

Zipf, Richard K. (Karl) (CDC/NIOSH/PRL)

From: Andrzej Wala [awala@engr.uky.edu]
Sent: Thursday, February 15, 2007 1:53 PM
To: Zipf, Richard K. (Karl) (CDC/NIOSH/PRL)
Subject: Report

Hello Karl,

I appreciate sending me the NIOSH draft report, concerning the mine seals, with you Michael and Jurgen being the authors.

I am being busy lately; everything is getting behind because of my injury. I am on the crutches; I broke my hip six weeks ago. Therefore, it took me few days to get through your report.

I have to give you credit for the good report. I like how you organized, outline the problems concerning the mine seal design issues:

1. Classification of the methane-air mixture explosions in the coal mine openings based on a free space (volume) for explosion to develop to the detonation stage,
2. Validate the existing codes for numerical simulations of the methane-air explosion phenomena, using explosions data from the laboratory scale tests, to assess the pressures (load) developed during such a explosions for the different mining scenario, and
3. Based on these two above mentioned steps, you were able to perform computer modeling to determine the thickness of the mine seals to resist these pressure loads.

As could be seen, and I agree with you, the numbers concerning the seal thickness are in the reasonable range. I still believe that more design work is needed concerning anchoring (keying) of the seals based on the local (site) characteristics of the strata (rock and coal property).

Today I was able to discuss your work with Braden Lusk, your former student. Now, Braden is the faculty member in our department. As you probably know Braden is already involved in the mine seals construction and design study.

Both of us, him being the explosive man and me ventilation one, we plan to work together doing research associated with mine seal design. Because of my area of interest, I know the role of seals in the mine ventilation systems. I am familiar with the work done in Poland by Prof. Cybulski, Pawel Krzystolik and Kazimierz Lebecki at the Experimental Mine "Barbara" and works done in Australia. During my six months Sabbatical Leave in Australia 2002, attending and presenting the paper at the Queensland Mining Industry Health and Safety Conference 2002, I was able to discuss with Jan Oberholzer the procedures needed to test performance of the mine seals being exposed to certain pressure load.

Finishing this short letter, I would like to ask you if you (NIOSH) will be interested to see a proposal regards to the research on mine seals construction and design, from Braden and myself.

Please conveyor my words to Michael and Jurgen.

Thanks,
Andrew Wala