

089905

B-170626



REPORT TO
SUBCOMMITTEE ON LABOR
COMMITTEE ON LABOR
AND PUBLIC WELFARE
UNITED STATES SENATE



LM089905

RESTRICTED — Not to be released outside the General Accounting Office except on the basis of specific approval by the Office of Legislative Liaison, a record of which is kept by the Distribution Section, Publications Branch, OAS

RELEASED

Problems In Implementation
Of The Federal Coal Mine
Health And Safety Act Of 1969

B-170686

Bureau of Mines
Department of the Interior



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-170686

Dear Mr. Chairman:

This is our report on problems in implementation of the Federal Coal Mine Health and Safety Act of 1969 by the Department of the Interior. The results of our review are being made available to you in response to your request of August 13, 1970.

Our principal observations are summarized in the digest which appears at the beginning of the report.

As a result of agreement reached with your office, we obtained, and incorporated in the report, the comments of the Department of the Interior on the matters discussed in the report.

This report is being sent today to the Secretary of the Interior with a request that he furnish us with information on the specific actions and plans that the Department of the Interior and the Bureau of Mines have initiated to implement our recommendations.

We believe that the contents of this report would be of interest to other committees and members of the Congress. Any additional release of this report will be made, however, only upon your agreement or upon public announcement by you concerning its contents.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Stacks".

Comptroller General
of the United States

The Honorable Harrison A. Williams, Jr.
Chairman, Subcommittee on Labor
Committee on Labor and Public Welfare
United States Senate

D I G E S T

WHY THE REVIEW WAS MADE

The Federal Coal Mine Health and Safety Act of 1969 placed new responsibilities on the Bureau of Mines of the Department of the Interior for inspection of coal mines and gave the Bureau broad authority to enforce correction of unsafe and unhealthy conditions.

At the request of the Chairman, Subcommittee on Labor, Senate Committee on Labor and Public Welfare, the General Accounting Office (GAO) made a review of the Department of the Interior's implementation of the act.

FINDINGS AND CONCLUSIONS

At the two districts visited by GAO, the Bureau had made about 31 percent of the required safety inspections and about 1 percent of the required health inspections through December 31, 1970. (See p. 10.)

Bureau inspectors have cited mine operators for violations and have required that they be corrected. During subsequent inspections of the same mines, however, numerous new violations were found, often of the same type as the earlier ones. That situation is attributable, at least in part, to the fact that the Department's policies for enforcing health and safety standards have been, at times extremely lenient, confusing, uncertain, and inequitable. (See ch. 3.)

Various required samplings and inspections were not made by the mine operators, and some that were made were not adequate. (See p. 16.)

Plans for roof control, ventilation, and emergency action when a fan stops either have not been submitted by all mine operators or have not been approved by the Bureau of Mines, although the act requires that they be submitted and approved. Until recently the Bureau had done little to induce operators to comply. (See p. 24.)

The methods for approving roof control and ventilation plans and the contents of approved plans varied significantly between the two districts included in this review, apparently because Bureau headquarters had delegated the approval process to the district offices without providing sufficient guidance. (See p. 24.)

Regular mine inspectors make both health and safety inspections. The health inspections are less complex and do not require some of the special skills and knowledge that the regular inspectors must have. It may be possible to use some less highly qualified technicians to make health inspections to conserve the time of the regular inspectors who are in short supply. (See p. 13.)

The Bureau's practices concerning the imposition of penalties for noncompliance do not consider various factors prescribed in the act, such as the effect that such penalties will have on the operator's ability to continue in business and the operator's history of previous violations. (See p. 54.)

Shortages of certain types of equipment have been cited by the Bureau of Mines as a major cause of noncompliance with health and safety requirements. In this connection:

- The Bureau has made no overall studies of the availability of equipment required for compliance with the act and of the normal time required to obtain equipment in short supply. (See p. 56.)
- The Bureau may have permitted unnecessarily prolonged noncompliance with certain equipment requirements by granting mine operators time extensions to obtain a particular brand that was in short supply while an essentially comparable substitute was readily available. (See p. 59.)
- The Bureau purchased more dust-sampling equipment than it needed and thus contributed to a shortage of such equipment and possibly precluded many mine operators from establishing dust-sampling programs within the time required by the act. (See p. 61.)

The team that investigates mine accidents usually includes Bureau personnel who have been involved in prior inspections of the mine or related activities or who are subordinate to officials responsible for carrying out these activities. In such cases, these personnel, in effect, are required to evaluate their own previous performance or that of officials to whom they are responsible. GAO believes that there should be greater independence in accident investigations. (See p. 68.)

Bureau inspectors are given insufficient criteria for making decisions on mine operators' compliance with health and safety standards. GAO believes that a comprehensive manual should be issued to provide inspectors with the necessary criteria and guidance. (See p. 71.)

Bureau representatives said that shortages of qualified manpower, certain equipment, and sufficient time were the principal reasons for noncompliance with the requirements of the act. GAO recognizes that the passage of the 1969 act has greatly expanded the responsibilities of the Bureau and that there are significant problems in obtaining compliance with its requirements. GAO believes, however, that more could have been done to achieve greater compliance.

RECOMMENDATIONS OR SUGGESTIONS

GAO made a number of proposals to the Secretary of the Interior to achieve the improvements needed. (See pp. 38, 55, 64, and 75.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Department of the Interior said that GAO's report was an objective appraisal of the Bureau of Mines' efforts to implement the act in the time period covered by the report. With one exception, the Department said that actions responsive to GAO's proposals had been initiated or planned. (See pp. 39, 55, 65, and 76.)

The Department disagreed with GAO's suggestion concerning the use of people less highly qualified than regular coal mine inspectors to perform health inspections. The Department believes that it is highly desirable that all inspectors be capable of enforcing both health and safety standards and of advising operators of changes that are needed for compliance with the law, in both respects, at all times that they are in the mines. The Department stated also that it expected to recruit by June 30, 1971, the minimum number of personnel to make all the inspections required by the act.

GAO agrees with the Department's basic views. It believes, however, that, should serious difficulty be experienced in meeting recruitment goals for regular coal mine inspectors, the Department should give further consideration to the possibility of using less qualified persons to make health inspections.

C o n t e n t s

	<u>Page</u>
DIGEST	1
CHAPTER	
1 INTRODUCTION	4
Major provisions of the act	6
Health standards	6
Safety standards	7
2 MINE INSPECTIONS AND OPERATING PLANS RELAT- ING TO MINE SAFETY	9
Required number of inspections not made	10
Opportunity for more effective use of inspectors	13
Inadequate sampling and inspection pro- grams by mine operators	16
Dust sampling	16
Safety inspections	18
Delays in submission and approval of plans for roof control, ventilation, fan stoppage, and equipment listings	24
Roof control plans	24
Ventilation plans	30
Fan stoppage plans	35
Listings of electric equipment	36
Conclusions	38
Recommendations to the Secretary of the Interior	38
3 NEED FOR CLEAR AND STRICT ENFORCEMENT POLICY	41
Changes in enforcement policy	43
Recurring violations	47
Amendment to penalty schedule in May 1970	50
Suspension of assessment of fines	51
Current assessment procedures	53
Conclusions	55
Recommendations to the Secretary of the Interior	55

CHAPTER	<u>Page</u>	
4	NONCOMPLIANCE WITH LAW DUE TO SHORTAGES OF EQUIPMENT	56
	Availability of equipment	56
	Interchangeable equipment	59
	Dust-sampling equipment	61
	Conclusions	64
	Recommendations to the Secretary of the Interior	64
5	RECRUITMENT AND TRAINING OF COAL MINE INSPECTORS	66
	Recruitment of coal mine inspectors	66
	Training of coal mine inspectors	67
6	OTHER MATTERS PERTAINING TO COAL MINE SAFETY	68
	Need for more independence in accident investigations	68
	Need for more guidance for inspectors	71
	Coal mine research	74
	Conclusions	75
	Recommendations to the Secretary of the Interior	75
7	EFFECT OF THE ACT ON THE SUPPLY OF COAL	77
	Conclusions	78
8	SCOPE OF REVIEW	80
 APPENDIX		
I	Letter dated August 13, 1970, to the Comptroller General from the Chairman, Subcommittee on Labor, Senate Committee on Labor and Public Welfare	83
II	Letter dated March 29, 1971, from the Director of Survey and Review, Department of the Interior, to the General Accounting Office	84

COMPTROLLER GENERAL'S
REPORT TO SUBCOMMITTEE ON LABOR,
COMMITTEE ON LABOR AND PUBLIC
WELFARE, UNITED STATES SENATE

PROBLEMS IN IMPLEMENTATION OF THE
FEDERAL COAL MINE HEALTH AND
SAFETY ACT OF 1969
Bureau of Mines
Department of the Interior B-170686

D I G E S T

WHY THE REVIEW WAS MADE

The Federal Coal Mine Health and Safety Act of 1969 placed new responsibilities on the Bureau of Mines of the Department of the Interior for inspection of coal mines and gave the Bureau broad authority to enforce correction of unsafe and unhealthy conditions.

At the request of the Chairman, Subcommittee on Labor, Senate Committee on Labor and Public Welfare, the General Accounting Office (GAO) made a review of the Department of the Interior's implementation of the act.

FINDINGS AND CONCLUSIONS

At the two districts visited by GAO, the Bureau had made about 31 percent of the required safety inspections and about 1 percent of the required health inspections through December 31, 1970. (See p. 10.)

Bureau inspectors have cited mine operators for violations and have required that they be corrected. During subsequent inspections of the same mines, however, numerous new violations were found, often of the same type as the earlier ones. That situation is attributable, at least in part, to the fact that the Department's policies for enforcing health and safety standards have been, at times extremely lenient, confusing, uncertain, and inequitable. (See ch. 3.)

Various required samplings and inspections were not made by the mine operators, and some that were made were not adequate. (See p. 16.)

Plans for roof control, ventilation, and emergency action when a fan stops either have not been submitted by all mine operators or have not been approved by the Bureau of Mines, although the act requires that they be submitted and approved. Until recently the Bureau had done little to induce operators to comply. (See p. 24.)

The methods for approving roof control and ventilation plans and the contents of approved plans varied significantly between the two districts included in this review, apparently because Bureau headquarters had delegated the approval process to the district offices without providing sufficient guidance. (See p. 24.)

Regular mine inspectors make both health and safety inspections. The health inspections are less complex and do not require some of the special skills and knowledge that the regular inspectors must have. It may be possible to use some less highly qualified technicians to make health inspections to conserve the time of the regular inspectors who are in short supply. (See p. 13.)

The Bureau's practices concerning the imposition of penalties for noncompliance do not consider various factors prescribed in the act, such as the effect that such penalties will have on the operator's ability to continue in business and the operator's history of previous violations. (See p. 54.)

Shortages of certain types of equipment have been cited by the Bureau of Mines as a major cause of noncompliance with health and safety requirements. In this connection:

- The Bureau has made no overall studies of the availability of equipment required for compliance with the act and of the normal time required to obtain equipment in short supply. (See p. 56.)
- The Bureau may have permitted unnecessarily prolonged noncompliance with certain equipment requirements by granting mine operators time extensions to obtain a particular brand that was in short supply while an essentially comparable substitute was readily available. (See p. 59.)
- The Bureau purchased more dust-sampling equipment than it needed and thus contributed to a shortage of such equipment and possibly precluded many mine operators from establishing dust-sampling programs within the time required by the act. (See p. 61.)

The team that investigates mine accidents usually includes Bureau personnel who have been involved in prior inspections of the mine or related activities or who are subordinate to officials responsible for carrying out these activities. In such cases, these personnel, in effect, are required to evaluate their own previous performance or that of officials to whom they are responsible. GAO believes that there should be greater independence in accident investigations. (See p. 68.)

Bureau inspectors are given insufficient criteria for making decisions on mine operators' compliance with health and safety standards. GAO believes that a comprehensive manual should be issued to provide inspectors with the necessary criteria and guidance. (See p. 71.)

Bureau representatives said that shortages of qualified manpower, certain equipment, and sufficient time were the principal reasons for noncompliance with the requirements of the act. GAO recognizes that the passage of the 1969 act has greatly expanded the responsibilities of the Bureau and that there are significant problems in obtaining compliance with its requirements. GAO believes, however, that more could have been done to achieve greater compliance.

RECOMMENDATIONS OR SUGGESTIONS

GAO made a number of proposals to the Secretary of the Interior to achieve the improvements needed. (See pp. 38, 55, 64, and 75.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Department of the Interior said that GAO's report was an objective appraisal of the Bureau of Mines' efforts to implement the act in the time period covered by the report. With one exception, the Department said that actions responsive to GAO's proposals had been initiated or planned. (See pp. 39, 55, 65, and 76.)

The Department disagreed with GAO's suggestion concerning the use of people less highly qualified than regular coal mine inspectors to perform health inspections. The Department believes that it is highly desirable that all inspectors be capable of enforcing both health and safety standards and of advising operators of changes that are needed for compliance with the law, in both respects, at all times that they are in the mines. The Department stated also that it expected to recruit by June 30, 1971, the minimum number of personnel to make all the inspections required by the act.

GAO agrees with the Department's basic views. It believes, however, that, should serious difficulty be experienced in meeting recruitment goals for regular coal mine inspectors, the Department should give further consideration to the possibility of using less qualified persons to make health inspections.

CHAPTER 1

INTRODUCTION

Pursuant to a request dated August 13, 1970, by the Chairman, Subcommittee on Labor, Senate Committee on Labor and Public Welfare (see app. I), we have reviewed the implementation of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 801 *et seq.*) by the Bureau of Mines, Department of the Interior. Our review was directed toward evaluating the extent to which the Bureau required mine operators to comply with major health and safety requirements of the act.

Prior to the enactment of the Federal Coal Mine Health and Safety Act of 1969, the Bureau carried out a coal mine inspection and investigation program under the Federal Coal Mine Safety Act enacted in 1952. The new act repealed the 1952 act and placed new responsibilities on the Bureau of Mines for carrying out a program of inspection of coal mines and gave the Bureau broad authority to enforce correction of unsafe or unhealthy conditions.

The stated purposes of the act are (1) to establish interim mandatory health and safety standards and to direct the Secretary of the Interior to promulgate improved mandatory health and safety standards to protect the health and safety of the Nation's coal miners; (2) to require that each coal mine operator and miner comply with such standards; (3) to cooperate with and to provide assistance to the States in the development and enforcement of effective State coal mine health and safety programs; and (4) to improve and expand, in cooperation with the States and the coal mining industry, research and development and training programs aimed at preventing coal mine accidents and occupationally caused diseases.

In carrying out its responsibilities under the act, the Bureau of Mines conducts investigations and inspections to determine the extent of compliance with the mandatory health and safety standards, issues violation notices and assesses penalties to miners and mine operators who violate

the law and regulations, and establishes and conducts education and training programs to improve health and safety conditions and practices in mines.

The Bureau has five coal mine health and safety districts which have subdistrict and field offices to assist in carrying out the programs in their geographic areas. The Bureau also has a technical and advisory support group and a health group in Pittsburgh, Pennsylvania. The functions of the health group include analyzing samples of the mine's dust submitted by mine operators to determine the amount of dust particles to which miners are exposed. Support services also are provided by the Bureau's Automatic Data Processing Section located in Denver, Colorado. In addition, the act established the Interim Compliance Panel which is responsible for granting permits for noncompliance with certain health and safety standards.

The approximate expenditures for fiscal years 1970 and 1971 for implementing the major provisions of the Federal Coal Mine Health and Safety Act of 1969 are as follows:

	<u>1970</u>	<u>1971</u>
	(000,000 omitted)	
Inspections, investigations, and rescue work	\$12	\$22
Health and safety research	<u>11</u>	<u>20</u>
Total	<u>\$23</u>	<u>\$42</u>

We have used in this report the approximate number of underground coal mines in operation during November 1970, as being indicative of the number of coal mines subject to the provisions of the act. The number of mines will change continually because of the opening of new mines and the closing of existing mines.

Our review was performed principally at the Bureau's district offices at Mount Hope, West Virginia, and Norton, Virginia. Of the approximately 2,475 underground coal mines in operation in November 1970, the Mount Hope District

Office had enforcement responsibility for about 580 mines and the Norton District Office had responsibility for about 1,365 mines. Thus these two district offices were responsible for enforcing the provisions of the act at about 1,945 mines, or about 80 percent of the Nation's underground coal mines.

MAJOR PROVISIONS OF THE ACT

The Federal Coal Mine Health and Safety Act of 1969 prescribes interim mandatory health and safety standards applicable to all underground coal mines until the Secretary of the Interior promulgates improved standards. The interim safety standards became effective on March 30, 1970, and the interim health standards on June 30, 1970.

The act prescribes a program of coal mine inspections to be carried out by the Department of the Interior to determine whether mines are operating in compliance with prescribed health and safety standards. The act provides authority to the Secretary of the Interior to enforce correction of conditions or practices that may be detrimental to the health and safety of miners. In addition, the act requires that representatives of the mine operators make certain health and safety inspections.

Health standards

The act prescribes health standards for controlling respirable coal dust which is the cause of pneumoconiosis, known as black lung. As defined by the act, respirable dust particles are 5 microns or less in size (a micron is one twenty-five thousandths of an inch). Effective June 30, 1970, the amount of such dust to which a miner may be exposed cannot exceed 3 milligrams per cubic meter of air, and after December 30, 1972, the concentration cannot exceed 2 milligrams.

Operators who were unable to comply with the 3-milligram standard could obtain from the Interim Compliance Panel non-compliance permits for up to 1 year during which time the standard, as set by the Panel, could not be greater than

4.5 milligrams. The Panel also is authorized to grant permits for noncompliance with the 2-milligram standard which will become effective after December 30, 1972.

In addition to requiring the Bureau inspectors to take periodic samples of the concentrations of respirable dust in each mine, the act requires mine operators to establish sampling programs in each mine and to submit dust samples to the Bureau for evaluation.

The act also includes interim health standards relating to dust resulting from drilling in rock, dust when quartz is present, and noise. The act provides that miners be given periodic chest X-rays for the detection of black lung.

Safety standards

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

With regard to roof support, the act required that mine operators submit, and the Secretary approve, a suitable roof control plan for each mine by May 29, 1970. Approved roof control plans are used during the Bureau's inspections to test compliance with the requirements of the plan.

The act also required each mine to have an approved ventilation system and methane and dust control plan by June 28, 1970. The plan is to show, among other things, 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) in the mine.

The act requires that, by May 29, 1970, each mine operator adopt a plan providing for immediate actions to be taken when any mine fan stops. The plan must be approved by the Secretary of the Interior.

The act provides that, to minimize the danger of explosions and electrocutions, the electrical system and equipment meet certain specifications established by the Secretary of the Interior. In contrast to roof control and ventilation standards which depend upon the approved plans for each mine, electrical requirements are to be applied uniformly to all mines.

CHAPTER 2

MINE INSPECTIONS AND OPERATING PLANS

RELATING TO MINE SAFETY

Progress in complying with the requirements of the Federal Coal Mine Health and Safety Act of 1969 has not been in accord with the target dates set forth in the act, and it does not appear that full compliance will be achieved in the near future. Through December 31, 1970, the two districts that we visited

- had made about 31 percent of the required safety inspections and about 1 percent of the required health inspections;
- had approved about 47 percent of the required roof control plans, about 10 percent of the required ventilation plans, and about 44 percent of the required fan-stoppage plans;
- had received about 44 percent of the mine operators' listings of electric equipment in use; and
- had hired only 76 of the 318 coal mine inspectors that they had planned to hire.

The operators' required self-policing programs for determining whether they were complying with health and safety requirements also appeared to be ineffective. For example, the act required coal mine operators to inspect each mine before the start of each shift. We found that the Bureau inspections had disclosed numerous violations which should have been identified and corrected during the operators' inspections.

Bureau representatives stated that the shortage of qualified manpower, the shortage of certain equipment, and insufficient time were the principal reasons for not meeting the requirements of the act. Although we recognize that the passage of the 1969 act has greatly expanded the responsibilities of the Bureau and that there are significant problems in complying with its requirements, we believe that

the Bureau can do more to achieve a greater degree of compliance.

Our detailed comments on the above matters follow.

REQUIRED NUMBER OF INSPECTIONS NOT MADE

The act requires a complete health and safety inspection of each underground coal mine at least four times a year. In addition, the act requires that mines which (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 be inspected at least once every 5 working days.

The mines subject to the weekly inspections are referred to by the Bureau as hazardous mines, and the weekly inspections are called hazardous spot inspections. A spot inspection generally is confined to a single working section of a mine, and a complete inspection includes the entire mine.

The schedule below shows the numbers and types of inspections required and made, from the effective date of the act to December 31, 1970, by the two district offices included in our review. Safety standards became effective on March 30, 1970, and health standards became effective on June 30, 1970.

<u>District</u>	<u>Type of inspection</u>	<u>Number</u>		<u>Per- cent</u>
		<u>Required (note a)</u>	<u>Made</u>	
Mount Hope	Hazardous spot-(note b)	2,886	1,510	52.3
	Regular	1,737	440	25.3
	Health	1,158	28	2.4
Norton	Hazardous spot-(note b)	936	527	56.3
	Regular	4,098	554	13.5
	Health	<u>2,732</u>	<u>16</u>	.6
Total		<u>13,547</u>	<u>3,075</u>	22.7

^aThe act required that all mines be inspected four times each year but did not specify the time intervals between inspections. The number of required regular and health inspections in the above table was arrived at by prorating on the basis of the effective dates of the requirements.

^bAlthough the act required that, beginning on March 30, 1970, hazardous mines be inspected at least once every 5 days, we noted that the Bureau had not made a final decision as to the criteria for identifying hazardous mines and had not begun to make the required inspections until May 1970.

During the same period the two districts also made 980 partial but representative inspections and 1,025 regular spot inspections. These inspections are not specifically required by the act.

A partial but representative inspection is an inspection of only a portion of a mine--usually one or two working sections. A regular inspection includes the entire mine. The Bureau used the partial inspections as a means of reaching as many mines as possible with the available inspectors. The partial inspections were discontinued about mid-1970, and we were advised that the Bureau did not plan to make any additional inspections of this type.

A regular spot inspection occurs when an inspector enters a mine to clear a violation cited during a previous inspection and cites another violation. In one district we found that Bureau statistics on regular spot inspections had been overstated in that they had included at least 178

instances where no form of inspection actually had been made. In these cases coal mine inspectors merely delivered notices of violations to mine operators for not submitting required ventilation and roof control plans, but the inspectors did not go underground.

We were informed by district officials that not all required inspections had been made because of a shortage of coal mine inspectors.

OPPORTUNITY FOR MORE EFFECTIVE
USE OF INSPECTORS

The two districts that we visited use coal mine inspectors to make health inspections which primarily involve collecting samples of respirable dust. We believe that, if less qualified persons were used for making health inspections, the Bureau could use its more highly qualified inspectors more effectively by freeing them to make the more complex safety inspections.

The act provides that coal mine inspectors be qualified by (1) practical experience in the mining of coal, (2) experience as practical mining engineers, or (3) education. The qualifications established by the Department, in conjunction with the U.S. Civil Service Commission, require that applicants have a minimum of 5 years of experience, consisting of 3 years of general experience and 2 years of specialized experience.

The general experience requirement may be met by an applicant who has worked as a miner, as a miner's helper, in other positions in a mine which have provided him with a working knowledge of mining processes, or in another occupation similar to mining operations, such as construction work in which excavation is a principal activity. Although there is no minimum education requirement for these positions, each academic year of study above the high school level may be substituted for 9 months of general experience.

Specialized experience consists of managerial or supervisory experience in mining in such positions as mining engineer, superintendent, foreman, or other responsible positions. To meet the specialized-experience requirement for a coal mine electrical inspector position, an applicant must have had experience as a fully qualified journeyman electrician in coal mining or must have held a managerial position relating to electrical requirements of coal mining.

Persons hired to inspect coal mines receive 10 weeks of classroom training and at least 3 months of field training with constant supervision before they are permitted to assume complete responsibility for coal mine inspections.

A health inspection primarily involves the collection of samples to determine whether the amount of respirable dust in the mine atmosphere to which miners are exposed is within the standards set forth in the act. In addition to taking these samples and determining whether there is compliance with the dust standards, an inspector is responsible for:

1. Determining whether the operator has initiated the required sampling program.
2. Determining whether respiratory equipment, such as self-rescue units, is available to miners.
3. Taking certain ventilation measurements.
4. Checking the operator's dust control program for its overall effectiveness.
5. Making adjustments to Bureau sampling units.
6. Keeping accurate notes and records of the health inspection.

We found that health inspections were quite time-consuming. The collection of a respirable dust sample requires that a sampling device be worn by, or placed in the proximity of, the miner whose atmosphere is being tested. Bureau procedures provide that samples be collected for miners in all coal-producing sections of the mine and for 10 percent of all workers not in the coal-producing sections. A determination of the average respirable dust concentration to which each individual miner is exposed requires the taking of at least two samples and may require the taking of as many as five samples.

A Bureau official told us that between 5 and 6 inspector man-days were required to collect the samples and to prepare the necessary report for miners in one coal-producing section and for 10 percent of those miners working outside of coal-producing sections. The total inspector man-days required to determine whether a mine is in compliance with the dust standards set forth in the act depend upon the number of coal-producing sections in a particular mine. For example, we found that a total of 19 man-days had been spent

in collecting dust samples at a mine in the Mount Hope district. Test results for the samples showed that the operator was in compliance with the respirable dust standards.

On the basis of our observation of a portion of a health inspection and discussions with Bureau officials, we believe that the duties of a health inspector do not demand the same experience and training in electrical system and equipment, ventilation, roof control, and other areas which are necessary for coal mine inspectors who make safety inspections. The use of less qualified persons to make health inspections could permit the more effective utilization of regular coal mine inspectors by freeing them to make the more complicated safety inspections.

INADEQUATE SAMPLING AND INSPECTION PROGRAMS
BY MINE OPERATORS

In addition to requiring the Bureau inspections of coal mines, the act requires that the mine operators make certain health and safety examinations, including sampling respiratory dust and making preshift, onshift, and weekly inspections of the working areas. Our review indicated that not all the operators were making these inspections and that some inspections which had been made were not adequate.

Dust sampling

Effective June 30, 1970, each coal mine operator was required to initiate a dust-sampling program to assist the Bureau in determining whether the workers in such mine were being exposed to excessive quantities of respirable dust.

The operator must forward the samples taken to the Bureau's Pittsburgh field group where they are measured and recorded. Pertinent information concerning the samples then is transmitted to the Bureau's Automatic Data Processing Section in Denver where it is processed. These results then are transmitted to the respective district offices so that appropriate action can be taken where operators are not in compliance with the required dust standard.

Each operator initially is required to collect and submit 10 valid samples from each coal-producing section or other areas where dust is generated. The operator subsequently is required to collect five valid samples each month in each coal-producing section. Where analysis of the initial and subsequent samples shows that the operator is complying with the applicable dust standard, the Bureau may require that samples be taken only bimonthly.

We discussed the implementation of the mine operators' sampling program with responsible agency officials at the Mount Hope and Norton District Offices. We were informed by district office officials that, as of November 1, 1970, about 80 percent of the mines in the Mount Hope district and, as of November 19, 1970, about 75 percent of the mines in the Norton district had not implemented fully the required sampling program. Therefore, although the requirement

for full implementation of the operator's dust sampling program was effective June 30, 1970, most operators had not started sampling 5 months later.

Reasons for not sampling

We discussed with officials of both districts the reasons why so many operators had failed to take dust samples. They informed us that an equipment shortage initially had been a major factor but that this problem should no longer exist. They informed us also that many operators apparently had realized that the dust concentrations in their mines were above the applicable standard. They informed us further that, rather than initiate sampling programs, be cited for exceeding dust standards, and be required to take samples during every production shift until the violations were abated, these operators did not start sampling until corrective measures had been taken to reduce dust concentrations.

One of the district officials advised us that, because of the initial expense in purchasing equipment for dust control and because of a general feeling that the law might not be enforced strictly, many operators had adopted a "wait and see" attitude, intending to take only the minimal action necessary to comply with the Bureau's enforcement practices.

Efforts by Bureau to enforce dust-sampling requirements

In an effort to ensure that additional mine operators would initiate a sampling program, a list of mines which had no sampling program was obtained by both district offices from the Bureau's Automatic Data Processing Section in Denver. During the first week of October 1970, all mine operators determined not to be sampling were issued a notice of violation for failure to initiate a respirable-dust-sampling program.

The notice of violation advised each operator that he would be given until October 26, 1970, to abate the violation by taking the required samples. The notice further provided, however, that, upon the presentation of evidence by the operator to the Bureau's Washington headquarters that the violation could not be abated within the time specified

because of unavailability of equipment or personnel which he was attempting to obtain, consideration would be given to an appropriate extension of time to abate the violation.

We were informed by agency officials that the health groups had given high priority to the follow-up of actions taken by operators on the notices issued for these violations. Bureau records showed, however, that, about 1 month after these violations were required to be abated, 53 percent of the mines in the Mount Hope district and 74 percent of the mines in the Norton district still had not instituted dust-sampling procedures. Information obtained from the Bureau further showed that, as of March 1, 1971, 22 percent of the mines in the Mount Hope district and 42 percent of the mines in the Norton district still had not initiated dust-sampling procedures.

Quality of dust sampling by mine operators

We reviewed the results of the dust samples taken on several selected days by coal mine operators who had implemented the sampling procedures. We found that more than 55 percent of the samples taken had been determined by the Pittsburgh field health group to be unusable for various reasons, such as (1) submitting erroneous data with the sample, (2) taking samples on shifts where production was less than 50 percent of normal production, and (3) mishandling sampling equipment which caused the sample to be void.

During our discussions with district office officials, we were informed that the results of the samples that we had selected for review were representative of normal results.

In view of the extent to which such samples are unusable, it appears doubtful that the mine operators' sampling programs have been of much value to the Bureau for enforcement purposes.

Safety inspections

Our review indicated that there was a need for mine operators to place greater emphasis on making the required

preshift, onshift, and weekly inspections to detect conditions which constituted violations of mandatory safety standards or other conditions hazardous to persons entering or in the mines. Our review of selected Bureau reports on inspections of hazardous mines showed that mine operators repeatedly had been issued notices for similar violations over extended periods.

Bureau officials agreed that many of the violations for which operators had been cited by the Bureau were of the type which the operators' inspections should have identified and which should have been corrected by the operators prior to the Bureau inspections. We found evidence of the need for improvements in the inspection programs of both large and small mines.

Section 303(d)(1) of the act provides that, within 3 hours immediately preceding the beginning of any shift and before any miner enters the mine, persons designated by the operator and certified by the State as being qualified to make inspections examine the active workings of such mine. This preshift inspection is to include tests for accumulations of methane and for oxygen deficiency; examination and testing of the roof, face, and rib conditions in such 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 be required to make inspections of each working section similar to the preshift inspections. In addition to requiring the preshift and daily inspections, section 303(f) of the act requires the examiner to make examinations in specific locations in the mine for hazardous conditions at least once each week.

The act requires that each operator provide a program, approved by the Secretary of the Interior, for training prospective inspectors and for retraining the certified inspectors needed to conduct these inspections.

The mine operator's examiner is required to record the results of his inspections in books approved by the

Secretary of the Interior. If the examiner finds any hazardous condition, he should promptly notify the operator and the condition should be corrected immediately.

In the preshift inspection, he should post a "DANGER" sign conspicuously at all points through which persons entering such place would be required to pass. No person, other than an authorized representative of the Secretary of the Interior, a State mine inspector, or persons authorized by the operator to eliminate the noted hazardous condition, may enter such place while the sign is posted. If a condition noted during the onshift or weekly inspection creates an imminent danger, the operator is required to withdraw all persons, except those mentioned above, from the affected area until the danger is abated.

Some inspections performed by the certified persons designated by mine operators appeared to have been ineffective because certain hazardous conditions and violations of mandatory safety standards, that the operators should have been made aware of by such inspections, were not corrected prior to Bureau inspections. Bureau inspection reports which we reviewed showed that notices had been issued repeatedly for violations of certain standards which we selected for use in evaluating the effectiveness of the mine operators' inspection programs.

The types of violations that we selected were (1) loose or inadequately supported roof; (2) inadequate ventilation; (3) failure to properly install and/or maintain line brattice (canvas or similar material used in mine passages to direct the flow of air) to provide adequate ventilation; (4) coal dust, loose coal, and other combustible material accumulated in active workings or on electrical equipment; (5) inadequate rock dusting (applying an incombustible material, usually powdered limestone, to the mine surface) to maintain the required incombustible content of the combined coal dust, rock dust, and other dust; and (6) more than one temporary splice, a temporary splice used for more than 24 hours, and/or a temporary splice of an unacceptable quality in a trailing cable (a flexible electric cable connecting mine equipment to the power source) for electric equipment.

We found that in one hazardous mine the Bureau had performed 24 spot inspections during the 7-month period ended December 31, 1970, and had issued to the mine operator a total of 64 notices for violations of the standards listed above, of which 15 were for accumulations of coal dust, loose coal, and other combustible materials and 14 were for inadequate rock dusting.

Because the mine was classified as hazardous under section 103(i) of the act, it was subject to a spot inspection at least once during every 5 working days at irregular intervals. Despite the mine operators' apparent knowledge that the Bureau inspector could be expected during every 5-working-day period, the inspector often issued notices for similar violations on consecutive inspections. The correction of these violations did not appear to place any unreasonable demands on the operator because they were generally abated during the Bureau inspector's visits.

We discussed the implementation of the mine operators' inspection programs with several mine operators. These operators advised us of several reasons for their being cited repeatedly for these types of violations, including (1) the lack of certified persons to perform the required inspections; (2) their disagreement with Bureau inspectors' judgment--for example, whether the amounts of coal dust, loose coal, and other combustible material accumulations observed actually represented a hazardous condition; (3) the inconvenience or time lost in correcting conditions--for example, replacing temporary splices with permanent splices or providing new trailing cables; and (4) the lack of cooperation from the workers.

One mine company official stated that a planned program to recruit and train more persons needed to conduct the inspections was expected to achieve only limited success because of the workers' reluctance to accept the added responsibility of this position.

We believe that, when Bureau inspections disclose repeated violations of a similar nature or when violations appear to have existed for long periods of time, the Bureau should determine whether such situations are attributable to the failure of the mine operator to provide for adequate

inspections, to the failure of the mine operator to take prompt corrective actions on hazardous conditions noted by the inspector, or to differences in the way in which the mine operator and the Bureau inspector interpret the safety standards.

If the Bureau finds that the operator's inspections are inadequate or that prompt corrective actions are not taken, we believe that it would be appropriate to penalize the operator. If, however, the Bureau finds that there are differences in interpretation of the requirements, such differences should be resolved.

The inconvenience caused by the need to correct a known statutory violation--such as the need to replace temporary splices in trailing cables--and the lack of cooperation from the workers do not seem to be sufficient justifications for not complying with specific requirements of the act.

The possible lack of objectivity by some operators who inspect their own mines may cause them to make ineffective examinations. For example, we noted one case in which a worker had been injured fatally by a roof fall in a small mine. According to the Bureau's investigation report on the fatality, one of the causes of the accident was the mine operator's failure to comply with his roof control plan which the Bureau had approved. The mine operator, who personally made the required inspections for hazardous conditions, had completed his inspection during the day of the accident without having noted the noncompliance with the approved roof control plan.

The Bureau inspector who conducted the investigation of the fatality told us that the mine operator had not been following the roof control plan for at least 2 days. He agreed that the mine operator should have noted the hazardous condition during his inspections.

The Bureau issued an order to withdraw all persons from the affected area because of the imminent danger of death or serious physical harm to the workmen as a result of conditions found in the mine subsequent to the accident. Although a notice of penalty pertaining to these conditions also had been issued to the mine operator, he was not cited for his

ineffectiveness or indifference in making the inspections required for hazardous conditions.

A Bureau official advised us that its policy was not to attempt to determine whether violations of mandatory safety standards or other conditions for which the Bureau inspector issued notices had been present long enough for the operators' mine inspectors to have noted them and for the operators to have effected their correction prior to the Bureau inspectors' visit.

We believe that effective preshift, onshift, and weekly inspections by the mine operators could result in fewer repeated violations of the type discussed above and in safer conditions for the mine workers. Therefore the Bureau should require that the mine operators implement effective inspection programs. To achieve more effective examinations will require the operators to devote more emphasis to recruiting and training persons to perform these inspections. The operators also must provide for the prompt correction of hazardous conditions brought to their attention by their inspectors if the required inspections are to serve their purpose.

DELAYS IN SUBMISSION AND APPROVAL OF PLANS
FOR ROOF CONTROL, VENTILATION, FAN STOPPAGE,
AND EQUIPMENT LISTINGS

The act requires that mine operators submit, and the Bureau approve, plans for roof control and fan stoppage by May 29, 1970, and plans for ventilation by June 28, 1970. The act requires also that operators furnish the Bureau, by May 30, 1970, with a listing of all electric equipment in use in the areas where coal actually is being mined. Our review showed that many such plans and listings had not been submitted and approved as of December 1970.

The act requires further that roof control and ventilation plans be reviewed by the Bureau at least every 6 months. Neither district had begun this review process at the time of our review due to the backlog of initial approvals. We found that, until recently, the Bureau had done little to induce operators to submit the required plans and listings. The responsibility for reviewing and approving plans had been delegated to the district office level with little or no direction from the Bureau headquarters. More detailed comments on these matters follow.

Roof control plans

The roof control plan describes the type and spacing of roof supports used, the procedures for installing the supports, and the sequence of mining to be followed. Approved plans are required to be posted at the mine to inform miners of the procedures that should be followed in their day-to-day operations and to provide criteria to be used by inspectors in citing unsafe roof conditions or practices.

Roof falls are one of the principal causes of fatalities in underground coal mining. During calendar years 1969 and 1970, the number of fatalities from this cause reported by the Bureau was 72 and 77, respectively. The purpose of the roof control plan is to reduce this hazard.

The schedule below shows the number of plans submitted and approved by May 29, 1970, and December 7, 1970.

<u>District</u>	<u>Date</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	May 29, 1970	580	355	-	-
	Dec. 7, 1970	580	536	88	15
Norton	May 29, 1970	1,365	75	12 ^a	1
	Dec. 7, 1970	1,365	874	831 ^a	61

^aIncludes both tentative and fully approved plans.

The Department's regulations published on March 28, 1970, set forth specific items of information required in all roof control plans and establish the criteria by which district managers are to be guided in approving the plans. The regulations state that the criteria relate to normal conditions of roof, face, and ribs and that abnormal conditions will require additional measures. The regulations state also that roof control plans which do not conform to these criteria may be approved, provided that the operator can show that the resultant roof conditions will not pose a hazard to the miners.

Guidance from Bureau headquarters

We found that methods for approving such plans and the contents of approved plans varied significantly between the two districts that we visited. We believe that this problem is largely attributable to the Bureau headquarters' delegating the approval process to the district offices without providing sufficient guidance as to the method to be used and as to the manner in which the Department's regulations are to be applied in reviewing roof control plans.

The procedures for approval of roof control plans at the Mount Hope District Office include, in addition to evaluations of data submitted by the mine operators, visits to the mines by roof control specialists for observations of conditions and discussions with mine operators. At the Norton District Office, the approval process consisted primarily of evaluations of the content of the plans and did not include visits to the mines. At the Norton District Office, the roof control plans are either disapproved, approved tentatively, or approved fully, the approval depending upon their completeness; whereas, at the Mount Hope District Office, plans are either approved fully or disapproved.

We randomly selected and reviewed 80 roof control plans that had been submitted to the two districts that we visited. We found that plans approved at the Mount Hope district contained all the required general information and generally met the guidelines set forth in the Department's regulations. We found that, generally, plans which had been approved tentatively at the Norton district did not contain all the required general information and appeared to meet less than half of the guidelines set forth in the regulations.

In those cases in which the plans did not meet the criteria set forth in the regulations, there was no evidence that the operators had shown, as required by the Department's regulations, that resultant roof conditions would not pose a hazard to the miners. We found that the Norton District Office had fully approved a few plans that contained all the required general information and that met many, but not all, of the criteria set forth in the regulations.

We were informed by Norton District Office officials that they had not followed the criteria set forth in the Department's regulations because, on April 23, 1970, a Federal judge in Abingdon, Virginia, issued an order restraining the Bureau from enforcing the regulations. (See p. 43.) Although the Bureau may have been restrained from enforcing the regulations, we are unaware of any reason why the Bureau did not use the criteria set forth in the regulations as a guide in reviewing the roof control plans. We were advised, moreover, by officials at the Mount Hope District Office that it was their policy to use the regulations as a guide in the approval process.

Additionally we noted that, on August 7, 1970, the Assistant Secretary, Mineral Resources, made the following statement before the Subcommittee on Labor, Senate Committee on Labor and Public Welfare.

"On March 30, the Bureau of Mines began to make inspections under the new law, citing violations with reference to the March 28 regulation. On April 23, a Federal judge in Abingdon, Virginia, issued an order restraining the Bureau of Mines from enforcing the regulations,

and they have not been used as a reference for citing violations since that time. They have continued to be used by Bureau of Mines inspectors, however, as a guide in determining whether or not operators are in compliance with the statutory standards, and violations of the statutory standards have been cited accordingly. Consequently, the court order restraining the Bureau from enforcing the regulations has had only a minimal effect upon the enforcement of the law."

We were informed by Norton District Office officials that, subsequent to the lifting of the injunction in November 1970, approved roof control plans would comply with all the mandatory general information requirements in the regulations, such as those providing for disclosure of names and addresses of the company, the mine, and responsible officials; the description of the type of rock above and below the coalbed; and the sequence of mining and installation of roof supports.

With respect to the other criteria set forth in the regulations governing such things as plans for installation of roof bolts to support the mine roof, types of roof bolts to be used, and recovery of coal pillars upon completion of mining activities in a given section of the mine, the Norton district took the position that they would only be included in roof control plans if district officials considered them to be necessary for specific mines.

In contrast to the approach followed by the Norton district, we were informed by Mount Hope district officials that they had required compliance with all the criteria set forth in the regulations, except when mine operators could demonstrate that noncompliance would not result in any less protection to the miners. It appears that the procedures followed by the Mount Hope district are more in line with the intent of the regulations which provide that:

"*** Roof control plans which do not conform to these criteria may be approved providing the operator can satisfy the District Manager that the resultant roof conditions will provide no less than the same measure of protection to the miners."

We believe that the situation described above is illustrative of the need for the Bureau headquarters to provide more guidance and direction to its district officers in approving roof control plans.

Shortage of personnel

On December 30, 1969, when the 1969 act was approved, the roof control group at the Mount Hope District Office, whose function is to review and approve roof control plans for each mine in the district--about 580 mines in November 1970--consisted of a mining engineer and a coal mine inspector. At the time of our review, the group had been increased to seven members--a supervisor, an engineer, four coal mine inspectors, and a secretary. The supervisor estimated that a total of 15 members were required to fully carry out their responsibilities under the act.

The Norton District Office roof control group, with responsibilities for about 1,365 mines in November 1970, consisted of five members at the time of our visit to the office in November 1970. The group consisted of a supervisor, a mining engineer, and three coal mine inspectors. The Assistant District Manager estimated that the roof control group would be increased to 32 members by January 1, 1972.

On the basis of the number of roof control plans which the roof control groups in these two districts have been able to approve since the effective date of the act, it is obvious that neither district has had sufficient staff devoted to this activity to enable them to comply with the requirements for approval of roof control plans set forth in the act.

Informing mine operators of requirements

Both districts conducted meetings to inform members of the coal mine industry about the requirements of the act. We were advised that provisions of the act also had been discussed with operators on an individual basis. We were informed at the Mount Hope District Office that most of the meetings had consisted of a brief presentation on each functional area of the act, followed by a question and answer period. No written material concerning implementation

procedures was provided. District officials told us that the meetings had been publicized highly but that they had no assurance that all mine operators had been contacted concerning the new act. We were told that some of the larger meetings, such as the one held in Beckley, West Virginia, had attracted 600 to 800 people.

Additional notice was provided to the mine operators on March 28, 1970, when the Department published its regulations, which included the requirements for roof control plans, in the Federal Register and stated that such plans should be filed with the appropriate district manager by April 20, 1970.

Although the Bureau made an effort to inform mine operators of the requirements for submitting roof control plans, there is no assurance that all operators had knowledge of these requirements. District office 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.

In July 1970 Mount Hope officials contacted the mine operators who had not submitted plans and requested them to do so. Except for reminders to the operators concerning the need to submit roof control plans at such times as Bureau inspectors made inspections at individual mines, no specific efforts to inform the mine operators to submit the plans were made by either of the districts that we visited until early in December 1970. On December 3 Bureau headquarters directed all district offices to immediately issue violation notices to all operators who had not submitted plans. Thus the Bureau now appears to be making an effort to obtain the required plans.

Ventilation plans

The ventilation system and methane and dust control plan (ventilation plan) includes a map of the mine and shows (1) the type and location of ventilation equipment and regulators installed in the mine, (2) the quantity and direction of air flow in the mine, and (3) the methane and dust control practices employed in the mine. The act required mine operators to submit, and the Bureau to approve, such a plan for each mine by June 28, 1970. Our review showed that no ventilation plans had been approved by the required date.

The schedule below shows the number of plans submitted to, and approved by, the two districts at which we made our review.

<u>District</u>	<u>Date</u>	<u>Approximate number re- quired</u>	<u>Number of plans sub- mitted</u>	<u>Number of plans ap- proved</u>	<u>Percent of required plans approved</u>
Mount					
Hope	June 28, 1970	580	120	-	-
	Dec. 7, 1970	580	365	41	7
Norton	June 28, 1970	1,365	28	-	-
	Dec. 7, 1970	1,365	227	144	11

Department regulations for ventilation plans list general information to be included in the plans and criteria by which the district managers should be guided in approving the plans.

Guidance from Bureau headquarters

Department regulations do not establish the procedures for approving the plans, and little guidance has been furnished otherwise to the districts by Bureau headquarters. We found that the methods for approving the plans and the content of the plans varied significantly between the two districts that we visited.

At the Mount Hope district, the approval process includes visits to the mines by members of the district's

ventilation group who observe the conditions of the mines and advise the mine operators of any revisions necessary to make the plans acceptable.

At the Norton district, the approval process is based on the content of the plans and does not include visits to the mines.

We randomly selected and reviewed 18 ventilation plans to determine the content of the plans at the two districts that we visited.

As was the case with roof control plans, ventilation plans submitted to, and approved by, the Mount Hope district contained virtually all the provisions required by the regulations; whereas, ventilation plans approved by the Norton district contained about half of the provisions. Unlike the Norton district's practice of tentatively or fully approving roof control plans on the basis of the completeness of such plans, however, all ventilation plans were approved fully.

The provisions to which most of the plans approved by the Norton district did not conform related to (1) limits of the mine property, (2) oil and gas wells, (3) abnormal conditions or faults, (4) velocity of air, (5) entry height, (6) abandoned or pillared areas, (7) auxiliary fans, and (8) bleeder systems. Norton officials agreed that ventilation plans which contained very little information had been approved. These officials informed us that, in their opinions, any plan was better than no plan at all and that the inadequate plans would be improved during the 6-month review process. As mentioned previously, neither district had begun the review process because of the backlog of initial approvals.

Norton district officials advised us that another reason that the plans had not contained more of the required information was because all regulations issued before November 20, 1970, were considered unenforceable because of a district court injunction. (See p. 43.)

We were informed by Norton district officials that, subsequent to the lifting of the injunction in November 1970,

approved ventilation plans would contain all the information which the regulations required the operators to submit, such as that information disclosing the methane and dust control practices followed and showing air quantities and velocities in the ventilation systems used.

Other criteria for approval of ventilation systems set forth in the regulations govern such things as the arrangement of the ventilation system in mines using multiple main fans to prevent the accidental reversal of the air flow in case a ventilating fan fails and the methods and materials for constructing permanent partitions to direct the flow of air. The Norton district took the position that these criteria would be included in ventilation plans only if district officials considered them to be necessary for specific mines.

In contrast to the approach followed by the Norton district, we were informed by Mount Hope district officials that they required compliance with all the criteria set forth in the regulations except when mine operators could demonstrate that noncompliance would not result in any less protection to the miners. It appears that the procedures followed by the Mount Hope district are more in line with the intent of the regulations which provide that:

"*** A ventilation system and dust control plan not conforming to these criteria may be approved, providing the operator can satisfy the District Manager that the results of such ventilation system and dust control plan will provide no less than the same measure of protection to the miners."

In our opinion, the above differences in the review and approval processes and in the content of plans between the two districts that we visited are additional indications that district offices need more specific guidance from Bureau headquarters.

Mount Hope and Norton district officials informed us that the ventilation plans had not been submitted and approved as required because (1) mine operators lacked the capabilities to prepare the plans and needed assistance

from the Bureau; (2) mine operators were confused about what the plans were required to contain, especially since the injunction was obtained against the regulations; and (3) the districts lacked adequate personnel to assist operators and to review and approve plans.

Shortage of personnel

The ventilation group at the Mount Hope District Office was set up in April 1970 with three members--a supervisor, a mining engineer, and a coal mine inspector. The group is responsible for reviewing and approving ventilation plans for all mines in the district--about 580 mines in November 1970. At the time of our visit to the Mount Hope District Office in November 1970, the group had been increased to eight members--a supervisor, five engineers, a trainee, and a coal mine inspector. The supervisor estimates that a total of 30 members will be required to fully carry out the group's responsibilities under the act.

The ventilation group at the Norton district was set up in July 1970 with one member--a ventilation engineer. The group is responsible for approving ventilation plans for about 1,365 mines. At the time of our review, the group still consisted of only the ventilation engineer. A district official estimates that a total of 11 members are needed in the district and field offices.

On the basis of the number of ventilation plans which the ventilation groups in these two districts have been able to approve since the effective date of the act, it is obvious that neither district has had sufficient staff devoted to this activity to enable them to comply with the requirements for approval of ventilation plans set forth in the act.

Informing mine operators of requirements

The efforts made to inform members of the coal mine industry of the requirements of the act were discussed on page 28.

We found that, in August 1970, Mount Hope district personnel contacted mines which had not submitted plans and requested them to do so. No special effort, other than

reminders of the need to submit such plans when inspectors visited individual mines to make inspections, was made by the Norton district.

On December 3, 1970, Bureau headquarters in Washington sent a directive to the districts to immediately issue notices of violation to mine operators who had not submitted the plans for approval. It appears that the Bureau is now making a more concerted effort to obtain the required plans.

Fan-stoppage plans

The act required mine operators to submit, and the Bureau to approve, fan-stoppage plans for each underground coal mine by May 29, 1970. The plan describes steps to be followed in the event that a fan used for ventilating the mine stops for any reason. Approved plans are to be posted on the mine bulletin board so that miners will be aware of specific procedures to be followed in case of fan stoppage.

The act states that the plan is to provide for immediate action by the operator to (1) withdraw all persons from the working sections, (2) cut off the power in the mine on a timely basis, (3) provide for restoring power and resuming work if ventilation is restored within a reasonable period of time, and (4) provide for withdrawing all persons from the mine if ventilation cannot be restored within a reasonable period of time. The Department regulations published in the Federal Register on March 28, 1970, define the reasonable period of time as not more than 15 minutes.

The schedule below shows the number of plans submitted to, and approved by, the two districts at which we made our review.

<u>District</u>	<u>Date</u>	<u>Esti- mated number re- quired</u>	<u>Number of plans sub- mitted</u>	<u>Number of plans ap- proved</u>	<u>Percent of required plans approved</u>
Mount Hope	May 29, 1970	580	180	78	13
	Dec. 31, 1970	580	448	352	61
Norton	May 29, 1970	1,365	150	150	11
	Dec. 7, 1970	1,365	500	500	37

Reasons given by district officials for operators not submitting plans as required were much the same as the reasons given for not submitting roof control plans. We were informed that plans had not been submitted as required because some operators (1) were unaware of the requirement or (2) were reluctant to comply with the provisions.

We found that, although many of the required plans had not been submitted at the time of our review, the two districts had done little to induce operators to submit the plans. In August 1970 the Mount Hope district contacted mines which had not submitted plans and requested them to do so; however, the Norton district had made no follow-up effort as of the time of our review.

Although the act and the Department regulations were specific as to what the plans should contain, we found that the Bureau had established no written procedures for reviewing plans. The methods for reviewing the plans and the contents of the plans differed in the two districts that we visited.

At the Mount Hope district, plans are reviewed for conformity with the required items. Plans which do not contain all required items are disapproved and returned to the operator, specifying what additional information is needed. In the Norton district, plans received are amended by district officials to include the specific criteria required by the act and the regulations and are returned to the operator approved as amended.

We reviewed a total of 24 plans in the two districts to determine the contents of the plans. Plans approved in the Mount Hope district contained all required items; however, several plans amended and approved by the Norton district did not. For example, one such plan at the Norton district did not show a reasonable time for restoring ventilation, and another plan did not provide for the immediate withdrawal of all persons from the working sections.

Norton officials advised us that plans which did not contain all the required items had been approved erroneously. They advised us that all approved plans would be reviewed and that those that were deficient would be revised to include all necessary requirements.

Listings of electric equipment

The act required each mine operator to file with the Bureau's district offices by May 30, 1970, a listing of all electric equipment in use in areas where coal actually was

being mined. The listing is required to show, among other things, whether the equipment is rated permissible and is maintained in permissible condition or whether it is non-permissible. Permissible equipment is equipment which meets specifications prescribed by the Bureau to prevent the equipment from causing a mine fire or a mine explosion.

We have been advised by district office officials that the listings can be used for the following purposes.

- Information showing the amount of nonpermissible equipment used in industry will be helpful in determining how much permissible equipment will be needed in the future to comply with the act.
- The listings can be used in evaluating the reasonableness of applications that may be filed in the future by mine operators for extensions of time for using nonpermissible equipment.
- The listings can assist inspectors by showing what equipment must be maintained in permissible condition.

We were told by an official of the Bureau's Health and Safety Technical Support Center in Denver that the Bureau had no reliable records of the mines which had submitted the listings; however, on the basis of rough estimates furnished by the Bureau, it appeared that about 44 percent of the mine operators in the two districts that we visited had filed the required listings as of December 31, 1970.

We were informed that neither of the districts had made an effort to contact mine operators but that operators who had not submitted the listings had been sent letters, reminding them of the need to submit such listings, by Bureau headquarters during the last week in November 1970.

We noted that, as of December 31, 1970, only 15 notices of violation had been issued for not submitting the required listings in the two districts that we visited.

CONCLUSIONS

During the first year since the enactment of the Federal Coal Mine Health and Safety Act of 1969, some progress has been made in implementing the provisions requiring a prescribed number of coal mine inspections, the institution of a respirable-dust-sampling program, and the approval of plans for roof control, ventilation, and fan stoppage.

Much remains to be done, however, to achieve full compliance with these provisions of the act. Although we recognize that the passage of the 1969 act has greatly expanded the responsibilities of the Department of the Interior and the Bureau of Mines and that there are significant problems in complying with its requirements, we believe that the Department and the Bureau can do more to achieve a greater degree of compliance.

RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

We recommend that the Secretary of the Interior require the Director of the Bureau of Mines to:

- Consider hiring and training persons with lower qualifications than those of regular coal mine inspectors to specialize in health inspections and to thereby free more regular inspectors to make the more complicated safety inspections, if the Bureau is unable to hire the necessary more highly qualified regular inspectors.
- Require the district offices to monitor the respirable-dust-sampling activities which the mine operators must perform to determine whether the concentration of such dust is within the limits prescribed by the health standards and to assist the mine operators in overcoming problems in their sampling operations.
- Require Federal coal mine inspectors to review the adequacy of safety inspections made by employees of mine operators and to cite violations where adequate inspections are not made or where mine operators fail to take actions to abate hazardous conditions found

by their inspectors. If, in evaluating the adequacy of the operator's inspection, the Bureau inspector finds that the operator's inspection was inadequate because of differences between interpretations of the safety standard, the Bureau should consult with the mine operator to resolve these differences.

- Provide additional guidance and direction to the district offices with respect to information which roof control and ventilation plans are required to contain and the methods to be used in reviewing such plans.
- Intensify the efforts of the Bureau to recruit qualified persons to review and approve roof control plans and ventilation plans.
- Increase the Bureau's efforts to obtain compliance with the health and safety requirements of the act by assessing appropriate penalties to mine operators who fail to submit required plans, initiate and carry out required health and safety programs, or otherwise violate the requirements of the act.

- - - -

In commenting on our draft report for the Department of the Interior, the Director of Survey and Review, in a letter dated March 29, 1971 (see app. II), stated that the report was an objective appraisal of the Bureau of Mines' efforts to implement the act within the period of time covered by the report and that, with one exception, actions responsive to our recommendations had been initiated or planned. The Director did not indicate what specific actions and plans were initiated or formulated.

The Department disagreed with our proposal that consideration be given to hiring people with lower qualifications than those of regular coal mine inspectors to specialize in health inspections. The principal reasons given by the Department for disagreeing with our proposal follow.

- The Bureau expects to recruit, by June 30, the required minimum number of personnel to make all the inspections required by the act.

--The Bureau is currently using inspector-trainees and technicians to assist in both health and safety inspections and will continue to do this to the extent that it can be done without reducing the quality of the inspections.

--All inspectors should be capable of enforcing both health and safety standards and of advising operators of changes that are needed for compliance with the law in both respects at all times that they are in the mines.

We agree with the Department of the Interior that it is desirable that all inspectors be capable of enforcing both health and safety standards and of advising operators of changes needed for compliance with the law. We believe, however, that, if the Bureau experiences any serious difficulty in meeting its recruitment goals for regular coal mine inspectors, the Department should give further consideration to the possibility of hiring less qualified persons to make health inspections.

CHAPTER 3

NEED FOR CLEAR AND STRICT ENFORCEMENT POLICY

Since the act became effective, Bureau of Mines inspectors have made many inspections, cited mine operators for many violations during their inspections, and required operators to abate the specific violations cited. When the inspectors made subsequent inspections of these mines, numerous new violations were cited and, in many instances, the violations were the same type that previously had been cited and abated. Thus in many instances mine operators have not taken the actions necessary to ensure full compliance with the prescribed health and safety standards.

We believe that the aforementioned situation is attributable, at least in part, to the Department's policies for enforcing health and safety standards, which in our opinion have not been as effective as desirable and which at times have been confusing, uncertain, and inequitable.

The Federal Coal Mine Health and Safety Act of 1969 requires coal mine operators and miners to comply with prescribed health and safety standards. It requires representatives of the Secretary of the Interior to make inspections and investigations in coal mines to determine, among other things, whether there is compliance with these mandatory health and safety standards, and it specifically provides for certain enforcement actions to be taken by the inspectors when violations are found.

The existence of any condition or practice in a coal mine that reasonably can be expected to cause death or serious physical harm before such condition or practice can be abated is considered an imminent danger.

If an inspector finds such a condition or practice, he must issue an order withdrawing the miners from the mine or from the affected part of the mine. If the violation has not created an imminent danger, he is required to cite the mine operator for the violation and to allow the violator a reasonable time to abate the violation. If the violation is not abated by the end of that period and if the inspector

does not find that the period should be extended, he is required to order a withdrawal of all workers from the area affected by the violation.

If an inspector finds a violation of a standard which does not cause an imminent danger but which could contribute significantly to any mine hazard and if he finds that the violation is due to an unwarrantable failure of the operator to comply with the standards, the inspector is required to issue a notice of his findings to the operator.

If, during the same inspection or any inspection within 90 days after issuance of the notice, an inspector finds another violation which is also due to an unwarrantable failure to comply, he must order the miners withdrawn from the mine. Once a withdrawal order has been issued for an unwarrantable failure, the inspector on subsequent inspections must issue additional withdrawal orders until no similar violations are disclosed.

The act authorizes the Secretary of the Interior to assess civil penalties against coal mine operators for violations of health and safety standards and against any miner who violates the mandatory safety standards relating to smoking or the carrying of smoking materials underground. Criminal penalties also are provided for willful violations of health and safety standards.

The manner in which the Department has implemented its enforcement powers under the act is discussed in the following sections.

CHANGES IN ENFORCEMENT POLICY

On March 28, 1970, the Secretary of the Interior published in the Federal Register extensive coal mine safety regulations for implementing and supplementing the interim standards provided in the act. In addition, the Federal Register contained the Department regulations which described the organization, function, and procedures--including procedures for assessing penalties--of the Board of Mine Operations Appeals in the Department of the Interior.

The procedures provided that, when a Bureau inspector issued a notice of violation, the mine operator or miner could make a penalty payment in accordance with a schedule included in the regulations. If payment was not received within 30 days after receipt of the notice of violation by the mine operator or miner, the procedures provided that proceedings for the assessment of penalties would be initiated upon the Bureau's filing a copy of the notice of violation with the Board. In determining the amount of penalty, the procedures provided that the Board would disregard the penalty schedule contained in the Department's regulations and would assess the penalty after considering certain factors specified in the act.

On March 30, 1970, the Bureau began to make inspections under the new law and cited violations in accordance with the Department's March 28, 1970, regulations.

The U.S. District Court for the Western District of Virginia at Abingdon issued a temporary restraining order on April 23, 1970, relating to the Department's enforcement policy. The court order, as subsequently modified on April 30, 1970, restrained the Secretary of the Interior from:

- Enforcing the Department's safety regulations published in the March 28, 1970, Federal Register.
- Assessing penalties and accepting payment in accordance with the penalty schedule published in the March 28, 1970, Federal Register.
- Enforcing the safety standards of the act to the extent that violations could not be abated because of

the lack of technology; the unavailability of certified, registered, or qualified personnel; or the unavailability of materials or equipment.

The court pointed out, however, that nothing in its order should restrain the Department from enforcing by any legal means--fines, penalties, or closure--the correction of any condition which would result in imminent danger to persons working in the mines. Additionally, the court order did not prohibit the Secretary from:

- Enforcing the safety standards of the act to the extent that operators were not prevented from compliance because of the lack of technology; the unavailability of certified, registered, or qualified personnel; or the unavailability of materials or equipment.
- Enforcing health standards of the act and Department regulations.
- Initiating proceedings with the Board of Mine Operations Appeals for the assessment of penalties.

On May 7, 1970, the Department published in the Federal Register a revision to the penalty schedule set out in its regulations on March 28, 1970. (See p. 50.)

On April 24, 1970; May 1, 1970; and May 22, 1970, a Bureau headquarters official issued instructions to the district offices to be followed during the period of the temporary restraining order for inspection and enforcement of the act and departmental regulations. The May 22, 1970, instructions, however, made no reference to the May 7, 1970, revised penalty schedule.

The May 22, 1970, instructions, which rescinded the instructions issued on April 24 and May 1, basically provided that mines be inspected only for compliance with the safety standards of the act and that notices of violation and orders of withdrawal be issued where necessary. The instructions provided, however, that, where violations could not be abated because of the lack of technology; the unavailability of certified, registered, or qualified personnel; or the unavailability of required equipment or materials, an

informational, rather than a violation, notice be issued to the violator advising him of the violation and that no penalty be assessed. The instructions provided that, in these instances, no time be set for abatement of the violation.

The instructions provided that the following notation be added to violation notices and withdrawal orders subsequently issued.

"A civil penalty will be assessed pursuant to Section 109 of the Act."

The instructions provided, however, that, until revised procedures for the assessment of civil penalties could be established, notices and orders not be filed with the Board of Mine Operations Appeals for the assessment of civil penalties under the act. This instruction continued in effect until November 1970.

On November 4, 1970, the Deputy Director, Health and Safety, advised the district managers that the Department would begin immediately to institute proceedings for assessment of civil penalties under the act for orders of withdrawal and that procedures for assessment of penalties would be announced soon.

On November 11, 1970, the court's restraining order was dissolved. On the basis of this action, the Bureau headquarters issued the following instructions to its district managers.

- "1. Safety inspections are to be made only under the statutory provisions of the Federal Coal Mine Health and Safety Act of 1969, and notices of violation are to be issued for each violation of the statutory provisions.
- "2. Informational notices or warnings shall no longer be issued.
- "3. Where the violation exists because of lack of technology, or the unavailability of equipment, personnel, or material at the time of the inspection, the notice shall

contain a determination that the operator was not at fault. The basis for this determination shall be documented on the notice.

- "4. The notice of penalty form is not to be used. No schedule of penalty is presently in effect, and you are authorized to inform the operator orally that his liability for a penalty will be determined when the Department announces its policy for assessment of penalties.
- "5. The policy for issuance of closure orders remains unchanged.
- "6. Upon issuance of new regulations and the establishment of an assessment policy, further instructions will be issued."

On November 18, 1970, the Department published in the Federal Register an amendment to its enforcement regulations, deleting the penalty schedule. On November 19, 1970, a Bureau headquarters official advised the district offices that, during inspections subsequent to November 11, 1970, notices of violations should be issued when it was found that a violation still existed that had been cited previously on an informational notice. Additionally, the instructions provided that, if the specified time for abating a violation was extended, the particular reasons for the extension should be specified.

On January 16, 1971, the Department published in the Federal Register amended procedures for assessing civil penalties. The regulations which set forth the guidelines for assessment of penalties included a schedule showing a range of dollar amounts of various types of penalties. (See p. 53.)

RECURRING VIOLATIONS

In August 1970 the Assistant Secretary, Mineral Resources, informed the Subcommittee on Labor, Senate Committee on Labor and Public Welfare, of the progress being made to implement the Federal Coal Mine Health and Safety Act of 1969. The Assistant Secretary stated that:

"The Bureau has cited more than 13,000 violations of the safety standards in the law and has required, or is requiring, all of these violations to be abated in a reasonable time, but it has been necessary for the Bureau to issue withdrawal orders in only 179 mines - 120 for imminent danger and 59 for failure to abate a violation in a reasonable time. Generally, the conditions cited in these orders have subsequently been abated rather quickly after the orders were issued to permit the mines to reopen."

Although the unsafe conditions noted by the Bureau inspectors might have been quickly abated, our analysis of subsequent inspection reports indicated that, when the Federal inspectors returned to mines previously inspected, they often had found many violations of health and safety standards, including violations of the same standards previously cited. To achieve the objectives of the health and safety standards, the Bureau should require mine operators to take the necessary actions to ensure compliance with such standards on a day-to-day basis.

To determine the extent of implementation of the safety standards of the act, we examined 438 inspection reports for 16 mines in each district which the Bureau had classified as hazardous. We found that violations had been cited on 366 of these inspections. More importantly, 261 of the inspections found violations which had been cited at least once on a prior inspection. Although action apparently had been taken to correct the original deficiency, action was not taken to preclude its recurrence. In some cases the violations were reported time and again.

For example, of the 16 hazardous mines in the Norton district for which we reviewed inspection reports, 12 had

repeated violations involving excessive accumulations of combustible materials and inadequate rock dusting, which are especially dangerous conditions in mines. The operator of one mine was cited for excessive accumulations of combustible materials in nine of 20 inspections.

In the Mount Hope district, we found that violations for excessive accumulation of combustible material and inadequate rock dusting were cited repeatedly in 15 of the 16 mines. The operator of one mine was cited for excessive accumulations of combustible materials on 13 of 15 inspections, including eight consecutive weekly inspections. Of 963 violations cited at the 32 mines, nearly 560, or over half, were repeat violations. About 230 of the violations involved excessive accumulations of combustible materials or inadequate rock dusting.

At the Mount Hope district, our test of 16 hazardous mines showed that, from July 14 through November 23, 1970, only 17 withdrawal orders for imminent danger had been issued closing single sections of mines for from 1 to 16 days; an average closing was for about 3 days. In nine of the withdrawal orders, the section was closed 1 day or less. At Norton, from May 28 through November 16, 1970, 10 withdrawal orders were issued closing single sections of mines for from 1 to 3 days. Nine of the withdrawal orders were for periods of 1 day or less.

Our review of the inspection reports on 32 hazardous mines showed that, despite the fact that 58 percent of the violations cited in the reports were repeat violations, the Mount Hope district had issued no notices for unwarrantable failure to comply with the act and no withdrawal orders on that basis and that the Norton district had issued 11 such notices and three withdrawal orders.

The Assistant District Manager of the Mount Hope district told us that the reason for not issuing notices and withdrawal orders was to give mine operators time to become familiar with the act. He stated that, had the provision of the act relating to unwarrantable failure by operators to comply with the act been enforced from the beginning, very few mines could have remained open. He agreed, however, that enforcement of this provision would increase the effectiveness of the act.

We believe that it would have been especially appropriate for the Bureau to have made greater use of the authority to close mines for unwarrantable failure to comply with the act during the period that the Secretary was restrained from assessing penalties on the basis of a penalty schedule.

AMENDMENT TO PENALTY SCHEDULE IN MAY 1970

Despite the court order on April 30, 1970, specifically restraining the Department from assessing penalties and from accepting payments in accordance with the penalty schedule of payments set forth in its regulations, the Department on May 7, 1970, amended its penalty schedule by reducing the penalties for initial violations occurring between March 30, 1970, and September 30, 1970. The Department accepted payments made voluntarily by mine operators, which were based on either the March 28, 1970, or the May 7, 1970, penalty schedule.

The amounts of payments for initial violations were reduced to one twenty-fifth of the former amounts, as shown below.

<u>Nature of violation</u>	<u>Amounts of penalties</u>	
	<u>March 28, 1970, Federal Register</u>	<u>May 7, 1970, Federal Register</u>
Violation or violations resulting in imminent danger	\$500	\$20
Violations caused by unwarrantable failure to comply with the act	100	4
All other violations	25	1

Under the amended penalty schedule, serious violations of the act relating to such matters as deficiencies in roof support, excessive accumulation of coal dust, and electrical and ventilation deficiencies would result in penalties to the operators of only \$1 for each violation, provided that the inspector did not determine that such violations had caused an imminent danger to the miners or that the violations had been caused by unwarrantable failures to comply with the act, in which case the penalty would be \$20 or \$4, respectively.

We do not believe that such token penalties for violations of the act where unavailability of equipment or

personnel was not a problem in abatement reasonably could have been expected to induce mine operators to comply with the act.

We discussed this amendment with Department and Bureau officials; however, they could not explain the reason for its issuance in view of the court's order against the use of a penalty schedule for assessing and collecting penalties. After the penalty schedule was revised, 13 companies paid a total of \$519 for 519 violations issued from April 8, 1970, through November 5, 1970. On the other hand, 64 companies, apparently using the March 28, 1970, schedule, paid a total of \$16,875 for 656 violations issued between March 30, 1970, and June 25, 1970.

Although the Secretary was restrained from assessing and collecting penalties under the March 28, 1970, penalty schedule, the Bureau accepted payments made voluntarily by the mine operators on the basis of violations cited.

The confusion and inequity resulting from the amended penalty schedule can be seen from the facts that some mine operators made payments based on the more lenient amended schedule and others made payments based on the original schedule.

For example, one operator submitted a check for \$35 at the end of September 1970 for 35 violations cited from April 8, 1970, to April 22, 1970, apparently using the amended schedule. In another instance an operator, apparently using the original penalty schedule, submitted a check for \$775 in payment of 31 violations cited from April 13, 1970, to April 28, 1970. In still another instance an operator made payment in the amount of \$125 for five violations cited on June 25, 1970, apparently using the original penalty schedule, even though the revised schedule had been published on May 7, 1970.

SUSPENSION OF ASSESSMENT OF FINES

During the period April 30, 1970, to November 11, 1970, the Department was restrained from assessing and collecting penalties by use of a penalty schedule. Nothing in the restraining order, however, precluded assessment of

penalties by the Board of Mine Operations Appeals of the Department of the Interior. We were advised by Department officials that, during the period April 30, 1970, to November 11, 1970, no penalties had been assessed by the Board, even though thousands of violations had been cited by the Bureau inspectors during this period.

On November 18, 1970, the Department revised its regulations to delete the penalty schedule. The amended regulations provided that the assessment of penalties be initiated upon the Bureau's filing with the Board a copy of the notice of violation or an order of withdrawal. The Board is required to give notice of the filing to the mine operator, and the mine operator is required to file an answer, setting forth his position, within 20 days after the date of service of such notice.

The regulations provide that, in determining the amount of penalty to be assessed against an operator, the Board consider the operator's history of previous violations, the appropriateness of such penalty to the size of the business of the operator charged, whether the operator has been negligent, the effect on the operator's ability to continue in business, the gravity of the violation, and the demonstrated good faith of the operator charged in attempting to achieve rapid compliance after notification of a violation. The Board is authorized to conduct hearings in making its determination of the penalty to be assessed against an operator.

We were advised by Department attorneys that, late in calendar year 1970, the Bureau had initiated approximately 60 proceedings to assess penalties against mine operators under the above procedures. Hearings reportedly were conducted in only one of these cases. The Department attorneys stated that these proceedings proved very time-consuming and, at times, required the presence of Bureau inspectors, which interfered with and reduced the time that they were available for inspecting mines. They further stated that, if an operator exhausted all appeals of the Board's decision available to him, as much as 5 years might be required to resolve one case.

The Board issued an order on February 1, 1971, to suspend the approximately 60 penalty assessment proceedings

pending before it, to permit the Bureau's Assessment Officer to determine the liability of the operators for civil penalties and the amounts of penalties to be proposed in accordance with regulations promulgated by the Secretary on January 16, 1971. Even though the Department had been considering the revision of its procedures for assessing penalties before the district court dissolved its restraining order on November 11, 1970, over 2 months had passed before the revised regulations were published.

CURRENT ASSESSMENT PROCEDURES

The Department's amendments to the procedures for assessment of penalties were published in the Federal Register on January 16, 1971. These procedures provide, in part, that:

"Each Notice of Violation and Order of Withdrawal issued on or after March 30, 1970, will be reviewed by an Assessment Officer who is appointed by and responsible to the Director, Bureau of Mines, to determine the liability of operator or miner for a civil penalty and the amount of penalty to be proposed."

* * * * *

"Each proposed assessment shall be made after taking into consideration (1) the operator's history of previous violations, (2) the appropriateness of the penalty to the size of the operator's business, (3) whether the operator was negligent, (4) the effect on the operator's ability to continue in business, (5) the gravity of the violation, and (6) the demonstrated good faith of the operator in attempting to achieve rapid compliance after notification of violation."

* * * * *

"The amount of the civil penalty proposed shall be within guidelines established by the Secretary *** and revised periodically in the light of experience gained under the Act, except

that a particular violation may warrant proposing a civil penalty in an amount more than or less than the range set forth in the guidelines."

The Assessment Officer is assessing proposed penalties for all violations and withdrawal orders which have been cited since May 1, 1970, for which no payment has been received. As of February 19, 1971, the Bureau had mailed 584 proposed orders of assessment, totaling over \$1 million, for 9,465 violations to mine operators in three States.

The Assessment Officer has established his own schedule for assessing these penalties. The amounts in the Assessment Officer's schedule are generally less than those in the guideline for assessment of penalties set forth in the Department's regulations which became effective January 16, 1971, but they are more than those in the Department's March 28, 1970, regulations.

The penalty schedule used by the Assessment Officer gives little or no consideration to most of the six factors which are set forth in the regulations quoted above as well as in the act. For example, the amounts of penalties in his schedule do not take into consideration the effect that such penalties will have on the operator's ability to continue in business, the demonstrated good faith of the operator to achieve rapid compliance, whether the operator has been negligent, or the operator's history of previous violations.

With regard to the operator's history of previous violations, we have been advised by the Assessment Officer that this factor is not being considered now because the period March 30, 1970, to April 1, 1971, is being considered as an educational period for the operators to become familiar with all the provisions of the act. The history of an operator will be considered on the basis of his compliance after the initial assessment for violations committed after April 1, 1971--1 year after the safety standards became effective under the act.

The Assessment Officer stated that assessment of penalties was not being proposed for violations issued between March 30 and April 30, 1970, because these violations cited the regulations issued in the Federal Register of March 28, 1970, which the April 30, 1970, court order restrained the

Department from enforcing. This restraining order, however, subsequently was dissolved. We see no valid reason for distinguishing between violations cited prior to the restraining order and those cited afterward, except for those violations cited prior to the restraining order which could not have been avoided because of the unavailability of equipment, material, personnel, or technology.

CONCLUSIONS

We believe 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 ensure full compliance with the act. In this regard we believe that the Bureau should assess sufficiently large penalties to provide this inducement and should exercise greater use of its authority to issue withdrawal orders against mine operators who repeatedly fail to comply with the act. We believe that mine operators have had sufficient time to become familiar with all the requirements of the act and that the operators' history of previous violations should be considered in establishing the amounts of the penalties.

We believe that, contrary to past practices, the Department should apply its enforcement policy uniformly and equitably to all mine operators who do not comply with the act.

RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

We recommend that the Secretary of the Interior require the Director of the Bureau of Mines to:

- Consider, in establishing the amounts of penalties, the factors required by the act, such as the operators' history of previous violations.
- Exercise greater use of the authority to close mines when operators repeatedly violate the act.

- - - -

The Department of the Interior has stated that plans have been formulated or actions have been initiated that are responsive to the recommendations set forth above. (See app. II.)

CHAPTER 4

NONCOMPLIANCE WITH LAW DUE TO SHORTAGES OF EQUIPMENT

Shortages of certain types of equipment have been cited as a major cause of noncompliance with various health and safety requirements of the act. As previously discussed, the April 1970 injunction against the implementation of the Department's safety regulations was granted partly because some of the equipment and technology necessary to implement the act were not available.

Bureau headquarters notified the district offices on April 24, May 1, and May 22, 1970, of the procedures to be followed when violations existed because equipment was not available. Bureau headquarters stated that, when such conditions were found, the operator was to be informed of the condition in writing but that notices of violation and penalty were not to be issued. The two districts that we visited implemented such procedures, but the determination of whether necessary equipment was available was left to the judgment of the inspectors.

Certain equipment shortages, although less of a problem now than when the act was passed, continued to preclude operators from complying with certain requirements. We found that some of these problems might be solved if the Bureau required operators to substitute equipment which was readily available for equipment which was not readily available. We found also that the Bureau apparently had contributed to the earlier equipment shortage by overbuying respirable-dust-sampling equipment and thus unnecessarily had reduced the quantities of such equipment available for purchase by mine operators.

AVAILABILITY OF EQUIPMENT

We were informed by district officials at the two districts visited that numerous items of equipment necessary to comply with the requirements of the act were in short supply. They also informed us that some necessary equipment, such as automatic brakes, had not yet been developed.

On June 22, 1970, the Norton district prepared a listing of 23 equipment items which were either unavailable or in short supply; this shortage precluded full enforcement of various requirements of the act. The listing included items of equipment, such as personal sampling devices for respirable dust, methane monitors, automatic circuit breakers, flame-resistant trailing cables, fire protection devices (deluge water sprays and foam generators), automatic brakes or speed reduction gears, and self-rescuers (1-hour type).

At the two districts that we visited, we reviewed a total of 63 reports of regular inspections made in September 1970 to determine what types of required equipment were not available.

We found that 46 of the 63 reports contained violations of various provisions of the act which were attributed to the unavailability or short supply of equipment. These 46 reports indicated that there was a total of 168 violations involving 19 different items of equipment. The types of equipment cited most often as being in short supply were (1) respirable-dust-sampling equipment--cited in 33 reports, (2) self-rescuers--cited in 30 reports, (3) automatic circuit breakers--cited in 19 reports, and (4) sanitary toilet facilities--cited in 16 reports.

On October 1, 1970, the Assistant Director for Coal Mine Health and Safety advised the district managers that there had been considerable inconsistency in the way that inspectors determined whether necessary equipment was available. He stated that:

"*** Effective immediately, concrete evidence of unavailability of equipment, such as purchase orders or requisitions, must be shown by the operator as proof of unavailability. Further, evidence must be shown that an effort has been made to purchase such equipment from more than one supplier, if more than one supplier exists."

In November 1970 the Bureau revised its policy regarding the issuance of notices of violations that were

attributable to equipment shortages. Rather than issue informational-type violation notices in these situations, the inspectors were instructed to issue regular violation notices. These notices gave the operator a specified amount of time to obtain the equipment. If such violations were not abated within the time specified and if no extension was granted, the inspectors were required to issue a withdrawal order.

A December 15, 1970, memorandum from Bureau headquarters instructed district personnel that, on the basis of a survey of the availability of ground-check monitors (electrical equipment) needed for compliance with the act, it appeared that production of such equipment would not be expedited without assurance of firm orders.

The memorandum then directed that no additional extensions of time would be granted for compliance with the applicable sections of the act requiring ground-check monitors and that notices of violation were to be issued, with a determination of no fault due to unavailability, when it was determined during an inspection that such equipment was not in use. A notice issued for a violation where there is a determination of no fault due to unavailability of equipment does not subject the operator to having a penalty assessed against him for such violation.

A copy of the survey that had been performed of the availability of ground-check monitors was enclosed with the Bureau headquarters December 15, 1970, memorandum to the district offices. Although the survey showed the approximate quantities that suppliers had indicated would be available in December 1970 and March 1971, the memorandum did not specify, as a guide to the inspectors, the approximate time required to obtain this equipment.

We were advised by Bureau headquarters officials that no overall studies had been made regarding the availability of all types of equipment required for compliance with the act and the normal lead time required for obtaining equipment in short supply. We were advised that the establishment of a reasonable time to abate a particular violation was the responsibility of the various inspectors because of their personal knowledge of equipment availability.

INTERCHANGEABLE EQUIPMENT

To determine whether shortages in the supply of equipment were valid bases for noncompliance with some requirements of the act, we contacted several suppliers and discussed the availability of equipment.

We were informed by one supplier that a particular brand of circuit breakers was in short supply and that the outlook for an increased supply in the near future was not good. The supplier stated that he had been unsuccessful in having the supply increased by contacting the manufacturer. This supplier had several unfilled orders which he had received from mine operators as early as April 1970. Delivery dates to these operators for the circuit breakers had been extended several times, and, at the time of our contact, the expected delivery date was April 2, 1971.

We also contacted a supplier of another brand of circuit breakers and found that these items were available with little or no lead time. We discussed with the supplier of the brand of circuit breakers which was available and with the head of the electrical group at the Mount Hope district the possibility of interchanging the two brands of circuit breakers.

We were informed that the two brands of circuit breakers usually could be interchanged with only minor modifications that were necessary because of differences in sizes and shapes. We were informed also that, when one brand (the brand which was available) was used, it must be enclosed in a molded casing to meet Bureau standards, whereas the other brand was manufactured in accordance with the standards. The district official estimated the cost of such a modification at about \$60. The purchase prices for the most commonly used models of the brand which is in short supply range from about \$170 to \$250, and comparable models of the available brand range from about \$150 to \$200.

Mount Hope district officials informed us that no decision had been made as to whether, as a general policy, they should require operators to substitute one brand or type of available equipment for a brand or type that was not available. The Mount Hope district manager agreed that the

possibility of substituting other items of available equipment should be examined. We were also informed that the Bureau might establish a policy regarding this matter in the near future.

Although our limited inquiry into this matter identified only one type of circuit breaker that may be modified to help alleviate the shortage of these items, we believe that the Bureau should undertake a study to determine whether there are similar situations with regard to other types of equipment now in short supply.

DUST-SAMPLING EQUIPMENT

In our opinion, the Bureau was at least partially responsible for creating a shortage of respirable-dust-sampling equipment.

We were informed by officials in both the Mount Hope and the Norton districts that shortages of dust-sampling equipment had caused many operators to be in violation of the provision of the act which required mine operators to establish dust-sampling programs in all mines. During our review of 63 reports on inspections made in September 1970, we found that 33 informational-type violation notices had been issued to the operators for failure to have dust-sampling programs. As mentioned previously, informational-type notices were issued when equipment necessary to comply with a particular requirement of the act was not available.

A Mount Hope District Office official advised us that mine operators needed about two personal dust samplers for each working section of the mine to carry out their dust-sampling programs. He stated that the total number required ranged from about two samplers for small mines to 24 samplers for large mines.

The Bureau ordered about 2,950 personal dust-sampling units and 150,000 filter cassettes in April and June 1970, and delivery of all items was to be made by July 15, 1970. We were advised that the number of units ordered had been based on the projected needs for 136 inspectors whom the Bureau estimated would be assigned to conducting health inspections by December 1970.

Bureau records showed that about 2,900 of the personal dust samplers and 5,300 of the filter cassettes had been received by July 15, 1970. Bureau records showed also that, between July 15 and September 30, 43 additional personal dust samplers and about 37,000 additional filter cassettes had been received.

The two districts that we visited received the following quantities of personal dust samplers and filter cassettes by the dates shown below.

<u>Dates</u>	<u>Number received</u>			
	<u>Mount Hope</u>		<u>Norton</u>	
	<u>Samplers</u>	<u>Cassettes</u>	<u>Samplers</u>	<u>Cassettes</u>
July 15, 1970	980	500	1,107	500
Sept. 30, 1970	980	9,200	1,107	9,150

We contacted the only two manufacturers which had obtained Bureau approval of their dust-sampling equipment, to determine what portion of their total production was used to fill the orders of the Bureau.

One company informed us that about 33 percent of all shipments of personal samplers and 24 percent of all shipments of filter cassettes during the period April through November 1970 had been made to the Bureau.

The company's records showed that the company had a sizeable backlog of orders from mine operators for personal dust samplers from April through July 1970 and for filter cassettes from May through December 1970.

Although detailed records of production and shipment of dust-sampling equipment were not available from the other manufacturer that we contacted, company officials advised us that shipments of personal dust samplers to the Bureau in June and July 1970 had accounted for about 80 percent of the company's production. Company officials advised us also that 80 percent of its production of filter cassettes in June 1970 had been shipped to the Bureau and that a substantial portion of its production had continued to be shipped to the Bureau until October 1970.

At the time of our review, we found that the utilization of the personal dust samplers and filter cassettes in the Norton Subdistrict Office was quite low.

For example, only 72 (or about 9 percent) of 833 personal samplers received for use by the Norton Subdistrict Office had been used for taking dust samples as of November 30, 1970. Over 380 of the units had not been calibrated and were not ready for use. Because only seven health inspections had been made by the subdistrict, the units had not been needed.

We also noted that, as of November 30, 1970, the sub-district had used only 207 of about 10,500 filter cassettes that it had received to collect dust samples.

We did not determine the actual utilization of dust-sampling equipment by the Mount Hope district; however, it appeared that the usage would be only slightly higher since the Mount Hope Subdistrict Office had made 14 more health inspections than the Norton Subdistrict Office.

The Bureau apparently had been aware of the possible shortages of the equipment and the effect of its orders on the availability of the equipment before the requirement to begin sampling became effective on June 30, 1970.

On May 21, 1970, a memorandum from the Assistant Director, Coal Mine Health and Safety, to the Chief of Procurement and Property Management stated that it was doubtful that one of the companies could fill the contract by the required deadline. The memorandum stated also that a review of Bureau requirements had indicated that the specified contract deadline remained realistic.

On July 10, 1970, the Assistant Director again sent a memorandum to the Chief of Procurement, which stated that, if the Bureau kept the suppliers to their original contractual obligation for delivery of filter cassettes, the industry would be without any filters for as long as 2 months. At that time the Bureau had received only a small portion of the total quantities of filter cassettes ordered under the contracts.

On July 13, 1970, an official of the Bureau's Division of Procurement and Property Management contacted the suppliers and arranged for revision to the delivery schedules for these items, to permit increased deliveries to the coal mining industry. Deliveries to the Bureau were stretched out to the end of September 1970. The suppliers did not meet the September delivery dates, however, and on October 16, 1970, the Assistant Director, Coal Mine Health and Safety, contacted the suppliers and agreed to further stretch out delivery schedules.

CONCLUSIONS

In our opinion, the Bureau may have permitted unnecessarily prolonged noncompliance with certain provisions of the act by allowing mine operators to order a particular brand of equipment and by granting time extensions for compliance even though that brand may have been in short supply while a comparable substitute brand may have been readily available.

We believe that the Bureau purchased more dust-sampling equipment than it needed at the time and, in doing so, contributed to the problem of an overall shortage of the equipment and might have precluded many mine operators from establishing a dust-sampling program within the time required by the act.

The Bureau headquarters has not provided inspectors with guidance as to (1) the specific types of equipment that are, in fact, in short supply and (2) a reasonable estimate of the lead time necessary to obtain such equipment. Without such information there is no assurance that uniform determinations are being made by the Bureau inspectors regarding the unavailability of equipment or the time necessary to obtain equipment not readily available.

RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

We recommend that the Secretary of the Interior require the Director of the Bureau of Mines to:

- Undertake, on a continuing basis, a study of the nationwide availability of all types of equipment necessary for compliance with the health and safety provisions of the act. The information obtained, including the amount of lead time required to obtain delivery, should be furnished to coal mine inspectors to aid them in making more uniform determinations as to how much time an operator should be allowed to obtain equipment necessary to abate notices of violations issued for noncompliance with provisions of the act.

- Determine, in conjunction with the above study, the feasibility of substituting one brand of available equipment for another brand which is in short supply and, in those cases where it is feasible, to require mine operators to make such substitutions.

- Give more careful consideration in the future to the impact that the Bureau's buying practices have on the supply of equipment available to mine operators, especially when the adequacy of the total supply appears questionable and when the Bureau and the mine operators are in direct competition for new and improved testing devices.

- - - -

The Department of the Interior has stated that plans have been formulated or actions have been initiated that are responsive to the recommendations set forth above.
(See app. II.)

CHAPTER 5

RECRUITMENT AND TRAINING OF COAL MINE INSPECTORS

RECRUITMENT OF COAL MINE INSPECTORS

When the Federal Coal Mine Health and Safety Act of 1969 was enacted in December 1969, the Bureau estimated that the full implementation of all the inspection and enforcement provisions of the act would require a staff of 1,046 persons. This staff includes supervisors, inspectors, and engineers; but it does not include support personnel, such as technical specialists, statisticians, and clerks. The Bureau estimated that the goal would be reached sometime in fiscal year 1972. In December 1969 the Bureau's inspection and enforcement staff consisted of 318 persons, including 57 who were in training. By March 6, 1971, the Bureau had increased the staff to 618, many of whom were in various stages of training.

Beginning in July 1969, in anticipation of enactment of the act, the Bureau and the Civil Service Commission took steps to speed up the recruitment of coal mine inspectors. After the law became effective, the Bureau continued to speed up the employment of coal mine inspectors. In October 1969 the Bureau requested the Civil Service Commission to lower the passing grade for the coal mine inspector examination. In November 1969 the Commission approved the request by lowering the passing grade from 124 to 105. In December 1969 the Bureau also revised its experience requirement by permitting substitution of education for experience. The substitution of education for mining experience is authorized by the 1969 act.

In February and March 1970, the Bureau held a series of examinations in over 40 mining communities. A second series of examinations was given in September and October 1970. By December 1970 these examinations had resulted in hiring 142 new inspectors. In addition, 201 eligible candidates were in the process of being hired.

Because existing recruitment practices were not obtaining the required manpower soon enough, on November 1, 1970,

the Bureau dropped the requirement for written tests for coal mine inspectors.

On the basis of our limited review of the recruitment efforts of the Bureau, it appears that continuing improvements are being made.

TRAINING OF COAL MINE INSPECTORS

In addition to taking steps to recruit increased numbers of coal mine inspectors, the Bureau revised its training practices to shorten the time required to train a coal mine inspector.

Prior to enactment of the act, the training program for coal mine inspectors consisted of 2 days a week of classroom training and 3 days a week of on-the-job training with an experienced coal mine inspector. After about 6 months the trainee-inspector was assigned on a full-time basis to an experienced inspector until he was qualified to conduct inspections on his own. We were informed that it usually took about a year from the time that the inspector was hired until he took full responsibility for making inspections.

After the passage of the 1969 act, the Bureau reduced the time required to train inspectors to meet its needs for additional inspectors more rapidly. The training period was reduced to 10 weeks of classroom training and about 3 months of on-the-job training with an experienced inspector, or a total training period of about 6 months.

We have no suggestions for the improvement of the Bureau's training program for coal mine inspectors at this time.

CHAPTER 6

OTHER MATTERS PERTAINING TO COAL MINE SAFETY

NEED FOR MORE INDEPENDENCE IN ACCIDENT INVESTIGATIONS

The act authorizes the Secretary of the Interior to investigate mine accidents and any other occurrences relating to health or safety in a coal mine. In the event of the occurrence of any accident, as defined by the Department in its regulations (30 CFR 80), mine operators are required to immediately notify the Bureau's district or subdistrict office which has jurisdiction over the area in which the coal mine is located. These regulations provide that, following notification of an accident, the district or subdistrict manager determine whether an investigation of the accident should be conducted.

We were advised by a Bureau official that, as a general practice, the Bureau investigated all accidents involving (1) a fatal injury or any other death occurring on mine property, (2) a serious nonfatal injury that could result in the death of the injured person, (3) a mine fire not extinguished within 30 minutes, (4) a mine explosion, (5) an ignition of gas or dust or combination thereof, (6) a mine inundation, (7) a coal outburst (violent burst of coal from ribs or face of mine) of sufficient intensity that it appeared likely that, had any persons been in the immediate area, death or injury could have occurred, and (8) the entrapment of any person.

The accident investigations usually are made by the inspector who inspected the mine prior to the accident, another coal mine inspector specializing in the area that caused the accident (e.g., roof control, electrical equipment, or explosives), representatives of the coal mine operator, and mine workers' union representatives if the accident took place in a union mine.

We believe that the independence of the groups investigating the accidents may be compromised by the possibility of a conflict of interest. For example, a

conflict of interest may arise if the inspector who last inspected the mine discovered that the accident was due to a violation of a safety standard that he should have found and reported during his previous inspection. This could be especially true if an accident occurred within a short time (1 or 2 days) after the last inspection.

Similarly, the specialists on the teams investigating accidents are frequently representatives from district office groups, such as those which have approved roof control or ventilation plans for the mine at which the accident occurred. It might be difficult for such specialists to reach completely objective and independent conclusions as to whether the plans, which they or other members of their group had approved, contained shortcomings which had contributed to the accidents under investigation.

Although we found no indications of impropriety in connection with any of the investigations that we reviewed, the fact that an inspector or other investigator may be put in a position of having to evaluate his own performance, especially where fatalities have occurred, raises questions as to the independence of his judgment in such situations.

The Bureau apparently became concerned with the quality of its investigations, and on October 8, 1970, a Washington headquarters official issued a memorandum to the district managers emphasizing the need for "more inquisitive and thorough *** accident investigations." He also prescribed a procedure--which the district managers were urged to follow--for selecting the accident investigation team and conducting the investigation.

The procedure recommended by the Bureau provides that each Bureau accident investigation team include:

1. A permanent member with interest and abilities in accident investigation work.
2. The coal mine inspector who last examined the mine or the coal mine inspector supervisor of the area in which the accident occurred.

3. A person with specialized knowledge concerning the type of accident investigated; i.e., roof control, electricity, etc.

The use of this procedure still would not seem to provide the desired degree of independence and objectivity in investigating the causes of accidents because members of the team making the investigation could find themselves in the position of reporting on matters which reflected adversely on activities or operations which had been carried out within the responsibility of their supervisor or which had been carried out directly by the members themselves. Therefore this approach would not necessarily ensure that responsibility for the accident was fixed properly or that the type of corrective action needed to prevent future similar accidents was identified properly.

NEED FOR MORE GUIDANCE FOR INSPECTORS

We believe that the Bureau has not provided Bureau inspectors with adequate guidance concerning the criteria and methods used to determine whether mine operators comply with the health and safety standards set forth in the act and in the Department's regulations. We believe that the need for more definitive guidelines concerning the criteria and methods used in inspections is especially acute at this time because the Bureau is in the process of quadrupling the inspection force that it had when the act was approved.

The Federal Coal Mine Health and Safety Act of 1969 is very comprehensive and complex, and we believe that, if the provisions of the act are to be administered uniformly, the Bureau's inspectors need to have a comprehensive, up-to-date manual.

The only manual available to the inspectors was prepared to implement the provisions of the 1952 act. We recognize that new inspectors receive classroom, as well as on-the-job, training. Nevertheless, in view of the complexities of inspection activities, we believe that written guidelines would provide greater assurance that inspection activities were being administered uniformly.

We noted that Bureau headquarters occasionally had issued some instructions relating to inspection and enforcement activities. These instructions, which were very limited, were furnished to district managers who were responsible for disseminating the information to the inspectors.

The need for definitive guidelines concerning inspection activities to be conducted under the act has long been recognized. A memorandum of an October 23, 1969, meeting of Bureau officials, including the Director of the Bureau, indicated that top priority was to be given to the preparation of a manual. In a letter dated April 23, 1970, from the Acting Secretary of the Interior to the Deputy Assistant to the President for Domestic Affairs, the Acting Secretary stated that:

"A new manual for inspectors which will include the changes brought about by the new Act is

almost complete. It will provide complete guidance for the conduct in the field of inspection and enforcement operations and assure uniformity of application in the various districts and sub-districts of the United States. We expect to distribute this manual within 90 days."

We recently were advised by Bureau officials that the revision was about 85-percent complete but would not be completed before May 1971. Moreover, drafting of the manual was suspended pending the adoption of changes in certain inspection reporting forms and the development of mandatory surface-mining regulations. Although the portion of the manual dealing with inspection of underground coal mines is substantially complete, the Bureau prefers to issue the manual as a complete guide for both surface and underground inspections. We noted, however, that most fatalities occurred in underground mines.

We noted instances in which inspectors were responsible for making decisions but were provided with little or no criteria for doing so. For example, if an inspector finds a condition in a mine which, in his opinion, results in imminent danger to persons working in the mine, he is required to issue an order requiring the mine operator to withdraw all workers from the section of the mine where the danger exists or, in some cases, from the entire mine, until it is determined by the inspector that the danger no longer exists.

The act defines imminent danger as the existence of any condition or practice in a coal mine which reasonably can be expected to cause death or serious physical harm before such condition or practice can be abated. The decision as to whether an imminent danger exists is made principally on the basis of the judgment of the inspector.

Principal written instructions relating to imminent danger consist of a listing in the existing manual of 28 examples of conditions and practices for which withdrawal orders may be issued. The manual, however, provides no guidance in determining when each example is or is not an imminent danger.

On January 8, 1971, Bureau headquarters issued instructions to its district managers, which stated that inspectors

should issue withdrawal orders when underground areas of coal mines were found to be inadequately rock dusted (an incombustible material applied to raise the incombustible content of coal dust in the mine). During our review we found numerous instances in which violations had been cited for these conditions prior to the issuance of the instructions and in which no orders of withdrawal had been issued.

We recognize that situations will vary from mine to mine. Nevertheless, if the Bureau is to achieve reasonable uniformity in the application of such provisions as imminent-danger determinations, we believe that it is incumbent upon Bureau headquarters to provide more specific criteria which its inspectors can use to make these determinations.

We noted statements by Bureau officials concerning the lack of uniform administration of inspection activities. For example, in May 1970 one district manager pointed out to his staff that the instructions received from Bureau headquarters, as well as those given at a recent district staff meeting, might have been confusing and were inadequate and that the inspectors were not uniformly carrying out their work. To ensure that each inspector understood the actions which he should take, the district manager issued certain specific instructions to each inspector. Although the district manager might have clarified the specific procedures in question, we believe that a more systematic means of providing instructions governing the entire inspection process should be developed.

COAL MINE RESEARCH

The Bureau's research effort is implemented through contracts, grants, and Bureau field research installations. Bureau officials concluded that the added responsibilities placed on the Bureau by the act could not be accomplished in its facilities alone and that the Bureau should contract for as much research as possible to fulfill the new responsibilities.

There was a minimum of available data on the Bureau's research planning for fiscal year 1970. We were advised that the selection of research projects to be funded had been made as a result of meetings and other contacts among responsible Bureau officials.

We were told that there was little documentation on the specific planning of the health and safety research program for fiscal year 1970. The first identifiable planning action for the expansion of the research program was a meeting in the summer of 1969, attended by the Bureau Director; the Deputy Director, Health and Safety; the Assistant Director, Coal Mine Health and Safety; the Acting Assistant Director, Mining, Mineral Resources, and Environmental Development; and other Bureau officials concerned with research. The general areas of needed research to improve coal mine health and safety reportedly were discussed.

In fiscal year 1970 the Bureau received, in conjunction with the passage of the act, a supplemental appropriation of \$12 million, of which \$7.5 million was designated by the Bureau for health and safety research.

As of June 30, 1970, the Bureau had committed about \$6.2 million of these funds to award 21 contracts for research projects in such areas as rescue and survival, underground support structures, mine rescue communications, and measurement of respirable-coal-dust concentration in mine atmospheres. Of the awarded contracts, 18--which accounted for \$1.2 million of the expenditures--resulted from unsolicited proposals. The largest contract was a \$3.4 million award to a private company for the development of a coal mine rescue and survival system.

Fiscal year 1971 research planning appears to have been more systematic than the research planning for the prior year. The responsibility for making specific recommendations for fiscal year 1971 research was given to task groups for functional areas, such as methane control, respirable dust control, and rescue and survival systems. Research ideas have come from universities and private industry in the form of unsolicited research contracts or grant proposals, from the Bureau's day-to-day contacts with industry organizations, and from the Bureau's field research installations.

We believe that the Bureau is developing a more effective approach to its research planning. Therefore we have no suggestions for improving the planning of the Bureau's research program at this time.

CONCLUSIONS

We believe that a change in the composition of the teams responsible for investigating coal mine accidents and in the organizational level to which these investigators report would be desirable to ensure a greater degree of independence and objectivity in carrying out the investigations.

We believe also that more definitive guidelines concerning the criteria used by inspectors to determine whether mine operators are complying with the Department's health and safety standards will provide greater assurance that such standards are being uniformly applied.

RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

We recommend that the Secretary of the Interior require the Director of the Bureau of Mines to:

- Consider establishing a policy requiring that accident investigation teams be made responsible to an organizational level above the district offices.
- Consider establishing a requirement that accident investigation teams be composed of inspectors and other specialists who have not made recent inspections of

the mine at which the accident occurred, who have not approved such things as roof control or ventilation plans which may have had a bearing on the cause of the accident being investigated, and who are not employed in the district having jurisdiction over the mine where the accident occurred.

--Expedite the issuance of definitive guidelines setting forth the criteria to be used by mine inspectors in determining whether mine operators are complying with prescribed health and safety standards.

- - - -

The Department of the Interior has stated that plans have been formulated or actions have been initiated that are responsive to the recommendations set forth above. (See app. II.)

CHAPTER 7

EFFECT OF THE ACT ON THE SUPPLY OF COAL

During the hearings preceding the act and after its enactment, considerable interest was expressed by coal mine operators and some members of Congress in the possible effects that the act could have on the supply of coal.

During our review we could not determine with any certainty whether the act had any appreciable effect on coal production in 1970. Coal production in the United States had been rising during the 4 years immediately preceding the passage of the act and continued to increase in 1970, as shown in the following table.

<u>Year</u>	<u>Tons produced</u>
1966	533,881,000
1967	551,000,000
1968	545,245,000
1969	560,505,000
1970	590,000,000

We discussed with Bureau officials the impact of the act on the supply of coal, and they told us that the act had practically no impact. On the basis of an earlier study made by the Mount Hope district in February 1970, however, the Bureau estimated that a gradual enforcement of the act (what the Bureau described as granting time to the operators to comply) would result in a reduction in coal output of about 8 million tons in the 12 months following the effective date of the act. Moreover, the Bureau estimated that full and immediate compliance with the law would have resulted in a reduction in production of about 50 million tons during the same period. Actually, in 1970 the Nation's coal output increased by 29.5 million tons, the largest single increase since 1964.

The Bureau made some efforts to identify losses in coal production due to the requirements of the act by requiring the district offices to furnish a weekly report on the activities of the coal mine inspection force. This report included such things as the number of violations cited, the

number of mines closed as a result of the act, and the estimated lost coal production.

A Mount Hope district official told us that the district did not have the manpower to develop the information and did not furnish it. The Norton district furnished the information, but it did not appear to be reliable. For example, in estimating the production loss, Norton made no effort to identify how much of the loss which it attributed to enforcement of the 1969 act would have occurred under the earlier 1952 act which also provided authority for closing mines when certain safety hazards were found.

In the absence of reliable data concerning lost production due to the 1969 act, we sought the opinions of knowledgeable persons in the coal mining industry and the mine workers' union.

Union officials told us that, in their opinion, the 1969 act had had no significant impact on the production of coal because the Bureau had not enforced the new act as strictly as it should have.

Officials from Virginia and West Virginia departments of mines also told us that, in their opinion, the new act had not had a significant impact on the Nation's supply of coal. Virginia officials stated, however, that, as the act was more rigidly enforced, some small operators might be forced out of business and that this could have an effect on the future production of coal.

In contrast, coal company officials stated that the act had had a significant impact on the production of coal. They said that cleaning up loose coal and coal dust, as required by the act, was one of the primary causes of lost production time. They also stated that the mere presence of a coal mine inspector had hindered coal production.

CONCLUSIONS

From evidence available to us, we could not determine whether the 1969 act had had any appreciable effect on coal production. Nevertheless, the large increase in coal production which took place in 1970 is an indication that, thus

far, the impact of the act on coal production has not been large. We have no basis upon which to comment on the possible effect on coal production of stricter enforcement of health and safety requirements in the future.

CHAPTER 8

SCOPE OF REVIEW

Our review was directed primarily toward examining into the effectiveness of actions taken by the Department of the Interior and its Bureau of Mines to enforce compliance with the major health and safety standards prescribed in the Federal Coal Mine Health and Safety Act of 1969. The review was conducted primarily at the Bureau's headquarters in Washington, D.C., and at the Bureau's Coal Mine Health and Safety district offices in Mount Hope, West Virginia, and Norton, Virginia.

We reviewed the legislative history of the act and the procedures for implementing the legislation. We also examined pertinent documents, reports, records, and files at the Bureau's headquarters and at the district offices. In addition, we interviewed Department and Bureau officials; coal mine operators; coal mine workers' union officials in West Virginia, Virginia, and Washington, D.C.; and officials of the West Virginia and Virginia departments of mines. We also accompanied coal mine inspectors and observed some of their health and safety inspections in underground coal mines.

APPENDIXES

Blank

RALPH YARBOROUGH, TEX., CHAIRMAN
 JENNINGS RANDOLPH, W. VA.
 HARRISON A. WILLIAMS, JR., N.J.
 CLAIRBORNE PELL, R.I.
 EDWARD M. KENNEDY, MASS.
 GAYLORD NELSON, WIS.
 WALTER F. MONDALE, MINN.
 THOMAS F. EAGLETON, MO.
 ALAN CRANSTON, CALIF.
 HAROLD C. HUGHES, IOWA

ROBERT O. HARRIS, STAFF DIRECTOR
 JOHN S. FORSYTHE, GENERAL COUNSEL

JACOB K. JAVITS, N. Y.
 WINSTON L. PROUTY, VT.
 PETER H. DOMINICK, COLO.
 GEORGE MURPHY, CALIF.
 RICHARD S. SCHWEIKER, PA.
 WILLIAM B. SAXE, OHIO
 RALPH T. SMITH, ILL.

United States Senate

COMMITTEE ON
 LABOR AND PUBLIC WELFARE
 WASHINGTON, D.C. 20510

August 13, 1970

The Honorable Elmer B. Staats
 Comptroller General of the United States
 General Accounting Office
 441 G Street, N. W.
 Washington, D. C.

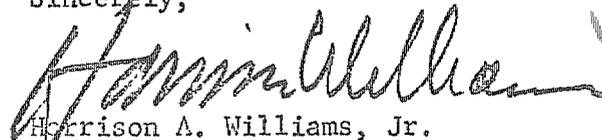
Dear Mr. Staats:

This Subcommittee was instrumental in both the writing and enactment of the "Federal Coal Mine Health and Safety Act of 1969." Since the December 30, 1969 approval of this legislation, the Subcommittee has maintained close contact with the implementation of the health and safety provisions of this Act by the Department of the Interior and it's Bureau of Mines.

A number of serious deficiencies in the Department's program for the implementation of these provisions has come to the attention of the Subcommittee during the course of legislative oversight hearings. For example, serious questions have been raised about the Department's (1) ability to implement effectively the law's inspection requirements, (2) use of substantially increased appropriations, (3) development of effective research and training programs. This enumeration only highlights some of the more serious issues.

It would be most helpful to the Subcommittee if the General Accounting Office would review the Department's actions and plans for implementation of the Act, and furnish the Subcommittee with a report on these activities, including any comments or recommendations you believe are appropriate.

Sincerely,



Harrison A. Williams, Jr.
 - Chairman
 Subcommittee on Labor

HAW/fc



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAR 29 1971

Mr. Joseph P. Rother, Jr.
Assistant Director, Civil Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Rother:

The Department of the Interior has reviewed the draft report entitled "Implementation of the Federal Coal Mine Health and Safety Act of 1969, Department of the Interior" which was made available for review and comment. It is believed that the report is an objective appraisal of Bureau of Mines' efforts to implement the Act within the period of time covered by the report, and consequently, only a very few substantive comments are offered at this time. Also, there has been initiated, or plans formulated to initiate, actions that are responsive to the report's recommendations. These actions will be described in our response to the final report.

The only major exception taken to the recommendation in the draft report is with regard to the utilization of people with lower qualifications than regular coal mine inspectors to specialize in health inspections. This is the first recommendation listed on page 46 of the report, and it is also mentioned on pages 8, 12, 13, 14, and 15 of the report.

Although the Bureau has not, as yet, increased its inspection force to the required minimum of 1,000 personnel to make all of the inspections required by the Act, this will be done by June 30, so there is no need to further reduce the qualifications of inspectors as a recruiting measure. It is, however, using inspector-trainees and technicians to assist in both health and safety inspections, and will continue to do this

to the extent that it can be done without reducing the quality of the inspections. It is believed that all of the inspectors should be capable of enforcing both health and safety standards and of advising operators of changes that are needed for compliance with the law in both respects at all times that they are in the mines. It would be extremely unwise, from our past experiences, to utilize personnel as health inspectors who would be incapable of recognizing unsafe practices and conditions which might result in fatalities - and possibly, a disaster - and to issue notices of violations and withdrawal orders when needed.

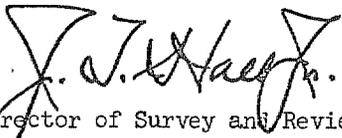
[See GAO note 1.]

it is doubted that there would be any cost saving, and that our inspectors would be less effective and therefore unacceptable.

On page 10 of the report it is incorrectly stated that partial inspections "are to be reinstated in 1971 after each coal mine has had two regular safety inspections." The Bureau of Mines does not plan to make any more "partial but representative inspections," [See GAO note 2.]

We appreciate the opportunity to review this report in draft, even though the four days time allotted was not sufficient to allow for the careful, reflective analysis we prefer to offer on such review.

Sincerely yours,


Director of Survey and Review

GAO notes:

1. The deleted comments relate to matters discussed in the draft report but omitted from this final report.
2. The draft report was revised to reflect the above statement. (See p. 11.)