

**SESSION 5: Panel Discussions on Mine Diesel Regulations****Chairperson: Michel Grenier, Research Scientist, CANMET**

Stated that in Canada the first diesel particulate limit of  $1.5 \text{ mg/m}^3$  measured as RCD (respirable combustible dust) was introduced 10 years ago. This was one of the first DPM (diesel particulate matter) limits cited in any jurisdiction. Overtime the DPM limits have changed. MSHA (US Mining Safety and Health Administration) is now referencing levels of 0.4 to  $0.16 \text{ mg/m}^3$ . In addition, better sampling techniques have been developed; and technology has improved. How do these factors impact decisions and expectations? Although the health effects are not fully understood, can we agree among the Panel members that there is a hazard? What can the Panel members agree to, in order to reduce exposure? Is regulation a technology enhancer? Will the technology toolbox (emission control technology, ventilation, cleaner engines, etc.) allow the US mining industry to meet the MSHA limits? What is a responsible response to these regulations and what is the anticipated impact of the MSHA regulations?

**Harry Tuggle, Health and Safety Specialist, United Steel Workers of America, Pittsburgh**

The Canadian RCD limit of  $1.5 \text{ mg/m}^3$  is too high and will be revisited by the USWA and CAW. Workers “expect” a cleaner environment. Mines can and must have better maintenance programs. U.S mines that have poor diesel maintenance programs and just slaps on a diesel particulate filter will find that won’t do any good in the hope to comply with the MSHA diesel regulations. Can Labour and Industry agree on health effects of diesel? Can they agree that DPM is a carcinogen? No! The US mining industry has hired some of the best lawyers in Washington DC to combat whatever levels of regulation that ACGIH, NIOSH or MSHA comes up with. The time and money spent on such litigation would be better spent and likely clean up most of the dirty pieces of diesel equipment in the mines today. Constructive criticism is one thing, but to destroy the whole attempt at a regulation is another. Industry, labour and government should be working co-operatively. Labour trusts and supports NIOSH and MSHA on the matter. But, Labour still hasn’t come to trust the corporations. Like it or not, by their current approach, they are stuck with the lack of trust stigma which has haunted the tobacco and asbestos industries in the past. In short, the mining industry should be ashamed of their approach. The workers should not have to continually negotiate for their health and safety. On the question of “what can the Panel members collectively agree to here?” - I hope we can agree that better maintenance of equipment and appropriate ventilation will address much of our concerns. On the matter of DPM levels, Labour believes that the MSHA level of  $0.4 \text{ mg/m}^3$  is easily achievable by appropriate maintenance and ventilation; and while there are contentions that to meet the  $0.16 \text{ mg/m}^3$  level in five years may be borderline, it is achievable. At this time, however, Labour is still not sure of the achievability of the ACGIH level of  $0.02 \text{ mg/m}^3$ . As to the  $0.16 \text{ mg/m}^3$  level in five years, Labour not only believes in its achievement, but that the cost of compliance will not be that significant, as technology moves forward and exhaust-cleaning equipment becomes mass-produced. Only a few years ago, MSHA had a full advisory standard for maintenance on diesel equipment in CFR30, but chose to delete it from the regulations

and insert it in a Toolbox forum on diesel. Now, like it or not, the only responsible course of action is to work with MSHA’s new diesel regulations and include mandatory maintenance. The USWA hopes that the MSHA regulations will have a positive impact on change of regulations for workers in Canada.

**George Saseen, MSHA Diesel Certification, Tridelphia, WA**

Worldwide engine standards will be set by EPA, California and Europe. The MSHA regulations are considered to be “feasibility standard”. Although the 400+ page preamble to the regulations does discuss health; the new regulation is not a “health protection standard”. MSHA needs negotiation on how to implement the new standard, not litigation. NIOSH is also facing legal challenges to conduct baseline diesel particulate sampling in metal and nonmetal mines. Specifically, MSHA needs to add exhaust system leakage to the “toolbox” and decide whether this should added to the coal mine standard. (MSHA Coal Standard: 2.5 gm/hr engine standard) Maintenance needs to be added to the top of the list. For coal mines, cleaner permissible engines need to be developed. The issues in the US and Canada are common and regulators need a plan for feasible regulation. We need to protect our most valuable resource – the miner.

**John Head, Principle of Harding ESC (Representing the U.S. mining industry’s position)**

Stating that he helped write the NMA’s response to the MSHA rules for both coal and metal/nonmetal. The mines want a degree of reality in the rules. No one wants unsafe or unhealthy conditions. The healthiest worker is one who has a job. According to the NMA, MSHA didn’t follow the proper protocol during the rule making process. The process requires rules to both scientifically valid and feasible; and that the benefits outweigh the costs. For the mines to comply with these rules will cost at least \$100 million (US). In the UK, the government is subsidizing the industry to implement diesel controls, this is not the US approach. The number and distribution of mines that MSHA used in its’ feasibility study do not represent the mines operating currently in the US and several slides comparing MSHA statistics to the actual were shown. According to Mr. Head the following are the actual demographics of the US metal/nonmetal mines:

Type of U/G Mine	No. of Miners	No. of Mines	No. of Miners/Mine
Stone	4213	100	42
Gold & Silver	2600	27	96
Base Metals	1187	13	91
Evaporates	6520	26	250
Misc.	2137	15	142
	16,657	181	

The underground limestone mines have equipment with large diesel engines, mining a low value product with a bare bones operation. They do not have the staff to engineer after treatment systems, nor the capital to repower their equipment.

**Question: Kevin Conley, USWA Local 6500:** The mines do hire healthy and after 30 years they're no longer healthy. The industry is spending a lot of time rebutting the health information that most of the world already takes for granted. For example, there is lots of information on the health effects of vibratory tools, but the industry chooses to fight the standard. If the industry believed in protecting the worker, they won't wait until regulation enforced better conditions.

**Mike MacFarlane, Manager Frood-Stobie Complex, Inco (Speaking for Canadian Mining Industry)**

The industry recognizes that there are long term health effects from exposure to diesel particulate matter (DPM). For years various organizations such as, NIOSH, IARC, HEI, ACGIH and others have publicly stated that DPM is a suspected human carcinogen. The mining industry has been proactive, primarily through the purchase of clean electronically controlled diesels such as the DDEC, which offer a 90% reduction in emission rates. The industry has been buying low sulphur diesel fuel (< 500 ppm) before the regulations were changed. The industry has promoted proper maintenance, emissions control and ventilation practices. The mining industry doesn't see the diesel engine disappearing; however it doesn't seem practical to meet the ACGIH proposed limit of 0.02 mg/m<sup>3</sup> with existing technology. The onus should be on the manufacturers to develop clean burning technology for engines. The US EPA can force these type of requirements. The mining industry only uses a small fraction of all the engines produced. The mining industry is committed to using low emission engines. DPM however should be eliminated or captured at the source. As well, maintenance cannot be overlooked. Any legislation must be scientifically supported and be an economic and workable standard. If DPM levels are legislated, the industry must be able to achieve the levels and improve conditions. The mining industry cannot accept the approach where mining needs to develop a technological breakthrough to meet a new standard.

**Ed McCloskey, Director, Occupational Health and Safety Branch, Ontario Ministry of Labour.**

The goal of the Ministry of Labour is to make safe workplaces. The Ministry of Labour has recently updated the province's Occupational Exposure Limits (OELs). As a result, new or more protective OELs for 204 hazardous chemical substances became law on September 30, 2000. On October 18, 2001 Ontario Labour Minister Chris Stockwell announced a permanent process to update future limits. It may be the right time to revisit the 1.5 mg/m<sup>3</sup> (RCD) level if a consensus can be developed. The Ministry of Labour has relied on the Mining Legislative Review Committee for advice. (4 management and 4

labour members, assisted by the Ministry of Labour) The Mining Legislative Review Committee should make a proposal to the Minister of Labour.

**George Botic, National Representative for Health and Safety, CAW**

It has been labour's experience that industry always fights any regulation. For example the industry claimed that the vinyl chloride regulation in the US would shut down the industry. Years later, exposure levels have been lowered and industry is still working. Labour hears that industry must remain competitive and that legislation must have a cost benefit. Occupational health and safety legislation is to protect health and safety and not to foster economic growth. The Canadian mining industry would probably support the phasing in of lower limits somewhere above the ACGIH limit. Within the CAW members are dying and therefore CAW supports the ACGIH limit. Limits and rules drive technology, for example the US EPA. New legislation must specify a limit (DPM), the method of monitoring such as EC (elemental carbon), lower sulphur fuels to achieve 3 – 4 ppm sulphur. Ontario just changed to fuel with a sulphur content of 500 ppm but needs to go further. Fuel cell technology is moving ahead. Government should explore "taxing" sulphur in fuel, as Sweden has done. Europe has many more regulations and industry there makes money, why couldn't the US. We all know that good maintenance reduces emissions but this maintenance needs to be legislated. The equipment and filter systems are complex and there are some bad operators. Training must be part of any regulation, both for the maintenance workers and the equipment operators to learn good practices. All workers must be trained in the health effects of diesel exhaust emissions. The technology, maintenance, low sulphur fuel is available, but the mine operators are doing nothing; and therefore regulation is needed. Whether the regulations are phased in, time based or immediate, regulation is needed to save lives.

**Question: Delegate: (Tim Rogers of The Associated Ocel Company Ltd, Milton Keynes, England)** In Europe, diesel fuel must have a sulphur content of less than 30 ppm. Diesel particulate filters will be required on diesel engines for 2005. These are already being introduced on a voluntary bases. The issue is political will. In the UK the government is not "throwing money at a problem" they are trying to solve it.