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Exposure of Underground Miners to Diesel Exhaust

Comment On: MSHA-2014-0031-0176

Exposure of Underground Miners to Diesel Exhaust Request for Information; reopening of the

rulemaking record for public comments.

Document: MSHA-2014-0031-0178 Comment from Stephen Hendrickson, NA

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General Comment

Particulate Matter Air Pollution and Cardiovascular Disease An Update to the Scientific

Statement From the American Heart Association

June 2010Circulation 121(21):2331-78

DOI: 10.1161/CIR.0b013e3181dbece1

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Abstract

In 2004, the first American Heart Association scientific statement on "Air Pollution and Cardiovascular Disease" concluded that exposure to particulate matter (PM) air pollution contributes to cardiovascular morbidity and mortality. In the interim, numerous studies have expanded our understanding of this association and further elucidated the physiological and molecular mechanisms involved. The main objective of this updated American Heart Association scientific statement is to provide a comprehensive review of the new evidence linking PM exposure with cardiovascular disease, with a specific focus on highlighting the clinical implications for researchers and healthcare providers. The writing group also sought to provide expert consensus opinions on many aspects of the current state of science and updated suggestions for areas of future research. On the basis of the findings of this review, several new conclusions were reached, including the following: Exposure to PM <2.5 microm in diameter (PM(2.5)) over a few hours to weeks can trigger cardiovascular disease-related mortality and nonfatal events; longer-term exposure (eg, a few years) increases the risk for cardiovascular

mortality to an even greater extent than exposures over a few days and reduces life expectancy within more highly exposed segments of the population by several months to a few years; reductions in PM levels are associated with decreases in cardiovascular mortality within a time frame as short as a few years; and many credible pathological mechanisms have been elucidated that lend biological plausibility to these findings. It is the opinion of the writing group that the overall evidence is consistent with a causal relationship between PM(2.5) exposure and cardiovascular morbidity and mortality. This body of evidence has grown and been strengthened substantially since the first American Heart Association scientific statement was published. Finally, PM(2.5) exposure is deemed a modifiable factor that contributes to cardiovascular morbidity and mortalit