



Q7. Do you support the proposed workplace exposure standard (WES) for diesel particulate matter (DPM) to protect workers from the adverse health effects of exposure to diesel engine emissions (DEE)?

No

Q8. What are your reasons for your response to Question 1? Please provide evidence or information to support your response.

How can Safe Work Australia support a WES to a group 1 carcinogen when the levels to get cancer are unknown. There are so many grey areas in the Science of DPM and DEE exposure to workers and cancer association that it is foolish to propose a level that is "Safe". I agree with a tightening of the guideline but PCBU's should be encouraged to reduce levels to As Low As Reasonably Practicable. The WES would allow unnecessary exposure to workers as businesses who test at or below the WES will take no further action to reduce worker exposure. Newer Euro standard engines produce much lower levels of DPM but early science shows that the finer particles (with therefore greater surface area) are potentially worse for workers. Unfortunately, because of the long latency period of cancers the full impact of this will not be felt for a number of years. Again, a reason to encourage PCBU's to work toward zero exposure.

Q9. Is there an alternative WES to DPM as respirable elemental carbon, or additional WES that should be considered to protect workers from DEE? Please provide evidence or information to support your response.

As Low As Reasonably Practicable. With the newer Euro Standard Engines, the DPM is greatly reduced but the science is out on whether that is a positive or not. As mentioned in question 8 the reduced size of DPM creates a greater surface area and all of the other carcinogenic chemicals in DEE attach to the elemental carbon. More re-search needs to be done in this area. Especially around absorption via the skin.

Q10. What changes would you need to make in your workplace (over and above any controls currently in place) to ensure workers and others at the workplace are not exposed to levels of DPM above the proposed WES? Please include in your response: i. a description of the control measures currently in place at your workplace(s) to minimise exposure of workers and others to DEE.ii. details of any costs to implement the WES for DPM (e.g., upgrade of ventilation systems in area X, costing approximately \$XXX).

i. Current control measures are ceiling fans in a timer to ventilate the structure. ii. removal of PPE from structure to avoid DPM and DEE exposure to PPE when staff are not wearing it. Installation of Direct Source Capture exhaust system to vent all DEE from the structure. Cost is approximately \$70,000 per ventilation system for each site (the organisation I work for has approximately 40 sites across the state).

Q11. Is there additional evidence or information that you think should be considered?

There is not enough science on new Euro standard engines to make an informed decision on a WES. Much of the science quoted by Safe Work Australia is 20 years old and focuses on old diesel technology. Assuming that new technology is "safer" for workers is a very dangerous assumption. Early indications are pointing towards new technology being just as dangerous as old because of the greatly reduced particle size. This extract was taken from a critical review of recent diesel exhaust exposure health impact research relevant to the underground hardrock mining industry (https://www.dmp.wa.gov.au/Documents/Safety/MSH_nPDM_Study_LitReview.pdf): "In addition, the use of exhaust after-treatment devices had little to no impact on the resulting health effects of diesel exhaust exposure, despite exhaust after-treatment devices such as a diesel particulate filter (DPF) being capable of removing over 90% of diesel exhaust particles by mass. Several studies exposed subjects to exhaust both with and without a DPF equipped and found similar health impacts. Thus "new technology" diesel exhaust emissions can meet occupational limits and still cause adverse health effects. DPF's also preferentially remove elemental carbon from diesel exhaust which limits the feasibility of using elemental carbon as an indication of exhaust exposure"

Q12. Are there any additional comments you would like to make?

I applaud Safe Work Australia for taking a much stronger stance on DEE and DPM from the old "guideline" that has been in place for many years. However, I urge Safe Work Australia to consider a zero WES due to the science being inconclusive and further encourage PCBU's to take all practical measures to reduce worker exposure to ALARP. If this is not possible then Safe Work Australia should consider different standards for different industries. For example, fire stations (Zero levels as a target) and underground mining (proposed levels) should be treated differently.

Q13. Upload your submission here: (PDF,DOC or DOCX)

not answered
