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HEALTH AND SAFETY COMMISSION

Regulations on the control of inhalable dust in coal mines

A paper by: Andy Miller, Head of Section, Mines, Quarries and Explosives Policy and Graham Gilmour, HM Inspector of Mines, HIDSI 1A.

Name of Board Member lead: Giles Denham, Director, Policy Group
Cleared by: DCE Jonathan Rees

Summary

This paper seeks the Commission's approval for new draft regulations and ACoP on inhalable dust in coal mines to replace the current regulations. Although the present regime has been successful in reducing the incidence of pneumoconiosis and other work-related respiratory illness, new regulations are needed to address changing work patterns as well as weaknesses in the present regime. The major changes are the introduction of personal sampling, time-weighting to take account of new shift patterns, and the extension of health surveillance to contractors' employees. The proposals would produce real health benefits, which significantly outweigh the costs.

Issue

1. The submission to Ministers of The Coal Mines (Control of Inhalable Dust) Regulations 2007 and approval of the accompanying approved code of practice/guidance and the proposed exposure control limits.

Timing

2. We propose that, in line with the Government's policy on common commencement dates, the Regulations and supporting ACoP should come into force on 1st October 2007.

Recommendation

3. That the Commission approve:

   - the draft regulations (Annex 1) for submission to Ministers;
   - the publication of the accompanying ACoP and guidance (Annex 2);
   - the exposure control limits and the method of calculation set out in the Notice of Approval at Annex 3 to this paper.

A draft letter to Lord Mackenzie, also for approval, is attached at Annex 4.

Background

4. In January 2004 the Commission approved (HSC/04/03) the publication of a consultation document on proposals for the control of inhalable dust in coal mines. The consultation took place later that year. The request for final approval has been delayed by technical issues involved in finding equipment suitable for use in the mining environment (initial trials with the personal samplers used in surface industries found that these were unsuitable for use underground).

5. The new regulations and ACoP will, together, replace the Coal Mines (Respirable Dust) Regulations 1975 (RDR). RDR has been successful in achieving a reduction in the prevalence of pneumoconiosis (and indirectly the prevalence of diseases such as chronic bronchitis and emphysema), and almost eradicating the worst forms of the disease. However, a series of cases at the end of the 1990s highlighted some shortcomings and the need for action to strengthen the regime.

6. The regulations will also implement the Chemical Agents Directive, 98/24/EC in relation to the health effects of coal mine dust (COSHH does not apply).

Argument

7. While retaining the basic approach of RDR, the new regulations and ACoP remedy its shortcomings in four main respects:

- introducing time-weighted exposure control limits to take account of working hours;
- requiring personal sampling wherever practicable - with sampling arrangements focused on those at greatest risk of exposure;
- introducing an exposure control limit for the quartz component of respirable coal mine dust that will apply throughout the mine;
- introducing a health surveillance regime for contractors' employees – not just employees of mine owners as at present.

8. Despite the very much reduced size of the industry (currently some 3,800 people are employed below ground), we believe these regulations will yield significant health benefits in reducing the numbers of cases of pneumoconiosis, chronic bronchitis and other work-related respiratory ill-health.

9. The proposals would replace RDR with a combination of regulations and ACoP. The first reason for this is that the new regulations adopt a different approach to sampling, and HSE and the industry agreed that additional guidance is needed to assist managers in designing the sampling arrangements. Second, the ACoP is intended to provide the assistance to managers and employers that was once provided by the corporate resources of the NCB/British Coal.

Issues

Proposed exposure control limits for quartz

10. The proposed exposure control limits are:

- respirable dust (the mixture of coal and other mineral dusts) 3mg.m^{-3}
- quartz (respirable crystalline silica) 0.3 mg.m^{-3}.

11. The overall mixed dust limit is in line with COSHH limits for respirable dusts of low toxicity and is judged to improve on the effect on individuals' exposure of the RDR fixed point limits.

12. As there is presently no general limit for quartz in coal mines, these proposals would represent a significant improvement and a challenging task for the industry. Although the limit for quartz is higher than the COSHH workplace exposure limit of 0.1mg.m^{-3} we believe that *at this stage* the proposed limit for quartz represents the most appropriate level for the coal mining industry. The Mining Industry Committee (MIC) plans to review the exposure limits in two years time. This will enable it to consider what scope there is for further reductions in the light of the practical operation of the new regulations. In contrast to COSHH, these limits are to be achieved through engineering controls alone, *without* reliance on Respiratory Protective Equipment.

13. It is also important to see the proposed regime for the coal industry as a whole. It includes an extensive monitoring regime together with automatic sanctions if the exposure control limits are breached. In practice it would offer a much higher level of control than a simple comparison of the exposure limits would suggest.

14. Finally, it should be borne in mind that the incidence of silicosis in the industry is, in practice, very low. Experts do accept that the toxicity of silica varies, depending on the nature of its occurrence and manner of its release, and that quartz dust in coal mines is generally at the low end of the risk range. The exposure controls are also backed up by an extensive health surveillance regime.

Consultation

15. The proposed package has been developed in consultation with a working group from the MIC and received the MIC's unanimous support. As a matter of policy the National Union of Mineworkers (NUM) does not attend meetings at which the Union of Democratic Mineworkers (UDM) is represented. The NUM has however been consulted throughout the process of developing the proposals.

16. While there was agreement from all sides of the industry on the almost all the proposals, both the NUM and the UDM had concerns. While neither union wishes to prevent the proposals being adopted, in both cases the union sought assurances that their concerns would be relayed to the Commission.

17. The UDM's principal concern was over the mandatory use of RPE, particularly in conditions of extreme heat and humidity and in confined spaces. (In contrast to other industries, workers are unable to take breaks in fresh air, where they could take off their RPE.) These concerns were shared by other stakeholders. The clear view of all of the industry stakeholders represented on the MIC has been that the ACoP should not require the use of RPE in all circumstances when the levels of quartz exceed 0.1mg.m^{-3}. It was felt that this would be too onerous for many of the individuals concerned and there would be a widespread refusal to wear RPE, which would put mine managers in an impossible position. The ACoP has therefore been drafted to allow mine managers more scope to take account of the risk of heat exhaustion in deciding whether to require the use of RPE (paragraphs 69 and 70 of Annex 2).

18. The NUM wished to see a move as quickly as possible to an exposure control limit for quartz of 0.1mg.m^{-3}. They recognised that it would not be possible to move

immediately to this level but felt strongly that it should remain as an objective. The NUM also recognised the issues surrounding the use of RPE and felt that the introduction of the new regulations should be accompanied by an educational campaign on the importance of the use of RPE. Finally, they were concerned over the possible impact of working patterns involving very long shifts and whether high levels of exposure combined with long hours could overwhelm the body's natural recovery mechanisms.

19. HSE has sought to address these issues so far as it is able, including commissioning research from HSL using a biomathematical model to investigate the effect of changes in shift pattern on the risk of pneumoconiosis. The results suggest that mineworkers on extended shifts should not be at increased risk if the exposure limits are time-weighted as proposed. The fundamental point to be made, however, is that both unions recognise that the proposals will significantly strengthen the framework for protecting miners' health against dust.

20. There has also been consultation with WATCH (the Working Group on Action to Control Chemicals) and with members of the Advisory Committee on Toxic Substances, as well as with experts from the Institute for Occupational Medicine and elsewhere.

Presentation

21. The proposals are already well known to the industry through its extensive involvement in the field testing of personal sampling equipment. The proposed package will be introduced by HSE's Mines Inspectors during their regular contacts with stakeholders and programme of visits to coal mines.

Costs and Benefits

22. The benefits of the new regulation are approximately £4.1m compared with total annual compliance costs to society, of less than £97,000. Even if the new regulation were to prevent only one case a year of chronic bronchitis, with no other reduction in incidence of ill health, the benefits, of £155,000 per annum over 35 years, would still substantially exceed the costs. Full details are in the Regulatory Impact Assessment at Annex 5.

Financial/Resource Implications for HSE

23. Around £400,000 in staff costs and £300,000 in research costs have been incurred over the last 6 years in developing these proposals. There will also be costs, less than £5,000, for promoting the ACoP and guidance to the new regulations on the HSE website and making this available as a print on demand item.

Environmental Implications / Other Implications

24. None.

Action

25. The Commission is invited to agree the recommendations in paragraph 3.