

APP203827 Proposal to amend the Fire Fighting Chemicals Group Standard 2017

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Mr Rod Rutledge (Caltex Group Process Safety & Regulatory Manager, Caltex Foam Task Force Coordinator), **Caltex Australia Petroleum Pty Ltd (Rodney John Rutledge)**

2 Market Street, Sydney

New South Wales

Australia

Ph: +61 412 217531

rrutled@caltex.com.au

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Overall Position: I support some of the proposals

Overall Notes:

Clause

What is the reason for making the submission?

Notes

TNZ Ltd operates a substantial bulk fuel terminal at Mount Maunganui. The facility includes fixed foam systems for protection of assets and minimizing harm to responders, community and environment associated with large storage tank fire events. TNZ Ltd is 100% owned by Caltex who operates fuel refining, terminal, depot & retail facilities in Australia. Caltex has relevant experience in the design & execution of a risk focused transition to fluorine free foams. Caltex process safety personnel attended the foam workshop conducted by NZ EPA in 2018 and provided end user insights from the Queensland jurisdiction at that time. There is clear evidence that a number of key learnings from implementation of the 2016 Queensland Foam Policy have been incorporated in the proposed amendments to the Fire Fighting Chemicals Group Standard.

Clause

Do you wish to speak at a hearing?

Position

No

Notes

Clause

What is your preferred outcome of this consultation?

Notes

Inclusion of proposed amendments including Option 2 to grant permissions, under section 95A of the HSNO Act, for companies to continue to use C6 firefighting foams after the phase out period is completed. Due to several remaining unknowns (most notably the absence of evidence of a suitable replacement fluorine free foam for crude oil and refined product large diameter tank fires).

Clause

Do you consider there are any applications for which fluorine-free foams are not suitable or do not have relevant approvals? If yes, please specify.

Position

Yes

Notes

Representatives of TNZ Ltd's parent company (Caltex) have worked closely with the LastFire consortium to design, plan and execute performance testing for fluorine free and C6 potential replacement foams for Class B flammable liquid fires. Caltex personnel have direct insight to the status & outcomes of international performance testing of potential replacement foams performed by LastFire. Caltex's experience is that at present there is a replacement fluorine free foam available for shallow pool fire application and small diameter tank fire application (<20m) for refined products (eg gasolines, jet, ethanol). Notable exceptions where fluorine free foam performance is yet to be established is for large tank fire application (>20m) for refined products (Class 3 PG II and III) and for crude oil (Class 3 PGI). I am of the understanding that the latter in particular is yet to be subject to any testing. This is of significance as crude oil is a boil over fluid whereby escalation/engulfment of surrounding tanks is well known to occur if the tank is not extinguished prior to any residual water in the base of the tank heating to the temperature at which a steam explosion occurs. LastFire continues to test fluorine free and C6 foams for larger diameter tank

applications but is yet to commence any testing for crude oil. Any requirement to transition a crude oil storage facility to fluorine free foam (in the absence of performance data proving suitability of the replacement foam) has relevance to responder safety that requires careful assessment ahead of any such proposed change. Testing is presently planned in 2020 for fluorine free foam for large tank fire applications up to 80m diameter. For both >20m diameter & crude oil tank applications Caltex / TNZ are awaiting outcomes of testing of fluorine free foams prior to establishing a transition strategy for these applications. For this reason Caltex/TNZ supports inclusion of a suitable regulatory instrument to permit extension beyond the mandated 2 and 5 year transition periods where such technical assessment for fluorine free replacement foams may remain incomplete.

Clause

What do you think of the practicality of these disposal provisions, in terms of the resources and costs involved?

Notes

The experience of Caltex in the Queensland jurisdiction is that chain of custody requirements for management of waste foam & associated equipment (eg discharged extinguisher bottles) should be referenced clearly in the Group Standard. This should include at what point any removed foam becomes classified as waste and therefore subject to waste transport requirements. The experience of Operators in Australia is that these administrative requirements can be quite demanding but are nonetheless necessary to ensure a complete custody chain from facility to destruction facility. Where there is scope for practicability is in requirements for decontamination of equipment that previously contained legacy PFAS foams. This appears to be recognized in item 5 page 13 of the accompanying consultation document that NZ EPA intends to provide guidance on what is considered to be 'as far as reasonably practicable'.

Clause

Would your business be able to contain all foam wastes?

Notes

For bulk fuel storage terminals foam it is typical that foam be installed so as to be able to be deployed for spills & fires in the tank farm (tank top, bund) and at the tanker truck loading rack. Tank top fire application is initially by fixed systems which discharge directly into the headspace of the tank or rim seal area. For bund spills/fires response is typically by fixed or portable monitors and foam containment is subject to wind conditions. It is typical that foam drift beyond the bunded area will occur where such monitors are used. The same may apply for truck loading areas depending upon whether a fixed deluge or monitor installation is in place. Hence, it is difficult to state with certainty that all foam wastes produced during response to an incident would be able to be contained in all circumstances.

Clause

If not, is this due to cost or practical difficulties?

Position

Practical difficulties - please specify

Notes

As stated above, there are practical difficulties in full containment where foam monitors are used to apply foam. Foam drift is a well known phenomena that responders must address with tactics on the day of an incident. Another specific example, is foam applications within port areas whereby fixed monitor installations are typically tower mounted and provide coverage to both wharf deck & ship at a flammable liquids berth. There is limited ability to contain foam deployed from such monitors during a real incident or during testing.

Clause

Do you have any concerns about fluorine-free foams potentially containing other persistent, toxic and/or bioaccumulative compounds?

Position

Yes - please specify

Notes

Queensland Foam Policy Operational Guidance Notes specifically identifies Siloxanes as a bio-persistent compound that in the past has been used in some foam products. In the Australian jurisdiction Operators are required to undertake their own due diligence to establish that the proposed foam to be used does not contain alternate bio-persistent compounds. This is an onerous obligation that has significant potential to be both inefficient and incomplete. It is appropriate that this obligation be placed upon manufacturers/suppliers as proposed in Schedule 1 Clauses 7 & 8.

Clause

Do you agree with phasing out C6 AFFF at the same timeframe as C8 AFFF?

Position

No - please tell us why

Notes

1. The availability of a suitable replacement fluorine free foam for some Class B fire applications is yet to be proven (ie crude oil and refined products >20m diameter). For this reason, some provision needs to be provided for ongoing use of C6 if this remains the case at the time of expiry of the transition period. 2. As shown within the Australian jurisdiction Operators will risk manage the potential for 'regret spend' associated with only transitioning to C6 where such may remain permitted. The uncertainty of C6 bio-persistence has by observation driven some Operators to transition to fluorine free for applications where a suitable replacement is proven (eg shallow pool fire, tank diameters <20m) even though C6 may still be permitted. In this instance, the Operator is seeking to avoid any subsequent cost of transition from C6 to fluorine free that may become

mandatory within the lifespan of the C6 concentrate upon emergence of further concerns with C6 enviro-chemistry.

Clause

Which is your preferred option?

Position

Grant permissions to continue to use C6 foams

Notes

For the reasons outlined above of incomplete technical assessment for fluorine free foam performance for large diameter tank fires and all crude oil tank applications. Operator experience from the Queensland jurisdiction is that approved extension for a determined time period is an efficient regulatory instrument for managing this.

Clause

What are your reasons?

Notes

As above.

Clause

Can you estimate the cost to your business of phasing out C6 AFFF?

Position

No

Notes

1. It is difficult to estimate until such time as technical assessment work for large diameter tank applications is finalized (ie LastFire, NFPA testing). Transition costs for fixed foam systems are costly attributable to substantial engineering modifications required to re-engineer for higher viscosity non-Newtonian foam concentrates as well as clean-out and disposal costs. NFPA research may well recommend increased application rates or durations which will require modification to foam storage & delivery equipment. This is costly to perform particularly in an established operating fuel terminal.

Clause

Do you have any other comments to make about the proposed amendments?

Notes

1. TNZ / Caltex support the obligations placed upon manufacturers & importers for firefighting foam (Ref. Schedule 1 Part 3 Clauses 7 & 8) to provide a record of compliance to the requirements of the Group Standard and to declare & display fluorine content on any product supplied to a 3rd party. This is an excellent inclusion and addresses a weakness in other jurisdictions that has required end users to undertake suitable independent due diligence. 2. I support the provisions for emergency response contained in Part 3 Clause 9 for reasonably practicable measures to be taken for containment. This is smart and provides scope for responders to make appropriate decisions in managing societal risks. 3. It is recommended that clauses to adopt Option 2 recognize that during the transition period (or any approved extension) it is the concentration of C8 in the 'foam system' that requires verification and not that the 'foam product' contains no C8's. Experience in the Australian jurisdiction is that there is a risk that some aged fixed foam storage assets may contain legacy PFOS / C8 residues in low points even though foam replenishments have been of C6. Schedule 2 clause 6 deals with requirements when transitioning to fluorine free but where a C6 is being installed into a fixed system the requirement appears to be on the C8 content of the foam being installed not on the final foam composition of the foam installed in the system.

Clause

Do you have any comments about the workability of the draft amendments shown in the revised Group Standard in the Appendix? Please include the relevant clause and sub clause number in providing any feedback.

Notes

1. It is recommended that NZ EPA provide further content in Schedule 2 Clause 7 including a clear statement of relevant NZ legislation required to be complied with in transporting PFAS waste concentrates & solutions both domestically and internationally to point of destruction. This applies both for foam concentrates/solutions as well as any storage containers (eg extinguisher bottles, IBC's, 200L drums). 2. Enhanced content to address the above point 1 should also consider any requirements for management of foam contaminated products (eg as may be result when foam is applied to a flammable liquid spill rather than a fire).