

Dragon, Karen E. (CDC/NIOSH/EID)

From: Weeks, James L - MSHA [weeks.james@dol.gov]
Sent: Friday, September 24, 2010 1:17 PM
To: NIOSH Docket Office (CDC)
Cc: Hutchison, Cherie A - MSHA; Fontaine, Roslyn B - MSHA
Subject: Docket No. NIOSH-210
Attachments: Comments on NIOSH Review of post 1995 information doc.doc

Greetings:

I have attached a few comments on your recent "Review of information published since 1995 on coal mine dust exposures and associated health outcomes.

Please note that I am submitting these comments on my own and not on behalf of any agency or organization.

James L. Weeks, ScD, CIH

Comments on

NIOSH Review of information published since 1995 ...
Docket No. NIOSH-210
September 24, 2010

The discussion on the increased prevalence of CWP is a welcome and important contribution.

Glossary.

Aerodynamic Diameter: I suggest using the definition in the 1995 Criteria Document.

Chronic Obstructive Pulmonary Disease (COPD). A final sentence should read, "The diagnosis is confirmed by spirometry." This sentence is taken from: NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease, Workshop Summary." Am J Respir Crit Care Med 163:1256-76, 2001. This supports using spirometry as a necessary part of medical surveillance.

Coal Workers' Pneumoconiosis (CWP). This should include surface as well as underground miners and should read, ". . . employment in a coal mine" without limiting it to an underground mine. Surface coal miners get CWP too.

Crystalline Silica. The last sentence should read, "The predominant form of silica exposure is quartz." without limiting it to coal mines or even to mining.

on p 10, the document states, "Unfortunately, there is a lack of data on working hours . . ." This is not quite true. Number of workers and working hours, from which one can derive hours per worker, per mine is reported for each mine under 30 CFR Part 50 and is available at

<http://www.cdc.gov/niosh/mining/data/>

under the accident and injury files from 1983 to 2008. Since these data are annual (quarterly, actually) for each mine, you should be able to link hours worked to the CWP research files for each subject in the file via their employment history and approximately adjust each miner's exposure. (This assumes you have the mine where the subject worked and for how long.) And in any event, you should include hours worked prospectively.

on p 15, Sec. 5.3 Compliance Policy & Procedures.

It is important to recognize the importance of longer work shifts and how it affects each miner's exposure. But you should take it a step further and show how it could affect compliance. Because of longer work shifts, there is a need to adjust the concentration

limit of respirable dust in order to achieve the equivalent cumulative exposure that is provided for in the current 2 mg/m^3 8-hour standard. For example, for a ten-hour shift, the concentration limit combined with shift length should result in the same cumulative exposure as does the 2 mg/m^3 standard for 8 hours. This is a cumulative exposure of $2 \text{ mg/m}^3 \times 8 \text{ hours} = 16 \text{ mg-hrs/m}^3$. For a ten-hour shift, the concentration limit should be $2 \text{ mg/m}^3 \times (8/10) = 1.6 \text{ mg/m}^3$ so that the cumulative exposure would be the same: $10 \text{ hrs} \times 1.6 \text{ mg/m}^3 = 16 \text{ mg-hrs/m}^3$. Or, more generally, $\text{conc} \times \text{time} = \text{constant}$. This is a well-established adjustment in industrial hygiene. (See for example, Armstrong et al., Occ Exposure Limits: an approach and calculation aid for extended work schedule adjustments. J Occup Environ Hyg 2005. 2(11):600-607.)

Submitted by

James L. Weeks, ScD, CIH

Please note: These comments are submitted by me and not on behalf of any agency or organization.