DEPARTMENT OF LABOR

Mine Safety and Health Administration

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

30 CFR Part 72

RIN 1219–AB18

Determination of Concentration of Respirable Coal Mine Dust

AGENCIES: Mine Safety and Health Administration (MSHA), Department of Labor, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Department of Health and Human Services (DHHS).

ACTION: Proposed rule; reopening of record; request for comments; notice of public hearings; correction; close of record.

SUMMARY: The Secretary of Labor and the Secretary of Health and Human Services (the Secretaries) are reopening the rulemaking record on a joint proposed rule that would determine that the average concentration of respirable dust to which each miner in the active workings of a coal mine is exposed can be accurately measured over a single shift. The Secretaries proposed to rescind a previous 1972 finding by the Secretary of the Interior and the Secretary of Health, Education and Welfare, on the accuracy of single shift sampling.

The Secretaries are reopening the rulemaking record to provide interested parties an additional opportunity to comment on any issue relevant to the July 2000 proposed rule; and to solicit comment on new data and information added to the record.

DATES: We must receive your comments on or before June 4, 2003.

The Agencies are also announcing that they will hold public hearings on this reopening notice. The hearing dates and times will be announced by a separate document in the **Federal Register**.

ADDRESSES: Comments must be clearly identified as such and transmitted either electronically to *comments@msha.gov*, by facsimile to (202) 693–9441, or by regular mail or hand delivery to MSHA, Office of Standards, Regulations, and Variances, 1100 Wilson Blvd., Room 2313, Arlington, Virginia 22209–3939. You may contact MSHA with any format questions. Comments are posted for public viewing at *http://www.msha.gov/currentcomments.htm.*

FOR FURTHER INFORMATION CONTACT: Marvin W. Nichols, Jr., Director, Office of Standards, Regulations and Variances, MSHA; phone: (202) 693–9440; facsimile: (202) 693–9441; E-mail: *nichols-marvin@msha.gov.*

This document is also available on MSHA's webpage at http://*www.msha.gov,* under Statutory and Regulatory Information; **Federal Register** Documents; Proposed Rules. You can view comments filed on this rulemaking at *http://www.msha.gov/currentcomments.htm.*

SUPPLEMENTARY INFORMATION: In accordance with sections 101 and 202(f) of the Federal Mine Safety and Health Act of 1977 (Mine Act), this document is published jointly by the Secretary of the Department of Labor, and the Secretary of Health and Human Services.

This document should be read in conjunction with: (1) The July 7, 2000 notice of proposed rulemaking (63 FR 42068) addressing ''Determination of Concentration of Respirable Coal Mine Dust, ''Single Sample''; and (2) the notice of proposed rulemaking addressing Verification of Underground Coal Mine Operator's Dust Control Plans, ''Plan Verification,'' 1219–AB14, published in today's **Federal Register**, and (3) the associated Preliminary Regulatory Economic Analysis (PREA) available on MSHA's webpage. The plan verification rule would require operators to verify that the dust controls specified in the ventilation plan protect miners from overexposure during normal operations.

In addition to this rulemaking, today's **Federal Register** contains the Plan Verification notice of proposed rulemaking, (NPRM). In combination, these rules represent MSHA's revised program to meet the Mine Act's requirement that a miners' exposure to respirable coal mine dust be maintained at or below the applicable standard on each shift.

I. Introduction

This reopening notice includes supplemental information which updates the preamble of the July 7, 2002 notice of proposed rulemaking. This information concerns the background, MSHA's current enforcement policy, health effects, quantitative risk assessment, technological feasibility, economic feasibility, compliance costs and benefits, and the list of references and supporting documentation.

The Agencies organized the July 2000 proposed rule (65 FR 42068) to allow interested persons to first consider pertinent material on the Agencies' 1972 notice followed by an overview of the NIOSH mission and assessment of the proposed rule, as well as those aspects of MSHA's coal mine respirable dust program relevant to this proposed rule. Following the introductory material is a discussion of the ''measurement objective,'' or what the Secretaries intend to measure with a single sample measurement, and the application of the NIOSH Accuracy Criterion for determining whether a single sample measurement will ''accurately represent'' the full-shift atmospheric dust concentration. Next, the validity of the sampling process is addressed, including the performance of the approved sampler unit, sample collection procedures, and sample processing. The concept of measurement uncertainty is then addressed, and why sources of dust concentration variability and various other factors are not relevant to the proposed rule. In addition, the 2000 proposed rule summarized the health effects of occupational exposure to respirable coal mine dust and presented MSHA's quantitative risk assessment. Finally, the 2000 proposed rule explained how the total measurement uncertainty is quantified, and how the accuracy of a single sample measurement meets the NIOSH Accuracy Criterion. Several Appendices, which contain relevant technical information, are attached and incorporated in the preamble to the 2000 proposed rule.

The Secretaries are interested in further comment on all issues relevant to the July 7, 2000 NPRM. The July 7, 2000 NPRM is available on MSHA's webpage at *http://www.msha.gov*, under Statutory and Regulatory Information, **Federal Register** Documents, Proposed Rules; or you may contact MSHA at 202–693–9440 for a copy.

The proposed rule, ''Determination of Concentration of Respirable Coal Mine Dust,'' has been referred to as ''Single, Full-Shift Sampling'' based on the Agencies' finding that a single, full-shift measurement would, after applying valid statistical techniques, accurately represent the atmospheric conditions to which the miner is continuously exposed. However, where appropriate, the term ''single, full-shift sample,'' will now be referred to as ''single sample'' in this document and any subsequent publications. This reopening notice does not change the actual finding as published in the July 7, 2000 **Federal Register**.

II. Background

In 1972, the Secretary of Interior and the Secretary of Health, Education, and Welfare issued a ''joint finding'' under the Federal Coal Mine Health and Safety Act of 1969. The finding concluded that a single, full-shift measurement of respirable dust would not, after applying valid statistical techniques, accurately represent the atmospheric conditions to which the miner is continuously exposed.

In 1994, the Secretary of Labor and the Secretary of Health and Human Services tentatively concluded that the 1972 joint finding was incorrect. Therefore, on February 18, 1994, the Secretaries published a proposed Joint Notice of Finding in the **Federal Register** (59 FR 8537). The Joint Notice proposed to rescind the 1972 finding and, instead, to find that a single, full-shift measurement *will* accurately represent the atmospheric conditions with regard to the respirable dust concentration during the shift on which it was taken. Concurrently, on February 18, 1994 (59 FR 8356) MSHA published a separate **Federal Register** document announcing how MSHA intended to use both single, full-shift samples and the average of multiple, full-shift samples for noncompliance determinations, and solicited public comment on the proposed enforcement procedure.

On February 3, 1998, MSHA and the National Institute for Occupational Safety and Health (NIOSH) published a final Joint Notice of Finding in the **Federal Register**, along with MSHA's enforcement policy implementing the joint finding (63 FR 5664 and 5687 respectively).

In May 1998, the National Mining Association and the Alabama Coal Association petitioned the United States Court of Appeals for the 11th Circuit to review the 1998 Notice of Finding. On September 4, 1998, the 11th Circuit issued a final decision and order vacating the Joint Finding on the grounds that the Agencies failed to comply with all the requirements for a health standard under section 101(a)(6)(A) of the Mine Act (30 U.S.C. 811(a)(6)(A)).

In response to the Court's ruling, on July 7, 2000, the Secretaries published in the **Federal Register** a Notice of Proposed Rulemaking (NPRM), Determination of Concentration of Respirable Coal Mine Dust (Single Sample) (65 FR 42068). In that document, the Secretaries proposed a new mandatory health standard in 30 CFR part 72 that stated that a single, full-shift measurement would accurately represent atmospheric conditions to which a miner is exposed during such shift. The proposed rule would rescind the 1972 Joint Notice of Finding.

During August 2000, three public hearings were conducted. Transcripts of those proceedings are available to the public (*www.msha.gov*, under Statutory and Regulatory Information).

III. MSHA's Current Enforcement Policy

The Federal Mine Safety and Health Review Commission's decision in *MSHA* v. *Excel,* 23 FMSHRC 600 (June 2001) precluded MSHA from citing an operator on the average of multiple samples collected by an inspector on a single shift. This decision affirmed an Administrative Law Judge dismissal of three citations alleging violations of the respirable dust standard based on the average of multiple inspector samples taken on a single shift. The Secretary's appeal of the Commission's decision is now pending before the D.C. Circuit Court of Appeals (D.C. Cir. No. 01–1335). Oral argument was held on October 7, 2002. In August 2001, MSHA ceased issuing citations on the average of multiple samples taken on a single shift pending a resolution of the appeal. Currently, all noncompliance determinations are based on the average of multi-shift sample results. Because this change has taken place since publication of the July 7, 2000 NPRM, references to enforcement action based on the average of multiple samples taken by inspectors on a single shift no longer reflect MSHA's current enforcement policy. The promulgation of the Single Sample rule would address the 1972 Finding and the consequences of the June 2001 Commission decision.

IV. Revisions To Update Data for the Rulemaking Record

The Agencies also solicit comments on revised information to update the rulemaking record which address the following:

(a) Health Effects

(Please see Section VII, 65 FR 42075, of the July 7, 2000 notice of proposed rulemaking for a complete discussion of Health Effects). The following provides an update on the Miners' Choice Program.

MSHA and NIOSH implemented the Miners' Choice Health Screening Program (Miners' Choice) in October 1999. The Miners' Choice program and Coal Workers' X-Ray Surveillance Program (CWXSP) identify cases of simple and complicated pneumoconiosis, including coal workers' pneumoconiosis and silicosis—hereafter referred to as ''CWP.'' All of the Miners' Choice x-rays were processed using the same procedures and criteria used in the CWXSP in accordance with the requirements of 42 CFR part 37.

MSHA and NIOSH are conducting preliminary analyses of the first three years of the Miners' Choice program. These data and analyses are being handled, conducted, and reported pursuant to the DOL's and DHHS's respective Information Quality Guidelines.[1] Preliminary analyses of these data are expected in Spring 2003. The analyses will be made available to commenters through the MSHA and NIOSH Web sites, *www.msha.gov* and *www.cdc.gov/niosh/homepage.html*, respectively.

As of the end of fiscal year 2002, more than 19,500 active coal miners from 20 states voluntarily participated in Miners' Choice. The overall CWP prevalence rate for radiographic categories of simple CWP categories 1, 2, 3, and PMF combined was 2.8% (546/19,517) among miners examined in Miners' Choice during the 2000–2002 period. This is similar to the CWP prevalence rate of 2.25% for initial participants in the Miners' Choice Program reported in the 2000 NPRM (65 FR 42100). Among Miners' Choice participants, the CWP prevalence rate was higher among underground coal miners at 3.8% (356/9,265), than it was for surface coal miners, 1.8% (188/10,184). The CWP prevalence rate for independent contractors was 2.9% (2/68). These findings show that CWP continues to occur among coal miners working under the current program to

[1] Specifically, the information is maintained in a confidential manner, all methodologies for data processing are transparent, and all available records were included. This information is reliable and accurate, and is presented in a clear and objective manner, as required by the Department of Labor's Information Quality Guidelines and the Department of Health and Human Services' Guidelines for Ensuring the Quality of Information Disseminated to the Public.

control respirable coal mine dust, including quartz.

(b) Quantitative Risk Assessment

The Quantitative Risk Assessment (QRA) in support of this rule has been updated to reflect more current data on the pattern of overexposures to respirable coal mine dust. The new data replaces some of the original information used to derive the risk estimates for the Single, Full-Shift Sample (65 FR 42068) and Plan Verification (65 FR 42122) Notice of Proposed Rulemakings. The updated analysis of risk provides the best available evidence pursuant to the requirements of section 101(a)(6)(A) of the Mine Act. Please refer to section VI. of the July 7, 2000 (63 FR 42123) notice of proposed rulemaking for the previous discussion of the QRA.

In this quantitative risk assessment (QRA), MSHA will demonstrate that eliminating overexposures on each and every shift would, over a 45-year occupational lifetime, significantly reduce the cumulative exposure to respirable coal mine dust, thereby reducing the risk of both simple CWP and PMF among miners. This reduction in risk would be attributed to reducing concentrations on just that percentage of shifts currently exhibiting a pattern of recurrent overexposure.

MSHA has estimated health benefits of the two rules based on eliminating excessive exposures at only those MMUs and roofbolter designated areas (RB–DAs) currently exhibiting a pattern of recurrent overexposures on individual shifts. In the previous proposed rule, MSHA used operator sampling data from the year 1999 to identify and characterize such MMUs. In the current proposed rule, MSHA has updated the analysis to 2001, included MSHA DO sampling data in addition to operator data, and expanded the quantitative analysis to include the reduction in risk expected for certain miners not previously considered (*i.e.,* miners working in RB–DAs). As a result, MSHA believes it has more accurately quantified the expected reduction in risk for the most exposed miner population currently subjected to recurrent overexposures.

By ''exhibiting a pattern of recurrent overexposures,'' MSHA means that, for the same DO (MMU) or RB–DA, at least two valid MSHA or operator bimonthly samples exceeded the applicable standard in a given year. MMUs exhibiting such a pattern are highly likely to have experienced excessive exposures on at least six shifts during the year under consideration.[2]

Based on 2001 MSHA and operator data, there were 716 MMUs (out of 1,256 total) at which dust concentrations for the DO exceeded the applicable standard on at least two of the sampling shifts (MSHA, datafile: DO_2001.ZIP). MSHA considers these 716 MMUs, representing 57 percent of all MMUs and more than one-half of all underground coal miners working in production areas, to have exhibited a pattern of recurrent overexposures. Valid DO samples were collected on a total of 20,905 shifts at these 716 MMUs, and the applicable standard was exceeded on 4,028 of these shifts, or 19.3 percent. For this 19.3 percent, the mean excess above the standard, as measured for the DO only, was 1.04 mg/m^3.

These results are based on a large number of shifts (an average of nearly 30 at each of the 716 MMUs). Therefore, assuming representative operating conditions on these shifts, the results can be extrapolated to all production shifts, including those that were not sampled, at these same 716 MMUs. With 99-percent confidence, the overall percentage of production shifts on which the DO sample exceeded the standard was between 18.6 percent and 20.0 percent for 2001. At the same confidence level, again assuming representative operating conditions, the overall mean excess on noncompliant shifts at these MMUs was between 0.96 mg/m^3 and 1.11 mg/m^3. If, as some commenters on the earlier single sample proposed rule and the Dust Advisory Committee proceedings have alleged, operators tend to reduce production and/or increase dust controls on sampled shifts, then the true values could be higher than even the upper endpoints of these 99-percent confidence intervals.

[2] MSHA estimates an MMU average of 384 production shifts per year. At MMUs exhibiting a pattern of recurrent overexposures in 2001, valid DO samples were obtained on an average of about 30 of these 384 production shifts. If dust concentrations on two or more of the sampled shifts exceed the standard, then it follows, at a 95-percent confidence level, that the standard is exceeded on at least six shifts over the full year.

If a different definition of ''exhibiting a recurrent pattern of overexposures'' had been used in the QRA, the estimate of the reduction in risk and associated benefits would have been different. For example, if the criterion were that four or more bimonthly DO exposure measurements exceeded the applicable standard then overexposures would be expected, with 95% confidence, to occur on at least 20 shifts in a year of 384 shifts. Using more than two recorded overexposures as the criterion would arbitrarily reduce the population for which MSHA is estimating benefits and decrease the estimated number of prevented cases.

The available data suggest that, unless changes are made to bring dust concentrations down to at or below the dust standard on every shift, the same general pattern of overexposures observed in 2001 will persist into the future.[3] Therefore, MSHA concludes that without the proposed changes:

- More than half of all MMUs would continue to have a pattern of recurrent overexposures on individual shifts;
- At those MMUs with recurrent overexposures, average respirable dust concentrations for the DO would continue to exceed the applicable standards on about 20 percent of all production shifts;
- Among those shifts on which DO exposure exceeds the applicable standards, the mean excess for the DO would continue to be approximately 1 mg/m^3.

If all overexposures on individual shifts are eliminated, the reduction in total respirable coal mine dust inhaled by a miner over a working lifetime will depend on three factors: (1) The average volume of air inhaled on each shift that would otherwise have exceeded the applicable standard, (2) the degree of reduction in respirable dust concentration in the air inhaled on such shifts, and (3) the number of such shifts per working lifetime. While the inhaled dose (mg) could not be measured directly, it is biologically and quantitatively related to the accumulated exposure (*i.e.,* airborne concentration multiplied by duration, summed across jobs for each miner) used to predict CWP and PMF prevalences in the Attfield-Seixas models used in this QRA. If a miner inhales ten cubic meters of air on a shift (U.S. EPA, 1980), reducing the respirable coal mine dust concentration in that air by 1.04 mg/m^3 will result in 10.4 mg less dust inhaled on that shift alone. Assuming the miner works 240 shifts per year, then reducing inhaled respirable dust by an average of 10.4 mg on 19.3 percent of the shifts will reduce the total respirable coal mine dust inhaled by 482 mg per year, or nearly 22,000 mg over a 45-year working lifetime:

1.04 mg less respirable coal mine dust per m^3 of inhaled air
$\times$ 10 m^3 inhaled air per shift
$\times$ 46.32 affected shifts (*i.e.,* 19.3% of 240) per work year
$\times$ 45 work years per working lifetime
= 21,678 mg less respirable coal mine dust inhaled per working lifetime.

In Section V, the strengths and weaknesses of various epidemiological

[3] Appendix VI.1 compares the pattern observed in 2001 to that in earlier years.

studies were presented, supporting the selection of Attfield and Seixas (1995) as the study that provides the best available estimate of material health impairment with respect to CWP. Two strengths of this study are its quantitative description of exposure-response among both miners and ex-miners (who had worked as miners for approximately 13–40 years) and the fact that it reflects recent conditions experienced by coal miners in the U.S. Using the exposure-response relationship it is possible to estimate the health impact of bringing dust concentrations down to or below the applicable standard on every shift. This is the only contemporary epidemiological study of CWP in U.S. miners providing such a relationship.

Attfield and Seixas (op cit) used two or three B readers to identify the profusion of opacities based on the ILO classification scheme.[4] The most inclusive category defined in their paper was CWP 1+, which include simple CWP categories 1, 2, and 3, as well as PMF. The second category CWP 2+, does not include simple CWP, category 1, but does include the more severe simple CWP categories, 2 and 3, as well as PMF. The third category used in their report was PMF, denoting any category (A, B, or C) of large opacities. The authors applied logistic regression models to the prevalence of CWP 1+, CWP 2+, and PMF as a function of accumulated coal mine exposure calculated for each miner included in the study. In the absence of data differentiating the inhalation rates of individual miners, the accumulated exposures in these models were expressed in units of mg-yr/m^3.

At the MMUs being considered (those exhibiting a pattern of recurrent overexposures), bringing dust concentrations down to no more than the applicable standard on each and every production shift would reduce DO exposures on the affected shifts by an average of 1.04 mg/m^3. Assuming this average reduction applies to only 19.3 percent of the shifts, the effect would be to reduce cumulative exposure, for each miner exposed at or above the DO level, by 0.20 mg-yr/m^3 over the course of a working year (i.e., 19.3 percent of shifts in one year, times 1.04 mg/m^3 per shift). Therefore, over a 45-year working lifetime, the benefit to each affected miner would, on average, amount to a reduction in accumulated exposure of approximately 9.0 mg-yr/m^3 (i.e., 45 years times 0.20 mg-yr/m^3 per year). If, as some miners have testified, operator dust samples submitted to MSHA tend to under-represent the frequency or magnitude (or both) of individual full-shift excursions above the applicable standard, then eliminating such excursions would provide a lifetime reduction of even greater than 9.0 mg-yr/m^3 for each affected miner.

The Attfield-Seixas models predict the prevalence of CWP 1+, CWP 2+, and PMF for miners who have accumulated a given amount of exposure, expressed in units of mg-yr/m^3, by the time they attain a specified age. Benefits of reducing cumulative exposure can be estimated by calculating the difference between predictions with and without the reduction. For example, suppose a miner at one of the MMUs under consideration begins work at age 20 and retires at age 65. At these MMUs, the mean DO concentration reported in 2001 was 1.15 mg/m^3; so, after 45 years, a miner exposed at this level can be expected to have accumulated a total exposure of nearly 52 mg-yr/m^3 (*i.e.*, 45 yr $\times$ 1.15 mg/m^3). By the year of retirement, such a miner is expected to accumulate, on average, 9.0 mg-yr/m^3 less exposure if individual shift excursions are eliminated. For 65-year-old miners, reducing an accumulated total dust exposure of 52 mg-yr/m^3 by 9.0 mg-yr/m^3 reduces the predicted prevalence of ''CWP 1+'' by more than 16 per thousand (see the entry for affected DO miners in Table VI–1).[5]

This result, however, applies only to DO miners at age 65. The Attfield-Seixas models provide different predictions for each year of age that a miner attains. The predicted benefit turns out to be smaller for younger miners and larger for older miners. This is partly because younger miners will have accumulated less exposure reduction as a result of the single sample and plan verification proposals, and partly because the Attfield-Seixas models depend directly on age as well as on cumulative exposure. The health effects of recurrent overexposures can occur long after the overexposures occurred. Even after a miner retires and is no longer exposed to respirable coal mine dust, the additional risk attributable to an extra 9.0 mg-year/m^3, accumulated earlier, continues to increase with age. Consequently, the benefit to be gained from eliminating individual shift excursions also continues to increase after a miner is no longer exposed. For example, assuming no additional exposure after age 65, the predicted reduction in average prevalence of CWP 1+ increases from 16.6 per thousand at age 65 to 21.4 per thousand at age 70. Presumably, the increasingly greater predicted reduction in risk of disease after age 65 is due to the latent effects of the reduction in earlier exposure and the progressive nature of CWP.

To quantify benefits expected from eliminating overexposures on each and every shift, MSHA applied the Attfield-Seixas models to a hypothetical population of miners who, on average, begin working at age 20 and retire at age 65, assuming different lifetimes.[6] To show the range of potential reductions in risk depending on a miner's lifetime, Table VI–1 presents the risk reductions predicted at three different attained ages: 65, 73, and 80 years. The projected benefit increases with attained age. However, MSHA's best estimate of the benefit to exposed miners is expressed by the reduction in prevalence of disease predicted at age 73.[7] Since not all underground coal miners are overexposed to dust with the same frequency or at the same level, Table VI–1 shows the risk reductions projected for three different categories of affected miners: (1) DO miners, (2) NDO miners who are faceworkers neither classified as a DO nor subject to a separate dust standard applicable to a RB–DA, and (3) DA roofbolters. The reduction in risk predicted for each of these three categories will now be discussed in turn.

(1) DO Miners

As explained earlier, for DO miners the predicted lifetime exposure reduction accumulates at a rate of 0.20 mg/m^3 of reduced exposure per year during the 45 ''working years'' between

[4] If three readings were available, the median value was used. If two readings were available, the higher of the two ILO categories was recorded. Eighty radiographs were eliminated because only one reading was available.

[5] The Attfield-Seixas model predicts a higher prevalence of CWP, and consequently a greater risk reduction (35 per thousand DO miners at age 65), after 45 years of occupational exposure to coal mine dust in central Pennsylvania or southeastern West Virginia. (Attfield and Seixas attribute this effect to the type of coal mined in those geographic areas.) However, few underground coal mines in central Pennsylvania or southeastern West Virginia are still operating. In fact, only about 29 of the 716 MMUs exhibiting a pattern of recurrent overexposures in 2001 were from those areas. Therefore, the risk assessment presented here, along with projected benefits of the rule, are based on the lower risks predicted for miners working outside central Pennsylvania and southeastern West Virginia.

[6] Appendix VI.2 contains a technical description of the Attfield-Seixas models and an explanation of how MSHA applied them to obtain the results shown in Table VI–1. The method used in applying the models differs slightly from that used in the previous proposed rule, and Appendix VI.2 also explains this difference. In addition, an EXCEL workbook entitled ''RiskRdxn.xlw'' showing the formulas used in the calculations has been placed into the public record for these proceedings.

[7] The expected lifetime for all American males, conditional on their having reached 20 years of age, is 73 years (calculated from U.S. Census, March 1997, Tables 18 and 119).

20 and 65, reaching a maximum of 9.0 mg-yr/m^3 upon retirement at age 65. Between ages 65 and 80, the accumulated reduction in dust exposure remains at an estimated average of 9.0 mg-yr/m^3, but (as also explained previously) the benefit in terms of both simple CWP and PMF risk continues to increase.

The first row of Table VI–1 presents the reductions in risk expected among affected DO miners who work at an MMU exhibiting a pattern of recurrent overexposures. For this group of miners, the calculation at an average lifetime of 73 years shows that bringing dust concentrations down to no more than the applicable standard on each shift would:

- Reduce the combined risk of simple CWP and PMF;
- Reduce the combined risk of simple CWP and PMF by 24.4 cases per 1000 affected DO miners; [8]
- Reduce the combined risk of simple CWP (category 2 and 3) and PMF by 15.5 cases per 1000 affected DO miners;
- Reduce the risk of PMF by 7.6 cases per 1000 affected DO miners.

When the dust concentration measured for the DO exceeds the applicable standard, measurements for at least some of the other miners in the same MMU may also exceed the standard on the same shift, though usually by a lesser amount. Furthermore, although the DO represents the occupation most likely to receive the highest exposure, one or more of these other miners may be exposed to even higher concentrations than the DO on some shifts. Therefore, the second category of affected miners addressed in Table VI–1 is the population of NDO faceworkers other than those working in roofbolter DAs (who are addressed as a separate, third category).

(2) NDO Miners

This category covers all faceworkers other than the DO, except those roofbolters for which a separate DA dust standard has been established. (Roofbolters not coming under a DA standard are included in the NDO category.) To estimate how NDO miners (other than those subject to a DA standard) would be affected by the proposed rules, MSHA examined the results from all valid dust samples collected by MSHA in underground MMUs during 2001 (MSHA, data file: Insp2001.zip). Within each MMU, MSHA typically takes one sample on the DO and, on the same shift, four or more additional samples representing other occupations. In 2001, there was an average of 1.0 NDO measurement in excess of the standard on shifts for which the DO measurement exceeded the standard.[9] For non-DO measurements that exceeded the standard on the same shift as a DO measurement, the mean excess above the standard was approximately 0.6 mg/m^3.[10]

Combining these results with the 19.3 percent rate of excessive exposures observed for the DO on individual shifts, it is reasonable to infer that, at the MMUs under consideration, an average of 1 other miner, in addition to the one classified as DO, is currently overexposed on at least 19 percent of all production shifts. In 2001, the mean of the highest dust concentration reported for any NDO miner on sampled shifts was 1.08 mg/m^3. Over the course of each working year, the reduction in exposure expected for such miners as a result of implementing the proposed rules is 0.12 mg-yr/m^3 (*i.e.*, 19.3 percent of one year, times 0.6 mg/m^3).

To assess the reduction in risk expected from eliminating all single-shift exposures for these NDO miners, MSHA again applied the Attfield and Seixas models to miners who begin working at age 20 and retire at age 65, assuming lifetimes of 65, 73, and 80 years. This time, however, the resulting decrease in predicted prevalence was multiplied by 1.0/6 = 0.167, to reflect the fact that the assumed rate of overexposure applies, on average, to about one-sixth of the faceworkers not classified as the DO.[11]

The second row of Table VI–1 contains the risk reductions for NDO miners expected as a result of eliminating all individual shift overexposures. Over an occupational lifetime, the average reduction in risk for simple CWP and PMF combined, and for PMF alone, increases with age. However, the risk reduction at each age is smaller for the affected NDOs than for the affected DOs. This is expected because the estimated probability that a NDO (other than a RB–DA) will, under current conditions, be overexposed on a given shift is only 16.7 percent of the corresponding probability for the DO. For the MMUs under consideration, the predicted reduction in risk for faceworkers other than the DO who live an expected lifetime of 73 years is: 2.3 fewer cases of ''CWP 1+'' per thousand affected NDO miners; 1.5 fewer cases of ''CWP 2+'' per thousand affected NDO miners; and 0.7 fewer cases of PMF per thousand affected NDO miners.

(3) Roofbolter DA (RB–DA) Miners

Because roofbolters are often exposed to higher quartz concentrations than other miners, the applicable dust standard for them is frequently different from the standard applicable to other miners working in the same MMU. Therefore, many roofbolters are classified as working in a ''roofbolter designated area'' (RB–DA). For purposes of this QRA, such roofbolters were excluded from the analysis of NDO miners presented above. Based on 2001 MSHA and operator data, 194 out of a total 659 RB–DAs met MSHA's criterion for exhibiting a pattern of recurrent overexposures—*i.e.*, dust concentrations exceeded the applicable standard on at least two of the sampled shifts (MSHA, datafile: RBDA2001.ZIP). Valid RB–DA samples were collected on a total of 3477 shifts at these 194 RB–DAs, and the applicable standard was exceeded on 837 of these shifts, or 24.1 percent (95% confidence interval: 22.7 to 25.5). For this 24.1 percent, the mean excess above the standard, as measured for the RB–DA only, was 0.72 mg/m^3 (95-percent confidence interval: 0.64 to 0.80).

At these RB–DAs (*i.e.*, those exhibiting a pattern of recurrent overexposures), the mean concentration reported in 2001 was 0.94 mg/m^3; so, after 45 years, an RB–DA miner can be expected, if there is no change in current conditions, to have accumulated a total exposure of more than 42 mg-yr/m^3. By retirement at age 65, such a miner would be expected to accumulate, on average, 7.8 mg-yr/m^3 less exposure if overexposures on all individual shifts were eliminated. (45 years × 24.1% of 0.72 mg/m^3). The third row of Table VI–1 shows the estimated impact of the proposed rules on the risk predicted for RB–DA roofbolters. At age 73, reducing an accumulated total dust exposure of 42 mg-yr/m^3 by 7.8 mg-yr/m^3 reduces the predicted prevalence of ''CWP 1+'' by 19.6 per thousand, of ''CWP 2+'' by 12.1 per thousand, and of PMF by 6.0 per thousand.

[8] ''Affected DO miners'' include all miners who work at MMUs with a pattern of recurrent overexposures and who are exposed to dust concentrations similar to the DO over a 45-year working lifetime.

[9] With 95-percent confidence, on shifts for which the DO measurement exceeds the standard, the mean number of other occupational measurements also exceeding the standard is at least 0.91.

[10] With 95-percent confidence, the mean excess is at least 0.59 mg/m^3.

[11] There are an estimated 6 NDO miners for each DO miner, and an average of 1.0 of these 6 miners is overexposed. This does not include roofbolters working in designated areas, who are treated as a separate group in the present analysis.

Table VI-1. By age, average reduction in cases of occupational respiratory disease expected to result from implementation of single sample and plan verification rules.

Type of Miner	Reduction in Cases of Occupational Respiratory Disease per 1,000 Affected Miners								
	Simple CWP[a] (categories 1, 2 or 3) or PMF[b] ("CWP 1+")			Simple CWP (categories 2 or 3) or PMF ("CWP 2+")			PMF		
	Age			Age			Age		
	65	73	80	65	73	80	65	73	80
Affected Designated Occupation Miners[c] (DO)	16.6	24.4	30.6	6.3	15.5	28.0	2.8	7.6	16.1
Affected Non-Designated Occupation Miners[d] (NDO)	1.6	2.3	2.9	0.6	1.5	2.7	0.3	0.7	1.5
Affected Roof Bolter Designated Areas Miners[e] (RB-DA)	13.0	19.6	25.3	4.8	12.1	22.5	2.2	6.0	12.8

[a] Simple CWP: simple coal workers' pneumoconiosis.

[b] PMF: progressive massive fibrosis.

[c] Affected Designated Occupation (DO) Miners: includes all miners who work at the 57 percent of the Mechanized Mining Units under consideration and who are exposed to dust concentrations similar to the DO, over a 45-year occupational lifetime. Risk reduction estimates are based on reducing the mean dust concentration of 1.15 mg/m^3 (Std. Error = 0.018) observed in 2001 for DOs at the MMUs under consideration.

[d] Affected Non-Designated Occupation (NDO) Miners: includes all underground faceworkers under consideration who are not classified as the DO or a "designated area roofbolter." Risk reduction estimates are based on reducing the mean dust concentration of 1.08 mg/m^3 (Std. Error = 0.011) observed in 2001 for the NDO sample showing the highest dust concentration on a given MSHA sampling day within an MMU.

[e] Affected Roofbolter Designated Area (RB-DA) Miners: includes all miners working as roofbolters in the 29.4 percent of RB-DAs exhibiting a pattern of recurrent overexposures. Risk reduction estimates are based on reducing the mean dust concentration of 0.94 mg/m^3 (Std. Error = 0.025) observed in 2001 for the RB-DAs under consideration.

Appendix VI.1 DO Overexposure Patterns

In 1998, MSHA attempted to enforce compliance on individual shifts. Therefore, to compare the 2001 pattern of excess exposures on individual shifts to that of previous years, MSHA examined the regular bimonthly DO sample data submitted by mine operators in the 10 years from 1990 through 1997 and 1999–2000. The same three parameters were considered as discussed above for 2001: (1) The percentage of MMUs exhibiting a pattern of recurrent overexposures, as indicated by at least two of the valid measurements being above the applicable standard in a given year; (2) for those and only those MMUs exhibiting recurrent overexposures, the overall percentage of production shifts on which the DO was overexposed, as estimated by the percentage of valid measurements above the applicable standard; and (3) for the MMUs identified as exhibiting recurrent overexposures, the mean excess above the applicable standard, as calculated for just those valid measurements that exceeded the applicable standard in a given year.

Although MSHA found minor differences between individual years, there was no statistically significant upward or downward trend in any of these three parameters over the 1990–1997 time period (see Table VI–2). Beginning in 1999, however, there was a significant and persistent decrease in the average excess above the applicable standard (Parameter #3) for MMUs exhibiting recurrent overexposures. MSHA attributes this decrease to two important changes in the Agency's inspection program, beginning near the end of 1998. These changes, which both resulted in increased inspector presence, were: (1) An increase in the frequency of MSHA dust sampling at underground coal mines; and (2) initiation of monthly spot inspections at mines that were experiencing difficulty in maintaining consistent compliance with the applicable dust standard.

Table VI-2. Parameters describing overexposure to respirable coal mine dust, based on operator DO samples.

1990-1997 1999-2000	Parameter #1 (Percent)	Parameter #2 (Percent)	Parameter #3 (mg/m^3)	
			1990-1997	1999-2000
Number of Years	10	10	8	2
Median	52.6	20.1	1.24	1.00
Mean	51.0	20.5	1.26	1.00
(Std. Error)	(1.36)	(0.30)	(0.023)	(0.07)
2001	**51.6**	**20.8**	**1.08**	

Parameter #1: percentage of MMUs exhibiting a pattern of recurrent overexposures.

Parameter #2: for those MMUs exhibiting a pattern of recurrent overexposures, the percentage of production shifts on which the DO was overexposed.

Parameter #3: for those MMUs exhibiting a pattern of recurrent overexposures, the mean excess above the applicable standard among valid DO measurements that exceeded the applicable standard.

Appendix VI.2 Application of the Attfield-Seixas Models

Attfield and Seixas (1995) provide separate logistic regression models for CWP1+, CWP2+, and PMF as a function of cumulative dust exposure (mg-yr/m^3). These models all have the following form:

$$\frac{p}{1-p} = e^{a_0 + a_1 \times age + a_2 \times exposure + a_3 \times rank \times exposure} \qquad \text{(Eq. 1)}$$

where p is the probability of disease at a specified age and cumulative exposure. The constant e is the base of the natural logarithms. The empirically estimated coefficients a_0 (the intercept), a_1, a_2, and a_3 differ for the three health effects considered and are presented in Table IV of Attfield and Seixas (op cit). The values for these coefficients are also shown in the Excel workbook (RiskRdxn.xlw) MSHA has placed into the public record as part of these proceedings. The coefficient (a_3) of ''rank'' refers to an additional effect of cumulative exposure to coal mine dust in central Pennsylvania or southeastern West Virginia, which the authors attribute to the rank of the coal mined in those areas. Since few mines in those areas are currently operating, MSHA did not employ this additional effect in its application of the Attfield-Seixas models (*i.e.*, MSHA assumed that the value of the indicator variable for ''rank'' is zero).

From equation 1, assuming exposure outside central Pennsylvania and southeastern West Virginia, it follows that the prevalence of disease, assuming continued exposure at current levels and approximate linearity of the exposure effect, is (per thousand miners):

$$P_y = 1000 \times \frac{y}{1+y}$$

$$\text{where } y = e^{a_0 + a_1 \times age + a_2 \times (\text{years of exposure}) \times (\text{current mean annual exposure})} \qquad \text{(Eq. 2)}$$

Similarly, the prevalence of disease, assuming reduced cumulative exposure attributable to implementation of the proposed rules is (per thousand miners):

$$P_x = 1000 \times \frac{x}{1+x}$$

$$\text{where } x = e^{a_0 + a_1 \times \text{age} + a_2 \times (\text{years of exposure}) \times (\text{reduced mean annual exposure})} \qquad \text{(Eq. 3)}$$

Note that the ''reduced mean annual exposure'' is the current mean annual exposure (based on 2001 data) reduced by eliminating overexposures on just that percentage of shifts for which overexposures have been shown to currently occur.

MSHA then estimated the impact of eliminating all overexposures on individual shifts by calculating (for ages 65, 73, and 80) the differences:

$$\Delta = P_y - P_x \qquad \text{(Eq. 4)}$$

It is these differences that are presented in Table VI–1. The calculations for each specific entry are detailed in the EXCEL workbook, RiskRdxn.xlw, which has been placed into the public record.[12]

(c) *Technological Feasibility*

The following discussion is a Summary of Chapters 3 and 4 of the Preliminary Regulatory Economic Analysis (PREA). The PREA is available in hard copy by request and also available on MSHA's Web page under Statutory and Regulatory Information. This discussion parallels the Regulatory Impact Analysis discussion in the accompanying notice of proposed rulemaking, ''Verification of Underground Coal Mine Operators'' Dust Control Plans and Compliance Sampling for Respirable Dust,'' published by MSHA, RIN 1219–AB14, in today's **Federal Register**.

MSHA, in consultation with NIOSH, believes that compliance with the proposed Single Sample rule would be technologically feasible for the mining industry. The Single Sample rule would predominantly affect MSHA's procedures since MSHA alone conducts inspector sampling. However, due to the promulgation of the Single Sample rule, some operators would experience a slight increase in the number of abatement samples they would conduct using current technology. After the promulgation of the proposed Single Sample rule, coal operators would continue to comply with the existing respirable dust concentration limit of 2.0 mg/m^3. Such compliance with the applicable standard has proven feasible over the years. Furthermore, compliance determination based on an inspector, single sample result was found to be technologically feasible during the prior effective Interim Single-Sample Enforcement Policy (Single Sample), in effect from March 2, 1998 through September 4, 1998.

(d) Economic Feasibility

The following discussion is a Summary of Chapters 3 and 4 of the Preliminary Regulatory Economic Analysis (PREA). The PREA is available in hard copy by request and also available on MSHA's webpage under Statutory and Regulatory Information. This discussion parallels the Regulatory Impact Analysis discussion in the accompanying notice of proposed rulemaking, ''Verification of Underground Coal Mine Operators'' Dust Control Plans and Compliance Sampling for Respirable Dust published by MSHA, RIN 1219–AB14, in today's **Federal Register**.

MSHA, in consultation with NIOSH, believes that the Single Sample rule would be economically feasible for the coal mining industry based on its most recent cost estimates. The coal mining industry would incur costs of approximately $3.1 million yearly to comply with the proposed Single Sample rule. Coal mine operators would also incur approximately an additional $1.7 million yearly in penalty costs associated with the additional citations arising from the proposed Single Sample rule.[13] That the total $4.8 million borne yearly by the coal mining industry as a result of the proposed Single Sample rule is well less than 1 percent (about 0.03 percent) of the industry's yearly revenues of $17.7 billion provides convincing evidence that the proposed rule is economically feasible.

Since single sample and plan verification are complementary NPRMs intended to be promulgated at the same time, the detailed presentation of assumptions and estimates for each are available in the same Preliminary Regulatory Economic Analysis (PREA)(MSHA, February 2003).

(e) Costs and Benefits: Executive Order 12866

In accordance with Executive Order 12866, the Agencies have revised the PREA of the estimated costs and benefits associated with the proposed rule for the underground and surface coal mining sectors. The key findings are summarized below.

1. Compliance Costs

The Agencies estimate that the cost of this NPRM would be approximately $3.1 million annually, of which all but about $57,000 would be borne by underground coal mine operators (the residual $57,000 to be borne by surface coal mine operators). Table XIII–1 (Summary of Compliance Costs) summarizes the estimated compliance costs by provision, for underground and surface coal mines, for the following three mine size categories: (1) Those employing fewer than 20 workers; (2) those employing between 20 and 500 workers; and (3) those employing more than 500 workers.

The compliance costs arising from the Single Sample NPRM would occur as a result of an increase in the number of MSHA inspector citations issued to underground and surface coal mine operators due to the determination of noncompliance being based on the results of a MSHA single sample rather than the average of multiple-shift sample results. The additional citations

[12] The method used here provides an approximation of the expected risk reduction (Δ), assuming approximate linearity of the exposure-response relationship over the exposure range of interest. This differs from the method used in the previous proposed rule, where lower bounds on the risk reduction were calculated. The calculations in the previous proposed rule defined

$A = P_{y'} - P_x$,
where $y' = y / x$ and x and $x' = e^{a0 \times age}$

The previous method results in lower values than those shown in Table VI–1. For example, for ''CWP 1+'' among affected DO miners at age 73, applying the previous method to 2001 operator and MSHA data would have resulted in a calculated risk reduction of 16.3 per thousand instead of the 24.4 per thousand presented in Table VI–1. MSHA believes the method used in the current proposed rule more accurately represents the reduction in risk that can be expected if all individual shift overexposures are eliminated.

[13] The estimate of the number of additional citations MSHA anticipates issuing under the single sample rule reflects a substantial increase over the number of additional citations anticipated under the July 7, 2000 proposed rule. This is because the baseline period employed in the revised cost estimates (August through December 2001) reflects the time period after which MSHA ceased issuing citations based upon multiple samples collected over a single shift. As a result, the number of citations during the revised base period is lower than the number of citations for the base period used in the July 7, 2000 cost estimate. The estimate of the number of additional citations MSHA expects to issue under the single sample proposed rule rose from 561 in the July 7, 2000 PREA to 909 in the 2003 revised PREA. This increase in the number of additional citations is primarily responsible for the increase in the revised total cost estimate for the single sample proposed rule.

would require mine operators to undertake the following actions and to incur associated compliance costs: take corrective action(s) in order to get back into compliance with the applicable dust standard; perform abatement sampling; complete dust data cards; send abatement samples to MSHA; post abatement sample results; write respirable dust plans; and post a copy of dust plans.

In addition to these estimated compliance costs, mine operators would incur yearly penalty cost increases of about $1.7 million. Penalty costs conventionally are not considered to be a cost of a rule (and, in fact, are clearly not a compliance cost) but merely a transfer payment to the government from a party violating a rule. Therefore, the penalty costs are not included as part of the compliance costs of the proposed Single Sample rule. These penalty costs are relevant, however, in determining the economic feasibility of the proposed Single Sample rule.

The derivation of the above cost figures are presented in Chapter IV of the PREA that accompanies this rule.

Table XIII-1
Summary of Compliance Costs
for Single Sample Proposed Rule

Estimated Costs by Category	<20 emp.	≥20 emp. ≤500	>500 emp.	Total
UNDERGROUND COAL MINES				
Corrective Actions	$370,226	$2,247,736	$99,686	$2,717,648
Dust Plan Revisions	$659	$8,677	$330	$9,666
Mail Plan Revisions	$116	$785	$30	$930
Post or Provide Dust Plan	$125	$845	$32	$1,001
Abatement Sampling	$43,414	$229,250	$6,730	$279,395
Complete Dust Cards and Mail Cards and Samples	$2,438	$13,993	$675	$17,105
Post Sample Results	$270	$1,541	$72	$1,882

Total	$417,248	$2,502,826	$10,554	$3,027,627
SURFACE COAL MINES				
Corrective Actions	$7,680	$19,749	$0	$27,429
Dust Plan Revisions	$577	$1,483	$0	$2,060
Mail Plan Revisions	$101	$134	$0	$235
Post or Provide Dust Plan	$109	$144	$0	$253
Abatement Sampling	$13,112	$13,189	$0	$26,301
Complete Dust Cards and Mail Cards and Samples	$221	$386	$0	$607
Post Sample Results	$44	$57	$0	$101
Total	$21,844	$35,141	$0	$56,985
UNDERGROUND AND SURFACE COAL MINES				
Corrective Actions	$377,906	$2,267,484	$99,686	$2,745,076

Dust Plan Revisions	$1,236	$10,160	$330	$11,725
Mail Plan Revisions	$217	$919	$30	$1,165
Post or Provide Dust Plan	$234	$989	$32	$1,255
Abatement Sampling	$56,526	$242,439	$6,730	$305,695
Complete Dust Cards and Mail Cards and Samples	$2,659	$14,378	$675	$17,712
Post Sample Results	$314	$1,598	$72	$1,984
Grand Total	$439,092	$2,537,967	$107,554	$3,084,613

* Totals may vary due to rounding.

2. Benefits

This benefits analysis is in support of the proposed Single Sample and Plan Verification rules, and updates information used in the Single Sample NPRM (65 FR 42068) and Plan Verification (65 FR 42122) NPRM. The revised Plan Verification NPRM is published elsewhere in today's **Federal Register**. This benefit analysis has been updated to include the revised QRA;[14] the reduction in the number of active mines (and miners); and more recent information on the Black Lung Compensation Program.

For all categories of simple coal workers' (CWP) pneumoconiosis and progressive massive fibrosis (PMF) combined, MSHA estimates, over an occupational lifetime (45-years) for miners who live to age 73 and who worked at MMUs exhibiting a pattern of recurrent overexposures, a minimum of 42 fewer cases among affected DO, NDO, and RB–DA miners than would otherwise occur without the promulgation of the Single Sample and Plan Verification rules. MSHA and NIOSH believe that the 42 prevented cases of CWP identified understate the true benefit of these proposed rules. The

[14] The revised QRA is published in full in section VIII of the Plan Verification NPRM. The QRA has been expanded to include quantitative estimates of reduction in CWP risk estimates for affected roofbolters working in designated areas (RB–DA).

Benefits chapter of the PREA and the Benefits section of the proposed Plan Verification rule delineate the reasons why this quantitative estimate understates the health benefit to all coal miners (*http://www.msha.gov/flex.htm*).

(f) Paperwork Reduction Act of 1995

The proposed Single Sample rule contains information collections which are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA95). The proposed Single Sample rule would increase paperwork for surface and underground coal mine operators. Surface coal mines would incur an additional 323 burden hours annually costing $9,278. Underground coal mines would incur an additional 5,354 burden hours annually costing $142,690. All of the additional burden hours and costs for underground coal mines arising from the Single Sample rule would be eliminated as a result of the promulgation of the plan verification rule.

We invite public comments and are particularly interested in comments which:

(a) Evaluate whether the proposed collection of information (presented here and in the PREA for the proposed Single Sample rule) is necessary for the proper performance of the functions of MSHA, including whether the information would have practical utility;

(b) Evaluate the accuracy of our estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Enhance the quality, utility, and clarity of the information to be collected; and

(d) Minimize the burden of the collection of information on respondents, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.*, permitting electronic submissions of responses.

We have submitted a copy of this proposed rule to OMB for its review and approval of these information collections. Interested persons are requested to send comments regarding this information collection, including suggestions for reducing this burden, if under 10 pages, by facsimile (202) 395–6974 to Attn: Desk Officer for MSHA; or by e-mail to: *cathomas@omb.gov.* All comments may be sent by mail addressed to the Office of Information and Regulatory Affairs, OMB New Executive Office Building, 725 17th St., NW, Rm. 10235, Washington, DC 20503, Attn: Desk Officer for MSHA. Please send a copy of your comments to MSHA at the address listed in the **ADDRESSES** section of the preamble. Submit written comments on the information collection not later than June 4, 2003.

Our paperwork submission summarized above is explained in detail in the PREA. The PREA includes the estimated costs and assumptions for each proposed paperwork requirement related to the proposed Single Sample rule. These paperwork requirements have been submitted to the Office of Management and Budget for review under section 3504(h) of the Paperwork Reduction Act of 1995. Respondents are not required to respond to any collection of information unless it displays a current valid OMB control number. The PREA is located on our Web site at *http://www.msha.gov/REGSINFO.HTM.* Comments may be sent to the addresses listed in the **ADDRESSES** section of the preamble.

(g) Correction to the July 7, 2000 Preamble (65 FR 42068)

On page 42076, column two, line 25, change ''4.8%'' to ''5.6%''. The sentence should read, ''Across the eight surface cohorts surveyed, the prevalence rate of simple CWP and PMF combined, among participants was 5.6%.''

V. Public Hearings

MSHA and NIOSH plan to hold public hearings on the reopening notice. The hearings will be held under Section 101 of the Federal Mine Safety and Health Act of 1977. The hearings will be held in the following cities:

(a) Evansville, Indiana;
(b) Charleston, West Virginia;
(c) Grand Junction, Colorado;
(d) Birmingham, Alabama;
(e) Lexington, Kentucky; and
(f) Washington, Pennsylvania.

The specific dates, times and facilities for the hearings will be announced by a separate notice in the **Federal Register**.

Dated: March 3, 2003.

Elaine L. Chao,

Secretary, Department of Labor.

Dated: March 3, 2003.

Tommy G. Thompson,

Secretary, Department of Health and Human Services.

Appendix E—References

The following is a list of references cited in this document. Some of these are additions to the existing rulemaking record.

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[FR Doc. 03–5402 Filed 3–5–03; 8:45 am]

BILLING CODE 4510–43–P