistence/degradation in freshwater sediments, marine water and sediments, and soils should be considered. Choose the least persistent product.
Material Safety Data Sheet (MSDS)
The product's MSDS may not include sufficient environmental information to evaluate Environmental Performance. Staff should insist that suppliers have undertaken appropriate environmental tests through an accredited laboratory and provide results for consideration by Defence prior to procurement. Further advice shall be sought from EPE or the local SEM/REO.

Supply and Storage

AFFF products should be supplied and stored:

- in sturdy sealed and labelled containers.
- in a bunded and roofed store house to avoid rain ingress or weather damage (bunding capacity at least equal to the volume of the largest container plus 50%).
- away from other incompatible hazardous substances.
- no closer than 50 metres to a stormwater drain or watercourse.

A manifest inventory will be maintained on site for all AFFF products, which shall include storage location, volumes, receipt date, expiry date, MSDS etc.

Procurement of large quantities of AFFF product is not recommended, nor should large quantities of AFFF be stored on-site.

Use

The use of AFFF or training foam must be managed to ensure it is not released into the environment, to prevent land, air or water pollution, during all stages of the lifecycle. AFFF products or training foams and associated wastewater must:

- not be sprayed or dumped on vegetation, waterways or soil during testing and use.
- not be released to stormwater, or sewage treatment plant (STP), or used for irrigation.
- be contained and stored to prevent environmental release. Contained wastewater may be stored in a tank or lined evaporation pond temporarily prior to treatment or disposal. The use of evaporation ponds is not recommended in areas of high rainfall.

The volume of any wastewater generated must be minimised to reduce water consumption and treatment/disposal costs.

Where full containment cannot be assured, an alternative must be agreed by the SEM/REO in consultation with EPE.

Equipment and Infrastructure Design and Maintenance

Infrastructure for the application and use of fire fighting plant and equipment shall be designed and maintained to prevent release of AFFF products, foam and wastewater to the environment. Any equipment, pavement, storage or waste containment leaks shall be rectified immediately.

Fixed installations such as hangers must be bunded and plumbed to drain and divert wastewater to containment facilities. Fixed installations must be fitted with an emergency stop button.

Field fire fighting and training areas must have bunding and drainage to capture wastewater (for the training catchment area) and divert to containment facilities for treatment and disposal or recycling.

Containment facilities must be of an appropriate volume to contain wastewater prior to treatment or disposal. Evaporation ponds must be lined to prevent infiltration to soil and groundwater, and sized to prevent overflow in the event of rain.

Fire trucks must be equipped with appropriate valves, an emergency stop button, and spill containment equipment.

All plant, equipment and infrastructure shall undergo regular maintenance in accordance with its individual service requirements.

Treatment and Disposal

Any existing stocks of AFFF products that do not meet this policy, such as 3M Light Water AFFF, must be disposed of as soon as practicable.

AFFF wastewater must not enter stormwater or sewerage (unless approved by the Technical Authority or SEM/REO).

An AFFF wastewater disposal plan shall be prepared in consultation with the SEM/REO. The plan should include a description of wastewater treatment technology to be used on-site or off-site prior to disposal, consideration of recycling opportunities for treated wastewater, and outline the disposal practices to be adopted by accredited waste contractors.

The Rapid Field Test Kit shall be used to measure the AFFF concentrations in effluent or stored wastewater periodically in support of developing plans for treatment, recycling or disposal.

Disposal of AFFF wastes and remediated materials shall be dispatched to an approved waste disposal or treatment facility. Materials shall be transported by an approved/licensed provider.

Emergency/Spill Response

Emergency and spill response plans shall be prepared for AFFF use at field and fixed facilities. The SEM/REO must be consulted for environmental management and reporting requirements.

Large spills or leaks resulting in contamination of soil, surface or groundwater is an environmental incident and must be reported. Contamination must be remediated in accordance with Defence contamination management procedures.

Reporting

All spills or incidents shall be reported to the line management and SEM/REO promptly. Incident reports shall be via local arrangements or environmentalincident@defence.gov.au.

Further information and contacts can be found in the AFFF Guidelines via the Environment Webpage: http://intranet.defence.gov.au/environment/default_cm.htm.