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Followup On  
Implementation Of The Federal  
Coal Mine Health And Safety  
Act Of 1969 B-170686

Bureau of Mines  
Department of the Interior

B-170686

BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES

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~~910996~~

FILE COPY - COMP. GEN.

JULY 5, 1973



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON D C 20548

B-170686

C The Honorable Ken Hechler  
House of Representatives

R Dear Mr. Hechler

2 In response to your request of June 26, 1972, this is our report which updates information and statistics presented in our report (B-170686 May 13, 1971) to the Subcommittee on Labor, Senate Committee on Labor and Public Welfare, entitled "Problems in Implementation of the Federal Coal Mine Health and Safety Act of 1969, Bureau of Mines, Department of the Interior." S1108  
D14  
33

3 Our views on the Department's actions in assessing and collecting penalties under the act, which you also requested, are contained in our report (B-170686 July 5, 1972) to the Conservation and Natural Resources Subcommittee, House Committee on Government Operations, entitled "Improvements Needed in the Assessment and Collection of Penalties--Federal Coal Mine Health and Safety Act of 1969." H1502

We obtained comments from Department officials and considered them in preparing the report.

As agreed with your office, we are sending copies of this report to the Chairmen of the House and Senate Committees on Interior and Insular Affairs, the Conservation and Natural Resources Subcommittee, House Government Operations Committee, and the Subcommittee on Labor, Senate Committee on Labor and Public Welfare. We are also sending

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copies to the Secretary of the Interior. However, any additional release of this report will be made only if you agree or publicly announce its contents.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "James P. Beards".

Comptroller General  
of the United States

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D I G E S T

WHY THE REVIEW WAS MADE

At the request of Representative Ken Hechler, GAO reviewed the progress made by the Department of the Interior's Bureau of Mines in implementing the Federal Coal Mine Health and Safety Act of 1969. The review was concerned with updating information and statistics presented in a 1971 GAO report on this subject (B-170686, May 13, 1971).

The data presented in this report was obtained from Bureau records or from officials at the headquarters office and was not verified by GAO. GAO's review related principally to the activities of five of the nine district offices established under the Bureau's 1971 redistricting plan. These five districts have enforcement responsibility for about 78 percent of the Nation's active underground coal mines and cover approximately the same geographical area as the two former districts included in GAO's prior review.

FINDINGS AND CONCLUSIONS

The Bureau made progress in 1971 and 1972 in carrying out the safety and health inspections and other activities required under the act and in monitoring the actions taken by the mine operators. To obtain full compliance with the statutory provisions, however, continuing efforts by the Bureau are needed.

Bureau mine inspections

The act requires the Bureau to make four regular safety and health inspections a year of each underground mine and to make special 5-day spot inspections of all mines having certain hazardous conditions.

Bureau statistics for the five districts selected by GAO showed that

--In 1972 three of the districts made all of their required regular safety inspections and the other two met 77 and 96 percent of their requirements. In 1971 safety inspections ranged from 33 to 66 percent of requirements. Corresponding percentages before 1971 were 14 and 25 percent. (See p 10.)

--In 1972 two districts made all of their required regular health inspections and the other three met 88, 70, and 18 percent of their requirements. In 1971 health inspections ranged from 7 to 37 percent of requirements. Before 1971 the percentages were about 1 and 2 percent. (See p 10.)

--All five districts substantially met or exceeded the requirements for making spot inspections of hazardous mines. (See p 12.)

The Bureau advised that it did not make greater progress in health

inspections because of the special emphasis placed on mine safety. Also, several districts had a shortage of trained inspectors, especially inspectors trained in health requirements. With a larger and adequately trained inspection force, the Bureau expects to be able to place needed emphasis on health inspections and to meet both safety and health inspection requirements.

Before 1971 the Bureau had not made enough use of its authority to issue withdrawal orders to mine operators who repeatedly failed to comply with the act. Such orders require the operators to withdraw all personnel immediately from the endangered area except for persons specifically needed to remove the hazardous condition. (See p 13.)

Withdrawal orders issued increased from about 1,500 before 1971 to 4,400 in 1971. However, the number decreased to 2,800 in 1972 because, according to Bureau officials, improved safety measures had been taken by mine operators.

Bureau statistics on mine accidents showed that fatalities in underground mines decreased from 144 in 1971 to 122 in 1972. But, nonfatal injuries sustained by coal miners increased from a rate of 45.85 per million man-hours worked in 1971 to 47.73 in 1972. Bureau officials attributed this increase, in part, to more accurate accident reports. (See p 15.)

#### Actions required of mine operators

Mine operators are required to take health and safety measures, including sampling respiratory dust concentrations and conducting daily

preshift, onshift, and weekly safety inspections of the mine working areas. GAO's prior review showed that many operators did not comply with these requirements.

The Bureau advised that in 1971 most mine operators submitted dust samples and that in 1972 all who were required had done so. However, in 1971 and 1972 the Bureau issued about 3,900 and 5,500 notices of violations, respectively, to operators for not submitting the required number of samples and for samples which showed that mines exceeded permissible dust concentrations. (See p 16.)

Bureau inspectors continued to find noncompliance with the requirements for daily and weekly safety inspections by mine operators in 1971 and 1972. The Bureau issued about 1,400 notices of violations in 1971 and 800 in 1972. The 40-percent decrease in notices issued was due to improvements in the mine operators' performance, the Bureau said. (See p 18.)

Bureau officials told GAO that they were continuing substantial efforts to educate mine operators regarding the act's requirements and to monitor operators' compliance. (See pp 17, 18, and 22.)

#### Approval and review of operating plans

Mine operators are required to submit for Bureau approval operating plans for roof control, ventilation, and emergency action when any mine fan stops functioning. They also are required to file lists of electrical equipment used in coal mining areas.

The Bureau said that the previous backlog in the submission and approval of such plans and lists was eliminated during calendar year 1971. The supporting documentation was maintained in the district offices and was not examined by GAO. However, certain statistics available at headquarters showed that by May 1971 the two districts had approved from 60 to 99 percent of the required plans. (See p. 20.)

GAO reviewed the approval of operating plans for mines starting or reopening operations during the 18 months through June 1972. Four of the five districts had accomplished between 76 and 100 percent of the required approvals. One district had met only about 30 percent of its requirements. According to Bureau officials, the districts had a shortage in specialized staff which was remedied by the end of 1972. (See p. 23.)

The act requires that the Bureau review approved roof control and ventilation plans at least every 6 months. In 1972, two districts made all required reviews but the other three did not. (See p. 24.) Bureau officials told GAO that additional needed roof control and ventilation specialists were hired in the latter part of 1972. (See p. 25.)

#### Equipment shortages

Shortages of certain types of equipment needed for proper and safe operations in the mines had been cited by mine operators as a major cause of noncompliance with the requirements of the act. In its followup review GAO was informed that these shortages no longer existed and that

the Bureau had taken several actions in response to GAO's prior report pointing out ways to alleviate situations of this nature. (See p. 27.)

#### Recruitment of inspectors

Since passage of the act, the Bureau has taken steps to speed up the recruitment and training of coal mine inspectors needed to implement the provisions of the act.

In early March 1971 the Bureau's inspection and enforcement staff numbered 618 persons, many of whom were in training. By December 1972 the Bureau had hired about 95 percent of its authorized complement of 1,350 coal mine inspectors. (See p. 29.)

#### Mine accident investigations

In GAO's May 1971 report, GAO pointed out the need to insure a greater degree of independence and objectivity in carrying out accident investigations. GAO recommended that the Bureau consider changes in the composition of the teams of investigators assigned by the district offices and changes in the organizational level to which the teams report.

The Bureau revised its accident investigation procedures to minimize the participation of district personnel who had previously been responsible for the safety of the mine under investigation and to include a headquarters representative. Also, the Bureau provided for headquarters review of accident investigation reports and of the corrective action taken by the district offices. (See p. 30.)

Guidelines to Bureau personnel  
and mine operators

In a previous review GAO found that the Bureau had not furnished adequate guidance to its district offices and sufficient information to mine operators regarding the requirements of the new law

Between September and December 1971, the Bureau issued (1) guidelines for approving operating plans, (2) manuals for the inspection of underground and surface mines, and (3) guidelines for issuing notices of violation and withdrawal orders. Copies were furnished to Bureau inspection personnel and mine operators. (See pp 22 and 31 )

## CHAPTER 1

### INTRODUCTION

Pursuant to a request dated June 26, 1972, by Representative Ken Hechler (see app I), we have reviewed the progress made by the Department of the Interior's Bureau of Mines in implementing the Federal Coal Mine Health and Safety Act of 1969 (30 U S C 801) Our review was concerned with updating the information and statistics presented in our report (B-170686, May 13, 1971) to the Subcommittee on Labor, Senate Committee on Labor and Public Welfare, entitled "Problems in Implementation of the Federal Coal Mine Health and Safety Act of 1969 "

We made our review at the Washington, D C , headquarters office of the Bureau of Mines, examined pertinent records and statistics for calendar year 1971 and, to the extent available, for calendar year 1972, and held discussions with Bureau officials. The data presented in this report was not verified by us.

On July 1, 1971, the Bureau reorganized the districts and subdistricts through which it carries out its coal mine health and safety programs The geographical areas of the districts were changed and their number was increased from five to nine. The Bureau prepared its statistics on coal mine health and safety activities starting with calendar year 1971 on the basis of the nine reorganized districts

Our prior review included principally the Bureau's Mount Hope, West Virginia, and Norton, Virginia, districts which at the time (November 1970) were responsible for enforcing the provisions of the act at about 80 percent of the Nation's underground coal mines Our followup review included the reorganized districts of Morgantown and Mount Hope, West Virginia, Norton, and Pikeville and Barbourville, Kentucky These five districts have enforcement responsibility for about 78 percent of the Nation's active underground coal mines and comprise approximately the same geographical area as the two districts covered by our prior review

The Bureau conducts investigations and inspections to determine the extent of compliance with the mandatory Federal health and safety standards issued by the Secretary of the

Interior, issues violation notices, assesses and collects penalties from miners and mine operators who violate the law and regulations, establishes and conducts education and training programs to improve health and safety conditions and practices in mines, and conducts studies, research experiments, and demonstration projects in coal mine safety

To implement the major provisions of the 1969 act, the Bureau received appropriated funds for fiscal years 1972 and 1973, as follows

	1972 <u>(actual)</u>	1973 <u>(estimated)</u>
	(millions)	
Inspections	\$30 0	\$31 7
Education and training	3.9	16 9
Technical support	5 8	5 9
Research	<u>27 9</u>	<u>28 2</u>
Total	<u>\$67 6</u>	<u>\$82 7</u>

HEALTH AND SAFETY PROVISIONS OF THE  
ACT AND THE APPLICABLE REGULATIONS

The act prescribed interim mandatory health and safety standards applicable to all underground coal mines until the Secretary of the Interior promulgated standards. Health and safety standards were published in the Code of Federal Regulations (30 CFR 70.1 and 30 CFR 75.1) and became effective in June and November 1970, respectively.

The act prescribes a program of coal mine inspections by the Department which is to consist of complete safety and health inspections of each underground mine at least four times a year and of special spot inspections every 5 working days of all mines having certain hazardous conditions. The Bureau has administratively determined that special spot inspections should also be made every 10 working days of certain other hazardous mines. In addition, the act requires that representatives of the mine operators make certain health and safety examinations.

The act and the regulations prescribe health standards for controlling respirable coal dust which is the cause of pneumoconiosis, known as black lung. Operators who are unable to comply with these standards may obtain a noncompliance permit from the Interim Compliance Panel. The panel was established by the act to issue noncompliance permits for a stated period during which mine operators must maintain respirable dust at or below the limit specified in the permit.

Health standards are also prescribed for dust resulting from drilling in rock, for dust when quartz is present, and for noise. Miners are to be given periodic chest X-rays for the detection of black lung.

The major safety provisions of the act and the regulations relate to roof control, ventilation, and electrical systems and equipment. Safety requirements are established also for (1) combustible materials and rock dusting, (2) blasting and explosives, (3) equipment for transporting miners, (4) emergency shelters, (5) communications, and (6) fire protection.

Mine operators must submit, and the Bureau must approve, a suitable roof control plan for each underground mine. The regulations give the criteria to be followed by district office managers in approving the plans. Approved roof control plans must be reviewed by the Bureau every 6 months. Roof falls are one of the principal causes of fatalities in underground coal mining. For calendar years 1971 and 1972, mine operators reported to the Bureau that fatalities from this cause numbered 61 and 51, respectively, or about 40 percent of all underground fatalities.

Each underground mine must have an approved ventilation system and methane and dust control plan. The plan is to show the type and location of mechanical ventilation equipment and the quantity and velocity of air reaching each working face (surface from which coal is actually mined). The regulations state the criteria to be followed by district managers in approving ventilation plans. The plans must be reviewed by the Bureau every 6 months. Each mine operator must adopt a plan providing for immediate actions to be taken when any mine fan stops. The plan and its revisions must be approved by the Bureau.

To minimize the danger of explosions and electrocutions, the electrical system and equipment must meet certain specifications established by the Secretary of the Interior. These specifications are to be applied uniformly to all mines.

## CHAPTER 2

### MINE INSPECTIONS RELATING TO SAFETY AND HEALTH

The Bureau has made progress in carrying out the required safety and health inspections during calendar years 1971 and 1972 compared with the period before 1971. Such progress was notably greater in safety inspections than in health inspections because of the special emphasis the Bureau placed on mine safety to reduce fatalities.

With respect to the regular safety inspections to be made four times a year, the five district offices covered by our review achieved from 33 to 66 percent of the required inspections in 1971 and from 77 to 100 percent in 1972. The corresponding percentages achieved before 1971 by the two district offices covered in our prior review had been 25.3 and 13.5 percent.

Regular health inspections, which are also required to be made four times a year, ranged from 7 to 37 percent of requirements in 1971 in the five districts and from 18 to 100 percent in 1972. The two offices covered in our prior review had met only 2.4 and 0.6 percent of their requirements.

Also, in 1971 and 1972, the five districts substantially met or exceeded the statutory requirements for making 5-day spot inspections of hazardous mines and the Bureau's additional requirements for 10-day spot inspections.

In computing the percentages of required inspections made during a given year, it is not possible to state the precise number of inspections required because of the fluctuation in the number of producing mines. In any given period, some mines are abandoned or temporarily closed and others are opened or operated only seasonally. The best available statistics on mines in operation are those submitted on a monthly basis by each district office. In computing inspection requirements for 1971 and 1972, we used the number of underground mines in operation as of December 31, 1971, and 1972, respectively.

REGULAR SAFETY AND HEALTH INSPECTIONS

In our prior review we found that the Mount Hope district office had made, from the effective date of the act through December 1970, only 440 (25.3 percent) of its required 1,737 regular safety inspections and 28 (2.4 percent) of its required 1,158 regular health inspections. The Norton district office had made only 554 (13.5 percent) of its required 4,098 safety inspections and 16 (0.6 percent) of the required 2,732 health inspections.

The progress made by the Bureau in carrying out regular safety and health inspections is shown in the following tables setting forth the percentages achieved by the five reorganized district offices covered in our followup review

Calendar Year 1971

<u>District</u>	<u>Safety inspections</u>			<u>Health inspections</u>		
	<u>Required</u>	<u>Made</u>	<u>Percent</u>	<u>Required</u>	<u>Made</u>	<u>Percent</u>
Morgantown	480	224	47	316	118	37
Mount Hope	1,788	978	55	1,788	264	15
Norton	1,004	662	66	1,004	153	15
Pikeville	1,520	509	33	1,528	110	7
Barbourville	1,120	617	55	1,120	236	21

Calendar Year 1972

<u>District</u>	<u>Safety inspections</u>			<u>Health inspections</u>		
	<u>Required</u>	<u>Made</u>	<u>Percent</u> (note a)	<u>Required</u>	<u>Made</u>	<u>Percent</u> (note a)
Morgantown	304	454	100	270	324	100
Mount Hope	1,496	1,553	100	1,360	956	70
Norton	960	1,255	100	855	753	88
Pikeville	1,216	936	77	1,075	191	18
Barbourville	1,348	1,300	96	850	1,092	100

<sup>a</sup> Represents the percent of required inspections made and does not include any inspections in excess of required number

Bureau officials explained that the five districts still fell short in 1971 (and the Pikeville district again in 1972) in making the required number of inspections because of a shortage of trained inspectors, especially inspectors trained in health requirements. The officials pointed out that, after new inspectors are hired, time is needed to train them in sampling and weighing coal dust and in calibrating and maintaining equipment required for health inspections. Although during 1971 the inspection force almost doubled to 1,081 at the end of the year, it averaged only 430 inspectors for the 12-month period.

In Pikeville the total inspection force was increased from 51 at January 1, 1972, to 94 inspectors at December 30, 1972. The staff at yearend included 32 inspector trainees, most of whom had been trained by the end of March 1973, and the district was close to its authorized target of 99 inspectors for fiscal year 1974.

In January 1972 the Bureau changed its inspection procedures to increase its presence at as many of the larger mines as possible. The revised procedure calls for conducting spot inspections designed in a planned series to cover specific mine areas or sections instead of conducting a complete inspection of an entire mine. When all sections of a mine have been inspected, the Bureau considers that one of the four required complete safety or health inspections has been made for complying with the act.

Another change instituted in January 1972 was the making of combined rather than separate health and safety inspections at some of the mines. Bureau officials told us that these changes were expected to help the Bureau to fully comply with the act.

With respect to the larger number of safety inspections made, as compared with health inspections, Bureau officials explained that they placed first emphasis on mine safety to reduce mine fatalities.

## SPOT INSPECTIONS OF HAZARDOUS MINES

The act requires that mines be inspected at least once every 5 working days if the mines (1) liberate excessive quantities of methane or other explosive gases, (2) have had a gas ignition or explosion resulting in death or serious injury during the past 5 years, or (3) have any other especially hazardous conditions. The Bureau has determined an excessive amount of methane to be over 1 million cubic feet in a 24-hour period

The Bureau also has administratively determined that certain mines should be spot inspected once every 10 working days. In this category are mines which (1) liberate 100,000 to 1 million cubic feet of methane in a 24-hour period, (2) have had one fatality during the previous 12-month period, or (3) have other hazardous conditions judged by the district to warrant a 10-day spot inspection.

The five districts substantially met or exceeded the spot inspection requirements for calendar years 1971 and 1972, as shown in the following tables

<u>District</u>	<u>Calendar Year 1971</u>			
	<u>5-day inspections</u>		<u>10-day inspections</u>	
	<u>Required</u> <u>(note a)</u>	<u>Made</u>	<u>Required</u> <u>(note a)</u>	<u>Made</u>
Morgantown	1,015	1,239	154	260
Mount Hope	2,268	2,389	180	992
Norton	383	380	178	228
Pikeville	44	51	192	157
Barbourville	405	752	403	621

<sup>a</sup>Adjusted by us for a 45-day union strike in October and November 1971 and for a 2-week miners' summer vacation which resulted in the closing of the mines.

Calendar Year 1972

<u>District</u>	<u>5-day inspections</u>		<u>10-day inspections</u>	
	<u>Required</u>	<u>Made</u>	<u>Required</u>	<u>Made</u>
Morgantown	1,311	1,355	55	206
Mount Hope	3,247	4,490	390	624
Norton	477	480	358	426
Pikeville	72	83	265	293
Barbourville	555	729	737	1,611

ISSUANCE OF WITHDRAWAL ORDERS

In our prior report we concluded that the Bureau's enforcement practices were not as effective as they could have been in inducing mine operators to take the necessary actions to insure full compliance with the act. We recommended that the Bureau assess sufficiently large penalties to provide this inducement and make greater use of its authority to issue withdrawal orders to mine operators who repeatedly fail to comply with the act. Section 104 of the act specifies that in the event of imminent danger in a coal mine, or in the case of continuing or repeated health or safety violations, the Bureau shall issue an order requiring the operator of the mine to withdraw all persons from the endangered area except certain persons whose presence is specifically needed to remove the hazardous condition.

Section 104(a) defines imminent danger as the existence of any condition or practice which could reasonably be expected to cause death or serious physical harm. This most frequently includes conditions which could cause explosions, such as excessive amounts of fine coal and coal dust or insufficient or improperly directed ventilation allowing methane gas to accumulate.

Section 104(b) provides that, in the case of a health or safety violation which does not create an imminent danger, a notice be issued setting a fixed time for the operator to correct the violation. If the violation has not been corrected and upon a finding that an extension of time should not be granted, a withdrawal order should be issued.

Under section 104(c)(1) a notice of violation should be issued if an inspector finds a violation of a standard which, although not causing an imminent danger, could

contribute significantly to any mine hazard. If, within 90 days after issuance of the notice, the inspector finds another violation which is due to an unwarrantable failure to comply, a withdrawal order should be issued.

Section 104(c)(2) requires that a withdrawal order be issued during subsequent inspections, if a similar violation is found that required a withdrawal order to be issued under section 104(c)(1), until such time as the inspection of the mine discloses no similar violation.

Section 104(1) provides that, if respirable dust concentrations in coal mines exceed the standards set forth in the act, a notice of violation be issued setting a fixed time for the operator to comply with the dust standards. Upon a finding that the violation has not been corrected and that an extension of time should not be granted, a withdrawal order should be issued.

Bureau statistics showed a substantial increase in the number of withdrawal orders issued during calendar year 1971 by all districts but showed a decrease in 1972.

<u>Legal authority for orders issued</u>	<u>Orders issued</u>		
	<u>Effective date of the act through December 1970</u>	<u>Calendar year 1971</u>	<u>Calendar year 1972</u>
Section 104(a)	657	1,927	1,333
Section 104(b)	611	1,708	1,149
Section 104(c) (1 and 2)	225	731	307
Section 104(1)	-	24	20
Total	<u>1,493</u>	<u>4,390</u>	<u>2,809</u>

Bureau officials attributed the decrease in 1972 to improved safety measures being taken by mine operators. They pointed out that several actions required of the operators by the act were of a permanent or semipermanent nature, such as the required plans for roof control and ventilation, improved electrical systems, and specialized health and safety equipment. Also, the mine operators had gained greater experience in, and made greater efforts toward, compliance with the act.

Bureau statistics on mine accidents showed that fatalities in underground mines had decreased from 144 in 1971 to 122 in 1972. However, disabling injuries sustained by coal miners increased from a rate of 45.85 per million man-hours worked in 1971 to 47.73 in 1972. Bureau officials, in commenting on this increase in disabling injuries, stated that this may be due in part to more accurate reporting since the Department issued revised regulations (30 CFR 80) effective April 1, 1972.

#### CONCLUSION

During the last 2 years, the Bureau has made progress in carrying out the prescribed types and numbers of coal mine inspections, although further efforts are needed to achieve full compliance with the required frequency of regular complete inspections, especially health inspections. The Bureau expects that, with a larger and adequately trained inspection force, it will be able to place needed emphasis on increasing its health inspections and thus be able to meet both safety and health inspection requirements.

## CHAPTER 3

### DUST-SAMPLING AND SELF-INSPECTION

#### PROGRAM BY MINE OPERATORS

The act and the related regulations require that mine operators submit to the Bureau a specified number of samples of respiratory dust concentrations in their mines and conduct daily preshift, onshift, and weekly safety inspections of the work areas. The inspections are intended to detect and correct unsafe working conditions in the mines.

Our prior review had shown that many mine operators did not comply with the requirements for submitting dust samples. In our followup review, Bureau officials advised us that most mine operators who were required to do so had submitted dust samples in calendar year 1971 and all had done so in calendar year 1972. However, in both 1971 and 1972 the Bureau issued many notices of violations to operators for not submitting the required number of samples and for samples which showed that mines were exceeding permissible dust concentrations.

Also, our prior review had indicated that not all operators were making the required daily preshift, onshift, and weekly safety inspections and that some inspections were not adequate. In our followup review we noted that in 1971 and 1972 the Bureau continued to issue notices of violations to mine operators for noncompliance with requirements for safety inspections, although the number of notices issued in 1972 was about 40 percent below that in 1971.

#### DUST SAMPLING

In its initial efforts to enforce the dust-sampling requirements, the Bureau issued in October 1970 notices of violations for failure to initiate a respirable-dust-sampling program. Many operators had not instituted the required sampling procedures within the time allowed by the Bureau. As of March 1, 1971, 5 months after issuance of the notices, 22 percent of the mines in the Mount Hope district and 42 percent of the mines in the Norton district had not initiated dust-sampling procedures.

Information furnished us by the Bureau on subsequent actions by mine operators showed that, as of December 31, 1971, 1,534 active mines were furnishing dust samples and 177 were not. A Bureau official estimated that about one-third of the 177 mines were new mines which had not yet started production and another third were mines which were temporarily abandoned. The remaining third received notices of violations for not submitting samples.

Although in 1971 most mine operators were submitting dust samples, some did not furnish the prescribed number--five valid samples are required to be taken each month in each coal-producing section unless otherwise directed by the Bureau. The Bureau issued 1,558 notices of violations to mine operators for such noncompliance. Also, in 1971 on the basis of its analysis of the submitted samples, the Bureau issued 2,368 notices of violations to operators for exceeding permissible dust concentrations.

For the period after December 31, 1971, Bureau officials provided us information showing that 1,910 active coal-producing mines were listed as being required to sample respirable coal dust between January 1, 1972, and February 1, 1973, and that 1,895 had submitted samples during this period. Bureau officials explained that, of the 15 nonsampling mines, some had opened and closed too quickly to establish a sampling program and the others had been listed erroneously as producing mines.

During calendar year 1972 the Bureau issued 3,066 notices of violations to mine operators for failing to submit the required number of samples and 2,393 notices for exceeding permissible dust concentrations. A Bureau official attributed the large increase from 1971 to 1972 in the number of notices issued for not submitting the required number of samples, in part, to the fact that more mine operators had established a dust-sampling program.

Bureau officials explained that they maintain control over mine operators' compliance with the dust-sampling requirements through a continuous reporting system under which the Bureau's automatic data processing section in Denver, Colorado, furnishes daily and weekly printouts of dust-sampling results to the district and subdistrict offices for all mines in their respective areas. This data allows district and subdistrict officials to determine which mines,

by mine and section, are not submitting samples or which have excessive dust accumulations and to take appropriate followup action with respect to the noncomplying operators.

As another method of monitoring the adequacy of the operators' dust-sampling program, the Bureau has compared the operators' samples with those taken by the Bureau's inspectors at the same mines. Bureau officials informed us that, during the latter part of 1971, a comparison of 220,000 operators' samples (averaging 2 milligrams of dust per cubic meter of air) with 29,000 inspectors' samples (averaging 2.1 milligrams) indicated close agreement of the sample results.

### SAFETY INSPECTIONS

In our prior review, we found that not all mine operators were making the required daily preshift, onshift, and weekly safety inspections and that some inspections were not adequate because certain hazardous conditions and violations of mandatory safety standards had not been identified and corrected by the operators before the Bureau inspections pointed out these deficiencies.

Section 303(d)(1) of the act provides that, within 3 hours preceding the beginning of any shift and before any miner enters a mine, persons designated by the operator and certified by the State as being qualified to make inspections examine the active workings of the mine. This preshift inspection should include tests for accumulations of methane gas and for oxygen deficiency, examination and testing of the roof, face, and rib conditions in the working sections, examination of active roadways, travelways, belt conveyors on which men are carried, and approaches to abandoned areas; and tests for proper ventilation.

Section 303(e) of the act provides that, at least once during each coal-producing shift or more often if necessary for safety, the examiner make inspections of each working section similar to the preshift inspections. In addition, section 303(f) of the act requires the examiner to make examinations in specific locations in the mine to test for methane and for compliance with the mandatory health or safety standards at least once each week.

During calendar year 1971, Bureau inspectors continued to find noncompliance with the requirements for safety inspections by mine operators. Bureau statistics show that 1,412 notices of violation and 59 withdrawal orders were issued to mine operators for not making the required daily preshift, onshift, and weekly safety inspections. Similar analyses of the statistics for calendar year 1972 show that 837 notices of violation and 13 withdrawal orders were issued. Bureau officials attributed the 40 percent decrease in notices issued to improvement in the mine operator's performance.

### CONCLUSION

Bureau statistics indicate that, during the last 2 years, almost all operators of active coal-producing mines have established dust-sampling programs, although improvements are still needed in the manner in which these programs are being carried out. Also, Bureau statistics indicate that mine operators have improved their performance of the required daily and weekly safety inspections but that further improvement is needed to achieve satisfactory compliance.

In discussing possible additional measures the Bureau could take to obtain full compliance by mine operators, Bureau officials told us that they had made substantial efforts, within the Bureau's budgetary constraints, to educate mine operators regarding the act's requirements and that they were continuously monitoring mine operators' performance.

They explained that during the last half of calendar year 1972 approximately 125 mine sections were found to have excessive respirable dust concentrations at any given time, that these violations were not static, and that different sections and mines would be in violation of the permissible standard at different times.

Bureau officials informed us that Bureau headquarters has been maintaining lists of mines and sections in violation of "high risk" conditions specified in the regulations and that, after violations have been abated, their significance is evaluated for assessing penalties and scheduling subsequent mine inspections.

## CHAPTER 4

### APPROVAL AND REVIEW OF OPERATING PLANS

The act required that mine operators submit, and the Bureau approve, operating plans for roof control and fan-stoppage emergencies by May 29, 1970, and operating plans for ventilation by June 28, 1970. The act also required that operators furnish the Bureau, by May 30, 1970, a list of all electrical equipment in use in coal-mining areas.

Our prior review showed that, as of December 1970, many such operating plans had not been submitted and approved and that lists of electrical equipment had not been submitted. Also, because of the backlog of initial approvals, the district offices had not begun the semiannual review of roof control and ventilation plans required by the act.

Bureau officials informed us that the December 1970 backlog of unapproved operating plans had been eliminated and that the required lists of electrical equipment had been submitted. With respect to operating plans submitted for mines opened after December 31, 1970, we found that four of the five districts included in our followup review had approved, at June 30, 1972, between 76 and 100 percent of the roof control and ventilation plans, whereas one district office had approved only 33 and 30 percent of the respective plans.

In calendar year 1971 the Bureau began reviewing previously approved roof control and ventilation plans, but its district offices generally were not able to meet the requirement that these plans be reviewed regularly every 6 months.

#### BACKLOG OF UNAPPROVED PLANS

At the two districts included in our prior review, as of December 1970, many required plans had not been submitted and approved, as shown in the following table.

<u>District</u>	<u>Approximate number required</u>	<u>Number of plans submitted</u>	<u>Number of plans approved</u>	<u>Percent of required plans approved</u>
Mount Hope				
Roof control	580	536	88	15
Ventilation	580	365	41	7
Fan-stoppage	580	448	352	61
Norton				
Roof control	1365	874	<sup>a</sup> 831	61
Ventilation	1365	227	144	11
Fan-stoppage	1365	500	500	37

<sup>a</sup>Includes both tentative and fully approved plans

Also, estimates furnished to us by the Bureau indicated that only about 44 percent of the mine operators in the two districts had filed the required lists of electrical equipment at the close of calendar year 1970.

In our followup review Bureau officials said that the past due roof control, ventilation, and fan-stoppage plans had been received and approved by the Bureau during calendar year 1971 and that the past due lists of electrical equipment had been submitted by the mine operators. They told us that the supporting documentation was being maintained at the district offices. However, certain statistics were available for our review at Bureau headquarters which showed that significant progress had been made in the approval of roof control and ventilation plans through May 1971, as follows:

<u>District</u>	<u>Approximate number required</u>	<u>Number of plans approved</u>	<u>Percentage of required plans approved</u>
Mount Hope			
Roof control	580	572	99
Ventilation	580	554	96
Norton			
Roof control	1365	<sup>a</sup> 1173	86
Ventilation	1365	823	60

<sup>a</sup>Includes both tentative and fully approved plans.

## GUIDELINES TO DISTRICTS

In our prior report we pointed out that the Bureau headquarters had delegated the approval of operating plans to the districts without providing them with sufficient guidance on the required contents of roof control and ventilation plans and the procedures to be followed in approving such plans.

In November 1971 the Bureau furnished guidelines for approving roof control and ventilation plans to all coal mine operators and Bureau enforcement personnel. Further, in December 1971 the Bureau issued a revised Coal Mine Safety Inspection Manual for underground mines which contains, among other things, criteria to be used for approval of roof control and ventilation plans.

## INFORMING MINE OPERATORS OF REQUIREMENTS OF THE ACT

In our prior review we noted that, although the Bureau had made some efforts to inform members of the coal mine industry about the requirements of the act, there was no assurance that all operators had knowledge of these requirements. For example, district officials advised us that some operators, especially small operators, had not submitted roof control plans because they had been unaware of the requirement to do so.

We were informed that, to afford a better understanding of what is required for compliance, the Bureau has in the last 2 years held meetings with and provided training for numerous industry personnel, representing both labor and management, on the requirements of the act and the Bureau's regulations.

Bureau statistics show that, in the first 11 months of calendar year 1972, 1,300 coal mine industry personnel received instructions regarding the requirements of the act.

## CHANGES IN APPROVAL PROCEDURE

Before January 1972, new mines were allowed to open and begin mining operations without an approved roof control, ventilation, or fan-stoppage emergency plan. The Bureau issued revised regulations in January 1972 requiring mine

operators to notify the Bureau before they open a new underground coal mine or reopen an abandoned or deactivated mine and to submit preliminary operating plans for Bureau approval. Operators are not allowed to develop any part of the coalbed until these and certain other preliminary plans have been approved by the Bureau's cognizant district manager.

After mining operations have progressed to the point that the adequacy of the operating plans can be determined, the final plans must be reviewed by the district offices. If any changes are required by the Bureau, the plans are not to receive final Bureau approval until such changes have been made.

APPROVAL OF PLANS SUBMITTED  
AFTER DECEMBER 31, 1970

Bureau statistics, as summarized in the following table, show that four of the five districts included in our follow-up review were substantially current at June 30, 1972, in the approval of roof control and ventilation plans submitted after December 31, 1970, by operators of new or reopened mines. The Barbourville district had a significant backlog of plans awaiting approval. Similar statistics on the approval of required fan-stoppage emergency plans were not available at Bureau headquarters at the time of our review.

<u>District</u>	<u>Number required and submitted</u>	<u>Roof control</u>		<u>Ventilation</u>	
		<u>Number of plans approved</u>	<u>Percent of required plans approved</u>	<u>Number of plans approved</u>	<u>Percent of required plans approved</u>
Morgantown	22	18	82	22	100
Mount Hope	135	135	100	135	100
Norton	70	62	89	63	90
Pikeville	89	72	81	68	76
Barbourville	132	44	33	39	30

Bureau officials attributed the backlog in approvals by the Barbourville district in part to a shortage of specialized staff which, we were told, was eliminated in the latter half of 1972. Also, Bureau officials told us that the district offices had informed headquarters that they were current in the approval of operating plans in the first quarter of calendar year 1973. The supporting statistics are

maintained in the districts and were not examined by us as a part of this followup review

SEMIANNUAL REVIEW OF ROOF CONTROL AND VENTILATION PLANS

The act requires that roof control and ventilation plans be reviewed by the Bureau at least every 6 months. Neither of the two districts covered in our prior review had begun the review process as of December 1970 due to the backlog of initial approvals. During 1971 the Bureau began the semiannual review of operating plans and, as shown in the following statistics provided us by the Bureau, the five offices included in our followup review made progress in meeting their requirements in 1971 and 1972

<u>District</u>	<u>Approximate number required</u>	<u>Roof control reviews</u>		<u>Ventilation reviews</u>	
		<u>Number</u>	<u>Percent (note a)</u>	<u>Number</u>	<u>Percent (note a)</u>
Calendar year 1971					
Morgantown	136	49	36	48	35
Mount Hope	894	301	36	433	48
Norton	502	210	42	274	55
Pikeville	498	347	70	436	88
Barbourville	560	161	29	170	30
Calendar year 1972					
Morgantown	146	152	100	115	79
Mount Hope	734	911	100	801	100
Norton	486	537	100	520	100
Pikeville	514	406	79	280	54
Barbourville	674	547	81	774	100

<sup>a</sup> Represents the percent of required reviews made and does not include any reviews in excess of required number

Bureau officials pointed out that a shortage of trained personnel contributed to the low percentages of plans reviewed in 1971 and that in 1972 the Pikeville district still did not have sufficient qualified staff. Also, 104 mines were opened during 1972 requiring initial approval action which took manpower away from the semiannual review function.

Bureau officials explained that the statistics for calendar year 1971 included only reviews made by roof control and ventilation specialists and not reviews made by mine inspectors. For calendar year 1972 the Bureau included

in its statistics the reviews of operating plans which Bureau inspectors made as a part of their safety inspections

Bureau officials explained that coal mine inspectors, due to their training and experience, were qualified to review roof control and ventilation plans and that their reviews could be used as a screening process whereby plans in need of improvements would be sent to the district office for review by roof control or ventilation specialists who would make recommendations for the necessary changes

#### PERSONNEL SHORTAGE

At the time of our prior review, the former Norton and Mount Hope districts did not have enough specialized staff to carry out the required approvals and reviews of mine operators' safety plans. District officials told us that at that time (November 1970) they needed 35 additional staff to approve and review roof control plans and 32 additional staff to approve and review ventilation plans

Although additional staff was recruited and trained in subsequent months, Bureau officials advised us that, as of June 30, 1972, three of the five reorganized districts still needed specialized personnel, as follows

<u>District</u>	<u>Number of personnel needed</u>	
	<u>Roof control</u>	<u>Ventilation</u>
Morgantown	-	2
Pikeville	6	5
Barbourville	<u>4</u>	<u>6</u>
Total	<u>10</u>	<u>13</u>

Bureau officials told us that these additional specialists had been hired in the latter part of 1972 and would be assigned after completion of their training

#### CONCLUSION

The Bureau's statistics show that it has been able to remove its backlog of unapproved operating plans and to stay substantially current in the approval of plans for newly opened or reopened mines. The Bureau has made progress in

meeting the requirement for semiannual reviews of approved plans, although further efforts are needed in this area. The Bureau expects to meet these review requirements with the additional staff of specialists it has hired and trained for this purpose.

Bureau officials explained that Bureau headquarters is keeping abreast of needed district actions in this important area of mine safety by employing senior inspectors who are constantly in the field and who monitor the approval and review of operating plans on behalf of the Washington office.

## CHAPTER 5

### AVAILABILITY OF EQUIPMENT

We previously reported that shortages of certain types of equipment needed for proper and safe operations in the mines had been cited as a major cause of noncompliance by mine operators with various health and safety requirements of the act. We found that some of these shortages might have been alleviated if the Bureau had required operators to substitute similar equipment that was readily available for equipment in short supply.

We also found that the Bureau had not provided its inspectors with guidance as to the specific types of equipment in short supply and with reasonable estimates of the leadtime necessary to procure such equipment. Inspectors should have had this information to determine the timespan needed for obtaining mine operators' compliance.

In our followup review, a Bureau official informed us that the previous shortages of equipment no longer existed and that the Bureau had taken several actions in response to our prior report recommendations.

### SUBSTITUTION OF EQUIPMENT BY MINE OPERATORS

In our prior report we pointed out that the Bureau may have permitted unnecessarily prolonged noncompliance with the act by allowing mine operators to order a particular brand of equipment and by granting time extensions for compliance if this brand was in short supply, while a comparable substitute brand may have been readily available.

A Bureau official informed us that subsequently the Bureau approved several types of similar equipment allowing coal mine operators to substitute one brand of equipment for another.

### BUREAU STUDIES OF EQUIPMENT AVAILABILITY

In our prior report we recommended that the Bureau undertake, on a continuing basis, a study of the availability of equipment necessary for compliance with the health and safety provisions of the act and that the study include the leadtime required to obtain delivery so that inspectors

can make uniform determinations as to the time to be allowed for mine operators' compliance.

In December 1971, the Bureau completed a survey of the availability of certain new and used equipment, replacement parts, and related information and issued the results in a booklet which was made available to interested persons and which is maintained in the Bureau's district offices. The survey was to be updated about every 6 months. A new survey was started in May 1972 but had not been completed at the time of our review in January 1973.

We noted that the booklet consisted of a list of manufacturers of new or rebuilt equipment and of those dealing in used equipment but did not show the leadtime required to obtain such equipment. A Bureau official informed us that the manufacturers had provided the information on a voluntary basis and were reluctant to disclose procurement leadtime. He told us, however, that the Bureau would continue to try to obtain leadtime information from equipment manufacturers.

## CHAPTER 6

### RECRUITMENT OF COAL MINE INSPECTORS

We previously reported that the Bureau was taking steps to speed up the recruitment and training of inspectors needed for implementation of the act

When the new law was enacted in December 1969, the Bureau estimated that the full implementation of all inspection and enforcement provisions would require a staff of 1,046 persons. This staffing goal included supervisors, inspectors, and engineers but was exclusive of needed support personnel, such as technical specialists, statisticians, and clerks. The Bureau estimated that full staffing would be reached sometime in fiscal year 1972. By early March 1971 the Bureau's inspection and enforcement staff had been increased from 318 persons in December 1969 to 618 persons, many of whom were in training.

During the last 2 years, the Bureau continued its recruitment and training efforts and, by December 31, 1972, had hired a staff of 1,282 inspectors, 169 of whom were in training. This staff represented about 95 percent of the Bureau's authorized ceiling which was increased in fiscal year 1972 to 1,350 inspectors.

## CHAPTER 7

### OTHER MATTERS PERTAINING TO COAL MINE SAFETY

In May 1971 we reported that there was a need for the Bureau to insure a greater degree of independence and objectivity in carrying out accident investigations. Also, we pointed out that the Bureau should provide more adequate guidance to its inspectors concerning the criteria and methods to be used in determining whether mine operators comply with the health and safety standards.

As discussed below, improvements have been made by the Bureau in both these areas

### INDEPENDENCE IN ACCIDENT INVESTIGATIONS

We had found in our prior review that the teams assigned by the Bureau for investigating mine accidents usually included district personnel who had been involved in prior inspections of the mine or in approving mine operating plans or who were subordinate to district officials responsible for carrying out these activities. Under this arrangement the independence of the investigating teams could be compromised by the possibility of a conflict of interest. We therefore recommended that the Bureau consider changes in the composition of the teams responsible for investigating coal mine accidents and changes in the organizational level to which these investigators report.

In July 1971 the Bureau issued revised accident investigation procedures which provide that persons involved in recent inspections of the mine and, to the extent possible, persons who approve operating plans for the mine not be members of the investigating team. Bureau officials explained to us that some districts do not have enough roof control or ventilation specialists to always insure that someone who has not been involved in plan approval will be a member of an accident investigation team. Therefore the words "to the extent possible" were inserted in the new procedures.

The Bureau did not agree with our recommendation that it should consider making accident investigation teams responsible to an organizational level above the district offices, because the district offices were the highest level of

management in the field and use of accident teams from outside the responsible districts would delay investigations. However, Bureau officials pointed out to us recent instructions issued by Bureau headquarters which require district managers to notify headquarters promptly before they investigate fatal or other serious accidents so that a representative of the headquarters' Division of Safety can participate in the investigation. The participation of a headquarters representative is expected to facilitate quick dissemination of information of such accidents to the coal mining industry and to other district offices and to help reduce the occurrence of similar accidents.

Bureau procedures provide for a critical review of the accident investigation report, its findings, and recommendations, by headquarters officials to insure that proper actions are taken to correct mine safety conditions in the district. Also, in March 1973, the Bureau established a Hazard Review Committee at the Washington, D C , headquarters office which will hold regular monthly meetings to review all accident reports, examine inspection results, assess the adequacy of current operational procedures, and prepare written recommendations, if needed.

#### GUIDANCE TO INSPECTORS

In our prior report we expressed our belief that the Bureau had not provided its inspectors with adequate criteria to determine whether mine operators were complying with the health and safety provisions of the act and the Department's regulations.

In September 1971 the Bureau issued a coal mine health inspection manual for underground mines and, in December 1971, an updated coal mine safety inspection manual for underground mines. These manuals provide Federal coal mine inspection personnel with guidelines for conducting inspections and investigations, preparing reports thereon, and applying the act's provisions and the related regulations in a proper and uniform manner. The manuals also are to acquaint the coal mining industry, State inspection agencies, Federal agencies, and other interested parties with the administration of the act. Bureau officials stated that these manuals are to be reviewed and

updated as necessary at 180-day intervals and, after adequate experience has been gained in their use, annually

In December 1971 the Bureau issued a coal mine safety inspection manual for surface coal mines or surface work areas of underground coal mines, and in November 1971 it transmitted guidelines for the issuance of notices of violations and withdrawal orders under section 104 of the act to all Bureau inspection personnel. These guidelines were also sent to every mine operator.

Because our review was limited to the Bureau's headquarters in Washington, D.C., we did not evaluate the effectiveness of the manuals and the guidelines in helping inspectors achieve a greater uniformity in the application of the health and safety provisions of the act.

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—PLUS ANY VOLUNTEER  
HELP WE CAN GET!

**Congress of the United States**  
**House of Representatives**  
Washington, D C 20515

June 26, 1972

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Honorable Elmer B. Staats  
Comptroller General of the United States  
General Accounting Office  
Washington, D C.

Dear Mr. Staats

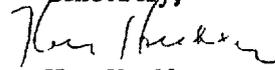
I am concerned as to whether the Department of the Interior has made any significant progress in implementing the Federal Coal Mine Health and Safety Act of 1969, since the issuance of your May 13, 1971, report on that subject to the Subcommittee on Labor, Senate Committee on Labor and Public Welfare.

Specifically, I am requesting that you furnish me a report which would contain your views on

- the timeliness of the Department's actions in assessing and collecting penalties for violations of the Act by coal mine operators, and
- the consideration given by the Department to the six factors which the Act requires to be considered in determining the amounts of penalties to be assessed.

I would also like the report to include updated information and statistics, similar to that in your report dated May 13, 1971, concerning the Department's progress in implementing the other provisions of the Act to the extent that such information is readily available and can be accumulated in a relatively short time.

Sincerely,

  
Ken Hechler

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