

TABLE IX-2-2.—ESTIMATED NUMBER OF AFFECTED MECHANIZED MINING UNITS^a (MMUs) AND AFFECTED UNDERGROUND COAL MINERS, BY PRODUCTION SHIFTS AND MINE SIZE

Number of production shifts	Mine size by number of employees									Totals			
	Less than 20 employees			20 to 500 employees			Greater than 500 employees			NMUs n=	DOS ^b n=	NDO ^c n=	Total affected miners on NMUs
	NMUs n=	DOS ^b n=	NDO ^c n=	NMUs n=	DOS ^b n=	NDO ^c n=	NMUs n=	DOS ^b n=	NDO ^c n=				
One	98	98	588	24	24	144	0	0	0	122	122	732	854
Two	16	32	192	264	528	3,168	0	0	0	280	560	3,360	3,920
Three	0	0	0	55	165	990	18	54	324	73	219	1,314	1,533
Totals ..	114	130	780	343	717	4,302	18	54	324	475	901	5,406	6,307

^a Affected MMUs in production are estimated by applying the observed percentage of MMUs' production shifts by mine size (as of July 10, 2002) to the snapshot of active MMUs as of May 14, 2002, by mine size, and multiplied by 0.570 (since fifty-seven percent of MMUs have a pattern of recurrent overexposures) (MSHA Table, July 10, 2002; MSHA Table, May 14, 2002).

Where:

^b DO = Designated Occupational Miners = (MMUs * 1 * production shifts).

^c NDO = Non-designated Occupational Miners = (MMUs * 6 * production shifts).

TABLE IX-2-3.—ESTIMATED NUMBER OF AFFECTED ROOFBOLTER DESIGNATED AREAS (RB-DAs) AND AFFECTED UNDERGROUND COAL MINERS, BY PRODUCTION SHIFTS, AND MINE SIZE

Number of Affected RB-DAs ^a	Mine Size by Number of Employees						Totals	
	Less Than 20 Employees		20 to 500 Employees		Greater than 500 Employees		RB-DAs n=	Total miners on affected RB-DAs
	RB-DAs n=	Miners n=	RB-DAs n=	Miners n=	RB-DAs n=	Miners n=		
1	22	22	6	9	0	0	28	31
2	5	10	83	249	0	0	88	259
3	0	0	12	54	4	24	16	78
Total	27	32	101	312	4	24	132	368
Number of Miners per RB-DA	1.0		1.5		2.0	

¹ Affected Roofbolter Designated Areas (RB-DAs) in production are estimated by applying the observed percentage of RB-DAs' production shifts by mine size (as of September 4, 2002) to the snapshot of active RB-DAs as of May 14, 2002, by mine size, and multiplied by 0.294 (since 29.4 percent of RB-DAs have a pattern of recurrent overexposures) (MSHA Table, July 10, 2002; MSHA Table, May 14, 2002). The number of miners per RB-DA varies with mine size and is applied to the estimated number of RB-DAs and the number of production shifts to determine the total number of affected faceworkers.

The total number of cases of simple CWP categories 1, 2, 3 or PMF that would be prevented is determined by applying the estimated number of affected miners to our best estimates of reductions in risk. The estimates of reductions in risk for the three sub-populations of affected miners (24.4 per thousand DOs, 2.3 per thousand NDOs, and 19.6 per thousand RB-DAs) are applied to the respective estimates of affected sub-populations of faceworkers (901 DOs, 5,406 NDOs, and 368 RB-DAs).³⁷ Table IX-2-4 presents a summary of the estimated number of cases among groups of simple CWP and PMF that would be prevented among the affected miners working at the 57.0

percent of MMUs and the 29.4 percent of RB-DAs determined to exhibit a pattern of recurrent overexposures, by limiting their exposures to respirable coal mine dust to no more than the applicable dust standard on each and every shift. For all categories of simple CWP and PMF combined, MSHA estimates a minimum of 42 fewer cases among affected miners than would otherwise occur without the promulgation of the proposed single sample and plan verification rules. Thirteen of these cases would be the most severe form of coal miner's pneumoconiosis, PMF, and as such, these cases could be interpreted as prevented premature deaths due to occupational exposure to respirable coal mine dust. Since simple CWP is a progressive disease and predisposes the development of PMF, it is important that simple CWP also be prevented (Balaan, *et al.*, 1993).

The benefits that would accrue to coal miners exposed to respirable coal mine dust and to operators, and ultimately to society at large, are substantial and take a number of forms. These proposed rules would reduce a substantial health risk to underground coal miners, lowering the potential for illnesses and premature death and their attendant costs to miners, their employers, their families, and society.

These rules should realize a positive economic impact on the Department of Labor's (DOL's) Black Lung Program and relatedly on operators. The Black Lung Program compensates eligible miners and their survivors for benefits under the Black Lung Benefits Act. This program provides monthly payments and medical benefits (diagnostic and treatment) to miners who are determined to be totally disabled by black lung disease, including cases of PMF and simple CWP. In 1986, DOL's Employment Standards Administration

³⁷ See the *Quantitative Risk Assessment* (section VI. of the Plan Verification Notice of Proposed Rule Making in today's *Federal Register*) for details describing the methodology used to calculate the reduction of risk among the affected sub-populations and Table VI-1 for a summary of reduction in risk estimates.