

1015

9114
Z181
C 63/4/1985

GOVERNMENT
Storage

KANSAS STATE UNIVERSITY LIBRARIES

COAL MINE HEALTH AND SAFETY

Y4
.Ed 8/1
C 63/4/1969

HEARING
BEFORE THE
COMMITTEE ON EDUCATION AND LABOR
HOUSE OF REPRESENTATIVES
NINETY-FIRST CONGRESS
FIRST SESSION
ON

H.R. 4047, H.R. 4295, and H.R. 7976

BILLS TO IMPROVE THE HEALTH AND SAFETY CONDITIONS
OF PERSONS WORKING IN THE COAL MINE INDUSTRY OF THE
UNITED STATES

HEARING HELD IN WASHINGTON, D.C.: SEPTEMBER 9, 1969

Printed for the use of the Committee on Education and Labor
CARL D. PERKINS, *Chairman*



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1969

35-486

KSU LIBRARIES

111900 984252 ✓

COMMITTEE ON EDUCATION AND LABOR

CARL D. PERKINS, Kentucky, *Chairman*

EDITH GREEN, Oregon
FRANK THOMPSON, JR., New Jersey
JOHN H. DENT, Pennsylvania
ROMAN C. PUCINSKI, Illinois
DOMINICK V. DANIELS, New Jersey
JOHN BRADEMAM, Indiana
JAMES G. O'HARA, Michigan
HUGH L. CAREY, New York
AUGUSTUS F. HAWKINS, California
WILLIAM D. FORD, Michigan
WILLIAM D. HATHAWAY, Maine
PATSY T. MINK, Hawaii
JAMES H. SCHEUER, New York
LLOYD MEEDS, Washington
PHILLIP BURTON, California
JOSEPH M. GAYDOS, Pennsylvania
LOUIS STOKES, Ohio
WILLIAM "BILL" CLAY, Missouri
ADAM C. POWELL, New York

WILLIAM H. AYRES, Ohio
ALBERT H. QUIE, Minnesota
JOHN M. ASHBROOK, Ohio
ALPHONZO BELL, California
OGDEN R. REID, New York
JOHN N. ERLNBORN, Illinois
WILLIAM J. SCHERLE, Iowa
JOHN DELLENBACK, Oregon
MARVIN L. ESCH, Michigan
EDWIN D. ESHLEMAN, Pennsylvania
WILLIAM A. STEIGER, Wisconsin
JAMES M. COLLINS, Texas
EARL F. LANDGREBE, Indiana
ORVAL HANSEN, Idaho
EARL B. RUTH, North Carolina

CONTENTS

Statement of—	Page
Bradbury, Arthur, mining engineer, Prestonsburg, Ky-----	31
Branham, Jack, of Floyd County, Ky-----	66
Broida, Theodore R., president, Spindletop Research, Lexington, Ky-----	70
Burke, Hon. F. M., and Hon. Clifford B. Latta, senators in the General Assembly, Commonwealth of Kentucky-----	47, 95
Cooper, Hon. John Sherman, U.S. Senator from the Commonwealth of Kentucky-----	1
Haley, Ted D., associate professor of mining engineering, Lexington, Ky-----	40
Hechler, Hon. Ken, a Representative in Congress from the State of West Virginia-----	55
Mosgrove, J., Assistant Commissioner, State Department of Mines and Minerals, Lexington, Ky-----	26
Mullins, W. Foster, chief mine inspector, Commonwealth of Virginia-----	78
Neely, Robert-----	93
Ward, Glenn-----	93
Statements, letters, supplemental material, etc.:	
Broida, Theodore R., president, Spindletop Research, Lexington, Ky-----	
International Conference on CWP, September 13, 1969-----	73
Participants in the Spindletop Conference on 'Coal Workers' Pneumoconiosis-----	72
Cooper, Hon. John Sherman, U.S. Senator from the State of Kentucky-----	
Gassy mines—ignitions or explosions, July 1, 1952 to December 1968 (table)-----	7
Gassy underground mines in which more than one ignition or explosion occurred July 1952–July 1969 (table)-----	8
Ignitions in mines classed nongassy at the time the ignition occurred (table)-----	6
Letter to John F. O'Leary, Director, U.S. Bureau of Mines, Department of the Interior, dated May 28, 1969, requesting information relating to bituminous coal mines-----	3
Methane ignitions and explosions in nongassy underground coal mines, July 1952 to July 1969 (table)-----	9
Number of gas ignitions or explosions in nongassy coal mines and number of persons killed or injured, July 1, 1952 through November 30, 1968 (table)-----	5
O'Leary, John F., Director, U.S. Bureau of Mines, Department of the Interior, letter from, dated June 5, 1969, enclosing table showing number of bituminous underground coal mines, employment or production by States and by gassy and nongassy mines, 1967-----	3
Dunn, Stephen F., president, National Coal Association, letter to Chairman Perkins, dated September 8, 1969-----	97
Hechler, Hon. Ken, a Representative in Congress from the State of West Virginia, summary of statistics in statement compiled from records of U.S. Bureau of Mines-----	64
Mosgrove, J., assistant commissioner, State Department of Mines and Minerals, Lexington, Ky., fatal coal mine accidents, July 1, 1952, to June 30, 1969, inclusive (table)-----	29
Mullins, W. Foster, chief mine inspector, Commonwealth of Virginia:-----	
Gas ignitions and dust explosions in Virginia, January 1, 1959, to September 1, 1969 (table)-----	88
Gassy mines in Virginia-----	91
Prepared statement of-----	78
Report of gas ignition-----	82

CONTENTS

COAL MINE HEALTH AND SAFETY

TUESDAY, SEPTEMBER 9, 1969

HOUSE OF REPRESENTATIVES,
COMMITTEE ON EDUCATION AND LABOR,
Washington, D.C.

The committee met at 9:30 a.m., pursuant to call, in room 2175, Rayburn House Office Building, Hon. Carl D. Perkins (chairman of the committee) presiding.

Present: Representatives Perkins, Green, Dent, Brademas, O'Hara, Hawkins, Burton, Gaydos, Clay, Quie, Bell, Erlenborn, Scherle, Delenback, Landgrebe, Hansen, and Ruth.

Staff members present: H. D. Reed, Jr., general counsel; Donald M. Baker, associate counsel (labor); Robert E. McCord, chief clerk and senior specialist; and Michael J. Bernstein, minority counsel for education and labor.

Chairman PERKINS. The committee will come to order. A quorum is present.

Come around, Senator Cooper, and take your seat there in the center. I am going to ask Mr. Mosgrove of the Department of Mines of Kentucky and Mr. Bradbury to come around also. I see Senator Burke here this morning. I did not know that you were coming, but you people bear with me today and I will hear you all, even if it runs late.

Let me welcome you here, Senator Cooper, this morning. I am delighted that you came over to give the committee the benefit of your views. I just wish all the members were here.

Go ahead and proceed in any manner you prefer.

STATEMENT OF HON. JOHN SHERMAN COOPER, A U.S. SENATOR FROM THE COMMONWEALTH OF KENTUCKY, ACCOMPANIED BY W. R. HALEY, LEGISLATIVE ASSISTANT

Senator COOPER. Mr. Chairman, my colleague from Kentucky, members of the committee, I have a written statement. I hope it is not too long. I will read it, but I am prepared to comment on it at any time. I will say I wrote it myself.

Chairman PERKINS. It may be that the other microphones are better.

Senator COOPER. Can you hear me?

Chairman PERKINS. Yes.

Senator COOPER. I appreciate your invitation to testify before your committee on H.R. 1047, the "Federal Coal Mine Health and Safety Act of 1969."

I served for several years as a member of the Subcommittee on Mine Safety in the late fifties when Congress was considering amendments to the Federal Coal Mine Safety Act. In 1965 and 1966, while I was

no longer a member of the Senate Committee on Labor and Public Welfare, I worked with the former chairman of the subcommittee, Senator Wayne Morse, at his request, to develop the Senate position on H.R. 3584, amending the Coal Mine Safety Act which was approved by the Congress in 1966.

My interest in mine safety has continued. Kentucky is now the second largest coal-producing State in the Nation and naturally I am interested in legislation dealing with the coal industry, both with respect to the provision of safety for those who work in mines and in the economic contribution of the coal industry to Kentucky and to the Nation.

I may say here I live in the eastern part of Kentucky, not in the coal fields, but on the edge of the coal fields, and over the course of many years in many campaigns I have traversed that section. I have visited the coal mines. I have been in the coal mines and perhaps that has helped me some in my views.

I am cosponsor of the administration bill introduced in the Senate, S. 1300, a companion bill to H.R. 1047. I consider that its provisions on the whole are necessary to insure more adequately the health and safety of those who work in the coal mines, which all recognize as a very hazardous occupation.

During the course of hearings in the Senate I introduced two amendments to S. 1300 which were adopted by the Senate Committee on Labor. One amendment was to provide greater protection from the hazards of roof falls, rib falls, and face falls, hazards responsible, according to Bureau of Mines records, for more than half of all mine fatalities.

The second amendment which was approved prohibits the use of open flame lamps in all mines, such use being the cause of many explosions.

A third amendment I offered which has not been approved would amend the administration bill to preserve the present classification of "gassy" and "nongassy" mines. This is the subject to which I wish to address myself today. As the committee knows, the classification of mines as gassy and nongassy has been preserved in the Federal Coal Mine Safety Act since its adoption. The reasons for maintaining the classification remain valid, in my view, as I will detail in this statement.

The chief purpose of proposing the merging of all mines in one classification, as gassy mines, is to require operators of mines now classified as nongassy mines to purchase and install new equipment which is designated as "permissible" equipment under the Federal Coal Mine Safety Act. This equipment is designed to prevent "sparking" of the machinery which could, of course, cause the danger of ignitions and explosions in mines where a sufficient concentration of methane occurs.

According to the last record of the Bureau of Mines respecting gassy and nongassy mines in bituminous underground coal mines—the record of 1967—the following statistics are provided.

There were 392 gassy mines employing 55,116 persons and producing slightly over 213 million tons of coal. The records show a total of 3,191 nongassy mines, employing 45,472 persons and producing 143,453,000 tons of coal.

Relative production is about 60 percent for the gassy mines, as now classified, and 40 percent for the nongassy.

If all mines are designated gassy under the pending legislation, the operators of the 3,191 nongassy mines would be required to junk the nonpermissible machinery now used, which has been installed at great cost, and replace it with permissible equipment of greater cost. This would impose a burden which many operators could not sustain. It would result in the closing of hundreds of mines, the driving out of employment of hundreds, if not thousands, of miners.

This drastic legislation would not only affect the mines and miners, but would result in severe economic hardship upon the communities and States in which the nongassy mines are located.

At this point, I ask that there be included in the record the table which I have cited.

Chairman PERKINS. Without exception, it will be inserted.

(Table follows:)

MAY 28, 1969.

Mr. JOHN F. O'LEARY,
Director, U.S. Bureau of Mines,
Department of the Interior, Washington, D.C.

DEAR MR. O'LEARY: I would appreciate it very much if you provide me with information relating to bituminous coal mines as follows:

1. The number of non-gassy mines by state.
2. The number of gassy mines by state.
3. The number of employees working in gassy mines by state.
4. The number of employees working in non-gassy mines by state.
5. The bituminous coal production for non-gassy mines by state.
6. The bituminous coal production of gassy mines by state.

If the Bureau of Mines does not as yet have complete figures for 1968, I would suggest that you use the 1967 figures or the most recent year for which the Bureau has these figures available.

Sincerely yours,

JOHN SHERMAN COOPER.

U.S. DEPARTMENT OF THE INTERIOR,
BUREAU OF MINES,
Washington, D.C., June 5, 1969.

HON. JOHN SHERMAN COOPER,
U.S. Senate, Washington, D.C.

DEAR SENATOR COOPER: Enclosed is the information on the number of underground mines, employees, and production, by States, for the calendar year 1967, as requested in your letter of May 28, 1969.

The data were not available in the manner you requested but were collected in the following manner:

1. The number of mines is the number inspected during the year.
2. The number of employees and production were assembled from the best source available to our field offices.

We will be glad to supply any additional information you may need.

Sincerely yours,

JOHN F. O'LEARY, Director.

NUMBER OF BITUMINOUS UNDERGROUND COAL MINES, EMPLOYMENT AND PRODUCTION, BY STATES, AND B GASSY AND NONGASSY MINES, 1967

State	Gassy			Nongassy		
	Number of mines	Employees	Production	Number of mines	Employees	Production
Alabama.....	17	3,222	8,443,850	85	1,633	739,350
Arizona.....				1	3	969
Arkansas.....	5	61	93,600			
Colorado.....	23	1,026	3,008,995	36	239	569,915
Illinois.....	26	5,271	27,797,978	9	111	525,834
Indiana.....	7	421	1,564,831	4	285	142,483
Iowa.....				5	51	244,917
Kentucky.....	32	3,851	18,996,388	913	{10,687	42,000,000
Maryland.....					580	2,287,406
Missouri.....				33	236	409,550
Montana.....		16	6,200	2	14	3,000
New Mexico.....	1	98	625,000	12	41	22,650
North Dakota.....				7	22	4,375
Ohio.....	18	2,115	8,922,588	1	5	976
Oklahoma.....	1	4	2,400	55	1,244	4,496,000
Oregon.....				1	5	1,000
Pennsylvania.....	68	13,973	46,110,933	279	3,007	8,302,238
Tennessee.....	7	57	135,250	142	1,924	4,364,750
Utah.....	10	799	2,785,122	17	359	1,478,102
Virginia.....	44	3,347	14,265,000	673	4,722	16,625,000
Washington.....	1	7	8,599	3	31	48,017
West Virginia.....	132	20,848	80,348,324	908	{20,181	61,037,451
Wyoming.....				5	32	30,812
					60	118,942
Total.....	392	55,116	213,115,058	3,191	45,472	143,453,737

Senator COOPER. It indicates that there were in 1967, 913 nongassy mines in Kentucky, 908 in West Virginia, 279 in Pennsylvania, 142 in Tennessee, 55 in Ohio, 85 in Alabama, 36 in Colorado, and smaller numbers in 10 other States.

The justification asserted for now classing all mines as gassy is essentially the assumption that all mines are potentially gassy and pose the danger of an ignition and explosion.

The issue of safety is, of course, more important than economic interests, but as I will point out in my statement, safety is not considered of sufficient importance to override the economic interest of keeping open the gassy mines wherein ignitions, explosions, fatalities, and injuries occur.

The question which I shall examine is whether the imposition by law of the purchase of permissible machinery for nongassy mines actually contributes in any measure to the safety of miners. I will point out that its effect, the closing of nongassy mines where there is little danger, according to the records of ignitions and explosions, would only serve to transfer production and miners to the gassy mines where the real danger resides and is inherent.

Speaking on the Senate floor on June 5, I submitted statistics from the Bureau of Mines which prove that the danger of explosions and consequent injuries and fatalities is inherent in the mines which are now classed gassy and this danger is not inherent in nongassy mines. Bureau of Mines records disclose that in a 16-year period—1952-68—381 ignitions and explosions occurred in the less than 400 gassy mines and that they resulted in 374 fatalities and 427 injuries. In contrast, in the same period in over 3,000 nongassy mines, 52 ignitions and explosions occurred, resulting in 27 fatalities and 54 injuries.

I ask unanimous consent to include in my statement at this point these tables from the Bureau of Mines.

Chairman PERKINS. Without objection they will be included.
(Tables follow:)

EXHIBIT B

TABLE B.—NUMBER OF GAS IGNITIONS OR EXPLOSIONS IN NONGASSY COAL MINES AND NUMBER OF PERSONS KILLED OR INJURED, JULY 1, 1952, THROUGH NOV. 30, 1968

Year	Number of ignitions or explosions	Killed	Injured
1952 (6 months).....	0	0	0
1953.....	3	0	3
1954.....	5	0	4
1955.....	3	0	6
1956.....	4	0	2
1957.....	5	0	5
1958.....	3	0	3
1959.....	3	19	2
1960.....	4	2	0
1961.....	7	0	7
1962.....	4	² 11	6
1963.....	1	0	0
1964.....	4	0	6
1965.....	3	³ 5	4
1966.....	2	0	3
1967.....	0	0	0
1968.....	1	0	3
Total.....	52	27	54

¹ No. 1 mine, Philips & West Coal Co., Robbins, Tenn., Mar. 23, 1959, 9 killed, 0 injured.

² Mine No. 2, Blue Blaze Coal Co., Herrin, Ill., Jan. 10, 1962, 11 killed, 0 injured.

³ No. 2-A mine, C. L. Kline Coal Co., Robbins, Tenn., 5 killed, 0 injured.

EXHIBIT C—IGNITIONS IN MINES CLASSED NONGASSY AT THE TIME THE IGNITION OCCURRED

Date of ignition	State	Source of ignition	Number	Fatalities	Injuries
Jan. 3, 1953	Pennsylvania	Match	1	0	0
May 5, 1953	Kentucky	Open flame lamp	2	0	0
Oct. 9, 1953	Pennsylvania	do	3	0	2
Apr. 9, 1954	do	do	4	0	1
May 10, 1954	Tennessee	Match	5	0	0
May 17, 1954	Kentucky	Open flame (lamp)	6	0	0
May 28, 1954	Pennsylvania	Smoking or electric arc at signal station	7	0	3
Nov. 30, 1954	Kentucky	Arc from 250-volt circuit used to blast	8	0	2
June 18, 1955	Pennsylvania (anthracite)	Nonpermissible electric coal drill	9	0	1
July 23, 1955	do	do	10	0	2
Dec. 19, 1955	Maryland	Smoking	11	0	1
Feb. 28, 1956	Alabama	Open flame (lamp)	12	0	0
Mar. 21, 1956	Colorado	Nonpermissible electric coal drill	13	0	2
July 17, 1956	Kentucky	Open flame (lamp)	14	0	0
Nov. 28, 1956	Pennsylvania	do	15	0	0
Jan. 17, 1957	do	do	16	0	0
Feb. 5, 1957	do	do	17	0	0
Feb. 26, 1957	Kentucky	Match	18	0	0
May 1, 1957	Pennsylvania	Open flame (lamp)	19	0	2
Nov. 16, 1957	do	Nonpermissible blower fan or match	20	0	3
Jan. 10, 1958	Virginia	Open flame (lamp)	21	0	0
Jan. 31, 1958	Tennessee	do	22	0	0
Dec. 11, 1958	Pennsylvania	Nonpermissible electric coal drill	23	0	3
Mar. 23, 1959	Tennessee	Electric locomotive or smoking	24	9	0
June 18, 1955	Pennsylvania (anthracite)	do	9	0	1
Oct. 8, 1959	Pennsylvania	Improperly assembled flame safety lamp	25	0	2
Nov. 4, 1959	Virginia	Cigarette lighter	26	0	2
Aug. 16, 1960	do	Open flame (lamp)	27	0	0
Aug. 23, 1960	Kentucky	do	28	0	0
Dec. 7, 1960	Pennsylvania	Nonpermissible blower fan	29	0	1
Dec. 28, 1960	West Virginia	Match	30	2	0
Apr. 13, 1961	Colorado	Smoking	31	0	1
May 9, 1961	Virginia	Open flame (lamp)	32	0	0
May 30, 1961	West Virginia	Smoking	33	0	1
Aug. 3, 1961	Virginia	Open flame (lamp)	34	0	0
Aug. 28, 1961	Pennsylvania	Nonpermissible blower fan	35	0	3
Oct. 7, 1961	do	Nonpermissible electric coal drill	36	0	1
Nov. 28, 1961	Virginia	Open flame (lamp)	37	0	0
Jan. 10, 1962	Illinois	Permissible type shuttle car being repaired where ignition occurred.	38	11	0
Apr. 9, 1962	Pennsylvania (anthracite)	Match	39	0	1
Nov. 12, 1962	do	Nonpermissible electric coal drill	40	0	1
Nov. 21, 1962	Virginia	Match	41	0	4
July 17, 1963	Kentucky	Open flame (lamp)	42	0	0
June 11, 1964	Pennsylvania	Propane torch or burning blasting fuse	43	0	3
July 17, 1964	do	Match	44	0	2
Oct. 14, 1964	Virginia	Open flame (lamp)	45	0	0
Dec. 16, 1964	Pennsylvania	Nonpermissible electric coal drill	46	0	1
Jan. 25, 1965	do	do	47	0	3
May 24, 1965	Tennessee	Cigarette lighter	48	5	0
Aug. 6, 1965	Virginia	Smoking	49	0	1
June 20, 1966	West Virginia	do	50	0	2
Nov. 7, 1966	Virginia	Nonpermissible electric coal drill	51	0	1
Aug. 2, 1968	Kentucky	Match	52	0	3
Total			52	27	56

EXHIBIT D

GASSY MINES—IGNITIONS OR EXPLOSIONS, JULY 1, 1952 TO DECEMBER 1968

Year:	Number of ignitions or explosions	Killed	Injured
1952.....	7	0	15
1953.....	21	9	32
1954.....	23	19	37
1955.....	18	4	20
1956.....	29	8	18
1957.....	20	66	20
1958.....	19	42	32
1959.....	19	1	12
1960.....	13	1	7
1961.....	17	26	27
1962.....	17	41	16
1963.....	33	36	35
1964.....	35	6	27
1965.....	32	14	32
1966.....	26	10	31
1967.....	30	12	44
1968.....	22	79	22
Total.....	381	374	427

Senator COOPER. If one should assume that the 3,191 "nongassy" mines in operation in 1967 had the same "gassy" characteristics of the 392 "gassy" mines, the number of explosions, fatalities, and injuries in those mines would have been eight times as large. Theoretically, there would have been 3,048 explosions instead of the 52 that occurred; there would have been 2,992 fatalities instead of the 27 that occurred; there would have been 432 serious injuries rather than the 54 that occurred.

On the other hand, if the 392 "gassy" mines has been as free of gas as the 3,191 "nongassy" mines, theoretically the tragic record in the "gassy" mines of 381 ignitions and explosions, 374 fatalities and 427 injuries would have been between four and five explosions, between three and four fatalities, about seven injuries.

I make these comparisons to show that there is an actual distinction and justification for the classifying of mines as "gassy" and "nongassy," that the inherent danger is in the "gassy" mines and that economic considerations are preventing the closing of the "gassy" mines where the tragic loss of life and injury to human beings occur.

I want to make another point here. The records of the Bureau of Mines from July 1952 to July 1969 disclose that explosion after explosion continued to occur in the "gassy" mines, ranging from two to as many as 18 in the Clinchfield Mine, at Dola, W. Va.; seven occurred in the Pittsburg and Midway Coal Mine at Union, Ky.; 10 at the U.S. Steel Co. Mine at Concord, Ala.; eight at the Jones-Laughlin Steel Co. Mine at Concord, Ala.; eight at the Jones-Laughlin Steel Co. Mine at Vestaburg, Pa., and of course we are reminded poignantly of the fact that the explosion at the Farmington Mine in West Virginia last year, which took the lives of 78 miners, was preceded in 1954 by an explosion which took 16 lives at the mine owned by the Consolidated Coal Co.

I ask unanimous consent to include in my statement at this point a table of the Bureau of Mines, indicating the multiple number of explosions that have occurred in "gassy" mines in the period July 1952 through July 1969.

Chairman PERKINS. Without objection, so ordered.

(Table follows:)

GASSY UNDERGROUND MINES IN WHICH MORE THAN 1 IGNITION OR EXPLOSION OCCURRED, JULY 1952-JULY 1969

Mine	Company	Location	Number of ignitions or explosions	Killed	Injured
O'Donnell No. 1	Rochester & Pittsburgh Coal	Four States, W. Va.	2	0	6
Moss No. 2	Clinchfield Coal	Dola, W. Va.	18	2	5
Wildwood	Butler Consolidated Coal	Wildwood, Pa.	2	0	4
Osage No. 3	Christopher Coal	Cassville, W. Va.	4	1	9
Loveridge	Mountaineer Coal, division of Consolidation Coal	Fairview, W. Va.	3	1	1
Robena No. 4	United States Steel Corp.	Greensboro, Pa.	2	0	0
Forge Slope	Glen Nan Corp.	Newport Township, Pa.	2	4	10
Bird No. 3	Bird Coal	Johnstown, Pa.	6	0	9
Compass No. 3	Compass Coal	Dola, W. Va.	6	0	4
Valley Camp No. 3	Valley Camp Coal	Triadelphia, W. Va.	2	0	1
Clyde	Republic Steel Corp.	Fredricktown, Pa.	3	0	0
DeKoven No. 6	Pittsburgh & Midway Coal Mining	Union, Ky.	7	1	4
No. 93	Consolidation Coal	Jordan, W. Va.	2	0	2
Jensie	Warner Collieries	East Springfield, Ohio	3	0	2
Marianna No. 58	Bethlehem Mines Corp.	Marianna, Pa.	6	6	5
Maple Creek	United States Steel Corp.	New Eagle, Pa.	2	0	7
Ernest No. 3	Rochester & Pittsburgh Coal	Ernest, Pa.	3	0	1
Gateway	Gateway Coal	Clarksville, Pa.	8	0	0
No. 2	Carbon Fuel	Helper, Utah	3	9	3
Lancashire No. 15	Barnes & Tucker	Bakerton, Pa.	8	0	14
No. 2, shaft, Storrs Colliery	Moffat Coal	Dickson City, Pa.	2	0	5
Pursglove No. 15	Christopher Coal	Pursglove, W. Va.	4	0	9
Vesta No. 5	Jones & Laughlin Steel Corp.	Vestaburg, Pa.	8	0	1
Consol No. 9, Llewellyn shaft No. 9	Mountaineer Coal, division of Consolidation Coal, Jamison Coal Co.	Farmington, W. Va.	3	98	1
Keystone No. 1	Eastern Associated Coal Corp.	Keystone, W. Va.	2	0	2
No. 32	Bethlehem Mines Corp.	Revloc, Pa.	2	0	0
Ireland	Hanna Coal	Moundsville, W. Va.	4	0	0
Concord No. 1	United States Steel Corp.	Concord, Ala.	10	0	0
Sunnyside No. 3	Kaiser Steel Corp.	Sunnyside, Utah	2	0	0
Beatrice	Beatrice-Pocahontas	Keen Mountain, Va.	5	0	5
Nelms (No. 1)	The Youghiogheny & Ohio Coal	Cadiz, Ohio	4	0	0
Dutch Creek	Mid-Continent Coal & Coke	Redstone, Colo.	8	9	10
Compass No. 2	Clinchfield Coal	Dola, W. Va.	6	22	2
Shannopin	Jones & Laughlin Steel Corp.	Bobtown, Pa.	4	0	0
Nelms No. 2	The Youghiogheny & Ohio Coal	Hopedale, Ohio	4	0	2
Enoco Collieries	Enoco Collieries, Inc.	Bruceville, Ind.	2	0	4
Emerald	Hillman Coal & Coke	Clarksville, Pa.	2	0	0
Itmann No. 3	Itmann Coal	Itmann, W. Va.	3	0	3
Mathies	Mathies Coal	Courtney, Pa.	4	0	0
Glen Burn Colliery	Gap-Anthracite	Shamokin, Pa.	3	1	6
Moss No. 3	Clinchfield Coal	Duty, Va.	4	0	2
Kenilworth	Independent Coal	Kenilworth, Utah	2	0	0
Robena No. 3	United States Steel Corp.	Greensboro, Pa.	5	37	5
Colver	Eastern Associated Coal Corp (3)	Colver, Pa.	4	0	0
Ebensburg	Ebensburg Coal Co. (1)				
Bunker	Trotter Coal	Cassville, W. Va.	2	0	1
Howe	Howe Coal	Heavener, Okla.	6	0	2
Lambert Fork	Clinchfield Coal	Dante, Va.	3	0	1
No. 34	Bishop Coal	Bishop, W. Va.	3	22	1

Senator COOPER. Now I want to put in the record also the record of multiple explosions which occurred in the "nongassy" mines. In the same period in the "nongassy" mines there were two mines in which two explosions occurred.

I ask that both of these be placed in the record.

Chairman PERKINS. Without objection, so ordered.

(Table follows:)

METHANE IGNITIONS AND EXPLOSIONS IN NONGASSY UNDERGROUND COAL MINES, JULY 1952 TO JULY 1969

Date	Mine	Town	State	Company	Killed	Injured	Drift	Slope	Shaft
Jan. 3, 1953	R. & T. Slope	Ferndale	Pennsylvania	Reed & Thomas Coal	0	11	0	1-525/-50°	0
Sept. 9, 1953	No. 1 Slope	Lewellyn	do	Zalanko & Bartnick	0	12	0	1-95/-10°	0
May 5, 1953	No. 3	Colson	Kentucky	Tom Richardson Coal	0	0	2	1-clude	0
Apr. 9, 1954	Williams Slope	Minersville	Pennsylvania	Elmer Williams, Operator	0	11	0	1-90/-43°	0
May 10, 1954	Reels Cove No. 2	Whitwell	Tennessee	Tennessee Products & Chemical Corp.	0	0	4	0	0
May 7, 1954	No. 1	Colson	Kentucky	Hall Coal	0	0	2	0	0
May 8, 1954	Rock Slope	Branchdale	Pennsylvania	Cheruka Bros.	0	13	0	1-520/-45°	0
Nov. 30, 1954	Yocum Darby	Everts	Kentucky	Yocum Darby Coal	0	0	2	0	0
June 18, 1955	No. 2 Lykens Valley Slope	Buck Run	Pennsylvania	Dietrick & Ebert Coal	0	11	0	1-890/-18°	0
July 23, 1955	No. 2 Slope	Valley View	do	Keller Coal	0	12	0	3/2-185°/65°	0
1	No. 3	Barton	Maryland	W. & W. Coal	0	1	4	0	0
Feb. 23, 1956	Cedar Grove	Maylene	Alabama	Cedar Grove Mining	0	0	0	1-1000°	2-25°
Mar. 21, 1956	Thompson Creek No. 1	Carbondale	Colorado	Thompson Creek Coal & Coke	0	2	0	0	0
July 17, 1956	Darby No. 1	Cloesplint	Kentucky	Barrett Coal	0	0	3	0	0
Nov. 28, 1956	Buck Mountain Slope	Ravine	Pennsylvania	Martin Zimmerman Coal	0	10	0	1-1100°-35°	1-shallow
Jan. 17, 1957	North Point	Dora	do	St. Marys Sewer Pipe	0	0	4	0	0
Feb. 3, 1957	North Point	do	do	do	0	0	4	0	0
Feb. 26, 1957	No. 1C, main opening	Alva	Kentucky	Black Star Coal	0	0	2	0	0
May 1, 1957	Phillips No. 4 slope	Trevelton	Pennsylvania	Fenster Coal	0	12	0	1-400-35°	0
Sept. 25, 1957	No. 7	Harrisburg	Illinois	Sahara Coal	0	3	0	2-1,300°	0
Jan. 10, 1958	No. 5	Tookland	Virginia	Thunder Knob Coal	0	0	3	0	0
Jan. 31, 1958	No. 2	Robbins	Tennessee	Terry Coal	0	0	2	0	0
Dec. 14, 1958	No. 1 slope	Branchdale	Pennsylvania	Montrose Coal	0	13	0	0	0
Mar. 23, 1959	No. 1	Robbins	Tennessee	Phillips & West Coal	9	0	3	0	0
Oct. 8, 1959	No. 64 slope	Grandville	Pennsylvania	S. & M. Coal	0	12	0	1-300°-10°	0
Jan. 4, 1959	No. 2	Vansant	Virginia	Preston Mining	0	0	5	0	0
Aug. 16, 1960	No. 7	Keen Mountain	do	Dorothy Mae Coal	0	0	2	0	0
Aug. 23, 1960	'A' No. 1	Gilley	Kentucky	Cornett Coal	0	0	2	0	0
1	No. 1 Slope	Valley View	Pennsylvania	Mason Herb & Co.	0	11	0	0	0
Dec. 28, 1960	Phillips No. 1	Newburg	West Virginia	Parson Coal	2	0	2	0	0
Apr. 13, 1961	Burnwell No. 1	Hesperus	Colorado	Wm. H. Hunt, operator	0	1	0	2-700°-70°	0
May 9, 1961	No. 16	Tookland	Virginia	O'Quinn	0	0	2	0	0
May 30, 1961	No. 2	Mount Hope	West Virginia	C.B. & H.	0	1	0	0	0
Aug. 3, 1961	Lynn Camp No. 1	Whitewood	Virginia	Peerless Goodman	0	0	4	0	0
Aug. 28, 1961	Holmes slope	Mount Carmel	Pennsylvania	B. & B.	0	13	0	2-510°-23°	2°-8° holes for ventilation.

1 Copy illegible.

METHANE IGNITIONS AND EXPLOSIONS IN NONGASSY UNDERGROUND COAL MINES, JULY 1952 TO JULY 1969—Continued

Date	Mine	Town	State	Company	Killed	Injured	Drift	Slope	Shaft
Oct. 7, 1961	No. 2 Lykens slope	Goodspring	Pennsylvania	C. K. & S.	0	1	0	2-650' 40°	0
Nov. 3, 1961	No. 3	Virginia City	Virginia	Castle Coal	0	0	4	0	0
Jan. 10, 1962	No. 2	Herrin	Illinois	Blue Blaze	11	0	0	0	1-158'
Apr. 9, 1962	Middle Split slope	Minersville	Pennsylvania	Waniski	0	1	0	1-500'-25°	0
Nov. 12, 1962	Skidmore	Mount Carmel	do	K. P. & M.	0	1	0	1-500'-50°	1-shallow
Nov. 21, 1962	No. 5	Bartick	Virginia	Bridge	0	4	2	0	0
Jul. 17, 1963	No. 3	Grace	Kentucky	Osborne Fuel	0	0	0	0	0
Jan. 15, 1964	Westwood slope	Primrose	Pennsylvania	Westwood Coal	0	1	0	2-525'-25°	0
Jan. 11, 1964	Diamond slope	Big Mine Run	do	Mickey Coal partnership	0	3	0	3-422'-60°	0
Jul. 17, 1964	No. 2	Goodspring	do	Kimmel Bros. Coal	0	2	0	2-412'-45°	0
Oct. 16, 1964	No. 9A	Marvin	Virginia	Roberts Coal	0	0	3	0	0
Jul. 25, 1965	Middle Split slope	Valley View	Pennsylvania	M.A.C.C. Coal	0	3	0	1-850' 60°	0
May 24, 1965	No. 2-A	Robbins	Tennessee	C.L. Kline Coal	5	0	2	0	0
Aug. 26, 1965	No. 1	Pilgrim Knob	Virginia	Ward & Honaker Coal	0	0	2	0	0
Jun. 20, 1966	No. 5	Kermit	West Virginia	Davis Coal	0	2	0	1	1
Jan. 2, 1966	No. 8	Keen Mountain	Virginia	Wade Coal	0	1	3	0	0
Aug. 2, 1968	Keystone 3-B	Eastern	Kentucky	Allen Fork Coal	0	3	0	0	0
Jun. 10, 1969		Herndon	West Virginia	Eastern Associated Coal	0	5	3	0	0

1 Copy illegible.

Senator COOPER. In my statement on the floor of the Senate on June 5 of this year, I placed in the Record an analysis of the causes of the 52 ignitions which occurred in "nongassy" mines during the 16-year period, provided by the Bureau of Mines. This analysis shows that with the exception of nine cases in which nonpermissible electrical coal drills were used and two cases where a nonpermissible blower fan was used, the remaining ignitions would have occurred even though the mines had been equipped with permissible machinery.

The ignitions were chiefly caused by the use of open flame lamps, matches, cigarette lights and smoking—all prohibited under the Federal Mine Safety Act and with stricter provisions against their use in the bill before this committee. In the exceptions I have mentioned, the record shows no fatalities occurred. I have proposed to the Senate Committee on Labor and will offer an amendment to the Senate bill that permissible electric coal drills be required to protect against any possibility of drilling into a gas pocket.

There are well-known topographical and geological characteristics distinguishing "nongassy" from "gassy" mines. "Gassy" mines are usually below the water table and gas has been released. "Nongassy" mines are generally "drift" mines whose entries are driven horizontally into the side of the hill and being above the water table, the gasses associated with underground coal mining have seeped out or been released through the cracks and crevices in their surfaces.

Further, the fact that the 392 "gassy" mines to which I have referred produce 60 percent of the coal mined in 1967, as compared to 40 percent produced in the 3,191 nongassy mines demonstrates that the area of the "gassy" mines is much larger than the area of "nongassy" mines. It is much simpler to ventilate effectively the smaller acreage "nongassy" mines than the large "gassy" mines.

If members of the committee have visited these two types of mines, this fact would be obvious. The larger mines to be economically operated have railways of great length, multiple entries, and sections in comparison to the shorter haulways, entries and more limited operations in the "nongassy" mines.

This all is reflected in the more effective ventilation. I note in your bill you have increased the volume of air which must be available per minute from 6,000 cubic feet to 9,000 cubic feet, and that, of course, would even provide greater ventilation in the shorter haulways, more limited areas of the "nongassy" mines as well as the "gassy" mines.

Further, as is well known, the economical operation of the large "gassy" mines requires the installation of the most advanced mining equipment. This machinery—sophisticated cutting machines and continuous mining machines—produces a concentrated volume of coal dust and larger danger of ignitions. In the small acreages and operations of "nongassy" mines, advanced machinery cannot be used economically. The volume of coal dust is reduced and is more easily removed by ventilation.

Not long ago, I was talking to a coal miner and he was telling me about the concentration of dust in these large mines where these sophisticated cutting machines and continuous miners are used. He told me that you can't see anything up there. That was his statement. He is a very well-known man who has had experience and I think it illustrates the difficult problems of ventilation and concentration of

dust that you have in the large mines which are not true in these smaller mines.

The Bureau of Mines has long recognized these differing characteristics of the two classes of mines. Section 209 of the Federal Coal Mine Safety Act refers again and again to the special safety standards that must be observed in "gassy" mines.

I read a day or two ago, and I think if you will read that, and it will take about 10 minutes, you will find one section of that which refers specifically to "nongassy" mines. But these specific provisions for safety in section 209 refer again and again to the "gassy" mines and to the content of the gas in the "gassy" mines.

Now, yesterday I read the administration bill—I read what I could of the Senate subcommittee draft. They keep changing it all the time. I read the subcommittee, which is H.R. 1047—on pages 59 through 64, 65, 66, and 70 of the bill before you. I found references of the increased measures of protection you want to provide in these mines. They all refer to what are today "gassy" mines.

Did you know if a "nongassy" mine is found—that 0.25 of gas by volume is found, then it is immediately classified as a "gassy" mine? But once it is gassy and you put the permissible machinery in, then you can operate it up to 1 per cent without any penalty at all. When it reaches 1 percent under the bill before you, then you must take measures to correct your ventilation; and if it reaches 1.5—I will say this with all deference, but I know we are here to discuss these matters frankly. On these points which I have drawn from, section after section refers to what are "gassy" mines.

It implicitly recognizes the danger and the different characteristics of "gassy" mines always speaking when it reaches 1 percent or reaches 1.5 percent. There is an incentive for operators and miners of "nongassy" mines to keep the presence of gas below .25—.25. There is no incentive, once it is past that. There is no incentive to keep it below 1.

So I will say in deference that the bill before you and the administration bill and the Senate bill all implicitly recognize the different characteristics of "gassy" and "nongassy" mines.

It is rather interesting that the Senate Committee on Labor adopted an amendment, incorporated in section 301 (b) of S. 1300, which affirms its recognition of the inherent danger of "gassy" mines as compared to "nongassy" mines. While S. 1300 would eliminate the present classification, this amendment, in effect, maintains the classification of "gassy" mines. It would require daily Federal mine inspections for gas at mines which the Secretary determines to be extremely gassy with great risks of ignitions and gas explosions—a determination to be made "based on the past history of the mine and other criteria he shall establish."

I submit that these daily inspections—and they also refer to it in your bill as a more frequent inspection—will be required only in mines now classed as "gassy" or which in the future may be classed as "gassy."

I do not know what testimony has been heard by this committee upon the question of the cost of installing "permissible" equipment in the "nongassy" mines in which it is not now required. In the Senate the Bureau of Mines submitted no testimony on this.

The only testimony provided to the Senate committee on this subject was by Mr. Cloyd B. McDowell, president of the Harlan County Kentucky Coal Operators Association, a very informed and reliable witness. His testimony may be found on page 881 of the Senate committee hearing record.

Mr. McDowell testified that the cost of installing permissible machinery in one section of a mine would be approximately \$260,000. He also stated according to the estimates of the Kentucky Bureau of Mines, if I may call it that, that it would cost \$10 million to install permissible machinery in one county, Harlan County, Ky.

It has been said that nonpermissible equipment could be reworked into permissible equipment. I directed letters to a number of equipment companies which manufacture permissible equipment, and I will be glad to submit the answers which I have received for your record.

Chairman PERKINS. I think it would be pertinent to know whether permissible equipment is available and whether priority is going to be given to equipping "gassy" mines with permissible equipment. If you have any concrete information about the availability of permissible equipment, I think the committee should know that.

Senator COOPER. Thank you.

The answers were to the effect that it would be uneconomical and impractical to attempt to reconstruct nonpermissible equipment to permissible standards. One of the answers which I have received stated—and it would seem to me that the statement is credible, as it is against the interests of the company which is manufacturing permissible equipment—that 10 years would be required to produce sufficient permissible equipment to re-equip "nongassy" mines.

Another answer said it would require to train at least 2,000 men to maintain permissible equipment in Kentucky and West Virginia, as I recall, and Virginia.

A requirement to install costly permissible equipment in "nongassy" mines would without question alter the economic organization of hundreds of small mines with small acreages, small production—and I understand the average production of these mines is 150 to 250 tons daily. It would be impossible to install such machinery and maintain an economic operation of these mines. It would result in the closing of hundreds of mines and the unemployment of many who work in these mines. It will cause economic loss to coal operators, to miners thrown out of employment, to related industries and to the communities and States in which these "nongassy" mines are operated.

In the Appalachian area the coal industry is still the chief industry and the chief source of employment. Thousands of miners have already been forced out of work because of the installation of machinery and many more would be forced out by requiring the installation of costly permissible equipment. A great deal of public attention has been focused upon Appalachia and millions of dollars have been expended to better living conditions of the people in this area of our country. Anyone can foresee the effect upon the well-publicized area of Appalachia if these mines are unnecessarily closed.

There is another form of economic loss which is hardly considered. The requirement that costly permissible equipment must be used in all mines will deny forever the development and operation of small

mines near the top of the hills and of small acreage, for they cannot be operated economically with costly permissible machinery.

Of course, many who operate these small mines could not begin to pay for the cost of such machinery. To deny the development of these natural resources in areas of our country would be unjust. The analogy is not quite on all fours, but it would be similar to permitting the operation of farms and businesses in one area of our country and denying it to another area.

We are going to have to produce enough coal to meet these needs.

The total production of coal necessary to provide electric energy and meet the other needs of our country must be maintained. If "nongassy" mines are driven out of business, one effect would be to increase the number of strip mines, against which the public cries out. A more likely result would be that production would be shifted to the larger mines now classified as "gassy," that able-bodied and skilled miners would be employed in these mines and the danger to them would increase rather than lessen.

I believe that the records of the Bureau of Mines disclose that the record of safety in the "nongassy" mines—27 deaths over a period of 16 years—sad as these deaths are, I believe it is a better record of safety than could be found in the great industries of our country. This cannot be said for the record in the "gassy" mines.

I hope that before this debate ends I shall be able to secure some comparable records of safety in the great industries of this country. I doubt if you will be able to find four industries in this country which in a period of 16 years has had as few as 27 fatalities. I must say this record cannot be said for the record in the gassy mines.

I think all would agree that safety is prior to economic consideration, but the record of safety in nongassy mines is good. This is the argument that is made by many who favor this distinction, made by many well-intentioned people, made by those who heard the word "safety" and do not examine to find out what the record of safety is and, of course, it has great emotional appeal and it has appeal to me.

But I think I looked at the record and looked behind the facts. I want to say again the record in the nongassy mines is good, probably there is no other industry in the country which could meet it as far as fatalities and accidents are concerned. The records of the gassy mines are bad.

Now let's talk about economic consideration. That is what they say. Are you more interested in an economic consideration than you are the safety? Yes, I am. This record is good.

Will you apply that same test to the mines? Will you close the gassy mines because they are producing these fatalities and injuries? No, this bill does not do that.

So I say to you it is hypocritical to use that argument that it is based on economic consideration rather than safety.

The closing of a number of nongassy mines will not cure the true danger, which is inherent and resides in the gassy mines. To those who argue economic consideration against the proposals I make, I would ask if economic consideration are not being given prime weight in keeping open the large gassy mines with their record of causing fatalities and injuries to the men who go down in the mines.

As to the tragic explosion in West Virginia, it brought the attention of the country to the danger for those who work in the mines. I think it was 78 killed. And prior to that time there was another explosion where 10 or 15 were killed.

And so as a result, I support this measure which provides for better ventilation, which provides for better inspection, which provides for escapeways, which provides for shelters, which has so many measures which will help. But I must say that after providing all of those measures which are directed toward the gassy mines, then they look for something else and make a big thing of requiring the nongassy mines, with a great record of safety, to install what some people call a half billion dollars, the cost of machinery, which will be closing mines, driving people out of work.

I would not want to end my statement without stating my support of the measures which are included in this bill to provide more adequate inspection, better provisions of protection against fatalities and injuries and to protect those who work in the mines against the dangers of pneumoconiosis and other respiratory diseases.

I must say I think your bill developed in the subcommittee is much more effective than the administration bill and also the bill that has been developed in the Senate committee. But I can't come here and just itemize these statistics without making some affirmative proposals.

The new measures of protection will apply to both the mines now classed as "gassy" and "nongassy." I hope that they will be effective in improving the safety record in the "gassy" mines. They can improve also the good safety record of the "nongassy" mines, particularly that section which will provide that 9,000 cubic feet of air shall be brought to the working surfaces and throughout the mine.

I also recommend that all mines might be allowed to use the permissible drill. Another point I make, many of these big mines are operating in "gassy" fields right now. I note in your report and also in the statement of the administration that they propose installing a device which would detect the presence of gas at the face and in that area, and when it reached a certain volume, it would automatically cut off the power coming into the mine, coming up the face.

That should be adopted if such a device is available. The detection and cutting off would be important.

I recommend that the committee retain the classification of "gassy" and "nongassy" mines. The record of the operation of these mines during the next 2 or 3 years after this bill goes into effect will provide proof as to whether the installation of permissible machinery in "nongassy" mines is required. There won't be any greater danger because the record is good in these mines.

Chairman PERKINS. First, Senator, let me compliment you on the eloquent statement. In my way of thinking, you have always been the type of American to express your views and you always stand on a solid foundation. I happened to grow up myself in a small community which within a radius of 20 miles had perhaps 12,000 to 15,000 coal miners.

I have always been interested in the safety legislation, just like you have. It took us a long time to give the Federal Government the right to police the mines, but I wonder, in view of the statement that you made on the bottom of page 3, over on the top of page 4, if in these

large mines that are abandoned, that have an abandoned area or areas where they are still operating, if we are imposing the duty on those mines that we should impose in respect to safety by seeing that the abandoned and sealed-off areas are free of methane to the extent there will be no explosions.

None of us know what happened, but we had Centralia. Now we have had the big one at Farmington. What happened in that area there? I would suppose that mine was making anywhere from 7 or 8 million cubic feet every 24 hours. It was liberating about 6 million cubic feet.

In my way of thinking, much of that gas is coming from these areas that have been abandoned. We ought to require that these abandoned areas be ventilated to the same extent that the other areas in the mines that are operational are, to make sure that there is no danger of any explosion. If there is some reason for sealing off some section of the mine, perhaps we should require drilling down from the surface to let that gas escape.

I want to compliment the distinguished gentleman from Pennsylvania. This bill in my opinion is much superior to the bill in the other body. But coming from a mining area, this thought runs through my mind.

I am afraid until we do something about these abandoned sections in these "gassy" mines, that we are going to continue to have these explosions. I certainly want to compliment you on your statement.

Senator COOPER. I think the bill as presented provides a better means for sealing these abandoned areas.

Chairman PERKINS. Mr. Dent?

Mr. DENT. Senator, it is always a pleasure to be in your presence. I am surprised that we might have some differences as to method, but I am sure that we are both trying to attain the same goal.

Senator COOPER. I have been following you for a long time.

Mr. DENT. I believe there are areas of merit to your economic view of the situation and the committee has tried its best to keep in mind the serious economic aspect of the problem of requiring permissible equipment in "nongassy" mines in a short period of time. However, there are so many figures batted around by groups that we have tried to get information directly. This has yet to appear in the record but it will appear at the proper time. It will show that if the Secretary is given the proper leadtime and given the proper authority and given the proper confidence by the Congress, we can move into the area of permissive equipment without demanding that the so-called nongassy mines accept the present equipment as a fulfillment of the demands of the act.

I honestly believe that there are different requirements in different mines. I don't think that you can draw a straight line and say that all the mines have to comply and do this particular line of equipment. There is no question that the small mines have different bodies. There is no question that the exits are easier to reach in a small mine.

In thinking along that line we provided in our act the mandate that all cutting equipment and all face-working equipment must have the automatic methane monitor on it. We have discovered that some are in a price range that does not make them prohibitive no matter what size of the mine. They have to carry other equipment, such as an auto-

matic shutoff switch which would automatically shut down all power equipment when a certain level of gas is detected.

The very proposal you made over in the Senate, which I compliment you on, we strengthened that by making it mandatory for prosecution where a miner is caught with combustible products in his pockets. The mine workers have for years made it ground for automatic dismissal if miners carry cigarettes into the mines.

I come from a coal mining family. We have had deaths from pneumoconiosis in our family as well as the accidental deaths that come from the many roof falls that occur in mines.

The serious problem we face is that the third generation of the coal miner is not entering the coal mine. He is not entering for two good reasons. One is the danger of pneumoconiosis or "black lung." The other is the danger of accidental death and injury. Even though many States have mine safety laws, safety is still a very paramount consideration when a young fellow decides whether he is going to work in the coal mines.

The number of applicants for coal mine jobs are far less than what the requirements of the industry are. The mines have reached a stage where within a very short period of time they are going to be depleted of workers. The older ones are staying in, many of them suffering from a mortal disease. But they are working because there is nowhere else they can go and not much else they can do to alleviate the disease they have contracted.

Progressive pneumoconiosis cannot be stopped nor can it be cured.

Now there were two things this committee felt had to be done. Considering the arguments we hear, such as those you gave us this morning, two things are shown to be paramount: We have to insure a young man who wants to have a job in a mine and who will accept a job in a mine, that we are doing everything humanly possible to eliminate pneumoconiosis in a reasonable time and protecting him from injuries.

We have done that in this bill. We know that all of the provisions we have included are going to cost money, but the cheapest commodity in the area of fuel that the American people have ever produced in our own country has been coal. Because it has always been at a price that has never paid the mining workers and the industry as a whole the kind of income obtainable in other industries does not mean that a 10-cent or 15-cent a ton additional cost, if that is what the increase finally amounts to, cannot be paid for the welfare of industry by coal consumers.

Even today with the prospects of atomic energy, coal will still be the most reasonable fuel for the many years to come.

I don't want to take the position that we have a closed mind on the "nongassy" issue except that we have found that this is the only Nation on earth that mines coal that has a "nongassy" classification. In your reference you said that all the provisions of the acts deal with "gassy" mines. That is because we have eliminated the "nongassy" classification and therefore presumed that all mines are gassy.

However, we know that the leadtime will be given to the Secretary and to the mine operators will be sufficient time to determine whether the economic hardship will be greater than can be borne and will be injurious, both to the economy of the area, the economy of the mines, and to the economy of the coal miner.

I don't want to see any mines shut down. Lord knows, we still have in Pennsylvania the second largest production in the country, so we don't believe that it is right to pass legislation which injures industry or the economy. However, deciding whether or not a mine is gassy or nongassy, sir, is a very serious situation.

Now let's just see what has happened since we introduced this legislation and since we have had some reclassifications of mines and a special inspection made; 210 mines have been reclassified as "gassy," which have never had explosions. Up until now the only time I have known of a mine being reclassified from a "nongassy" mine to a "gassy" mine is after an explosion has happened and automatically that mine becomes a "gassy" mine.

Mr. BELL. Will you yield for a question?

How many of those mines are large mines?

Mr. DENT. I will give you that. Each one is classified as to its size. Incidentally, it might interest you to note that the mines are classified as to drift, slope, shaft, so that the classifications have absolutely all the information you could require—130 mines operated as "nongassy" from the period of starting to 5 years and were reclassified "gassy"; 30 mines operated from 6 to 10 years and were reclassified from "nongassy" to "gassy." Eighteen operating from 11 to 15 years, were reclassified from "nongassy" to "gassy"; and 26 with over 15 years of operation were reclassified.

Now this is only a part of the 3,100 so-called small mines plus the 1,100 to 1,400 larger mines which are classified as "nongassy." But this is an example. The air analysis on two previous inspections showed all of these mines below 0.25, the largest was 0.22. And yet the last reclassification made by the Bureau showed some of these mines up to as high as 1.34, 1.49, and all of them over 0.25.

Now if this is true on a single reclassification, in my own opinion I don't know how the operation is going to be performed by the Bureau of Mines. But I do believe that with cooperation of the states, they will be able to have a reclassification of those they find immediately and they will be the first mines that will be manned with permissive equipment. That is the only way I know it can be done.

Senator COOPER. May I just say that what you have said here does not in any way conflict with what I have said.

Mr. DENT. I know that.

Senator COOPER. If they find these mines to have more than 2.5, they should be classified as "gassy," that is the law. It is probably a question of dereliction of inspection if they have not been classified so in the past.

Your State, my State, the State of West Virginia, and I think now the State of Virginia have model line safety laws. They have made more inspections in the coal mines of Kentucky than all of the inspections of the Federal Bureau of Mine Safety in the whole of the United States.

I think we are trying to get better inspection, better detection. So I am wholly in accord with what you have said.

Mr. BELL. Will the gentleman yield?

How many mines are the small so-called drift mines that were reclassified?

Mr. DENT. I am sorry, the chairman just whispered that I had taken a great deal of time. I would like to hear your question again.

Mr. BELL. My question is of those mines that were reclassified, how many small so-called drift mines?

Mr. DENT. If you will allow me to give you this to use it to study for yourself, I will give you a copy. The vast majority of the mines are small mines, the vast majority of these mines were drift mines because, as you well knew, the vast majority of this type of mines are small mines.

Chairman PERKINS. Mr. Erlenborn?

Mr. ERLBORN. Thank you, Mr. Chairman.

Senator Cooper, I want to compliment you on a fine statement you have given our committee here this morning. I want you to know that I agree wholeheartedly with your position. I think it is obvious from what you have told us that had we some years ago done away with the distinction of "gassy" and "nongassy" and required all of these currently "nongassy" classified mines to have permissible equipment with the exception of a few cases where electric drills were involved not one explosion would have been avoided, not one life would have been saved by the requirement of using permissible equipment in these small "nongassy" mines.

Senator COOPER. It didn't happen, even in those cases there were no fatalities.

Mr. ERLBORN. So not one life would have been saved if some 16 or 17 years ago we did away with this classification and put this economic burden on these small mines.

Senator COOPER. That is what the Bureau of Mines records reflect.

Mr. DENT. If you go from the dates since 1952, that is the strongest point made against Federal inspection, that the Federal inspection did not in any way reduce accidents nor save any lives, and yet the record is to the contrary.

Mr. ERLBORN. I thank the gentleman for what I guess is his contribution to this debate. But I don't think that you have in any way contradicted the conclusion that I reached and the Senator has reached that you would not have saved one life in the last 16 or 17 years by the expensive requirement of the use of permissible equipment in these small drift mines of "nongassy" mines.

So classifying this as a necessary move for safety of the miners just cannot be sustained by the record compiled by the Bureau of Mines.

The bill before us, I think that the similar provision is in the bill in the other body, would require that in 1 or 2 years all mines would have to have complete permissible equipment. I think that you in your investigation found that this is just not feasible, it can't be done, the equipment is not available. Isn't that true?

Senator COOPER. Mr. O'Leary himself has testified to that. Of course, he testified before this committee 4 or 5 years ago, you know, that the distinction between "gassy" and "nongassy" mines was absolutely valid, that is the question you are asking.

He testified on the Senate side, in fact, I was there at one point. I heard him say in the executive session, you can't find much of his testimony in the printed record. The minimum would be 5 years.

As I said, I have letters here from some saying it would be 10 years. But that is a problem you have to take into consideration if you want to take this route. But I continue my argument as a matter of principle. I believe that you should not take this route because the record shows that these mines are not gassy.

Mr. ERLNBORN. If the equipment is not available in the expiration of 1 year and this law goes into effect as it is now written before our committee, then the Secretary of the Interior may extend another year under this law; but at the expiration of 2 years without any question, probably hundreds, maybe thousands of small mines would have to go out of business, because even if they were able to afford to buy the permissible equipment, it would not be available to them. Is that correct?

Senator COOPER. That's right. I assume most members have traveled through at least the Appalachian area and know the topographical aspects of this country. Large coal companies with great resources, and I do not speak against them. They are an important factor in coal production in our economy. They have the capital, the resources, to accumulate large acreages by lease or purchase.

In order to find those large acres, they have to go very deep down at the base of a hill or underground in the shaft mines. You get under the water table.

Now I am from Kentucky, and I know West Virginia, too, and Pennsylvania, traveling through the country. In our State I think the highest altitude is 4,200 or 4,300 feet. The country is cut by small streams and narrow valleys, and your hills go up abruptly to the peaks. As they go up, of course, the acreage decreases.

Yet those are the acreages where the local people go in with their capital, which they have acquired by their work. Many of them are miners who have been able to build up some capital, and they open up these mines in smaller acreages with a limited amount of equipment. They employ six or seven men, sometimes two or three men, and they go up to 25 or 30.

It is related to the trucking industry, it is related to the community. They can't install this permissible machinery, \$260,000 for a section, and run an economical operation. If it is necessary to do it; yes. But the records from the Bureau of Mines show that it is not necessary.

Mr. ERLNBORN. Senator, some of these small mine operators have borrowed money to purchase the present equipment they are using, usually over some great length of time, several years at least they have to repay it. What is going to happen to the bankers in these small towns that have loans to operators who will have to go out of business? What is going to happen to the man who has invested his money in the purchase of a truck that he uses to haul coal from these small drift mines to the railroad or wherever the preparation plant is, wherever it has to be taken? What about the people who are in the business of buying and selling used equipment, nonpermissible equipment, who may have an investment of hundreds of thousands in equipment that can no longer be used?

Can it be used in any other mining operation? It is economically feasible for them to continue in business? What will they do with this equipment?

Senator COOPER. They will all go out of business.

MR. ERLBORN. This, without question, will have a great economic impact on the Appalachian area that is suffering under great economic stress conditions at the present time, isn't that true?

Senator COOPER. That is correct. All of us who live in Appalachia, I live in it, are sensible and sensitive to these needs. We are looked at by almost anybody. People make 2- or 3-day trips into our section and write stories about it. Some of it is true, some of it is not.

But we are conscious of the problems and we try our best to help solve them. If this program is not needed, since this is not needed—and the records show it—you just hit eastern Kentucky with another blow.

I want to stay as long as I can, and I will, but we have a memorial service coming at 12 o'clock in the Rotunda. I have to be there to go over about a quarter after 11. So I will be glad to stay or come back.

I am interested in this subject.

Mr. BURTON. Initially I would like to state the very great esteem with which I hold you. I think you are truly one of the most distinguished political leaders of the country, and the country has much to be indebted to you in terms of your service not only in the Senate, but in other capacities as well.

I am certain that anyone knowing of your record of compassion knows you would not be here unless you were concerned about the total impact of the elimination of the distinction between "gassy" and "nongassy."

As our chairman indicated, he may well stipulate the problems, but differ in view to some extent as to how we might resolve it. I am not going to ask you any questions. I think you know so much more than I and our subcommittee chairman knows so much more than I do that—at this juncture—I could not make any useful contribution other than to note my appreciation. I am sure Chairman Dent feels this, for the kind observation you made about the relative merits of the subcommittee bill as contrasted to the rather inadequate product all of us started with and perhaps even the favorable contrast you made with the final product of the full committee on either side.

Obviously you are concerned about this one area. I think it is one that perhaps before we are finished following this legislation, this group will have to find some mechanism for accommodating your concern. Congressman Bell, particularly on our side, has been working day and night with the view to finding some acceptable way to meet the primary thrust of the objection you have proposed this morning.

Mr. BRADEMAS. Will the gentleman yield? I thank the gentleman for yielding, because I must go to another meeting.

I simply want to take a minute to identify myself with the remarks of Mr. Burton and to express my own very great admiration for Senator Cooper and what he represents in American life. I pretend no expertise whatsoever on the subject of this legislation, so I listen with a completely open mind. I thank the gentlemen.

Senator COOPER. Thank you. I had better spend more time over here.

Chairman PERKINS. Mr. Bell?

Mr. BELL. Thank you, Mr. Chairman.

Senator, I would like to echo the comments that have just been made about you. So you may have to make that remark again.

Senator, would you say that it is generally correct that this all came about in a general sort of a way as a result of the railroads turning in the late forties from coal to fuel causing the whole mining industry to be adversely affected, in which the larger mine operators found it less profitable to work the small mines and therefore, because of the unemployment and so forth, some of these independent miners picked up and started working these small mines, eking a very small living out of it, relatively speaking. Would you say that was generally the history and background of this?

Senator COOPER. Of course, there are great changes in the coal mining industry and I think what Mr. Dent says is correct, the fact that the coal industry almost alone of all industries in the United States is still able to produce coal at about the same price it did 20 or 30 years ago.

It is because of the use of more effective machinery that is in the coal industry. The fact that we have better roads now in these areas has made it possible to bring out coal.

Mr. BELL. What I am getting at is that the small miners today have a very small margin to make a profit and as a result, demands are a big problem. The demands on the part of the Bureau to force the small miners into purchasing permissible equipment is the big bulk of the problem; is this correct?

Senator COOPER. Oh, that is correct. There will be witnesses here to show you that to require this equipment would, of course, entirely unsettle the economic organization of the small mines. It is just impossible.

I read the statement of Mr. Erlenborn, I think it is a very good statement, the speech he made in the House in which he pointed out—and I am sure it was discovered—that a minimum which produced about a hundred tons a day, that the margin of 30 cents a ton profit, that while these miners make \$7,000 or \$8,000 a year which is good, his profit might be \$12,000 to \$15,000.

Mr. BELL. So it is your feeling that if demands for permissible equipment were made immediately that would result in sizable unemployment.

Senator COOPER. Oh, yes. We have to face a problem. Many of these men who work in these small mines, many of them are not unionized and I am not here to raise a question between unions and nonunions. I am well acquainted with the UMW people. At times they have been my friends and supporters and at times they have not, but that is not the question.

In many of these small mines there are some older miners who cannot get work in the big mines and it provides a living for them and a very good living. If they go out of work, they are out of work. That is one of the tragedies of the Appalachian region.

People who have worked in mines, they are miners. They love to work in mines, they grow up working in them, they are associated with the mining camp, with the mining village. Their record has been that they are difficult to train for other occupations. They are afraid to leave their little camp or little village because they are afraid they will lose it.

If they are out of jobs, they are out of jobs.

Mr. BELL. If the permissible equipment were installed and the result were unemployment, it would be quite a serious situation for a problem that we have right today. For example, we spent millions of dollars, in fact billions of dollars trying to help the Appalachia area, did we not? So a result of the small mines closing down because of the immediate need of permissible equipment could be a worsening of the Appalachia problem. Is this correct?

Senator COOPER. Without question, the coal industry is still the chief industry, at least in my eastern part of the State. It is very hard to get industries to establish themselves, small industries, because of isolation and other transportation factors.

I am sorry to say this, but the chief payroll in the eastern counties of Kentucky is the Federal payroll and the welfare payroll.

Mr. BELL. The basic problems involving coal mines occur generally in the larger mines; this is where the disasters have been occurring, is this not correct? They have been occurring among the "gassy" and "nongassy" large mines that are not drift mines. They go down deep with tremendous equipment and are already covered under the Federal Mine Safety Act, is this correct?

Senator COOPER. It is absolutely correct, proven by the records of the Bureau of Mines.

Mr. BELL. So, in effect, if permissible equipment were demanded immediately in the small mines not only would there be a danger of putting miners out of work, but it would be totally unnecessary because so few of the mines involved in disasters are small mines, is that correct?

Senator COOPER. That is correct, proved by the Bureau of Mines, that is correct.

Chairman PERKINS. Mrs. Green?

Mrs. GREEN. Thank you, Mr. Chairman. I also welcome you, Senator Cooper, and I was especially interested in hearing your comments on the comparison of the administration bill and the Senate bill and the House bill.

Mr. Chairman, I just wanted to pay, first of all, my respects to the chairman of the subcommittee and to congratulate him for what I thought were very, very thorough hearings and a deep study of the total legislation in regard to mine safety. I wish also to pay my respects to the chairman of the subcommittee for his understanding of all of the problems that are connected with the mines and his leadership in the House in making other Members of the House understand the lack of consideration that has been given to this problem. His leadership over a period of years, I think has been extremely outstanding.

He has always placed the lives of individuals above economic considerations. Also in this bill, it is my understanding that there will not be any immediate economic disturbance; that a carefully phased change has been written into the legislation.

I do not have any questions, but I would yield to the chairman of the subcommittee to be heard.

Mr. DENT. Thank you. On this last point, that this immediate change might be economically disastrous: Immediate change is not possible; we recognize that. We recognize that in the bill, we recognized that in debate, we recognize that in discussion.

If we have failed to clearly state that before the period of grace is over, there still must be equipment available, then we will rewrite the section and clearly state that availability of equipment is a second consideration. No one would be foolish enough to write legislation which said that you have to use a certain type of equipment if such equipment is not available.

The real reason behind the suggestion for an open end is because I sincerely believe that the manufacturers of equipment have lacked the foresight or the initiative to produce the kinds of equipment that can be used in the small mines at a reasonable price.

The minute we discussed putting a continuous methane monitor on all face equipment, the manufacturers developed for use a very, very inexpensive automatic device to do that job. When we talked about the dust levels, they immediately developed new techniques. I have had the privilege of seeing new types of equipment for dust reduction that they never would have dreamed of if we had not kept pushing for a dust limitation.

Your own amendment about the probability of entering into the pockets of gas when you are in a nongassy mine is a very intelligent amendment. That is what happened in one mine very recently. Gas had seeped up from a gassy mine below. It had come up through the structure and the roof strata and it gave a certain amount of gas and because it was a nongassy mine, they were careless in monitoring their methane and it exploded and men were injured.

Chairman PERKINS. That was a gas mine.

Dr. DENT. I am sorry.

Chairman PERKINS. The figures have been compiled.

Senator COOPER. The mine in West Virginia where the level underneath it was a level mine.

Chairman PERKINS. That was in West Virginia, but in western Kentucky that was a gassy mine.

Mr. DENT. It was an Eastern Coal Co. Mine, which is situated in my district. I know their mines well and I know this mine well. They had a mine below the nongassy mine which was a gassy mine.

The Senator has made two proposals which, I think, are very important. One is the required use of nonflammable materials and the other is requiring on the permissible drill, some kind of triggering device that will deenergize it if it enters a pocket of gas.

In closing, I just want to say this. There has never been any lack of initiative on the part of the small mine operator, including myself, I might add, to buy the most expensive, the best transportation equipment available. I lost out if I didn't buy the the best hauling equipment I could get to take my coal at the pay bin.

This is true of every small operator I know in my area. They have the best equipment and some of the coal hauling equipment they buy costs as much or more than the most expensive permissible equipment that I foresee will be used in the small mines.

I am not disturbed too much by the economics of raising oil prices, because the real competitor of coal is oil. The oil companies now own all the big coal companies anyway. The last three experts on coal I talked to were presidents or officers of the biggest oil companies in the United States. They are not going to produce coal for people at any price except a profitable price.

So the economics of this situation, I am sure, will take care of itself, Senator, and the oil companies are going to see that their coal companies will make money.

Senator COOPER. I don't think that will help the plight of the small individual operators in the hills of Kentucky and West Virginia and Pennsylvania.

Chairman PERKINS. Mr. Quie, any questions?

Mr. QUIE. No questions.

Chairman PERKINS. Mr. Hansen?

Mr. HANSEN. Thank you, Mr. Chairman.

I have just one point I would like to make and that I will yield to my colleague, Mr. Bell. I join my colleague in extending to you a very warm welcome and a deep appreciation for your bringing to bear on this rather complex problem your considerable knowledge and understanding of the industry that we are dealing with.

I was particularly impressed with one point that you made and it is one that underscores a point made continuously by Mr. Erlenborn. You stress quite properly that safety is the No. 1 priority and if the effect of removing the distinction between the gassy and non-gassy mines will, in fact, be the closing of a great many of the non-gassy mines and the shifting of production and employment to the gassy mines, then we will have in the name of safety increased risks.

Therefore, it seems to me that we should focus attention on this precise point and try to predict as accurately as possible the exact economic impact of abolishing this distinction on the nongassy mines and be very careful that any steps we take do not, in fact, increase the risk of loss of life and injury.

With that point I will yield to my colleague, Mr. Bell.

Senator COOPER. Thank you very much.

Mr. BELL. Senator Cooper, is it not true that in mine explosion of any kind that in addition to gassy substance, there has to be a certain amount of dust in the air to be serious?

Senator COOPER. Yes.

Mr. BELL. Is it not true that generally speaking the so-called drift or small mines are basically free of this dust to a large extent?

Senator COOPER. Certainly freer than the large mines. As I pointed out, and I think the people here who operate these mines can show it, these large mines to be economically run, they require the most advanced machinery, machinery which cuts the coal quickly and at great speed, the continuous miner, or machines which undercut the coal.

They do product tremendous concentrations of dust suspended in the air, which is combustible. Now if you have a situation where you have those large concentrations and again an accepted volume of methane gas which in the gassy mines, as I have said, go up to 1 percent, then you have increased the danger of an explosion.

Now contrast that with a small mine where they don't have this advanced machinery, where the cutting is slower. You don't have the large concentrations of dust, and where the methane gas has not to be kept below .25. You don't have that situation for a mixture which brings about the explosion.

That is the reason you have got this record of 400 explosions, as I recall, in 391 mines over a 16-year period compared to 52 in 3,200

mines over a 16-year period. The contrast is so obvious that I think it is just apparent to any of us.

Mr. BELL. In effect, if we demand immediate installation of permissible equipment, the best information I have is that this may cost upward from \$100,000 to \$200,000, which the small miners cannot handle. We are, therefore, hurting the economic situation in Appalachia to prevent a danger that really, in truth, does not exist as far as the small mines are concerned. Is this correct?

Senator COOPER. Yes.

Mr. BELL. We are all for mine safety. But I want to be sure that the economic life, as the Senator does, is protected for these people who are eking out just a bare living from this operation.

Senator COOPER. That is correct.

Chairman PERKINS. Mr. Ruth?

Mr. Dellenback, any questions?

Mr. DELLENBACK. No; I just join in welcoming the Senator this morning. I have no questions to add. We appreciate his testimony very much.

Chairman PERKINS. Thank you very much, Senator.

Senator COOPER. May I express to this committee my appreciation and also for many of you coming and listening in, and I want to express my high regard to this committee, to the chairman who I have known for many years. We have worked together on so many problems in Appalachia and tried to help that section with our other colleagues.

Also, I express my regards to Mr. Dent. I know him and have talked with him many times in the past and I know his work and his interest in this field.

As I said, I thank this whole committee because I think the subcommittee bill is a more accurate one than the Senate committee. Don't make coal production more dangerous by shutting down the safe mines and putting the production in the dangerous mines.

Mr. DENT. Senator, we surely appreciate very much your coming here today. I can also assure you that the things you are afraid of won't happen if we in any way can forestall it.

Chairman PERKINS. Mr. Mosgrove is assistant director of the bureau of mines for Kentucky and has with him Ted D. Haley from the University of Kentucky. Sit down, gentlemen.

Go ahead, Mr. Mosgrove, with your statement.

STATEMENT OF J. MOSGROVE, ASSISTANT COMMISSIONER, STATE DEPARTMENT OF MINES AND MINERALS, LEXINGTON, KY.; ACCOMPANIED BY TED D. HALEY, ASSOCIATE PROFESSOR OF MINING ENGINEERING, UNIVERSITY OF KENTUCKY, LEXINGTON, KY.

Mr. MOSGROVE. Mr. Chairman, and members of the committee, I will try to qualify myself without going into detail. My job is assistant commissioner, Kentucky Department of Mines and Minerals, and as background I have been in Kentucky coal mining 40 years.

I started at the age of 15 as a coal loader in an eastern Kentucky coal mine and I advanced from that to mine foreman, mine inspector with the Kentucky Department for Mines and Minerals. I have been

the safety director for a number of years. I taught mining 15 years. It adds up to 40 years mining experience.

I was asked by Mr. Perkins to put together some figures which I hope that the committee will see useful and I think maybe will be helpful in helping you to make a decision. Kentucky is the second largest coal producing State in the Union. We attained that rank a few years ago.

In the last 2 years, 1967 and 1968, we mined over 100 million tons of coal. Coal in Kentucky is what we call the No. 1 cash crop. It may be even above whisky and tobacco. It employs a lot of people.

Personally we of the department of mines and minerals and administration are extremely proud of Kentucky's coal miners. We think they are fine people and we have a deep feeling also for an industry, as you know I would have, having grown up in it.

At the present time I am going to dwell with the figures I have dealing with underground coal mines. I have left out what are known as the surface mines, the strip mines. Our figures for the year 1968 showed that we had what are known as "rail mines," 110. These 110 rail mines employed 9,413 men. They produced almost 40 million tons of our coal. That is the underground rail or large mines.

I don't know how to break a large and a small mine down, but there must be some point there that someone is using. If it is agreeable with the committee, I will stick with what we referred to as "underground" and "truck mines."

Our truck mines mined almost 22 million tons of coal last year from underground mines. They employed 10,000 men. They employed 10,487 as compared to 9,000 for rail mines rather.

Now, I made an analysis for Mr. Perkins which includes the period covered by Public Law 552, which seems to be the area incorporated in most reports. Beginning with July of 1952 through June of this year I made an analysis and a breakdown of each fatality that we have had in those years and let me say at this point that we are not happy with our fatality record.

We are not going to be happy as long as we have one. The Kentucky Department of Mines and Minerals has a definite program. We know what we are trying to do. We have men who live in the district who know the personality of the people and of the coal mines. They are by and large veterans.

To give you an example of what we have done in 17 years, something that might be food for thought, falls of roof, slate, and so forth, has killed a total of 517 men. Hauling of coal in some fashion from the workings to the outside of the mine has killed 131. Electricity inside our mines has killed 61 in the 17 years. Machinery or working with machinery has killed 34.

Now we get to the point that seems to be the one that we are most concerned with, gas or dust explosions. In 17 years Kentucky has not had one man killed in a "nongassy" mine with a gas ignition in 17 years. We have had in the 17 years nine men killed. That included four current in the 17 years.

The first one was killed in a "gassy" mine when a locomotive entered; second was when a fire boss went in an inspection jeep in an area, an inspection jeep. It is a mobile buggy. In 1967 we had two

occurrences, one killed four men and one killed three. They were both in gas mines.

Kentucky at this time, and I always say this with my fingers crossed, because I know we are not immune to the problems—Kentucky if they can go to December 26 of this year, we will go 24 years without a major disaster brought about as a result of a gas or dust ignition.

There are some accidents, fatal accidents you must classify as miscellaneous, because you just don't know where else to put it, and we class that as five. Explosion in blasting, we had 26 in the 17 years. From coal bumps, we had four. In mine fires we had five. That is a total of 837 men killed in 17 years. We are not happy with that figure.

The thing that we are satisfied with is that we may be making progress, we feel, in reducing those accidents. As an example, in 1948 we had 134 men killed in Kentucky coal mines. We have gotten that down, the industry and the men who work in the industry and the agencies that are working in it. We have had that as low at 33. Last year it was 56. That was done while increasing the coal production from 82 million to over 100 million.

Of the percentages of our coal mine accidents or fatalities, taking it by percentages, from falls of roof it was 62 percent of all fatal accidents. We worked hard on that. We worked real hard, because we feel if 62 percent of our people are killed from falls of roof, that we are just about justified in exerting 60 to 62 percent of our effort in that direction.

Seven percent by electricity, 4 percent by machinery, and our deaths from gas and dust ignition explosions has been 1 percent of the total. Our miscellaneous has been one-half of 1 percent, explosives and blasting, 3 percent; fire, 0.6 percent; and so forth.

Now then taking the average per year over the 17-year span, it shows that our average number of men killed from falls of roof is a shade over 30. Our number killed from haulage is almost eight. Electricity is three and a half. Machinery is two. The number of people we have had killed from gas and dust explosions, 1.53, or one-half man average per year.

Going on down the line, I think that you would not be interested in this, but a copy of this analysis will be available for the committee if they would like to have it.

Chairman PERKINS. Without objection it will be inserted in the record.

(Analysis follows:)

KENTUCKY DEPARTMENT OF MINES AND MINERALS

FATAL COAL MINE ACCIDENTS, JULY 1, 1952 TO JUNE 30, 1969, INCLUSIVE (17 YEARS)

Year	Falls of roof	Haulage	Electricity	Machinery	Gas or dust explosion	Miscellaneous	Explosives and blasting	Coal bump	Fire	Surface	Total	Strip	Grand total
1952 (July).....	15	9	1	3	---	---	11	---	4	3	36	---	36
1953.....	39	10	3	1	---	---	---	---	---	2	59	---	59
1954.....	5	5	4	5	---	---	---	1	---	4	54	3	57
1955.....	33	13	4	---	---	21	11	---	---	3	55	---	57
1956.....	47	9	8	---	31	1	12	---	---	4	74	1	75
1957.....	40	10	4	2	---	---	42	---	---	2	59	2	61
1958.....	29	7	3	1	---	---	51	---	---	5	48	1	49
1959.....	26	4	4	1	---	---	61	---	1	3	42	2	43
1960.....	32	7	8	3	---	1	61	---	---	3	55	1	57
1961.....	43	5	2	1	---	---	81	---	---	2	55	0	55
1962.....	19	11	3	1	71	---	---	---	---	5	41	0	41
1963.....	25	5	1	1	---	---	61	1	---	---	33	0	33
1964.....	21	6	3	3	---	---	---	---	---	2	44	3	47
1965.....	23	6	1	1	---	---	93	1	---	1	37	2	39
1966.....	22	9	---	---	107	1	---	---	---	1	37	3	40
1967.....	23	5	4	3	---	---	111	---	---	2	46	4	50
1968.....	22	5	7	3	---	---	129	1	---	3	50	6	56
1969 (June).....	9	2	1	2	---	---	61	---	---	---	15	1	16
Total.....	517	131	61	34	9	5	26	4	5	45	837	31	868
Percentage of total underground.....	62	16	7	4	1	.6	3	.5	.6	5	---	---	---
Average per year.....	30.40	7.70	3.58	2.00	.53	.29	1.52	.24	.29	2.65	---	---	---

1 Blow through.
2 Compressed air.

3 Gas locomotive, old works, gassy mine.

4 1 blow through, 1 put shot off on.

5 Blasting fuse caps set off with cap lamp.

6 Short fuse.

7 Fireboss, inspection Jeep, gassy mine.

8 Improper handling, caps, open light.

9 1 flying material from shot and 2 improper handling.

10 2 occurrences, gassy mines.

11 Fuse caps, open spark.

12 Improper handling and storage.

Mr. MOSGROVE. We have other members we would like to hear from. If you have questions, I will try to answer them.

Chairman PERKINS. Mr. Dent?

Mr. DENT. I am very much impressed.

Mr. MOSGROVE. Congressman Dent, you had me worried awhile ago when you mentioned those six men, because I thought someone was slipping one over on me. It was in West Virginia, it was not in Kentucky.

Mr. DENT. I did not intend to say in Kentucky.

Mr. MOSGROVE. We have many small mines. They are good citizens, these people who work in these mines are fine. I grew up in eastern Kentucky.

Chairman PERKINS. Mr. Bell.

Mr. BELL. Mr. Mosgrove, you were just talking about the number of small mines in Kentucky. Would you say that there are substantially more so-called small mines?

Mr. MOSGROVE. By numbers, yes, sir.

Mr. BELL. There are substantially more?

Mr. MOSGROVE. That is right.

Mr. BELL. Do you have any idea how many of the truck or small mines are nongassy?

Mr. MOSGROVE. Most if not all of the truck mines or the small private mines referred to are nongassy. I believe I read that. Let me refer back to my charts. I do have that.

Chairman PERKINS. Tell us the advantages if any, of treating the gassy and nongassy mines separately in Kentucky if you want to, briefly.

Mr. MOSGROVE. Mr. Chairman, the record that I have read as far as we are concerned speaks for itself.

Chairman PERKINS. Not a single fatality.

Mr. MOSGROVE. We simply have not had the problem with it.

Mr. BELL. You would prefer to have the gassy-nongassy classification retained?

Mr. MOSGROVE. The commissioner of our department has taken that stand with his statement with the Senate committee.

Mr. BELL. Do you see a serious problem economically, Mr. Mosgrove, if the demand for permissible equipment were made immediately as far as the small mines are concerned? Would that be a serious problem?

Mr. MOSGROVE. An abrupt change could cause trouble, that I am sure.

Mr. BELL. An abrupt change could cause serious economic change as far as the small miners of Kentucky are concerned?

Mr. MOSGROVE. Sir, I believe it would.

Mr. BELL. My information is that the cost of permissible equipment would be in the neighborhood of plus \$100,000 and this could be a serious problem.

Mr. MOSGROVE. I have no idea of what the costs would be, because we don't concern ourselves with those things. But I am sure it would be rather expensive.

Mr. BELL. I see.

Chairman PERKINS. Your gassy mines in Kentucky are in western Kentucky primarily?

Mr. MOSGROVE. Mostly by and large our gassy mines are in the slopes in western Kentucky. We do have enough to keep us alert in eastern Kentucky.

Chairman PERKINS. Mr. Bradbury, will you come up at this time and take that seat over there? While several members are here I want to introduce you.

This gentleman is Mr. Arthur Bradbury. I would like for you to identify yourself and tell a little bit about your training and experience and then go ahead and make your statement.

**STATEMENT OF ARTHUR BRADBURY, MINING ENGINEER,
PRESTONSBURG, KY.**

Mr. BRADBURY. My name is Arthur Bradbury. I live at Prestonsburg, Ky. I was born in England, and I worked in the mines from the age of 13. I went to work at 13. They would not allow you underground, so I worked on the surface until I was 14. Then I went underground, and I guess I have just about been underground ever since then.

Chairman PERKINS. How many years experience have you had with the mines, gassy and nongassy?

Mr. BRADBURY. Well, I started at 13, and I quit at 65. So that makes me 52 years of active participation in coal mining.

Chairman PERKINS. What was the position you held at the time you quit?

Mr. BRADBURY. I was going to give you a few facts regarding my experience and history.

Chairman PERKINS. Go ahead.

Mr. BRADBURY. While working in the mines in England I attended night schools. We were fortunate in that area, that heavy industrialized area of many coal mines and other manufacturing. We were fortunate in having a good education system. So I took a course in mining engineering during the time that I was working, by night-school efforts.

Anyhow, in August of 1923 I came to this country and came to Illinois, Marion, Ill. I worked in the Marion and Bellville areas of Illinois underground in various capacities. And in 1934 I was appointed superintendent of the Bellville Mine Rescue Station, which is a mine rescue station operated by the Department of Mines in Illinois.

In March 1941 I went to Wheelwright, Ky., and was employed there by Inland Steel Co. at their coal mining properties. I started as a first-aid instructor. They had a program going on, and they put me in charge of it.

After that was completed, I was put in mines as safety inspector. And in 1942 I was put in full charge of the safety department to run their safety program.

I retired on May 1, 1963, and at that time I have been given the additional duties as assistant to the manager of coal properties. I have been retired then more than 6 years, but I do still like to keep in touch with the coal mining and also community activities in our area.

I have been a member of Kiwanis for many years, have been president of our local club at Wheelwright. And I am now chairman of the advisory council at the McDowell Appalachian Regional Hospital, also chairman of the steering committee of the comprehensive health program, which is a Federal operation in Floyd County. I am a past president of the Big Sandy Coal Mining Institute, past president of the Mine Inspectors Institute of America, and I served as general chairman of the coal mining section of the National Safety Council

for the year 1950. I served on committees, safety committees of the American Mining Congress and also the Bituminous Coal Miners Association's safety committee.

I might mention I have been fairly active in Red Cross and Boy Scout work and things of that nature in the community.

I would like to tell you just a little bit more of the work in England. There is quite a difference between coal mining there and coal mining in this country.

As I said, I started underground as a haulage boy. That mine where I started was 500 feet deep. It was very gassy. In fact, all the mines in the field were gassy, very gassy. Believe it or not, those of you who understand, you have heard about safety lamps, I am sure of that, during your previous hearings. The safety lamp at that time was the only illumination that underground workers had, because, of course, of the very gassy condition.

The safety lamp in those days would give about one-half candle-power per lamp, and each man, of course, carried his own. And I know people who work in the mines now today where we have these modern electric-cap lamps would hardly realize that you could see to work and perform your duties underground with the small light that we were providing.

After 2 years as a haulage boy at this first mine, I went to another one, and this shaft was 2,000 feet deep. There I served as haulage boy. And at the age of 17 I went to the coal face as a loader. The loader, of course, all he did in those days was shovel.

I later advanced to what they called colliers. The collier's duties were to do the timbering and placing the shot holes and things of that nature with the help of his coal loader. All this time I was going to school, and I got certificates as a shot firer. And I mention in those days a shot firer there had to be a certified man with a Government certificate. He had to show that he could test for gas with a flame safety lamp, and he had to have his hearing tested. And he had to know all of the laws pertaining to blasting in coal mines that were gassy.

From shot firer, I became what they called in some parts there a deputy. It would be equivalent in this country to a section foreman. They were also permitted to fire shots, and that would be done. The deputy would make his rounds about twice a day, and he would have the holes already prepared for him there. And he would bring the detonators. And the only thing the coal miner had to do with blasting was that he carried the powder into the mine from the magazine on the surface in a canister. And the fireman, he was the man who had the key.

Following that I worked at a mine that was 3,000 feet deep, and I had the job as a deputy there. I might mention that in this field the depth of the shaft didn't just mean that was the depth of all the workings, because the seams were all inclined, and from the shaft you would go down these inclines or slopes.

Mr. BELL. May I ask a question right here? When you say 2,000 feet down, do you mean straight down?

Mr. BRADBURY. Oh, yes, yes; vertical. That is to the shaft bottom. From the shaft bottom then you would go on slopes following the inclination of the seam, and they would drive levels.

Mr. DENT. Might I interject? We went down in one 2,500 feet deep, and it was a little warm down there.

Mr. BELL. I went down 2 miles in one in Virginia.

Mr. BRADBURY. This one that was 3,000 feet, it was called the Handley Deep Pit, and I suppose that was a very suitable name for it.

I also advanced my schoolwork, thought I was getting along pretty good. I was taking this mining engineering course, and I completed it. But I might tell you it took me about 11 years to do it under those conditions. However, it turned out all right.

I took Government examinations in England. By the way, I came to this country when I was 25, so I had the opportunities of working there as a young man. I took Government examination, and I obtained certificates as the fireman or deputy and underground manager.

I also possessed certificates as a first-class mine foreman and State mine inspector in both Illinois and Kentucky.

In 1942, I was sent to Pittsburgh to take the Bureau of Mines course that they were giving to their new inspectors. At that time they were just starting to put into operation the inspection of mines through the Bureau of Mines. I went at company expense to attend one of those courses of about 6 weeks duration, and our company wanted me to be familiar with what was going to be expected when those examinations came about.

So much for my history. In the 52 years I actively served in coal-mining industry I have seen wonderful progress in coal mining methods and in coal mining safety. I believe progress in mine safety has never been given the acclaim and publicity that it deserves. It has always had a bad image. You only hear of the bad things, very little about the good things that were accomplished.

I went to Wheelwright in March 1941. I have already told you that, how I started there. I took charge of the safety program in November 1942. During the year 1942 a total of 169 disabling injuries occurred. Hand-loading methods prevailed with about 1,400 men employed. A systematic safety program was developed, and the accident record was steadily improved each year.

In the year 1953, or it might have been 1954, the disabling accidents were reduced to seven.

Chairman PERKINS. During all the time that you were in Wheelwright did you ever have an explosion or an ignition from gassy mines?

Mr. BRADBURY. No, sir; never did, and we never had any trouble from that direction.

Let me relate, I think probably I have some notes that would cover that, if you don't mind.

Chairman PERKINS. Go ahead.

Mr. BRADBURY. I might mention that this safety program that was developed, it included revision of safety rules, regular mine inspections on all shifts, investigation of accidents, Bureau of Mines first-aid and accident-prevention training courses, both the supervisors and workers, and first-aid mine-rescue training, and company contests and participation in other safety contests. We held safety meetings throughout, both for the men, and we expected also of the section foreman to have his safety reading with his own small group of men, and we also had monthly foremen's meetings where safety was the chief topic of those discussions.

We put into effect some incentive plans, trying to urge safety by giving them a little incentive. And we had a rating plan for foremen on their individual safety efforts with their own groups of men.

I spoke about that safety program that we had at Inland Steel Co., and I was sufficiently in touch with other companies' programs that I can assure you that wasn't an individual or isolated effort. I found that it was general practice throughout the industry by responsible companies.

During these years progress and economic factors dictated the development of machines to replace hand-loading methods. Later mobile equipment was introduced, including cutting machines, drilling machines for coal, and roof bolting, loading machines, continuous miners, shuttle cars, and all of those various pieces of equipment were developed and improved, and the years went along. While these machines brought new problems in safety and health conditions, they did remove the men from the immediate face area, where the danger from roof and coal falls was most acute. It allows the men to perform their work in comparative safety under roof where permanent supports had been applied.

Other features contributed to the improvement in mine safety. To sum up, they were automatic couplings on mine cars, protected cabs on locomotives, and the Bureau of Mines' inspection service, also that of the State departments of mines, training programs that those two divisions of government provided, they were used extensively. Roof bolts and roof-support stands, and better mining conditions also contributed. We should not lose sight of the fact that falls of roof have been the No. 1 killer in coal mines for many years. Great strides have been made in reducing mine explosions over the years by improved ventilation, gas-detecting devices, and rock dusting. And until the tragic Mannington disaster occurred, it appeared that ignitions and explosions had been confined to very small areas in mines, and almost eliminated.

I think the records will show what improvement was made in those type disasters over the years. Some of the proposed changes in the law now under consideration are drastic and will be very costly, and in my opinion many substantially established coal companies will suffer a very severe financial jolt.

One of the most drastic features is the elimination of the nongassy mine classification. This change will do little or nothing toward saving lives and little toward improving safety and health conditions. But it will be a very severe blow to an important segment of the coal industry, one which is least able to defend itself and defend its interests. I am referring to the small mines group.

Eastern Kentucky coal fields, where I have lived and worked for the last 28 years, is in the heart of the Appalachia poverty domain, and whatever economic health it enjoys outside of Government programs is largely dependent upon the continued operation of the small mines which produce coal from these mines starting from the outcroppings on the hillsides, high up in the hills. These mines and even the large mines where I was employed are practically devoid in methane gas. The present lull also requires that even in nongassy mines examinations for gas must be made in each working place, before each shift, with a flame-safety lamp, also that the air current be checked at the last open cross or breakthrough on each section.

I believe I have got just a little bit ahead of myself. If you will excuse me, I want to go back here a little. I want to talk about the small mine operators who are going to suffer, in my opinion, these hardships.

These small mine operators would be forced out of the business if they were compelled to meet the requirements of gassy mines. They would not be able to buy the costly permissible equipment and provide other expensive changes in operating practices. Maintaining this type of equipment in permissible condition requires the constant attention of skilled electricians and repairmen. There is a shortage of this type of worker throughout the industry. It would be impossible for the small mines to attract men of that caliber for the reasons, of course, that they would rather go to the large mines where their job security would certainly be more satisfactory.

As the law now stands, these nongassy mines are subjected to inspections both by the Bureau of Mines and by the State mining departments in the various States. They all have these inspections. These inspections are made at frequent intervals, and during the course of the inspections air samples are obtained and sent to the laboratory for analysis. These samples are taken at places where gas would most likely be expected. If one sample shows twenty-five one-hundredths of 1 percent of methane present in the air, the mine is classed as gassy forever. This provides the men employed at these mines a great margin of safety when you consider the lowest explosive mixture of air and methane must contain 5 percent of methane gas.

It is here where I would like to also bring out what I started to speak of before, that these nongassy mines even under the present law are subject to inspection, and it is part of the provisions of the law that they make these gas examinations for every shift and that the air currents must be checked in each section to make sure that they are functioning properly and of the proper amount.

When I went to Wheelright the mines were all classified nongassy. I am speaking of Inland Steel's mines now, not just the small mines. But in December 1954 an air sample was found to contain thirty-four one-hundredths of 1 percent methane. And soon afterward we were pretty much distressed about that.

Another inspection occurred, and one sample showed forty-five one-hundredths of 1 percent of methane present. Subsequently, the mine was classified gassy. When this occurred we all became very gas conscious.

The training of underground supervisors in gas testing and in the use, care, and handling of safety lamps was renewed. A W-8 methane detector, which at that time was the best and could indicate gas in small quantities from one-hundredth of 1 percent to 5 percent, was used periodically. Up to the time I retired no gas was found by sample or detectors which again reached twenty-five one-hundredths percent in that mine.

On many occasions I inspected old worked-out areas, and on several occasions it became necessary to explore old abandoned workings, workings that our mine workings were approaching. On these occasions I always carried a methane-carbon-monoxide detector and the safety lamp. I don't remember ever finding any methane in the atmosphere, and the atmosphere would always sustain the flame of the

safety lamp, showing that the oxygen content that was there was reasonably good.

I know you have had an abundance of information on accident figures and other statistics, and what I wanted to do here and I hope I might have done is tell my story in simple language and try to to avoid duplication. I firmly believe it would be a great mistake to eliminate the nongassy mine classification. I am sure that if this is done, it will result in great hardship to Floyd County, where I live, and in many of the counties in eastern and southeastern Kentucky and in other places where similar small mines operate.

I think that would cover what I had to say.

Chairman PERKINS. Mr. Bell has some questions.

Mr. BELL. Thank you, Mr. Chairman. I would like to ask Mr. Mostrow as well as Mr. Bradburg: have you heard of an instrument that is almost in effective working order, which establishes a method by which a certain percentage of methane can be tested anywhere the device is placed and by the time that methane reaches a certain level, this instrument, as I understand it, reacts to a point where it cuts off all of the electrical equipment in the mine? Have you heard of such an instrument?

Mr. MOSTROW. There is some rather sophisticated equipment being tested. I have read that. I know we have methane monitors which are supposed to cut the power from the equipment.

Mr. BELL. My information is that the instrument is pretty well perfected and it would cost approximately in the neighborhood of \$600, not much more than that.

My query is, if we were to establish immediately an opportunity to test this instrument adequately, would you as a commissioner approve of an immediate test and also provide that members of the Bureau would be there to witness the testing? This instrument, as I said, could very seriously affect this bill that we are talking about. It could, as I see it, eliminate the absolute need for permissible equipment.

Mr. MOSGROVE. If I understand your question, would we make available an area for testing of this equipment with the Bureau of Mines? I believe—

Mr. BELL. Do you have any idea—

Mr. DENT. Will the gentleman yield?

Mr. BELL. You said you will test this, you will provide for a testing of this instrument?

Mr. MOSGROVE. We, of course, get the approval of the operating company for this. But I see no difficulties in getting it done.

Mr. DENT. You are working on an assumption, but the assumption is already a matter of fact. This continuous methane monitor is in operation and has been in operation a long time. It is already operating in mines I have been in, and other members of this committee and Mr. Hansen have been in mines where they operated.

Mr. BELL. Has the Bureau of Mines made up its mind that it could just require one instrument to eliminate dangers in mines, to the point where they would say this is adequate, fully tested, and therefore remove the necessity to have permissible equipment? Because in truth if it were that effective, it would seem to me you would not need permissible equipment.

Mr. DENT. The gentleman has asked a question he will have to answer.

Mr. BELL. You said this is tested. Perhaps the Bureau of Mines can answer that.

Mr. DENT. The Bureau of Mines is aware of the fact——

Mr. BELL. Mr. Dent, being fully aware is not adequate. I think it will be necessary for people in the mining industry to have this established as a safety vehicle that would preclude the necessity of more expensive equipment.

Mr. DENT. The law that is before you, the bill before you is written in such a way that this is part of the equipment.

Mr. BELL. Are you willing to say, therefore, that it is not necessary to have permissible equipment that would cost \$100,000 if this instrument were installed?

Mr. DENT. You are assuming the cost to be \$100,000.

Mr. BELL. I know that is the basis of our debates, but I must say almost everybody I have talked to agrees on that point.

Chairman PERKINS. Let me first clear, if I understood the gentleman's question, though, Mr. Bell's question, is an alternative to use nonpermissible equipment in any mine equipped with a methane monitor that would automatically deenergize itself when the gasline reached a certain level, is that your question?

Mr. BELL. Yes.

Chairman PERKINS. Mr. Dent.

Mr. DENT. With a methane monitor the designation of gassy or nongassy would mean nothing, because if it automatically shuts off a mine's operation, it will shut equipment in a big mine off just as well as equipment in a little mine.

The question is whether or not the classification of gassy or nongassy serves a useful purpose. That is what I was going to say to the gentleman from England. A few years back the English determined that the nongassy designation was fictitious, and they have now designated all mines to be gassy. There is no such a thing as a nongassy mine in all of Great Britain nor is there in any operation in Africa, Czechoslovakia, Japan, Poland, or anywhere else.

Mr. BRADBURY. I believe there is an answer to that. The coal industry in those European countries which you have mentioned has a much longer history than, of course, the industry has in this country. I just don't think that there is any coal that is close enough to the surface in those countries that would be nongassy. They are down in these deep mines.

Mr. DENT. They had the classification of gasy and nongassy mines, and they removed the nongassy classification by order of the coal boards.

Mr. BRADBURY. I don't remember them every speaking of nongassy mines when I was there. I sure don't.

Mr. BELL. In other words, Mr. Bradbury, you believe that the gassy and nongassy classifications should remain as you said earlier and that England's system is somewhat different, because they have mines that go down deep and we have flat and horizontal mines.

Mr. BRADBURY. Yes. I can tell you an episode about this particular subject. In the very early mining days in England there was coal that was around near the surface on some of the hills, and they got that, of course, worked out first. It developed later when they had to start going down and finding seams of coal below the surface they ran into

trouble. In those days there was no such thing as a safety lamp. They were using open-flame lamps.

Mr. BELL. Would you agree that this would be a rather important aspect of this whole program? Would an adequate testing of the type of instrument that I spoke of perhaps preclude the necessity, as I said earlier, of expensive equipment? There would be no need for the gassy or nongassy classification if this instrument could adequately shut off all the electrical equipment. Therefore, it would make the problem purely academic.

Mr. BRADBURY. Well, you know, I think you and Congressman Dent were discussing something a little bit different in your discussion of this monitoring device. You said, Mr. Dent, that it was already in use. But I wonder if that isn't the monitor for methane that is attached to an individual face, piece of face equipment.

Mr. DENT. That is what the bill talks to.

Mr. BRADBURY. I think Mr. Bell was referring to something different, something that would cut off the power of the mine.

Mr. BELL. Right, this instrument is one that could be placed anywhere, at the face of the mine or at another spot and at a certain level of gas could shut off automatically all of the power in the mine. Now there is such an instrument that is reaching the perfection stage.

Mr. BRADBURY. I don't know of it myself. I don't know whether you do.

Mr. MOSGRAVE. I don't know of that one, but I do know if there is an instrument that would be helpful in safety in coal mines, I am sure that we have operators in this room that would say let's try it.

Mr. BELL. You would be in favor of testing it immediately if this were possible?

Mr. MOSGROVE. Of course, any device that would improve safety.

Mr. DENT. I have nothing more. I thank all of them for contributing to the proceedings this morning. It is a problem that has always been very controversial and one that is not the type of legislation that is passed every week. It usually takes a great number of years to get this legislation ready, and that is why this committee has not been rushed into anything. We are trying to do that which we think is best for the miner and mine operator.

I think, Mr. Chairman, the information we got this morning will be very helpful. I appreciate your waiting to testify. I know this gentleman has a great deal of practical knowledge of the coal industry. I want to thank you all for coming here this morning.

Chairman PERKINS. Mr. Hansen, any further questions?

Mr. HANSEN. Thank you, Mr. Chairman. Let me first of all express my appreciation also for your attendance here and for your very helpful testimony. May I commend the State of Kentucky on what certainly appears to be a fine safety record. I will only ask one question and ask for the comments of both of the witnesses.

I am interested in knowing the extent to which the elimination of the gassy and nongassy distinction may, if you think it will, may increase the hazard by forcing the closing of nongassy mines and shifting production and employment to the gassy mines.

Mr. BRADBURY. I was interested in that question when you asked Senator Cooper. I agree with his thinking along that line. He pointed out where the gassy mines, that is where you find most of these acci-

dents. And, of course, if the classification was eliminated for nongassy mines, I do believe that it would have a big impact on them and that they just could not afford to do it. They have these little mines in this small acreages, very small. They employ few men. They work it out in a year or two, and they have to find another patch of coal which probably could not be reached by some large mine, and there they start again.

So I do think that it would pretty well run them out of business. We have to have coal. I hear right now that coal stocks in this country are right about the lowest they have been for a long time. We are going to have to have coal, so the big mines are the ones that would have to produce it, and you would be putting men in the places and the mines where these accidents have been more frequent. That is true. That is a point I had not thought about before I heard you make that question.

Mr. DENT. Would you yield for an observation?

Mr. HANSEN. I would be glad to.

Mr. DENT. For 16 years in title I mines those under 14 men were exempted from the Federal mine inspections. They were exempted always on the fact that if the Federal mine inspections was made mandatory on the small mines that they were out of business.

In 1965 I introduced legislation which was passed subsequently in 1966. It put the small mines under the Federal mine inspection requirements. At that time, all we heard was that they would go out of business if they were included. It would be too expensive, they told us.

We were able to write that law in such a way that they did not go out of business. In fact, not a single company went out of business because of Federal inspection. It is my humble opinion that not a single company will go out of business when the final product of this committee appears.

Mr. BELL. Will the gentleman yield? I want to state one thing.

I was in on the writing of that bill a few years ago, and it seems to me there were a few other things besides just what you were speaking of. I think there were some changes made, which was all right, and we approved.

On the other hand, the gassy/nongassy type of classification was brought up. It was discussed as to whether all mines were gassy or not. And at that time, I believe, one of the representatives of the small mines did say if this—if the nongassy classification were eliminated and all mines were placed in the same category that they would go out of business. And they still say it.

I think that pertained to what happened then, and I think it still pertains today.

Mr. DENT. The only reason they were not designated gassy in 1966 is because the chairman of the Rules Committee was from Virginia and he would not give me a hearing on the rules until after we put the "nongassy" distinction back into the bill, and that is how simple it was.

Mr. BRADBURY. I think you would probably have had this same type of discussion at that time if it had been.

Mr. BELL. You are exactly right, Mr. Bradbury, because the whole center of this point has always been the placing of the nongassy mines directly under the gassy category of the Mine Safety Act, an action which would unnecessarily place a tremendous economic hardship on the small mines. Primarily it would require them to purchase per-

missible equipment. This is where the bat meets the ball. It is that cost of permissible equipment. It is what affects adversely the economically small mines.

Mr. BRADBURY. Mr. Mosgrove, I know, gave his figures. Am I correct in saying that there are more men employed in the small nongassy mines than there are in the large gassy mines?

Mr. DENT. I will give you that figure.

Mr. MOSGROVE. I believe I made it.

Mr. BRADBURY. I believe there was a figure of 10,000 or 9,000.

Mr. MOSGROVE. As I recall, the figures show that about 3 to 5 percent of our Kentucky miners work in—no, 3 to 5 percent of our mines are gassy mines, and between 15 and 20 percent of our men are employed in gassy mines, roughly.

Mr. DENT. The National Coal Association says that total employment in the underground mines is 18,794 men in Kentucky in 1966. That is the latest figure.

Mr. MOSGROVE. I am talking about 1968.

Mr. DENT. It didn't go down to 3 percent of the employment, did it?

Mr. MOSGROVE. No, 3 percent of the total mines are gassy mines, 3 to 5 percent. About 17 to 20 percent would be the employment in gassy mines.

Mr. DENT. Then your underground mines are producing 55 million tons out of a total of 95 million tons, and you only have 3 percent of your employment in the underground?

Chairman PERKINS. Talk a little louder, Mr. Mosgrove.

Mr. MOSGROVE. Three to 5 percent of our underground mines are classed as gassy mines. I would say 15 to 20 percent of our total employees are in underground gassy mines. That is the way I intended to put it. I may have said otherwise.

May I answer Mr. Hansen's question at this time?

Chairman PERKINS. Go ahead.

Mr. MOSGROVE. It only stands to reason that if you were to change men from nongassy mines into mines that would be gassy that your potential for an accident from that type of an accident would be increased.

Mr. HANSEN. Thank you. Thank you, Mr. Chairman.

Chairman PERKINS. Are there any further questions?

Mr. Haley, go ahead and identify yourself for the record and make your statement.

STATEMENT OF TED D. HALEY, ASSOCIATE PROFESSOR OF MINING ENGINEERING, UNIVERSITY OF KENTUCKY, LEXINGTON, KY.

Mr. HALEY. Thank you, Mr. Perkins.

My name is Ted Haley. I am an associate professor of mining engineering, Office of Civil Engineering, University of Kentucky at Lexington, Ky. I first started working in underground coal mines in 1940 as a summer employee of a surveyor in eastern Kentucky. After graduation from the University of Kentucky in 1949 I have worked continuously for 10 years in the mining industry in western Kentucky at Madisonville.

Then for a year I was a superintendent of an underground mine in Oklahoma. After that I spent 7 years as a technical adviser for

the use of blasting materials and explosions for the Spencer Chemical Co., now of Gulf Oil Corp.

Mr. BELL. Could I interrupt for a moment? Would you clarify what you mean by "underground mine" as distinct from other mines?

Mr. HALEY. Yes, sir. The distinction is between the strip mining and where you go below the surface of the earth.

Mr. BELL. That is below the water table?

Mr. HALEY. Not necessarily, drift, slope, and shaft underground mines, just so you go below the surface.

For the past 3 years I have been a professor of what they call mining engineering practice at the University of Kentucky, and I am director of the mining offices there.

I will make my remarks as brief as possible.

In eastern Kentucky, Virginia, West Virginia, and Appalachia we still have the situation where we have coal seams outcropping to the surface and the tops of the mountains. This situation is such that when the lateral pressure is released from a coal seam and the characteristics of the seam are such that it is well pleated, as are the coal seams in this Appalachian region, that the gas will dissipate to the surface over a period of many eons.

Now the Europeans have faced a problem, as was pointed out by my predecessor here, that they have run out of these high seams, the readily available coal lies much deeper. I know this to be true in Poland, Czechoslovakia, Japan, England, and Germany. Therefore, they are dealing with deep mines, below the water table, just as we have deep mines in this country below the water table. We are speaking of a special situation in which, in fact, we still have the coal available, while the other countries have run out.

The phenomenon of gas migration has been recognized by geologists and scientists throughout the world. Last night at Reading I heard an Australian engineer, where he collected data collected from Poland and the United Kingdom as well as the United States. If this gas is measurable as it should be, and measured upon opening the mine, a very adequate safety factor of 20 to 1 has been set up. Under the present law when you call for 0.25 percent of methane in the total air, you have a safety factor of 20 to 1 because the threshold of explosibility, the lower threshold is 5 percent of methane volume in the air. That is a better safety factor than you have when you step on the elevator out here in the building. Most safety factors are 10 or 15 to 1.

I thoroughly endorse the idea of continuous monitoring of the methane content as a permanent record. Therefore, with the safety factor of 20 to 1, and the known geological conditions which we have, I do not think that the present law should be changed. Permissible equipment is highly extensive. We have the adequate safety factor. For instance, the conditions in all mines are not the same. Some mines have bad groups. Some regions of this country are characterized by bad roof conditions. Those mines have to spend heavily on roof support.

We have some mines in some parts of the country that require no roof support at all. Therefore, it would not be reasonable to have all mines in the United States spend heavily on roof support whether they need it or not.

Mr. Dent, there are some mines in the northeastern part of your State that pump 40 to 60 tons of water to each ton of coal mined. Nevertheless, these people have to have pumping installations that are astounding in size, reserve pumps, standby pumps, in case of pump failure, have standby engines in case of power failure. Obviously, when you put out 40 tons of water for each ton of coal, you have to have a safety factor there. Because these mines suffer great danger from flooding from the Susquehanna River, would it be reasonable to require all mines in the country to put in standby pumps whether or not they are dry? Therefore, all mines in the country do not have a serious methane problem as long as they are checked.

I agree with the advent of continuous monitoring. Why should they have the financial burden, the poor management practice of buying additional equipment when they don't need it?

Mr. DENT. I don't think you are considering water in the mine which is a serious item which could be picked up. We have mines in my county that pump from 40 to 60 tons of water for a ton of coal, and we are only getting \$4 a ton while the anthracite mines get \$16 a ton. Nevertheless, they stay in business.

Mr. HALEY. My statement is a good management practice does not require a purchase of equipment when it is not necessary.

Mr. DENT. That is an assumption also. The industry has never demanded nor have the mine-equipment manufacturers ever produced machinery that would be permissive and economical for a two-man, three-man, or four-man mine. We are not going to demand the installation of a continuous miner in a mine that only has an acre of ground.

We believe that if there isn't something done about both safety and health standards, you won't get any miners to go into the mines.

Too much has gone on in the past few years. People do not work in the mines because they love to work in the mines despite what the witness said awhile ago. I know mines. I don't want to brag, but I started working in mines when I was 11 years old, two years before you did.

Mr. HALEY. I will close my remarks by saying that methane is measurable. There has been a continuous monitoring of measuring equipment.

Mr. DENT. There will be good equipment, and it will be cheap enough. We put things in this bill never put in a bill before. Each operator will be able to borrow from the Government at the lowest possible rate of interest in order to buy new equipment required of them for the first time.

Mr. BELL. The trouble is we all have to pay it back.

Mr. DENT. I have seen more safety legislation in my lifetime than most people. When we put goggles on for machinists, they said we can do it ourselves. But they didn't do it. Then we had to pass laws to make workers wear safety shoes. We also had to come along and pass legislation to make it mandatory that gloves be worn. All of these things were done because they would not do it themselves.

Mr. BELL. Will my good friend yield?

Everyone of us is in favor of safety for miners.

Mr. DENT. Except where it costs money.

Mr. BELL. It costs jobs and economic chaos where it is not necessary. I believe in safety where it is necessary. I think that safety is very important. But there is a difference between these types of mines and the

gentleman from Pennsylvania said earlier in the day that when there is a definite distinction between different types of mines, they have to be treated differently.

Mr. DENT. We make a provision for that.

Mr. BELL. I thought that was a very good statement. I would hate to have you now try to apply a general overall statement to all mines after you just said this previously.

Mr. DENT. I said before and I say it now and I say it as strongly as I can, that the economics of the situation have been and are getting a very full investigation. It is not our intention to close down mines. It is to write the kind of legislation that will give the maximum amount of safety to the men that mine the coal. To say that nongassy mines are not gassy is fictitious because there are no such things as gassy and nongassy mines regardless of what the measurement is, because gas is only released in a coal mine where there are pockets of natural gas. It is only released when you mine coal. It comes from the substrata and works up in the coal when you release it.

Chairman PERKINS. Let's let the gentleman make a comment.

Mr. BRADBURY. I would like to mention just one thing in connection with this gassy and nongassy. I am sure that many people who don't know anything about coal mining industry are somewhat puzzled by hearing about nongassy mines and gassy mines, how does it come about?

Well, to answer that you will have to go back, I guess, to the theory on the formation of coal seams. Putting it very briefly, they were once dense forests. Each of these seams, which were submerged and covered by silt and sand, eventually became the layers of strata which now cover those seams. In this process, which has taken millions of years, gasses were trapped by the overlaying strata. In seams near the surface that we find now near the surface, and outcropping on the hillsides the gas has drained off over the millions of years involved. However, in deep mines the gas was unable to escape and is liberated as the mine workers expose the coal; that is true. When they work the coal that is when the gas is liberated.

Some coal seams liberate more gas than others. But you can depend on knowing the gas in the air, ventilating the deep mines. You can depend that you will find some.

The big answer in my opinion, of course, not just my opinion but everybody who knows who is in the industry, the way to stop explosions is to make sure that you don't have gas accumulations. And in order to arrive at that you must have a sufficient amount of air provided and traveling through these workings in quantities that would dilute and carry away those gasses as they are liberated. That, of course, is the ideal thing.

Sometimes things go wrong. You get a combination of circumstances and someone left a door open or there was a fall in the intake air course that blocked the ventilation, and then someone had something that caused an emission, you had a flame of some sort, that is when you get the combination of circumstances.

Mr. DENT. You are an old miner. Would you approve of a miner lighting a cigarette at the face of a mine; any man?

Mr. BRADBURY. When I went to Wheelwright everybody smoked in the mines.

Mr. DENT. Did you approve of it?

Mr. BRADBURY. I could not do much about it because we knew if we stopped it, we would have a strike. But we did gradually, by education. These safety meetings I am speaking about we stressed that thing.

Mr. DENT. Why did you stop it?

Mr. BRADBURY. The reason for stopping it in our circumstances was this, and we tell the men, we know there is no danger of explosion from gas, but there is danger from fire. Someone carelessly flipping a cigarette into a combustible surroundings, after all, everything in the coal mine is just about combustible; the timbers and the coal itself and the dust from it and anything else, oil or grease that might be around.

But our problem was chiefly in that connection from eliminating the fire hazard.

Mr. DENT. Isn't it true that mines must produce at least 6,000 cubic feet of air per foot of working space?

Mr. BRADBURY. That is the law that must be provided, at least 6,000 cubic feet at the last open break through the nearest face. It is probably more as it starts in and there are leakages, of course.

Mr. DENT. How long has that been a national requirement for mines of all sizes?

Mr. BRADBURY. When was the Federal Coal Act adopted?

Mr. DENT. 1952. That is not when we placed small-mines under the regulations. Small mines were placed under the Federal Safety Act in 1966.

Mr. BRADBURY. I was under the impression that even in the small mines they had to have 6,000 cubic feet.

Mr. DENT. It depends on the State and depends on the local areas.

Gassy mine classifications were formerly designated by area rather than by individual mines. They would say the Redstone and Pittsburgh seams are nongassy so that all the mines in that particular vein of coal were given a nongassy designation. That is why I would like these gentlemen to understand the history of this thing. It has not been what you think it is.

The first coal mine explosion I can recall was in a nongassy mine in the town of Jenetta.

The gassy and nongassy distinction serves no purpose whatsoever in this day and age.

Mr. BRADBURY. That occurrence, I presume, occurred before these inspections. Nowadays they are more watchful than that.

Mr. DENT. Do you know how long it took to pass the first Perkins bill? Five years. We had the same arguments about economics then.

Mr. BELL. I think we have to recognize the terrible disasters. But I think we have to recognize that these terrible disasters have occurred in the large mines that are of a deep nature and that turn out to be gassy. We are talking about apples and oranges.

I am not sure Mr. Haley finished his testimony? Did you finish?

Mr. HALEY. Yes, sir; I finished. Thank you.

Mr. BELL. I would like to ask Mr. Bradbury if he would agree with the statement made by the distinguished gentleman from Pennsylvania earlier in the testimony when he said very sincerely that we recognized we had different types of mines, we had to look at them differently.

I interpreted his words as saying we need flexibility in this law. Would you agree with this?

Mr. BRADBURY. Yes; I certainly would.

Chairman PERKINS. I have been rather quiet, but I know a little something about coal mining myself. I have plenty of relatives who have been injured and maimed. I believe in the safety of the coal miners.

The point that disturbs me, when we open up mines below the water table down home in eastern Kentucky, whether that be 25 years or 50 years, all of those mines are going to be gassy, per se, gassy. When that day arrives will depend upon the attitude of the Pittsburgh Consolidated Coal Co., and some of the big oil companies in the country Mr. Dent has referred to owning so much coal acreage in this day and time.

Outside of this gassy and nongassy issue, I don't think that we should lose sight of the real target area where we have these gassy explosions in these gassy mines per se. I think with the history behind this that it is high time that we do something in this area. I don't know whether the Pittsburgh seam which the gentleman refers to is naturally gassy. The mine that blew up in Farmington was liberating more than 6 million cubic feet of gas per day.

How are you going to make those mines safe in the future? It would appear to me that we are going to have to ventilate that whole mine, not just the part that is now being worked but that whole mine. If it becomes necessary to seal off any section in the future, let them drill in from the surface above so that gas can escape and put some requirements along that line in this bill. I think by doing that we will prevent this excessive accumulation of gas like we had at Farmington. None of us know what caused it. We may never know what caused it. They say they are going to open it up. It may be several months before they are able to get in there and make a determination as to what caused it.

It is feasible to assume and we know from past figures that gas has been seeping through these abandoned areas, even where these gassy mines have been sealed. We have got to do something to see that ventilation takes place throughout the mine, the abandoned sections and the operating section of the mines.

Would you, in your experience, Mr. Bradbury, feel we could assure safety if we did something in this area and prevented these explosions in the future?

Mr. BRADBURY. We have talked about safety and about the economics of the situation in regard to coal mines, small mines. Your thought, your discussion certainly has some merit in my opinion. I don't know what just all the ramifications would chain react from, something of that kind. Just offhand you have to look into these things a little bit deeper and figure out what other possibilities attending those plans would be. But theoretically it sounds like a very good idea.

Chairman PERKINS. From your experience, Centralia, Farmington, the two previous mine disasters, did you ever come to any conclusion yourself that a great portion of that gas came from the abandoned sections of those mines?

Mr. BRADBURY. It is not easy to say. After an explosion, of course, the ventilation system is disrupted and often destroyed, and it is difficult to say just exactly in many cases where it came from.

Mr. DENT. Will the gentleman yield?

This bill goes a little further than most people think. Sometimes you are blinded by one feature and forget the others. For the first time in the history of safety legislation we are giving authority to the Secretary to establish safety chambers in mines. And we also acknowledge how quickly mines change by having "gassy" mines inspected on a daily basis.

Chairman PERKINS. I read this bill carefully. I read the section you are talking about carefully, too. Now you do give the Secretary the discretion, but I would amend that section and make it mandatory.

Mr. DENT. Also where there are abandoned gas and oil mines in fields we have provided in this bill a barrier of at least 500 feet around abandoned gas or oil wells. I assume that most States have laws with provisions similar to this.

Chairman PERKINS. That has been one of the great complaints where we have been lacking in our State requirements.

Mr. BELL. May I ask the witness a question?

Mr. Mosgrove, in Kentucky you have some oil and gas wells, I assume, and don't you have a State mining law that requires oil and gas wells be cemented solid from the seam clear up to the surface when they are abandoned so there could be very little leakage of gas and oil?

Mr. MOSGROVE. That is right, sir; but even so we do not permit anyone to mine closer than 100 feet of either an active or abandoned tanks or well. They must stop when they get to within 500 feet, and then we determine how close they can go. That figure we use as 100 feet makes a 200-foot-square block centered about the well. We have had no problems with that.

Mr. BELL. I am curious about it because my understanding of the oil and gas business is that most of those gas and oil wells are much further below the surface than is the mine. So if they were to cement above the gas, adequately, leakage should never occur. So the oil business itself is, I think, to a great extent is at fault if there is any leakage of this gas.

Mr. MOSGROVE. We have laws, and we have an oil and gas division which supervises the plugging of each well. That well is sealed below and above the coal measures for the protection.

Mr. BELL. Then there should not be any leakage from an oil or gas well.

Mr. MOSGROVE. Assuming that a good job is done——

Mr. BELL. Don't you have inspections?

Mr. MOSGROVE. We have inspectors who do inspect and record the plugging of those wells. We have records of them, that is right, sir.

Chairman PERKINS. Are there any further questions of these witnesses?

Now let me ask my colleague from West Virginia, Mr. Hechler, if he wants to take the stand now or if he wants to come later on, because this thing is going on. There are several people coming in that I am not aware of. I will give them all a chance to be heard.

Mr. HECHLER. If there are people who have come from long distances and have to return, I will defer to them. I will leave this to the judgment of the Chairman. If there are people who feel they have to leave, I can wait. I will do whatever you feel is best.

Chairman PERKINS. I will call Senators Burke and Latta.

STATEMENTS OF HON. F. M. BURKE AND HON. CLIFFORD B. LATTA,
SENATORS IN THE GENERAL ASSEMBLY OF THE COMMON-
WEALTH OF KENTUCKY

Senator BURKE. Mr. Chairman, members of the committee, after listening to Mr. Bradburg and these other gentlemen, I have a feeling that it is presumptuous for me as a nonexpert to undertake or discuss this problem that this committee is considering. During the morning all the evidence or practically all of it has been directed toward the elimination of the gassy/nongassy provision. My evidence will be brief and based on my experience, personally, and my knowledge and observation of mining in eastern Kentucky generally and in Floyd County, in particular, over a period of more than 50 years.

I didn't get into mines at the very age Mr. Dent indicated that he entered the mines. But at the age of 17, I commenced working in the mines and worked continuously for a period of 3 years. My career as a monitor was ended in early April 1920, by a slate fall which occurred about 4 o'clock in the afternoon and resulted in the death of a young man of my age at that time working in the room two entries removed from where I was working.

The miner in the room next to me came to the breakthrough and said there had been a slate fall, which he believed had resulted in a fatal injury of the young Mr. Johnson just in the room to his right. It was then the practice that all miners quit work with a fatal accident. We closed the mine, and we all went out and the victim was at the mouth and on a stretcher and presently died.

I drilled coal with a breastplate halter and prepared my own powder, which was stored nearby, and we used jibs and fuse and dynamite to blast the coal. Since that time or soon thereafter I was in school and ultimately graduated from law school and was admitted to the bar of Kentucky by our court of appeals in September 1925.

During the years and for during more than 40 years of active law practice I probably have represented more workingmen and plaintiffs in our county and the adjoining county than any three lawyers in our bar. Through the years I was regarded as a plaintiff's lawyer. I have great sympathy for working people, and I have great regard for the efforts of this committee and of Congress as well as the legislative body in my own State, of which I am a member, to improve safety standards with the view of protecting men that work in the mines, not only men that work in the mines but men working in industry generally.

My remarks will deal largely with a situation in my county of Pike, which is the largest coal producing county in the United States and the largest coal producing county, in my information, in the world. The brief statistics that I will give you are published by the Department of Mines and Minerals, Commonwealth of Kentucky, the issue of May 1969. These statistics relate specifically to coal production in Kentucky for the entire year of 1968.

In Pike County the rail mines during 1968 produced 8,279,661 tons. The tonnage produced in truck mines was 10,344,192 tons. Our employment in rail mines was 2,098 and in truck mines 3,461. We have 18 rail mines, and we had and still have, incidentally, 482 truck mines.

May I emphasize that the major number of these truck mines are small mines employing generally from seven to 15 people. Many of them are operated by family groups. The total number of people employed in a great many of these truck mines consist of father, two or three sons or one or two sons or maybe more, a brother, or brothers, a brother-in-law or brothers-in-law, and the total families, so that if a total disaster occurred the entire family, almost, would be wiped out.

There is no group, to my knowledge, anywhere more safety minded than these men who work and make a living in these truck mines in my county. They are concerned for themselves, and they are concerned—the father is concerned for himself and his sons and his brothers. And they are all concerned for each other. They do a good job, as the statistics presented there show, in protecting themselves. They have—we have a good safety record in our county.

Now mining has been going on in our county since the turn of the century. The railroad was extended into our county, I believe, in 1904 or 1905, and mining commenced immediately.

Chairman PERKINS. They were barging coal on the river before that time?

Senator BURKE. Correct. There was some mining at the turn of the century.

As Mr. Chairman has pointed out, some coal was moved on the river before the railroad came.

Now, throughout the history of mining in Pike County and to my knowledge in the adjoining counties in the eastern Kentucky coal field—and that includes all of the eastern Kentucky coalfield—there has not been a mine explosion attributable to methane gas. Every mine, both rail and truck, in our county, we have no mines below the surface. And through the years, certainly the 3 years I worked almost 7 days a week, we encountered no gas conditions that were harmful or dangerous. And through the years none had been encountered in our county.

I know from my wide experience as a lawyer and representing the people of my county in court and out that these small-mine operators, at least 90 percent of them could not possibly equip their mines with permissible equipment. I am not an expert on mine machinery and equipment, but I do have a fair knowledge of mine equipment and machinery, and I have a fair knowledge of its cost. I do know—and that has been pointed out here, and I believe the members of this committee and the Congress will find, and I am sure the committee will make an extensive investigation as to the ability to get such equipment within any reasonable time.

May I state with certain knowledge that I know that the J Joy Manufacturing Co., which is one of the large producers of equipment used in our area, say that they cannot make available this equipment, if you place it on order, it would take 12 months, something like a year to get it.

But the point I make on behalf of these 483 truck miners in my county is the absolute inability, their inability under current conditions to provide that equipment if it was to be delivered today or tomorrow or the next day.

Mr. Dent has suggested that it is his view that the Congress write into this bill some provisions for enabling these people to finance the purchase of such equipment.

Chairman PERKINS. We will never get the money out of the Federal Government.

Mr. DENT. Would you yield for a clarification at that point? May I clarify that point?

Senator BURKE. Yes, sir, you may.

Mr. DENT. First of all, we have viewed this loan feature in such a way that it is like a chattel mortgage and operates exactly as a chattel mortgage and does not take into consideration the ability of the operator to get money from any other source.

We anticipate the difficulties you mentioned. We are trying to meet those difficulties.

Senator BURKE. May I commend you, Mr. Dent? I believe you were chairman of the subcommittee. Certainly I would urge upon the full membership of this committee and on the Congress that you undertake to write such lending authority in a way that you will not get bogged down in redtape such as we encounter with most governmental agencies anymore, both State and Federal. It is becoming nearly impossible to get along with most Federal and State agencies because of the limit of time.

Chairman PERKINS. It doesn't matter what we write, we may never get an appropriation. There is another committee that appropriates money for this purpose.

Senator BURKE. You can't borrow money unless you get the appropriation.

Mr. DENT. I will write it so that if they can't get the money they need, they are not out of compliance.

Senator BURKE. Mr. Dent, and other members of the committee, I have observed and particularly on the part of Mr. Dent that he, as the old saying goes, he is almost hell-bent on this elimination of this gassy and nongassy provision in the existing law.

Now, we talked here this morning about presumptions. Now, as to knowledge and experience, I have come here not as an expert but as a nonexpert witness. Based upon personal knowledge and personal experience and personal observation, it would be certainly within the realm of pure presumption without any basis for the presumption, and those of us who have a little knowledge of the law know something about presumptions, that there is absolutely no reason in the world to classify the drift mines, rail or truck mines in Pike County, the largest coal producing area in this country, as gassies and impose any penalty upon the operator of those mines by reason of the theory that they are gassy.

When all is said and done, and we can all speculate about this situation or that, but in my view there is absolutely no basis whatever, in fact, for any such classification.

Now the director, Mr. O'Leary, the Director of the United States Bureau of Mines, in an interview on the 19th or 20th of August this year, in insisting upon the gassy elimination of the gassy/nongassy provision, he said: "We are not doing it on the basis of history, but what we are doing is buying disaster insurance." That was reported

as a result of an interview with Ward Sinclair, one of the staff writers of the Louisville *Prairie Journal*.

There would be just as much reason, Mr. Chairman, and members of the committee, to undertake to legislate against, say, that we might have an earthquake up there in Pike County. Now, Pike County is an area, I believe, of 779 square miles of steep mountains and narrow valleys. We don't have enough level ground in our county to build sufficient homes for our people to live in. We build up on the mountainside.

In the early days when we didn't have bulldozers, we built the homes upon the flats. As a matter of fact, I was reared on the first flat at the head of one of these little narrow valleys. Now since we have bulldozers, we go to a mountain and bulldoze out a house seat and build it. But it is estimated by mining engineers that in Pike County alone we have in excess of 1 billion tons of coal located in these, on the mountains, not below water level but on the known seams which would be removed by drift mines, not by big drift mines because the topography of our county is such that railroads cannot be built up these narrow valleys and these narrow ridges.

The seams, a great many of them, are not more than a thousand feet across under the overburden. The only way that coal can ever be removed is by small mining operations.

Now, these 483 mines in our county, I would say that fully 80 percent of them do not have coal reserves in excess of 40 or 50 acres. The average, I think, of 80 percent of them would be about 25 or 30 acres of coal, and that is coal that is located out on these ridges that cannot be recovered.

Mr. DENT. I will answer the call. I will be back.

Senator BURKE. I am about to finish up. These mines are located up the side of the mountain, and these experts say the methane gas, if it was ever there, has long since escaped. There are many situations along these narrow ridges. There is a mine on each side, so they go back, they are owned by separate property owners and released to different truck mine operators, and they are most generally not under the mountain more than 500 to 800 and a thousand feet.

We believe that it would be a very great hardship, and we know, I know, that it would be a very great hardship on these small truck mines of my county to impose upon them the burden of buying permissible equipment to operate their mines. Under these facts our knowledge and experience over a period of now nearly 70 years we do not believe that Congress will be justified in imposing such a burden. That is our view.

I speak for the people of my county. I think we produced 18,623.853 tons in 1948, and we had, I believe, about 9,000 men employed. Well, that is not correct. But, as I pointed out, we have about, I believe, between 65 and 70 percent more men employed in truck mines than in rail mines in the big mines. I believe that is what I have to say.

Mr. DENT. Thank you, Senator. I can appreciate the issue because we also have quite a few hills in western Pennsylvania. However, the question the committee asks, which becomes academic when you get down to it, is whether or not this ought to be the stumbling block for this kind of legislation. Have you had opportunities to look at the rest of the bill and study it at all?

Senator BURKE. I have studied some provisions of it, and I would like to say this. I agree, and you will observe that I have not attempted to suggest methods of improvement or alternatives. I think the recommendations Senator Cooper made are, in my view, sound and those of the other witnesses this morning are sound.

Mr. DENT. Senator, isn't it more or less a question as to how the Secretary deals with the problem of equipment. If we haven't written it strong enough, I assure you we will. We give the Secretary full authority. I know I have said many times this morning and many times in hearings that I don't expect the Secretary to require the type of equipment in a three- or four-man mine as a large mine. No one expects them to put in \$200,000 worth of equipment.

But I don't want to see the progress we are trying to make in this legislation thwarted because of a misconception of what we intend to do. The Secretary of Mines is here. We will have a chat with him later and see what is on his mind.

Senator BURKE. I am sure that you as a longtime responsible Member of the House and of the Congress and the members of this committee and, in fact, no Member of Congress desires to impose any burden on any citizen of the country. In the name of safety as a result of, you might say, an inflamed public mind of the tragedy at Farmington has disturbed people clear across the country. We have to recognize that the great majority of our people have no knowledge of coal or of coal mining. It is encouraging that you express the determination not only yourself but the committee of the Congress to protect our people who are engaged in mining coal.

There can be no question about its value as a fuel, the fact that mining coal was seriously impeded, it would greatly affect the economy of the country. We just want to be sure that this committee and the Congress understands the problems of our people, particularly of the small mine operators. The facts are and the record shows that these small mines are producing more coal in the largest coal mine section of the country than the rail mines, and that is because of the topography of this mountain area that constitutes our country. It is one of the largest counties in the country, 779 square miles being quite a bit of territory.

My concern and the concern of these men and of their families is that they might get hurt, or at least the Bureau, I believe Mr. O'Leary has conceded that it is going to impose burdens and prove expensive to comply and meet the conditions of this bill as it is now in its present form.

I know that if you are going to be concerned about modifying these provisions that you can ascertain it might be burdensome and yet at the same time do what you want to do, and that is to bring about safety in the mines.

Mr. DENT. I am sure you appreciate the sentiments of Congress.

Senator BURKE. It is going to stay that way, I think. I would hope all of you do.

Mr. DENT. I was going to say I found out it is the same area.

Thank you very kindly, Senator, for your very frank expression. I am sure this is the kind of expression we want to hear.

Senator Latta.

Senator LATTI. I have a brief statement I was going to read, but I think I will pass that by and talk informally for just a minute.

My name is Clifford B. Latta and I am a lawyer and vice president of the First National Bank in Prestonburg, and also a State senator. I am from Floyd County. My district is Martin County, Floyd County, and Knott County, which happens to be the chairman's home county, so I guess that makes me his senator.

My purpose is to discuss what I consider to be the economic impact of this particular legislation in our area. First of all, I have not been closely associated with the mining industry in that I have been an active coal miner. Fortunately, I didn't have to start this way, very frankly.

I have though, since graduating from law school and since becoming interested in the banking business, been very acutely aware of what some of the economic problems are that beset our area. I have been active in civic organizations and other groups that have attempted to alleviate some of these conditions which have been happening there for so many years. These conditions are brought about by some of the very things we are talking about here today, the improvement and techniques of mining and modernization in mining, the mechanization of mining which has in itself depleted our labor force—or I should not say "depleted" it, it has caused it to immigrate to some other sections of the State, the north and east where they can find employment.

We have been aware of this problem for a number of years and in the late fifties and the early sixties the Congress became more aware of it and enacted certain legislation in the form of the Area Redevelopment Act, which was later superseded by the Economic Development Administration, which tried to put into these areas needed facilities which would help to attract industry and to more or less diversify our economy to a certain extent and at the same time to create or help stop the gap of unemployment created by mechanization of the mines.

Now we have worked hard on this for a number of years through the chambers of commerce and civic organizations and such and other interested groups. We have found that we need to diversify our economy to a certain extent because, although coal—and make no mistake about it, coal is the king in eastern Kentucky—is the very stabilizing influence on our economy, we have come to recognize that we have to have some other types of employment, other industrial advantages to take care of the number of people who are coming along and who are not going into the coal mines in later days.

We think we have made very great strides in this direction. We feel at this point where we have achieved a certain measure of diversification that we are now coming to the point where the passage of this proposed legislation would be a deterrent to this.

Chiefly the proposal is to eliminate the distinction between "gassy" and "nongassy" mines. Once again I hasten to add I am not an expert in the field of mining, but I can draw on some of the knowledge of other people around me who are better qualified in this field and I can certainly draw upon the information we have from the Department of Mines and Minerals and from the Department of Commerce in the Commonwealth of Kentucky as it applies to my particular area.

I have a few figures here which I think are significant. In Floyd County, for example, at this time 90 percent of the production of coal that is available there is to be done by small drift mine-type operations, because, as Senator Burke pointed out a minute ago, the topography

of the land simply does not lend itself to the large coal mining operation.

These are small tracts that cannot be mined profitably by large companies and, therefore, are family operations, small operations who go into these areas and mine this coal. Estimates indicate at the present time we have approximately 30 million tons of coal in Floyd County which fall within this category. This coal being mined at its present rate of production would probably have a life of 15 to 20 years.

This same amount of coal has and could provide over that same period of time approximately \$150 million in purchasing power in our area.

One thing I would like to point out at this time, too, in these small operations quite often the coal, the product itself, is owned locally. It is not owned in large families by the larger coal companies, and I have no argument with them. But the product itself is owned, the value of the product stays at home as well as the wage.

That is used to invest in our area and in the long run we reap the benefits of that. At the present rate of production in Floyd County, the truck mining operations or drift mining operations contribute approximately \$7 million in purchasing power annually to our economy.

Of course, the chairman is, but if you are not familiar with our economy, you will find out that the removal of a substantial portion of that purchasing power would have a very detrimental effect on the economy. As I said, I am not an expert in the field of mine safety. I do not know the difference between a "gassy" mine and a "nongassy" mine except that supposedly or apparently one has gas in it and one has not.

What I have found out here today is we are talking about some people who say there is gas in "nongassy" mines and, frankly, I don't know. But I have to once again rely on what expert testimony I have heard and upon experience and upon the use of modern mining techniques and investigative procedures which permit the State department of mines, the U.S. Bureau of Mines to periodically check and to be in a position to determine dangers that may arise.

I am very much impressed with the testimony of Mr. Arthur Bradbury. I have known him for a number of years. I think the testimony he gave here today illustrates quite vividly what measures are being employed to provide safety in the mines.

I would say this, that I think if the bill is passed in its present form, that it would be very detrimental to the best interests of the State of Kentucky and in my own opinion that it would retard, if not completely stifle the economic growth that we have developed over the past 10 years.

Mr. Dent partially answered this question a moment ago, but to require small coal mining operations to provide expensive equipment would be economically prohibitive. I think I have insight into that by the fact that I am constantly acquainted with various transactions through our bank.

Chairman PERKINS. While recognizing that the aim of the legislation is to save lives, let us look briefly at the economics. Tell us about the bankers down there and about this thing and about what a harm-

ful situation would come about. To what extent do the banks loan money for equipment and to have loans on equipment?

Senator LATTI. Under the present circumstances, Mr. Chairman?
Chairman PERKINS. Yes.

Senator LATTI. At the present time small coal operations, their equipment needs are not as expensive as anticipated under the equipment that will be required if this act is passed. I can't give you the exact figures of what it would require to put a man in operation in the mines, but I am familiar with several loans in the nature of \$6,000, \$8,000, \$10,000, \$12,000—in that realm—to purchase and buy equipment for mine operations. In some instances it is even as high as \$17,000 to \$20,000, \$25,000, depending on the type of equipment and the quality of equipment.

Now based upon the information which I am furnished, people who I assume give me the correct information, when we are talking about equipment in the realm of \$100,000 to \$200,000, and small operations, and when I say "small operations," I am not necessarily talking about a family of five working out in the backyard. I am talking about a small truck operation.

You are just about pricing the operator out of business. He has no place where he can get that kind of credit at a local bank because as a simple matter we have other regulations with the Federal Government in national banks and we have national bank examiners.

You don't loan money that is not properly collateraled. It is as simple as that. You could not loan the money to a small operator.

Chairman PERKINS. What are the loans down there on trucks that have been purchased for use of hauling coal?

Senator LATTI. The allied industries that will be affected by unfavorable legislation, if this legislation can be termed that, can be numerous. In our county alone we have two truck body companies that are very active. Their business, for all practical purposes, would be cut by 60 to 70 percent.

Chairman PERKINS. You go ahead.

Senator BURKE. I appreciate very much your question to Senator Latta about trucks financed through local banks. More than 3,000 trucks in Pike County are engaged in transporting coal from our truck mines. We have almost half as many truck miners in our county as you have in the entire eastern part of the State, certainly a third as many. We have more than 3,000 trucks that have been purchased at a cost of from \$25,000 to \$40,000 each.

Chairman PERKINS. You mean each truck, \$25,000 to \$40,000?

Senator BURKE. Yes, they transport tonnages of from—

Chairman PERKINS. Seventeen to 30 tons, something like that?

Senator BURKE. Yes, and some of them more than 30 tons each and the purchase of the trucks alone involves a substantial investment.

Chairman PERKINS. How many trucks would you say are in your county alone?

Senator BURKE. More than 3,000. In the past 3 years, as you know, with your knowledge about Pike, that the C. & O. relocated the railroad as a result of the dam construction and the relocation goes through the heart of our county.

Now as of this year we will reduce more than 2 million tons in the Johns Creek area where the C. & O. relocated, the area where the C. & O.

relocated the railroad about 28 or 30 miles. These miners are truck miners and of necessity it involved the use of large numbers of modern trucks.

They are enormous trucks and involve enormous sums of money. If the operators of these small mines were put out of business or any material number of them, then the owners of these trucks would be faced with actual bankruptcy because they could not continue to pay the monthly installments on the trucks. Most of these trucks are owned not by the small mine operators, but by individuals living in the area and most of them are owned by one—one individual owns the trucks and that is his living, that is how he supports himself and his family, and they contribute enormously to the economy of our county.

But for that, as Mr. Latta has pointed out, we would have economic chaos in our county if this bill should have adverse effect on the small amount of truck miners.

Senator LATTI. The same is true in Knott County and Floyd County to a lesser degree. It would be in relation approximately to the number of coal mines in the respective counties.

As Senator Burke pointed out, we have the same situation in the ownership of trucks. In very few instances do we find that a mine operator owns his own trucks. These are contract haulers, like a person invests if he is going into the hauling business and going to haul coal, he invests and goes to the bank and borrows the money and that is his livelihood.

Chairman PERKINS. Do you have any other remarks?

Thank you.

I will call Mr. Hechler.

STATEMENT OF HON. KEN HECHLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WEST VIRGINIA

Mr. HECHLER. This committee deserves the support and commendation of all Americans for its determined efforts to enact strong and effective coal mine health and safety legislation. As in the past, powerful forces of opposition are attempting to weaken, water down, and drive loopholes into this legislation. The committee is fully aware of the strange alliances which have developed among those who for various reasons stand to profit, at the expense of men's lives, if the pending legislation remains weak and toothless.

It is commendable that both this committee and the administration have supported legislation to eliminate the distinction between a "gassy" and a "nongassy" mine, thereby endorsing the conclusion which the Bureau of Mines first made as long ago as 1926 that "all mines are potentially gassy." Chairman Dent of the General Subcommittee on Labor wisely observed on the opening day of hearings before his subcommittee on March 4 that "There is no such thing as a nongassy mine."

In view of the wide public discussion concerning that provision of the pending bill (section 305-a) which eliminates the distinction between "gassy" and "nongassy" mines, I believe it would be helpful for the committee to weigh objectively and dispassionately just how dangerous these "nongassy" mines actually are. Section 305(a) requires that all underground electric face equipment, which can cause

mine fires and mine explosions, must be spark and arc-proof and be maintained and used in a permissible manner.

Mr. Chairman, an extensive scare campaign has been mounted by those who oppose the efforts of this committee to write genuinely strong and effective mine health and safety legislation. Once again we hear the same tired old prediction of lost jobs, closed-down mines, power blackouts, and economic disaster. All these arguments ignore the loss of life and limb among the coal miners working in small mines. Let me summarize what has been contended by the opponents of this important provision of the bill reported by the subcommittee:

They contend:

That mines are classed "nongassy" because there is no gas in them;

That the safety record of the small "nongassy" mines, as compared to the "gassy" mines, does not justify elimination of the distinction;

That many of the small "nongassy" mines are drift mines, thus eliminating the possibility of a gas explosion; and

That the real danger in "nongassy" mines is a dust explosion.

A careful review of the history of this distinction and the history of ignitions and explosions in all underground mines leads one to the conclusion that these contentions are without any basis in fact. In their allout effort to defend and retain this distinction, they totally ignore the facts:

That gas has been found in many so-called "nongassy" mines;

That there have been ignitions and explosions in such mines, including drift mines; and

That thousands of miners, and in one case two visiting boys, have been killed or injured in these smaller mines due to ignitions or explosives.

Mr. Chairman, there is a portion of my testimony here which refers to the formation of how methane gas is formed, which I would ask unanimous consent to be included in the record as though read.

Chairman PERKINS. Without objection, it will be so read.

Mr. HECHLER. 1. What is the danger from methane?

Methane gas, because of its explosive characteristics, presents one of the most serious hazards to the miner during coal mining. Methane occurs most often in the coal itself, but may occur in strata below or above the coal seam. When the coal is disturbed, or when the strata adjacent to the coal are disturbed by the mining operations, the methane migrates into the mine atmosphere.

In many cases, the methane escapes to the surface years before the mining operations have begun. This is particularly true in mines close to the surface or above the water table—the so-called drift mines. It is not possible, however, to determine whether Mother Nature has provided this means of escape prior to mining.

In numerous instances, according to the Bureau of Mines, mines which give off essentially no gas or very small quantities of gas from the coal reserves during normal operations, have become extremely gassy in or near places where extensive falls of overlying material occur. In other cases, mines which normally give off little or no gas at ordinary times, suddenly become very gassy in places upon encountering crevices or fissures in the floor, or heaving of the floor, or upon encountering geological faults or dikes.

Also, gas is often trapped in pockets and goes undetected for many years. Suddenly the pocket is opened during mining and, if we are

lucky, the mine is classed "gassy." Too often, however, an ignition or explosion occurs and miners are hurt or killed. This condition occurs in all types of mines.

The explosive range of methane is from 5 to 15 percent. Once it escapes from the pocket or the coal, it can accumulate rapidly. The energy needed to ignite methane is not great. For example, frictional sparks created when the bits of continuous miner strike sandstone can ignite the methane and produce flame and pressure. These sparks are often less intense than the flame produced by an ordinary cigarette lighter. The resulting disturbances to the atmosphere will disperse coal dust and cause a serious coal dust explosion. Bureau of Mines experiments prove that an ignition of as little as 13 cubic feet of methane in the atmosphere will disperse coal dust and can cause a widespread explosion.

The presence of coal dust suspended in the air can increase the possibility of a methane explosion, according to the Bureau. They point out that as the amount of coal dust increases, the methane explosive range widens from 5 percent, when the atmosphere is essentially dust free, to 0 percent in pure coal dust.

2. BACKGROUND OF THE CLASSIFICATION DISTINCTION

The distinction between a so-called "gassy" mine and a "nongassy" mine was first adopted on May 8, 1926, by the then-Director, Scott Turner "for policy and for teaching by the Bureau's mining staff." At that time, the then-Mine Safety Board of the Bureau of Mines concluded:

The U.S. Bureau of Mines believes that all mines are potentially gassy; but for purposes of administration in respect to prevention of explosions and fires, the Bureau recommends the following classifications:

"Nongassy"—when all samples of mine air contain less than 0.05 percent methane;

"Slightly gassy"—a classification that could be determined in several different ways, depending on the ventilation and the amount of methane found; and

"Gassy"—a classification applied to all other mines.

At that time, according to the publication, none of the State mine regulations specifically defined a "gassy" mine.

In 1941, the Mine Safety Board decided that the use of three classifications was unsatisfactory and provided only two classes—"gassy" and "nongassy" mines. The "gassy" classification was applied to "any coal mine where methane or any other combustible gas can be detected in amounts as much as 0.25 percent or more, by frequent systematic searches..."

The Board noted:

In the 30 years of investigating mine accidents by the Bureau of Mines, it is noteworthy that many serious gas explosions have occurred in mines in which methane had not been reported prior to the disaster.

In July 1945, the standard for determination of a "gassy" mine was reduced by the Bureau from 0.25 to 0.1 percent methane. But in 1946, this was again increased to 0.25 percent. A review of the various publications of the Bureau of Mines does not provide any clue on how this percentage was arrived at. Recent testimony by Bureau personnel and correspondence to the Congress by the Department of the Interior on this legislation confirms this point.

3. CLASSIFICATION UNDER THE 1952 ACT

Congress in 1952 adopted the Bureau's administrative convenience concept of classifying mines as "gassy" or "nongassy" (a) where methane has been ignited, or (b) where methane is found by a Federal inspector in an amount of 0.25 percent or more by use of a permissible flame safety lamp or air analysis.

In adopting this classification, the House committee's report emphasized that:

The first step in eliminating gas as a cause of mine disasters is the recognition that such gas exists or may exist within the mine. Upon evidence of gas after the enactment of this bill, the mine should at all times thereafter be operated as a gassy mine.

This approach follows the old adage of closing the barn door after the horse is stolen.

It should be noted that the Bureau also automatically classifies mines as "gassy" where a State agency classes the mine "gassy." Also, in some cases the operator himself requests such a classification when he opens the mine. This latter instance usually occurs in areas where there are a number of gassy mines.

4. NUMBER OF MINES CLASSED "GASSY" AND "NONGASSY"

Based on 1967 and 1968 data of the Bureau of Mines, there are 3,778 active underground bituminous and anthracite coal mines, of which 450 are now classed "gassy." The remainder, 3,238, are classified "nongassy," of which 2,755 are small "nongassy" mines, not 4,000 as some contend.

Many of these small "nongassy" mines are found in eastern Kentucky, southern Virginia, and West Virginia and are drift mines. As I have stated, under these conditions there is a good chance for methane that was present in the coal many years ago to have escaped from the coal seam before mining is undertaken. But, as I also stated, no one can be sure of this and frequently the methane remains as a cause of disaster and threat to the lives of the coal miners.

5. COAL PRODUCTION FROM "GASSY" AND "NONGASSY" MINES

Based on data of the Bureau of Mines, the total annual coal production from underground bituminous and anthracite mines during 1967 and 1968 is about 350 million tons. Large and small "gassy" mines accounted for about 60 percent of this total, or 210 million tons. Large and small "nongassy" mines combined accounted for the remaining 40 percent, or 140 million tons.

Small "nongassy" mines annually produced slightly less than 12 percent, or 39 million tons—a far cry from the 40-percent production claimed by some who want to retain this administrative distinction for small "nongassy" drift mines.

6. INCIDENCES OF "NONGASSY" MINES CLASSIFIED "GASSY" UNDER 1952 ACT

As the House committee in 1952 stated when reporting out the bill that became the 1952 Act, "gas may exist within" any mine. History underscores the accuracy of this statement. The following table clearly

shows that years pass in some cases before an active "nongassy" mine suddenly becomes "gassy."

This is precisely the table that Representative Dent was referring to this morning at the bottom of page 5 when he cited that how after a number of years so-called "nongassy" mines may become active "gassy" mines.

Active gassy mines :	Number of years operated nongassy
131 -----	0 to 5
35 -----	6 to 10
18 -----	11 to 15
26 -----	15
Total -----	210

A demonstration of this fact is that during the period 1964-68, 168 mines were classified by the Bureau of Mines as "gassy" under the act. Of these, 101 were so classified by a Federal inspector when the air contained 0.25 percent methane. An additional 40 were classed "gassy" by the States and two were so classed after an ignition. In both cases, miners were injured. Of the 168, there were 84 large drift mines and 43 small drift mines classed "gassy."

It is of interest to note that when Federal inspectors inspected the mines on the two previous inspections, the air analysis of the methane content in the air in 23 small "nongassy" drift mines showed evidence of methane ranging from 0.01 to 0.20 and 41 such mines showed no evidence of methane. In the two ignition cases the methane readings were less than 0.2 percent.

In addition, prior to the 1966 amendments to the act, there were eight other ignitions between January 1964 and June 1966, at small "nongassy" mines, of which four were drift mines, that were classed "gassy" under the Bureau's advisory authority which killed five and injured 13 miners.

7. HISTORY OF IGNITIONS AND EXPLOSIONS IN UNDERGROUND GASSY MINES

From July 1952 (when the basic law was enacted) through June 10, 1969, the Bureau records 399 ignitions and explosions in "gassy" mines that were investigated by Federal inspectors. Of these, 166, fortunately, did not cause any death or injury to miners underground. The remaining 233 resulted in the death of 374 miners and injured 439.

A review of the Bureau's record of such ignitions and explosions shows that not one of these ignitions and explosions were caused by an arc or spark from large permissible electric face equipment—that is, equipment of more than 10 horsepower—which was in permissible condition and used in a permissible manner. A number of ignitions and explosions were caused by nonpermissible equipment, explosives, smoking, open flames, welding, bits, hand-held drills, and flame safety lamps.

During the period between January 1941 through July 1952 when the Bureau's powers were merely advisory, there were 201 ignitions and explosions in underground "gassy" mines, killing 690 and injuring 419 persons.

Incidentally, I questioned that figure when I first saw it and usually found a great many more injured than killed, but it was a great number of killed and it was a larger number than was injured.

According to the Bureau of Mines statistics a large number of these deaths and injuries were caused by arcs or sparks from nonpermissible equipment or permissible equipment in nonpermissible condition or maintained in a nonpermissible manner.

8. IGNITIONS AND EXPLOSIONS IN "NONGASSY" MINES

During this 1952-69 period the Bureau records 73 ignitions and explosions in "nongassy" mines. Of these, 19 did not cause any death or injury, while 54 ignitions and explosions killed 44 miners and injured 79.

One explosion on December 26, 1956, in a small "nongassy" mine also killed two young boys who were visiting the mine.

Of the total of 73 ignitions and explosions at so-called nongassy mines since 1952, 55 are directly attributable to the sudden occurrence of methane in a mine that was not supposed to have methane. No less than 42 of these occurred in small "nongassy" mines, 22 of which were drift mines.

So when I hear the phrase "disaster insurance," I say let's have some disaster insurance.

The causes of all but one of these various ignitions and explosions include the use of explosives, smoking, open flames, and small nonpermissible electric face equipment, such as hand-held drills.

What was the one exception?

It occurred on January 10, 1962, in Illinois where 11 miners were killed in a large "nongassy" mine. The Federal Report (No. 17849) states:

Cause of explosion: The Federal inspectors are of the opinion that the disaster was caused by the ignition of methane in the air current in room 2 off 3 north entry at the entrance to the second north crosscut. Methane apparently entered the ventilating current from the abandoned north panel that had been penetrated. The gas was ignited by an arc or spark from the open control panel while repairs were being made on the shuttle car. Coal dust in the immediate area entered into the explosion, which then picked up all the fuel necessary for propagation from the accumulations of coal throughout the north working section.

The shuttle car was permissible, but, according to the Bureau, at the time of the accident it was being repaired and was in a nonpermissible condition. The mine was classed "nongassy" despite the fact that the coal bed in this area is "gassy," according to the report, and "all abandoned mines surrounding this mine were classified gassy."

9. CONSEQUENCES OF ELIMINATION OF DISTINCTION

If the gassy/nongassy distinction is eliminated, all underground mines would be treated alike. The safety features applicable to "gassy" mines would apply to "nongassy" mines as well.

COST EFFECT OF THESE CHANGES

The elimination of smoking underground will have no cost effect on small mine operators.

In connection with the open flame prohibition, it should be noted that much of the coal mined in the small so-called nongassy mines in east Kentucky and southern Virginia is produced by "shooting

off the solid." In this method of mining there is no undercutting of the coal before it is shot with explosives. The undercutting is done in order to provide a "free face" so that when the explosives are detonated the coal that is affected by the explosion has a place to move.

The Bureau of Mines has discouraged "shooting off the solid" because larger quantities of explosives must be used which can cause serious roof control problems. For a typical face which has been undercut, the Bureau advises five holes with explosives might be sufficient to produce 16 tons of coal; if the coal is shot off the solid, 15 holes with explosives might produce only 14 tons of coal.

Under the present law in the small nongassy mines open flames are permitted and the explosives are detonated by using fuses. The fuses are lit at different times so that after the first explosive is fired there is the equivalent of a "free face" with some attendant benefit in producing more coal per shot (delayed blasting).

With the elimination of this distinction, open flames would not be permitted. Blasting off the solid would still be possible, however. Using electric detonators the blasting could be done using milli-second delay detonators. There would be some additional cost to the operators under this prohibition.

These electric devices have been used in small mines for some time in West Virginia because the State will not permit the use of open flames in blasting. Such a prohibition, however, is not in effect in eastern Kentucky.

The more frequent testing for methane should not result in any significant increase in costs.

Making all small horsepower electric face equipment, such as hand-held drills and pumps, permissible will result in some costs to the operators according to the Bureau of Mines.

What, then, is the basis of opposition to elimination of the distinction?

It is the requirement that large electric face equipment be permissible that has caused those who wish to retain the distinction to raise the scare arguments of closed mines, blackouts and unemployment.

They charge that the costs of meeting this requirement would average about \$200,000 per operator or \$1 per ton of annual production, a cost that they contend they cannot meet and therefore will have to close their mines. They contend that, if their mines close, their customers will turn to coal production from the large gassy mine operators who would then reap huge profits through the closure of the small mines and gain a greater monopoly on the coal industry.

They contend that overall the safety record of the small nongassy mines has been outstanding in comparison to the large gassy mines. They state that the United Mine Workers of America is one of the major forces behind this provision of the proposed law because the UMWA would benefit through the employment of miners from closed small mines in unionized mines.

I suggest that I have been somewhat critical of the leadership of the United Mine Workers of America, and assure this committee I do not support this provision in order to benefit the leadership of the UMWA.

Undoubtedly, there will be some costs involved in making this equipment permissible. I doubt, however, that the figure \$200,000 is

reasonable when the average annual production in the small nongassy mines is about 15,000 tons, according to the Bureau. This average includes those producing 100,000 tons or more and those producing 2 or 3,000 tons. It is obvious that a mine of this size does not and cannot use costly equipment like continuous miners in their operations. Such mines use hand-held drills, drag cable shuttle cars, and the like.

It is only the mines that are annually producing substantial tonnage that could afford or need large and expensive equipment in their mines. Therefore, the expense of acquiring or converting to permissible equipment would not seem to reach \$200,000.

I think, too, one must consider the very revealing information found in the April 1965 "Dunn's Review" that an estimated one-third of the coal output of this country comes from lands held, not by the coal operators, but by the "400 owners of coal royalties" including "insurance agents, farmers and corporation executives, as well as fairly large corporations and a few good-sized partnerships."

The article states that the "small band of financiers who are reaping golden profits from the investment nobody knows about: coal royalties, which come from leasing mineral-rich lands to mining companies."

I understand that royalties are as high as 25 cents per ton depending on the quality of the coal. Also, the coal the small mine operator is mining is usually not economic for the large operators, and, in some cases, the coal has been first mined by large operators.

Chairman PERKINS. Let me say I have been observing that. I recall when coal was 5 cents, 10 cents, 15 cents, 20 cents, and a quarter.

Mr. HECHLER. In both cases, unless the small operator mines the coal, the lessor will lose his royalty. For this reason, these entrepreneurs will not let the mines close, lest they lose these profits and tax benefits, too.

From the standpoint of the industry as a whole, there can be no better time for the industry to meet the cost demands that may result from this legislation. The July 5, 1969, edition of *Business Week* noted that the National Coal Association recently forecast that the coal "demand this year would be 16 million tons above last year's consumption of 549.5 million tons" while noting a drop in production due to work stoppages and the rising demand for coal.

Business Week also noted that while coal inventories at electric utilities have decreased, "the utilities contend they have plenty of coal." This is hardly a picture of recession.

In my opinion, the safety record of this industry is appalling. I was about to say "horrendous." Over the last 17 years (1952-1968) 4,943 miners have been killed in this industry or an average of 290 persons annually. Many more thousands have been injured.

Since 1966, when the Federal inspectors were given enforcement powers at small mines, the number of violations of the 1952 Act and the Bureau's advisory code exceeded those at the large mines as follows:

I ask that this be placed in the record.

Chairman PERKINS. It is so ordered.

(The information referred to follows:)

	Violations of 1952 act	Violation of code
1967:		
Large mines.....	7,308	27,742
Small mines.....	8,126	94,749
1968:		
Large mines.....	7,354	27,088
Small mines.....	7,721	96,905

Mr. HECHLER. In conclusion, in summary, there is no scientific basis for retaining the distinction. It is one of administrative convenience. Even the percentage established to determine if a mine is gassy has no scientific or technical significance.

In sheer numbers, it would appear that the chance of a mine not becoming gassy over its lifetime under present procedures is good. Yet the record shows that no one can predict when gas will be found, if ever. There is a considerable record that gas may be found under almost any circumstances in sufficient quantity to cause death and injury.

Past history shows that mines, once classed nongassy, do suddenly have sufficient accumulations of methane to cause ignitions and explosions. This fact is equally true for large and small mines and for drift mines as well. Most of these ignitions have been caused by smoking, open flames, and small nonpermissible electric equipment, but one such ignition has occurred from larger equipment in a nonpermissible condition at a nongassy mine.

No one can assure the Congress that so-called nongassy mines will not continue to have sudden and unexpected rushes of dangerous methane in explosive quantities while mining is underway which will be ignited by a spark or arc from a nonpermissible piece of equipment or some other source.

On the contrary, the experts in this field in the Bureau of Mines point to history and state that the possibility of such ignitions and explosions is ever present.

The need for elimination of this distinction was demonstrated by the death of the first miner killed by a methane explosion in a so-called nongassy mine. The record is clear that making electric face equipment fire- and explosion-proof and maintaining it in such condition has saved lives and protected miners from injury in gassy mines since 1952.

The miners in so-called nongassy mines deserve no less protection. This requirement offers a real protection for safety which cannot be ignored.

The fact that there have been fewer ignitions and explosions from methane in nongassy mines with the resultant loss of life or injury than in gassy mines is hardly the basis for contending that the men who work in small nongassy mines do not require protection.

The legislation must not only eliminate the distinction, but also must provide the means to eliminate the causes of ignitions and explosions at all underground mines. We must prohibit smoking and use of open flames, control the use of explosives, increase testing for methane, and require that all large and small electric face equipment be permissible and be maintained in permissible condition.

I also urge that the committee require that the flame safety lamp, a cause of many deaths and injuries, be adequately checked daily by

trained personnel, and that immediate action be taken to accelerate research on a device to suppress ignitions from sparks caused by bits.

I also feel there should be increased research on perfecting the methane monitor.

Let me emphasize that the provisions must be adequate to control ignitions at all mines, not just the so-called nongassy mines. The record shows that many of the causes of ignitions at nongassy mines have caused ignitions at gassy mines, too. Thus, the present safeguards for gassy mines are not adequate now.

There must be no compromise with the miner's life and limb. His safety must be considered first, and the economics of the industry second. No miner wants to become a statistic like those at Farmington, or like the 120 who have died since Farmington.

Mr. Chairman, I ask unanimous consent to insert in the record the summary attached.

Chairman PERKINS. It is so ordered. It will be inserted.

(Summary follows:)

SUMMARY OF STATISTICS IN STATEMENT COMPILED FROM RECORDS OF U.S. BUREAU
OF MINES

1. Number of underground mines

Large gassy-----	300
Small gassy-----	150
Large nongassy-----	573
Small nongassy-----	2,755
Total -----	3,778

2. Production from underground mines (millions of tons)

Large gassy-----	208
Small gassy-----	2
Large nongassy-----	101
Small nongassy-----	39

3. Ignitions and explosions gassy mines, Jan. 1, 1941-July 1952

Number of ignitions and explosions-----	201
Number killed-----	680
Number injured-----	419

*4. Records of ignitions and explosions gassy mines, July 1952-June 10, 1969
and cause*

Number of ignitions and explosions-----	399
Number killed-----	374
Number injured-----	439

Cause	Number of ignitions and explosions	Number killed	Number injured
Bits and friction.....	165	14	124
Explosives.....	51	60	61
Trailing cables, nipping and frame ground.....	28	37	26
Locomotives.....	26	14	32
Smoking and smoking materials.....	19	6	23
Flame safety lamp.....	15	5	24
Large electric face equipment in nonpermissible condition.....	14	12	35
Nonpermissible electric drill.....	13	0	23
Power wires.....	12	18	10
Open flames.....	5	5	4
Nonpermanent blower fan.....	4	0	5
Welding.....	4	7	4
Other.....	22	88	26
Undetermined.....	19	108	32
Total.....	399	374	439

5. Record of ignitions and explosions in nongassy mines from methane, July 1952-June 10, 1969, and cause

Number of ignitions and explosions.....	55
Number of large nongassy mines.....	12
Number of small nongassy mines.....	42
Data not available on size of mine.....	1
Number of large nongassy drift mines.....	10
Number of small nongassy drift mines.....	22
Number killed.....	27
Number injured.....	64

Cause	Number of ignitions and explosions	Number killed	Number injured
Open flame.....	18	0	8
Smoking.....	15	7	18
Nonpermanent electric drill.....	9	0	15
Bits and friction sparks.....	4	0	8
Nonpermanent blower fan.....	2	0	4
Flame safety lamp.....	1	0	2
Explosives.....	1	0	2
Permanent electric face equipment being repaired in nonpermanent condition.....	2	11	5
Cable.....	1	0	2
Undetermined.....	2	9	0
Total.....	55	27	64

6. Record of ignitions and explosions in nongassy mines from causes other than methane

Number of ignitions and explosions.....	22
Number killed.....	16
Number injured.....	20

7. Number of fatalities underground mines, July 1952-December 1968

Large mines.....	3,784
Small mines.....	1,159
Total.....	4,943

8. Number of nonfatal underground mines, July 1952-December 1967

Large mines.....	171,685
Small mines.....	24,827
Total.....	196,412

Chairman PERKINS. Thank you very much. You have demonstrated your interest in safety over a long period of time. We appreciate your coming.

Mr. HECHLER. I have one comment. Nobody is forcing or requiring any small nongassy mine to spend \$200,000 for continuous miners. The bill has no such provision in it. The entire burden of the argument here, I think, revolves around that point. I think it is an exaggeration to say that the bill requires that.

I commend the chairman of the full committee and the chairman of the subcommittee for the language of the bill.

Chairman PERKINS. I think you are right in one sense of the word, but to contemplate these operations in the cutting machine, electric drill, roof-holding machine, and on ground hauling and insulating—that equipment is more permissible.

Mr. HECHLER. I would hope, Mr. Chairman, this committee would examine carefully into the economics. The bill does not provide any abrupt, sudden overnight transference. The smaller mines do not use the larger equipment.

I have many small nongassy mines in my congressional district. Paraphrasing Mr. Churchill, I do not propose to preside over economic disaster in my district.

Chairman PERKINS. If more time is necessary for inspection because the saving of life is put before the economics, you would have no objection to that?

Mr. HECHLER. No. That is right, sir.

Mr. DENT. Thank you for coming. I am sure everyone appreciates your very keen interest in this subject matter. You made a rather thorough analysis of many problems that affect this kind of legislation.

I think you share with most of us the belief that we would not do anything to disrupt the economy of an area or even a single coal mine. If we can write safeguards into the act we will certainly do that.

Mr. HECHLER. I appreciate that suggestion.

Chairman PERKINS. Thank you very much.

Go ahead, Mr. Branham.

STATEMENT OF JACK BRANHAM, OF FLOYD COUNTY, KY.

Mr. BRANHAM. Mr. Chairman and Mr. Dent, I am Jack Branham from Floyd County in eastern Kentucky. With the exception of 4 years in the Marine Corps, I have lived in the coal-mining region. My father retired after 50 years as a miner. At the present time I have numerous relatives employed as miners.

Since World War II, I have been in the general insurance business, directly writing insurance for mine owners and miners. We have never experienced a gas explosion type loss during this period of time under workman's compensation for the ones we have had insured.

Our area has always been more or less dependent on the one industry, the coal industry. Men who were unable to obtain work in our coal fields went to Ohio or to Detroit or else they were dependent upon State or Federal aid.

Legislation that began in this committee a few years ago has produced amazing results in our area. I would like to say that the adult education production and the adult vocational training, along with a

rural basic health program, which began just the past 2 or 3 years, have created desire for better living standards for the fathers of our needy families, and the changes that have occurred in so many fathers who have participated in those programs are amazing.

I might add, in the beginning a lot of business people were skeptical, but now I must say that we in our area are indebted to them for helping us initiate this program. I have observed fathers from poor or poverty-level families whom I have known for years, who have always been on some type of public assistance; and now they tell me they are working at a trade that they learned recently under some program under this adult education.

The best point to me, however, is their changed outlook on life. They are independent. Some even gripe about having to pay income taxes for a change.

Throughout our area we have also received real economic boosts from the Economic Development Administration in the past few years. We have new and diversified small businesses that have begun, through the aid of the EDA, jobs have become available for a lot of people in small industries other than coal mines. In other words, things are looking up.

The assistance of the Federal programs is really beginning to bear fruit in our area. I witnessed the decline in business from small mines during the 1950's, but with the determination to compete and with the ingenuity of some local people in the coal business, small coal business, they have developed new battery-type equipment that actually mechanizes small mines to the point where they are competitive with larger mines having up to 50 times more money invested in machinery.

The real stability of our rural economy is the many small businesses. We have hundreds of small, locally owned and operated mines, each employing from five to 25 of their neighbors. Now they are using this modern-type equipment, and not so many are using pick and shovel anymore.

About 5 years ago, the demand for financing for this new type of machinery became a problem for small mines, mainly because the small-mine employers did not have the means to provide the estimated \$25,000 that it would cost for them to get in business. Our small banks were limited and, as has been stated previously, they were restricted, due to collateral or to the unknown or untested type of equipment.

I was convinced, however, that this new equipment was the answer for our small coal mines. So, with the help of our local banks, we obtained a line of credit through a larger bank in Louisville and we began financing this new equipment that is for small mines.

However, we only represent a small percentage of the mechanized so-called truck mines. But during the past 5 years we have financed over \$1,250,000 worth of equipment for small mines. We have only repossessed two items during this time.

Now, we have approximately 80 pieces of battery-type equipment financed, and conservatively it provides direct employment in a small area for about 450 men. The pay in these small mines is equal to, and in some cases better than, that in larger mines.

The small mines are providing employment for those who cannot find employment in the larger mines or who cannot pass the physical required for the larger mines. A lot of handicapped, disabled men are

employed in these small mines. From a lot of large mines that have previously closed down, these men who were put out of work are finding employment in small mines.

I would like to cite one actual example of a small business or small mine that began less than 6 months ago. Two partners who had previous mining experience in some miscellaneous mining equipment put up \$5,000 as a downpayment on \$20,000 worth of battery-type equipment which was called a scoop. Today they have either acquired or are paying for \$60,000 worth of mining equipment.

They are providing employment for 20 men with a monthly payroll of about \$16,000. All of this is in a hollow where most of the men live and walk to work because transportation is a problem. All of the \$16,000 a month is provided and spread around in one little rural community.

Now, a lot of discussion has gone on about replacing this equipment to permissible type, but I find few could pay to convert their equipment to comply with the new type of equipment—but the real tragedy would be the discouragement for these new businesses that would start, which ultimately would be the demise of those that are in business, because the price would simply be out of reach.

Soon we would again be back in need of Federal aid for some more unemployed fathers.

The other day I was talking to a friend of mine, whom I have known for years. Incidentally, in all the publicity that has gone about, they seem to think there is a concentrated effort to put men out of work who are working these small mines. He told me he had worked for 22 years in small mines, and now two of his five children are grown up and married.

He told me he could not understand how in the world so many in Washington could say that the mine in which he worked was gassy and dangerous, when he had never heard of any mine around him ever being called gassy in his lifetime. His real concern was whether or not he would be able to get his other three children through school before they closed his mine down.

We do not argue that because the small coal industry provides a large payroll it is justified in its operations regardless of what it may do to the lives of others. Some businesses are certainly not justified, with their heavy payroll, and need to be closed down. But we contend Congress should not push the panic button and kill off the mines that are not now and have never been a source of lethal explosion.

MR. DENT. I am glad you talked about the battery factors, the facts on that type of operation. I do not have any figures here, but since you brought up a particular type of operation, we have the figures taken from a seven-man face operation. That is a pretty productive mine.

That mine would probably have two cutting machines, one utility truck, two tractor-trailers. Total cost of that machine, either convertible or rebuilt, brandnew rebuilt machine, average price of replacement is \$2,700; total cost \$21,450.

That is not an exorbitant figure for a mine which produces anywhere from 20,000 to 35,000 tons a year.

The reason I asked for these figures was because in the first analysis given to us we found that the small operators talked about figures

that went up to \$555 million. What were they talking about? They were talking about what CM cost. That cost \$140,000.

It is inconceivable that a mine with 15 men can buy a \$121,000 piece of machinery; two GSC shuttle cars at \$20,000; one Galis-300 roof bolter at \$9,000; one 14-BU-9 loader at \$22,500; two 10-SC shuttle cars at \$12,500; one Joy coal drill at \$12,500; one 11-RU cutting machine at \$30,000; and one supply tractor at \$6,000; total price of face equipment \$196,500; total pieces of equipment, 11.

You and I know this is just not the kind of mine we are talking about. We are not talking about this type of operation down there.

If you are talking about that type of operation, that is not the kind of operation we are worried about. We are worried about that small mine, about the family-type operation, where the brother and everybody else is working in the mine.

If these figures are accurate, they come from a very close study by the Department. I believe this equipment is permissible equipment in the eyes of the Bureau right now.

Mr. BRANHAM. No, sir, it is not.

Mr. DENT. The Bureau Chief will be here. They gave us the information.

Mr. BRANHAM. Speaking of a battery-type piece of equipment that is used, such as a high lift, it is reasonably new, been on the market 3 years. It lifts the coal up hydraulically, takes it outside or sometimes puts it on a belt. It is permissible equipment as it is being made now.

Mr. DENT. What is the difference between that battery operation and any other battery-operated machine, when the danger comes from the operation of the machine, regardless of how it is powered?

Mr. BRANHAM. I think there is a difference in the cost of enclosing it in the motor.

Mr. DENT. How much would that cost to enclose that particular piece?

Mr. BRANHAM. I think there has been some estimate made for some mines in Pennsylvania. From what I can understand, this piece of equipment that now costs with the batteries \$20,000 would cost approximately \$45,000.

Mr. DENT. Eliminating the battery?

Mr. BRANHAM. No, including the batteries. The cost to make them permissible, the same piece of equipment, to make it permissible to be used in a mine that is now classed "gassy," instead of costing \$20,000 would cost in excess of \$40,000.

Mr. DENT. That particular type of machine I have never seen in operation, so I am in the dark on what kind of high lift operation that might be.

Is it a self-contained operation. The bucket takes how much coal out?

Mr. BRANHAM. Up to 2 tons. It has revolutionized these small mines.

The tonnage per man is increased where three men can produce up to 150 tons a day.

Mr. DENT. Then the cost of operating a three-man operation against the type of operation the man had before, certainly would pay the difference to put that type of machine in, regardless of whether the Government insisted on it or not, wouldn't it?

Mr. BRANHAM. I cannot answer that because I do not know what the price of coal is.

Mr. DENT. I am not too disturbed over the price of coal at the moment, because since the oil companies took it over they are not going to have any competition. The oil companies will see to it that coal sells at a good price.

Mr. BRANHAM. The only problem would be still that it would put some men out of work. I financed for a lot of men who cannot get the financing at a bank.

Mr. DENT. We are hoping it will be tied to availability of the mine operators who avail themselves of the machinery, plus the fact of availability of funds to finance it.

I am sure the chairman and every member of the committee is cognizant of economic problems in Kentucky and West Virginia and Appalachia.

Chairman PERKINS. I agree with what my colleague stated, but at the same time I don't want the next few years to depend upon the Federal Government, because I don't believe we can get it financed.

Thank you.

Chairman PERKINS. Our next witness is a gentleman from Spindletop Research, Mr. Broida, from Lexington, Ky.

STATEMENT OF THEODORE R. BROIDA, PRESIDENT, SPINDLETOP RESEARCH, LEXINGTON, KY.

Mr. BROIDA. Mr. Chairman, my name is Theodore R. Broida. I am president of Spindletop Research in Lexington, Ky. I have a very short announcement to make, an invitation to extend. I am not going to talk about gas or nongassy mines. I am going to talk a minute about coal workers pneumoconiosis, which is a matter of some concern to this committee and to the subcommittee.

First, Spindletop Research is an independent, not-for-profit, and an applied research institute established in 1961 by the Commonwealth of Kentucky to aid in the development of the economy of the State of Kentucky and of the region. We have had for a number of years great concern about the success and future of various major industries that now function in our part of the country.

For the past year we have had an inquiry on the medical aspects of coal workers pneumoconiosis. We are not, ourselves, medical experts and I don't want to mislead this committee in representing myself as an expert in this very special disease.

However, we have attempted to bring together the leading authorities in the world for a most unusual conference. The reason I am here today is that this conference is going to take place this week and in fact at this very moment in Lexington there are 23 outstanding medical researchers from all over the world converging, who will spend the next 3 days in a session devoted to exploring what is known and what is not known about coal workers pneumoconiosis and to make recommendations about future research that needs to be done and to summarize what they agree on and what they do not agree on.

I have a list of the 23 doctors who are from this country, from Canada, England, Germany, Scotland, and we are very optimistic about the expected results from this conference.

I have some announcements of the conference. I would like to extend an invitation to the members of this committee and subcommittee or any member of their staff to attend the public session that will be held this Saturday at which time the results of this 3-day working session will be announced.

I cannot tell you now what it will be because I have no idea, but we hope at that time, on Saturday, to have a preliminary report summarizing the findings of these doctors and then at a later date, perhaps a month after, have a finished printed version of this report. But we are very excited about the conference itself. You might be interested. We decided to put on this conference as a public service and then once we announced it, a number of organizations indicated their willingness and desire to become sponsors.

I would like to just read to you the list of sponsors for this conference. It is really very impressive, I think. This group is listed in alphabetical order. We have the American Insurance Association, Appalachian Regional Commission, Commonwealth of Kentucky, Commonwealth of Pennsylvania, Kentucky Coal Association, Kentucky Tuberculosis and Respiratory Disease Association, Keystone Bituminous Coal Association of Pennsylvania, the National Tuberculosis and Respiratory Disease Association, Spindletop Research, Inc., State of West Virginia, and West Virginia Coal Association.

We are very pleased with this broad representation of States, coal associations, and health associations that are interested in this problem. We were quite concerned that there had been a lot of discussion back and forth about this disease but that it was very difficult to get together at one time and at one place all the people who are believed to be experienced in this field.

By believed to be, I mean that sincerely because this is a thing you already discovered. Where there is a lot of difference of opinion, we had to rely heavily on judgment of the doctors themselves as to who the real experts are. I can submit for the record a list of the doctors who will be the main participants and also a listing of the sponsors.

I have these announcements of the conference which, Mr. Dent, I would like to leave with you and if you want to distribute them to any of your staff, I would be delighted for you to have them.

Mr. DENT. We will be happy to do so. I will try to make sure somebody from the committee is present and also some staff members. I am sorry I won't be able to be there. I have accepted invitations for another meeting in the anthracite region. However, this is very interesting to me because I don't know whether you are aware of it or not, but early in the game we knew we had to deal with this pneumoconiosis problem, so I organized a group made up of members of the committee and the Director of Mines, a representative of the Secretary of Health, Education, and Welfare, representative of Secretary of Labor, representative of mining industry, representative of the coal miners themselves.

We spent 5 days in England, Scotland, and Wales, headquartered in London. We went to their research laboratories up in Edinburgh and went into the mines. We received lectures for $3\frac{1}{2}$ full days and I brought a report back with me. I think we have an extra copy and I would like, if you would accept it, to give you a report of our congressional mission to the United Kingdom with all of the testimony given by these experts from Great Britain.

We discovered after many years that they have been able to isolate the pneumoconiosis itself and have it distinguished from any other respiratory disease, which is a great breakthrough.

They have 30,000 specimens made from autopsies on coal miners.

I also think this visit was responsible for the decision of the committee to place the responsibility for the health section into the Department of Health. It is a question of reading the X-rays properly according to one set of guidelines. If we allow each operation to be responsible for the medical records and medical examinations of their miners, we felt there would be a hodgepodge of decisions. The responsibility belongs in the Department of Health, Education, and Welfare.

We feel we should remove the responsibility from the State, except for distributing moneys for the benefit payments for victims of black lung.

We believe this would give us a start. I am convinced pneumoconiosis is not a necessary evil. I think it can be eliminated and the British believe so too. I appreciate what you are doing there. I think it is a great step forward, that you are putting into action this week. I am sorry I am so tied up and can't back out of it since I am the principal speaker, but I am sure someone will be there from the committee.

Mr. BROIDA. We will make available copies of reports that will come out of this conference.

(The following material was submitted for the record:)

PARTICIPANTS IN THE SPINDLETOP CONFERENCE ON COAL WORKERS' PNEUMOCONIOSIS

PATHOLOGISTS

- Averill Liebow, M.D. (chairman—work session on pathological aspects of CWP), Professor and Chairman, Department of Pathology, University of California, San Diego, California.
- Paul Gross, M.D. (Advisor for the conference), Director, Research Laboratory, Industrial Hygiene Foundation of America, Pittsburgh, Pa.
- John P. Wyatt, M.D., Professor and Chairman of Pathology, Department of Pathology, University of Manitoba School of Medicine, Winnipeg, Canada.
- A. G. Heppleston, D.Sc., M.D., Professor, Department of Pathology, Royal Victoria Infirmary, Newcastle, England.
- Philip Pratt, Associate Professor of Pathology, Department of Pathology, Duke University, School of Medicine, Durham, North Carolina.

EPIDEMIOLOGISTS

- Philip E. Enterline, Ph.D. (Chairman—work session on the epidemiological aspects of CWP), Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pennsylvania.
- Ian T. Higgins, M.D., M.R.C.P. (Advisor for the conference), Professor, Community Health Services, Epidemiology, School of Public Health, University of Michigan, Ann Arbor, Michigan.
- Stewart Rae, M.B., M.R.C.P., Head of Medical Branch, Institute of Occupational Medicine, Edinburgh, Scotland.
- Wolfgang T. Ulmer, Professor, Institute for Mining Research, West Germany Mining Institute, Bochum, Germany.
- Murray C. Brown, M.D., Special Assistant to the Commissioner, Environmental Control Administration, U.S. Public Health Service, Rockville, Maryland.
- William S. Lainhart, M.D., Deputy Director, Division of Epidemiology and Special Services, Bureau of Occupational Safety and Health, United States Public Health Service, Cincinnati, Ohio.

PHYSIOLOGISTS

- Jay A. Nadel, M.D. (Chairman—work session on the physiological aspects of CWP), Cardiovascular Research Institute, University of California School of Medicine, San Francisco, California.
- George W. Wright, M.D. (Advisor for the conference), Director of Medical Research, Saint Luke's Hospital, Cleveland, Ohio.
- Robert W. Penman, M.D. (Medical Consultant and conference program co-chairman), Director, Pulmonary Division and Associate Professor of Medicine, University of Kentucky School of Medicine, Lexington, Kentucky.
- Colin B. McKerrrow, M.D., M.R.C.P., Pneumoconiosis Research Unit, Llandough Hospital, Penarth, Glamorgan, South Wales.
- Robert E. Hyatt, M.D., Mayo Clinic, Associate Professor of Physiology, Mayo Graduate School of Medicine, University of Minnesota, Rochester, Minnesota.
- William K. C. Morgan, M.D., Chief, Appalachian Laboratory for Respiratory Diseases (ALFORD) West Virginia University Medical Center, Morgantown, West Virginia.
- Donald L. Rasmussen, M.D., Chief, Cardio-Pulmonary Laboratory, Appalachian Regional Hospital, Beckley, West Virginia.

RADIOLOGISTS AND CLINICIANS

- Benjamin Branscomb, M.D. (Chairman—work session on diagnostical and clinical aspects of CWP), Professor of Medicine, University of Alabama School of Medicine, Birmingham, Alabama.
- Eugene P. Pendergrass, M.D. (Advisor for the Conference), Emeritus Professor of Radiology, University of Pennsylvania Hospital, Philadelphia, Pennsylvania.
- Charles E. Andrews, M.D. (Advisor for the conference), Provost for Health Sciences and Professor of Medicine, West Virginia University, School of Medicine, Morgantown, West Virginia.
- John Rogan, M.D., Chief Medical Officer, National Coal Board, London, England.
- William H. Anderson, M.D. (Medical consultant and conference program co-chairman), Chief, Pulmonary Diseases Section and Associate Professor of Medicine, University of Louisville School of Medicine, Louisville, Kentucky.

PROGRAM OF INTERNATIONAL CONFERENCE ON CWP

MEDICAL RESEARCH ASPECTS

- 8:00-9:00 a.m.—Final Registration, Coffee and Informal Assembly.
- 9:00-9:30 a.m.—Conference Opening: Greetings, Theodore R. Broida, President, Spindletop Research, Inc.; Special Welcome, Honorable Louie B. Nunn, Governor, Commonwealth of Kentucky; Introductions, John D. Leslie, Vice President, Spindletop Research, Inc.

CONFERENCE PROGRAM

- 9:30-10:55 a.m.—Current problems of CWP, Dr. W. H. Anderson, Presiding; Epidemiology, Dr. Philip E. Enterline, Principal Speaker; Pathology, Dr. Averill A. Liebow, Principal Speaker; Physiology, Dr. George W. Wright, Principal Speaker; Diagnosis and clinical aspects, Dr. Benjamin V. Branscomb, Principal Speaker.
- 10:55-11:05 a.m.—Break.
- 11:05-12:00 noon—Current research on CWP in Europe, Dr. Robert W. Penman, Presiding, Dr. John Rogan, National Coal Board, England, Professor Dr. Wolfgang T. Ulmer, Institute for Mining Research, West Germany, Dr. A. G. Heppleston, Royal Victoria Infirmary, England, Dr. Colin B. McKerrrow, Pneumoconiosis Research Unit, South Wales.
- 12:00-2:00 p.m.—Buffet luncheon (Continental Inn, Lexington), Buses will transport attendees to lunch and return them to Spindletop Research.
- 2:00-2:30 p.m.—Recommendations and proposals for future research, Dr. Robert W. Penman, Presiding; Presentations by members of the work session team.
- 2:30-4:30 p.m.—Question and answer session, Dr. William H. Anderson, Presiding; Open for discussion between conference attendees and work session team.
- 4:30 p.m.—Close of conference, Theodore R. Broida, President, Spindletop Research, Inc.

WORK SESSION TEAM

William H. Anderson, M.D., Professor of Medicine, and Chief of the Pulmonary Diseases Section, University of Louisville, Kentucky, School of Medicine: A graduate of the University of Chicago School of Medicine in 1949, Dr. Anderson was with the United States Public Health Service for a six-year period, during which time he was a Research Fellow with the National Heart Institute and Staff Physician at USPHS TB Hospital in Brooklyn, among other assignments. Dr. Anderson was Associate Chief of Medicine at the Harlan (Kentucky) Memorial Hospital and Director of the Cardiopulmonary Laboratory at that institution for seven years prior to his present association with the University of Louisville in 1963. He holds a wide range of memberships and Fellowships, and is a diplomate to both the National Board of Medical Examiners and American Board of Internal Medicine. He has written numerous articles and reports on conditions affecting pulmonary functions.

Charles E. Andrews, M.D., Provost for Health Services, West Virginia University Medical Center, Morgantown, West Virginia: Dr. Andrews received his degree from the Boston University School of Medicine in 1949. His academic appointments include the University of Minnesota and the University of Kansas in addition to West Virginia University. He has been affiliated with the West Virginia University Medical Center since 1961, and was named Professor of Medicine in 1963. He was made a diplomate by the National Board of Medical Examiners in 1950, and by the American Board of Internal Medicine in 1957. He is a member of the American College of Physicians and the American Thoracic Society.

Benjamin V. Branscomb, M.D., F.A.C.C.P., Professor of Medicine and Associate Professor of Physiology, Medical College of the University of Alabama, Birmingham, Alabama: Dr. Branscomb received his degree of doctor of medicine from Duke University School of Medicine in 1947, and was certified in internal medicine in 1956. He was a Research Fellow in the Department of Pulmonary Physiology, Trudeau Foundation at Saranac Lake, New York, is a Fellow with the American College of Physicians and a member of the American Thoracic Society. Dr. Branscomb was previously Director of the Pulmonary Laboratory and Clinical Investigator at the National Institutes of Health in Bethesda, Maryland. He is Director of the Pulmonary Disease Division and Director of Emphysema Rehabilitation at the Medical College at Alabama in addition to his academic posts. He has contributed over 30 articles to publications concerning respiratory and pulmonary conditions.

Murray C. Brown, M.D., Deputy Regional Environmental Control Director, Chicago Regional Office, United States Public Health Service, Chicago, Illinois: Dr. Brown has an extensive career with the USPHS holding such posts as Chief of Grants and Training for the National Heart Institute, Chief of Clinical and Professional Education at the National Institutes of Health, and Chief of the Division of Occupational Health. A graduate of the School of Medicine at the University of Virginia (1938), Dr. Brown is a former Director of Medical Education and Professor of Medicine at Meharry Medical College in Nashville, Tennessee, an institution at which he also served as Assistant President. Dr. Brown was vice president of the 1969 Johannesburg, South Africa Conference on Pneumoconiosis.

Philip E. Enterline, Ph.D., Professor of Biostatistics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, Pennsylvania: A doctoral graduate of the American University, Washington D.C. in 1960, Dr. Enterline was a professorial lecturer at that institution for five years before accepting the position of Professor of Medical Statistics at McGill University, Montreal. Since assuming his present post in 1967, Dr. Enterline has also been an Advisory Fellow to the Mellon Institute, Pittsburgh, a member of the Health Advisory Committee, National Bureau of Economic Research, a member of the Research Study Section of the National Institutes of Health, and a consultant to the Division of Occupational Health, USPHS. Dr. Enterline has conducted or participated in extensive studies on problems of health, particularly lung and heart diseases. His works have been published in all the major medical magazines and include several major articles on coal workers' respiratory ailments.

Paul Gross, M.D., Director of Industrial Hygiene Foundation's Research Laboratory and Research Professor, Pathology of Industrial Diseases, University of Pittsburgh, Pennsylvania: A native of Berlin, Germany, Dr. Gross received his Doctor of Medicine in 1927 from Berlin's School of Medicine, Western Reserve University. In 1929, he completed graduate studies at the Western Reserve Univer-

sity. Dr. Gross is a member of the American Conference of Governmental Industrial Hygienists' Threshold Limit Values Committee and Chairman of the ACGIH Committee on Diagnostic Criteria and Disability Assessment for the Pneumoconioses. He is the author of many publications dealing with the pulmonary pathological changes in industrial pulmonary disease.

A. G. Heppleston, D.Sc., M.D., Professor and Chairman of the Department of Pathology at the University of Newcastle-upon-Tyne, England: Dr. Heppleston is a graduate of the University of Manchester and was formerly on the staff of the Welsh National School of Medicine. For a year he was a Dorothy Temple Cross Research Fellow at the Henry Phipps Institute of the University of Pennsylvania. His primary research interests and publications are in pulmonary pathology, both human and experimental, with particular reference to emphysema and fibrotic conditions, pneumoconiosis and particle disposal. The mechanism of fibrogenesis and the cytodynamics of neoplastic and other states of the lung comprise further fields in which he is currently engaged.

Ian T. T. Higgins, M.D., M.R.C.P., Professor of Epidemiology, Professor of Community Health Services, School of Public Health, University of Michigan, Ann Arbor, Michigan: Dr. Higgins received his medical education at the London Hospital and qualified M.R.C.S., L.R.C.P. in England, 1942. After holding hospital appointments in general medicine, pediatrics, and chest diseases, he joined the British Medical Research Council's Pneumoconiosis Research Unit in Cardiff, Wales, in 1953. He was with the faculty of the Graduate School of Public Health, University of Pittsburgh as Professor of Chronic Disease Epidemiology from 1963 until 1966, when he assumed his present appointments. He is a member of several national committees and has a particular interest in problems of air pollution. His main research has been on the epidemiology of chronic cardiorespiratory disease.

Robert E. Hyatt, M.D., Associate Professor of Physiology, Mayo Graduate School of Medicine, University of Minnesota, Rochester, Minnesota. Dr. Hyatt took the M.D. at the University of Rochester, New York, in 1950. He was a Fellow in Cardiology at Barnes Hospital in St. Louis, Missouri, following his internship and residency there. Dr. Hyatt was then with the National Heart Institute, National Institutes of Health, for five years. He was Associate Chief of Medicine and Director of the Cardiopulmonary Laboratory at the Beckley, West Virginia, Memorial Hospital during the period 1958-62. Since that time he has been at the University of Minnesota and has also been consultant to the Physiology section at Mayo Clinic in Rochester. He has written extensively on application of pulmonary physiology to chronic lung diseases, including coal workers' pneumoconiosis. Dr. Hyatt is a member of the American Board of Internal Medicine and the American Thoracic Society among other organizations.

William S. Lainhart, M.D., Deputy Director, Division of Epidemiology and Special Services, Bureau of Occupational Safety and Health, United States Public Health Service, Cincinnati, Ohio. A 1951 graduate in medicine from the University of Washington at Seattle, Dr. Lainhart immediately joined the Public Health Service. After taking a master's degree in public health at the University of California (Berkeley) in 1955, he held a series of supervisory posts in research including that of Medical Officer-in-Charge, Tuberculosis Research Laboratory at Chamblee, Georgia. Since assignment in 1962 to the Cincinnati, Ohio, office as Medical Officer to the Occupational Medicine Section, Dr. Lainhart has investigated the problem of respiratory diseases among miners. He has personally authored or contributed to several contemporary works on the subject. Dr. Lainhart's areas of special interest are biological statistics and epidemiology.

Averill A. Liebow, M.D., Professor and Chairman of the Department of Pathology, University of California, San Diego School of Medicine, La Jolla, California. Dr. Liebow took his M.D. degree at Yale University School of Medicine in 1935, after which he held a series of teaching posts at that school. Following World War II, Dr. Liebow returned to Yale and was named Professor of Pathology in 1952. He has held numerous professional committee posts including being President of the International Academy of Pathology, member of the Committee on Pathology of the National Research Council, and member of the Cardiopulmonary Disease Advisory Committee of the National Institutes of Health. He is responsible for several textbooks on the pathology of lung diseases.

Colin B. McKerrrow, M.D., F.R.C.P., Pneumoconiosis Research Unit of the Medical Research Council, Penarth, Glamorgan, Wales. Dr. McKerrrow received his medical education at Cambridge University and St. Bartholomew's Hospital, London, became a member of the Royal College of Physicians in 1949, and took

the M.D. in 1955. Since his association with the Pneumoconiosis Research Unit, Dr. McKerrow has worked chiefly on clinical and physiological problems of industrial pulmonary diseases. He has been there since 1950 except for a year's work at Johns Hopkins in Baltimore (1953) on distribution of ventilation in the human lung. In 1969 he was admitted as Fellow of the Royal College of Physicians of London.

William K. C. Morgan, M.D., M.R.C.P., Chief of the Appalachian Laboratories for Occupational Respiratory Diseases (ALFORD), United States Public Health Service, and Associate Professor of Medicine, West Virginia University Medical Center, Morgantown, West Virginia. Dr. Morgan was educated in medicine at Sheffield Royal Infirmary and thereafter held a series of hospital appointments in England for five years. Coming to the United States in 1958, Dr. Morgan was at the University of Maryland as Associate Professor of Medicine and consultant physician to the Veterans Administration hospitals in Baltimore prior to his present assignment. He has written or contributed to numerous articles on pulmonary diseases including several on coal workers' pneumoconiosis.

Jay A. Nadel, M.D., Senior Staff Member, Cardiovascular Research Institute; Associate Professor, School of Medicine, University of California, San Francisco, California. After taking his M.D. at Jefferson Medical College in 1953, Dr. Nadel did his internship and residency in Internal Medicine at Philadelphia General Hospital. He has been with the Cardiovascular Research Institute since 1958 and has held academic positions at the University of California School of Medicine at San Francisco since 1961. Dr. Nadel has conducted research and written on a wide range of pulmonary and respiratory conditions. He holds membership and positions on a number of committees including the NIH Task Force on Research Planning in Environmental Health Sciences, and the American Thoracic Society. He is also on the editorial board of the Journal of Applied Physiology and the American Journal of Physiology.

Eugene P. Pendergrass, M.D., Emeritus Professor of Radiology, School of Medicine and Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania: Dr. Pendergrass received his degree in medicine at the University of Pennsylvania in 1918 and has held academic positions in medicine there continuously from that date, assuming his present post in 1961. He was named Professor of Radiology in 1936 and Director of the Department of Radiology in 1939. He is also consultant to several organizations and institutions including the U.S. Public Health Service and the Department of Health of the Commonwealth of Pennsylvania. Dr. Pendergrass has been recognized via numerous awards and honoraria and has held executive positions in a wide range of medical committees and organizations. He has personally written or contributed to over 300 published works, including many on pneumoconiosis.

Robert W. Penman, M.D., Associate Professor and Director of the Pulmonary Division at the University of Kentucky, Lexington: Dr. Penman graduated from Edinburgh University School of Medicine in 1954. Following a series of Internships and Residencies, he entered academic medicine in the field of pulmonary diseases in 1959, having appointments in Queen's University, Belfast and Sheffield University, in Great Britain. Following a research fellowship at Johns Hopkins Medical School in 1963, he was appointed Assistant Professor at University of Kentucky Medical School. He is a diplomate in internal medicine and pulmonary diseases (Royal College of Physicians of Edinburgh and London). His research centers upon chronic lung diseases and respiratory physiology.

Philip C. Pratt, M.D., Associate Professor Pathology, Duke University School of Medicine, Durham, North Carolina: After taking his M.D. at Johns Hopkins in 1944 and serving his residency there, Dr. Pratt joined the Saranac Laboratory at Saranac Lake, New York, for nine years. He was also Chief of Laboratories for the Ohio Tuberculosis Hospital at Columbus and Associate Professor of Pathology at Ohio State Medical College before accepting his present post in 1966. He holds a certification from the American Board of Pathology and membership in the American Thoracic Society and American Society for Experimental Pathology among others. Dr. Pratt has written on numerous aspects of the pneumoconiosis, tuberculosis and other pulmonary conditions.

Stewart Rae, M.B., M.R.C.P., Head, Medical Branch, Institute of Occupational Medicine, Edinburgh, Scotland. A graduate of the School of Medicine at Edinburgh, Dr. Rae held several positions at the hospitals in Edinburgh before his military service. After this he was trained as a hematologist and carried out research on the treatment of the leukemias. He was then appointed by the National Coal Board to conduct an epidemiological investigation into CWP, working at the Medical Research Council's Pneumoconiosis Research Unit in South Wales.

Since 1954 Dr. Rae has been involved in the investigation of the relationship between exposure to airborne dust underground and the development of CWP. He was elected to the Fellowship of the Royal College of Physicians in Edinburgh in 1968.

Donald L. Rasmussen, M.D., Cardiopulmonary Laboratory, Appalachian Regional Hospital, Beckley, West Virginia: Graduated from the University of Utah College of Medicine in 1952, Dr. Rasmussen served his internship at the University of Minnesota hospitals, and his residency at hospitals in Utah and California. He served a pulmonary disease residency at Fitzsimons General Hospital in Denver, Colorado. He has held positions as Associate Chief of Internal Medicine, and Chief Medical Officer of the the Appalachian Coal Miners Research Unit, USPHS, since assuming his present assignment in 1963. He is certified by the American Board of Internal Medicine.

John M. Rogan, M.D., Chief Medical Officer and Director of Research, National Coal Board of England: Dr. Rogan graduated in medicine at the University of Edinburgh in 1935. Following several intern posts and teaching appointments, he joined the Colonial Service in Malaya, then transferred to the Royal Army Medical Corp at the outbreak of World War II, eventually being in charge of clinical research on malaria in India. After World War II, Dr. Rogan was appointed Lecturer in industrial medicine at the University of Glasgow. In 1948 he became Senior Medical Officer of the Medical Research Council with responsibility for administration of research in environmental medicine. He has held his present post since 1951 and has also been the United Kingdom observer on the Medical Research Committee of the European Economic Commission since 1956.

Professor Dr. Wolfgang T. Ulmer, Chief of the Department of Medicine, Institute of Silicosis Research of the Professional Society of Mining at Bochum, Germany; and Head of the Institute for Lung Function Research of the University of Münster at Münster, Germany: Dr. Ulmer took his medical degree at Erlanger, Germany in 1952. He worked extensively in lung and heart diseases at the Institute of Physiology at Kiel, Germany; the Internal Medicine Hospital at Zurich, Switzerland; the University of Groningen in Holland; and, at the University in Heidelberg, Germany where he received the degree of doctor med. habil. in 1958. His present work at the Institute concerns new methods of investigation into lung and heart diseases and special research on coal workers with and without CWP. In 1964 Dr. Ulmer was awarded the title of Professor at the University of Münster.

George W. Wright, M.D., Head, Department of Medical Research, Division of Internal Medicine, Saint Luke's Hospital, Cleveland, Ohio: A graduate from the Indiana University School of Medicine in 1932, Dr. Wright did his internship at Barnes Hospital in St. Louis, Missouri, and his residency at Bellevue Hospital in New York City. He was in private practice as a consultant on chest diseases at Saranac Lake, New York, for fourteen years. In addition to his present position he is also Associate Clinical Professor of Medicine at Case-Western Reserve University. He is active as chairman and member of numerous national committees dealing with vocational rehabilitation and occupational health including the American Thoracic Society Committee on Research and the Permanent Commission and International Association in Occupational Health.

John P. Wyatt, M.D., Professor and Chairman of Pathology, University of Manitoba School of Medicine, Winnipeg, Canada: Dr. Wyatt is a graduate in medicine from the University of Manitoba (1938). Following fellowships at Banting Institute and Harvard and a tour of military service, he became a lecturer in pathology at Toronto University and a consultant to the Ontario Silicosis Board. Dr. Wyatt was at St. Louis University for a fifteen year period thereafter, holding such positions as Professor of Pathology and Head of the Pathology Department at that institution. He has held his present post since 1964. He holds membership in numerous societies including that of Diplomate to the American Board of Pathology. He has authored or contributed to numerous publications including many on acute and chronic experimental studies of diverse lung conditions, including pneumoconiosis and emphysema.

Mr. DENT (presiding). Mr. Foster Mullins.

STATEMENT OF W. FOSTER MULLINS, CHIEF MINE INSPECTOR,
COMMONWEALTH OF VIRGINIA

Mr. MULLINS. Thank you, Congressman Dent.

I am W. Foster Mullins from Great Stone Gap, Va., and I will give you just a brief résumé. I was born in Floyd County, Ky. My father left Kentucky when I was a small boy and moved to Virginia. I grew up in Virginia and commenced working in coal mines in 1935.

I have been actively engaged in coal mining since 1935. I am a registered professional engineer in the State of Kentucky. I have done all types of work in and about coal mines, from a common laborer to transitman, engineer, chief engineer, safety director, section foreman, mine foreman, and superintendent.

I want to apologize to the committee for not having several copies of the statement. I learned of this meeting Thursday night at 11:30. I do have one copy to leave with the committee and would ask that this and the supporting documents that I will discuss be made a part of the record.

Mr. DENT. Without objection, it is so ordered.

(Mr. Mullins' prepared statement and supporting documents follow:)

PREPARED STATEMENT OF W. FOSTER MULLINS, CHIEF MINE INSPECTOR,
COMMONWEALTH OF VIRGINIA

With your indulgence, I would like to turn back a few pages of history and look at certain conditions prevailing in the coal industry immediately prior to the passage of Public Law 552. Very early in 1951, the Bureau of Mines published the following statements:

"The bituminous coal industry in 1950 experienced the best safety year since 1930 when complete injury data first became available. The fatality rate was 0.93 per million man hours, the second successive year that this rate in bituminous coal mines has fallen below 1.0 per million man hours of employment, however this rate in 1950 was slightly higher than the comparable rate of 0.92 in 1949." (Mineral Industrial Surveys, U.S. Department of the Interior, C.M.I. No. 36).

Unfortunately, this good news was destined to be very short-lived, for in December, 1951, a tragic explosion occurred in the Orient No. 2 Mine at West Frankfort, Illinois, bringing death to 119 miners. Shortly thereafter, proceedings were underway which resulted in the passage of Public Law 552.

On September 18, 1963, John F. O'Leary, Deputy Assistant Secretary, Mineral Resources, Department of the Interior, made this statement:

"In 1953, after major disasters in the coal mines of this Nation had shocked and alerted us all to the need for strong legislation and mandatory Federal safety inspection, the Congress enacted Title II of the Federal Coal Mine Safety Act, which was designed to prevent major disasters in coal mines employing regularly more than fourteen individuals underground.

"As this act became operable, there was a notable reduction in the number of coal mine disasters: One in 1953, one in 1954, and none in 1955 or 1956, and it appeared that the mandatory controls of the act, coupled with the long-term safety education and training program of the Bureau of Mines and the efforts of miners and operators, were really paying off.

"Then, in 1957, the number of coal mine disasters began creeping up again. It took two recent large coal mine disasters, however, to bring this situation before the general public in a dramatic and appalling way. On December 6 of last year an explosion in the Robena No. 3 Mine in Pennsylvania killed 37 men. And on April 25, 1963, tragedy again struck—this time in the Compass No. 2 Mine in West Virginia where 22 men were killed."

Mr. Forbes, a former director of the Bureau of Mines has gone on record as saying that accidents are problems of human failure and that if the Bureau and industry are going to correct these accidents that they have to be attacked

through the medium of correction within the human mind, and the human body, and the man has to be made to act safely.

Mr. Ankeny, a former director of the Bureau of Mines, has made the statement publicly that passage of bills would not be expected to reduce the accident rate.

Therefore, how can we, in logic or in good conscience, say that we are going to pass, and when I say "we" I am putting myself in the class with you gentlemen,—how can we say that we are going to pass a bill to improve the safety record, when the two previous directors of the Bureau of Mines said that passage of laws would not reduce the accident rate.

The following statements are quotations from the Subcommittee of Labor in the Senate concerning S. 3290. On Page 8 in this report of the statement of Marling J. Ankeny, made on March 21, 1958, in discussing violations of the Federal Coal Mine Safety Act, Article V, Section 3(b); Section 209(d) (1), Mr. Ankeny stated: "Thirty-nine gassy mines were in violation." He was referring to the ventilation requirement of the act which provides 6,000 C.F.M. of air must be passing through the last open crosscut. On Page 9, in discussing preshift requirements of Article V, Section 10(e) and Section 209(d) (7), Mr. Ankeny states: "Only gassy mines were included in the analysis of this category. Forty-one—20 percent—were not examined as required, which means that accumulations of gas presenting imminent danger as well as other hazards may have been present when the men entered the mine." Mr. Ankeny further states that preshift examinations "requires examination of every active working place and every other place in a nongassy mine, where men regularly work or travel, for gas and other hazards by certified persons within 4 hours immediately preceding the first coal-producing shift."

On Page 11 in discussing explosion hazards in gassy mines, Mr. Ankeny states: "The hazard is greatest in gassy mines, where the combination of this violation and a violation of articles VI, section 1(a)—dangerous accumulations—presents an exceedingly dangerous condition."

It must be remembered that most mines are dry, at times, dependent on ^{the} season. In a dry season, it is estimated that more than one-half the mines would be in violation.

On Page 13, Mr. Ankeny states in discussing permissible electric lamps, Article XI, Section V and Section 209(h) (4): "Requires that only permissible electric lamps be used by all persons in a gassy mine for portable illumination.

"In most of the small mines, open-flame lamps are used for illumination, and, also, to ignite the fuses or squibs used in blasting. The use of such lamps presents a serious fire hazard in any mine, gassy or nongassy. In a gassy mine, the possibility of igniting methane is an additional danger. Records show that numerous gas explosions were caused by open-flame lamps.

"This safety provision prohibits the use of open-flame lamps in gassy mines. However, such lamps were in use in 13 percent of the small gassy mines. In many States, open-flame lamps are prohibited in gassy mines by State legislation, and accounts for the absence of violations in such States."

Mr. Ankeny further stated in discussing prohibiting smoking underground that Article II, Section 7(a) and 209(h) "Prohibits smoking and the carrying of smoking material, matches, or lighters by any person in a gassy mine.

"Flame introduced in any mine presents a definite fire hazard, and, in a gassy mine, the additional hazard of causing a gas explosion.

"This provision seeks to prevent such hazards by keeping sources of flame out of gassy mines. Nevertheless, in 42 small gassy mines—21 percent—such dangers did exist. Again, State legislation probably prevented additional instances of violation."

Senator John Sherman Cooper in cross-examining Mr. Creed P. Kelly, Chief Mine Inspector for the State of Virginia, in discussing the danger from gas and small operations, the following is quoted from Page 110 of the report on S. 3290:

LESS DANGER FROM GAS

"Senator COOPER. Now, another statement. You state that small mines are better ventilated because their operations do not extend great distances underground. I can understand that, but are there less dangers from gas?

"Mr. KELLY. I don't understand that question.

"Senator COOPER. I am citing this statement. It is not a statement I made. In this statement it is said that there is less danger from gas in these small mines because the operations do not extend great distances underground. I assume what you are saying is that you have got a mine where the face is back 300 feet or a

quarter of a mile, there is less gas there or less danger than in one going back a mile. Is that true?

"Mr. KELLY. It is possible that in the deep work you encounter more gas, but that is not necessarily true. If you had gas on the outcrop, it would be there just the same as it would be a mile back, but you don't generally find it.

"Senator COOPER. It is your judgment that these small mines are less subject to gassy conditions than large mines?

"Mr. KELLY. That is the way we have found it.

"Senator COOPER. Have there been many gas explosions in these small mines?

"Mr. KELLY. No, sir."

The following statements were taken from the report of H.R. 23 of the House Subcommittee of Labor. The dates of the hearings were August 8, 9; September 18, 19, and 20, 1963. In the statement of Mr. John F. O'Leary, Deputy Associate Secretary, Mineral Resources, on Page 109, the following is quoted: "The legislation which we support has four major provisions. These would: (1) -----; (2) -----; (3) eliminate and amend "grandfather" clauses in the Federal Coal Mine Safety Act; and (4) provide that each mineworking section be ventilated by a separate split of air directed and controlled by overcasts."

"Another aspect of compliance with the Federal act involves State mining laws. Most of the title I underground coal mines are found in Pennsylvania, West Virginia, Kentucky, Virginia, and Tennessee.

"The laws of these States are virtually identical to the principal Federal mine safety provisions that pertain to roof control on haulageways and travelways, ventilation, preshift and onshift examinations for gas and other hazards, clean up and rock dusting, closed lights in gassy mines, and use of permissible electric face equipment in gassy mines—provisions that would entail the most expense."

On Page 112, the following is quoted:

"Elimination of 'grandfather' clauses from the Federal Coal Mine Safety Act: At the time title II of the Federal Coal Mine Safety Act was enacted in 1952, 'grandfather' clauses were included in sections 209(d) (5) and (6) and in 209(f) (1) and (2) to avoid undue hardship and to permit an orderly transition period for the mine owners to get their 'houses in order.'"

"Now, there has been a gradual let down, I know that, and you know it. Robena is only a few miles from my home, and we understand the problem, and there always is a certain period of laxity when things get going pretty good, and maybe the momentum of safety provisions got ahead of itself, and we just got caught up short in some of these disasters that might have been averted.

"However, if the old law as it is now had been completely complied with, I don't believe that you would have had either Robena or the Campbell mine.

"Now, in my humble opinion—and I say this to the chairman with all sincerity, and to the Department—I believe that House bill 23 ought to be pushed as an exclusive, sole piece of legislation. Now, hearings have been held on it. That particular phase of mine safety has been covered time after time, with hour after hour and ream after ream of hearings. Why can't the Secretary and the Department go along with the proposal that we strive to get House bill 23 up before the full committee and before the Rules Committee and before the House while continuing the hearings on the new proposal, which encompasses so much more?

"I know that it takes in the title I mines, but it puts them in the same category, outside of a 6-month so-called period of grace, and yet you are saying to the small mines, who are economically in a much weaker position than the title II mines, that they must do in 6 months what we allowed the big mines to take 17 years to do."

"We think it is important for the committee to know that a Federal investigation of the Centralia disaster in Illinois on March 25, 1947, disclosed that the blasting with caps and fuse in a dry and dusty area that was not rock dusted was the prime suspect in the cause of this disaster that killed 119 men. The mine was classed nongassy by the State and gas was not a factor in the disaster.

"Bureau experiments have proved conclusively that 'splitting' fuse can ignite a cloud of coal dust and initiate a coal dust explosion.

"Inasmuch as the use of fuse requires an open flame or equivalent to cause ignition thereof, the use of fuse in a gassy mine would be prohibited under section 209(h) (3) of the Federal Coal Mine Safety Act. We are confident that the State of Virginia would not condone such practice of using a flame at the face of a room or entry in a gassy mine."

On Page 411 of this report I am quoting comments by the Bureau of Mines on certain statements made by witnesses:

"Statement by Senator Cooper (p. 89 of transcript): 'The Bureau of Mines contends that the provisions of section 209 (Federal Coal Mine Safety Act), every one of them, must be made applicable in every respect to title I mines.'

"Comment: The Bureau of Mines could not apply every one of the 37 mine safety provisions of title II to either title I or title II mines, unless all the conditions or practices covered in the 37 mine safety provisions were found in the mine under inspection, and this would be a very rare occurrence. For example, (1) the provisions in section 209 that apply to gassy mines could not and would not be applied to nongassy mines; (2) the rock-dusting provisions in section 209 apply only to dry mines and therefore could not and would not be applied to wet mines; and (3) the provisions in section 209 that apply to hoisting in shaft mines could not and would not be applied to drift mines."

This history of previous hearings as a result of major disasters is different than the hearings being conducted at the present time. Before these hearings were started we knew what caused the major disasters.

There is no point in my making a long dissertation concerning what brought about the present hearing before this Congress. We all know that it is the result of the disaster which occurred at Farmington, West Virginia. The only difference in the situations at this time and at the two previous investigations and hearings which I have just mentioned is that we do *not* know what caused the Farmington disaster as of this date.

As I have just shown from previous records the subject of gassy and nongassy mines has been brought before the Congress repeatedly in previous years. In order to prevent gas explosions adequate ventilation is of utmost importance. Rarely at any time is more air provided than is necessary, nor do we find too many mines which provide more than 6,000 C. F. M. in the last open crosscut. Only the best mines are able to deliver to the working faces as much as 85 per cent of the air sent through the mine. To achieve 70 per cent is considered good and many mines drop to 40 per cent and even much lower.

As a rule, although not always, sufficient air passes through the ventilating fan on the surface, and much is lost through leaky stoppings or crosscuts left open or through carelessness when doors are left open to facilitate haulage. Such haphazard ventilating practices not only are dangerous to the health and lives of the miners, but are the height of inefficiency because of the waste of power in putting into the mine so much air that never reaches the places where it is needed.

To deliver to the working faces a sufficient volume of air at the necessary velocity to dilute and carry away explosive gas, crosscuts are required at the right locations, wide enough, and free from refuse and other material. Airways must be unobstructed, and overcasts, regulators, stoppings, and doors must be properly installed and maintained. Often, however, a ventilating fan installed when the mine was first opened is kept in service long after the advancement of the work requires its replacement by a larger one, capable of ventilating the larger area and of forcing air through miles of old air courses long since obstructed by falls of roof.

In addition to delivering sufficient air to the working faces, a given split of air must not be overburdened to the point where it contains a dangerous volume of methane, and all return air should be led directly into the main return and not through other active workings. Too often air splits thus overburdened carry methane-laden air into other working sections where danger of ignition exists.

Obviously, greater vigilance is needed in mechanized mines to keep working places free from explosive gas, and a more exact technique is required to detect promptly any unusual accumulation. An occasional, or even more frequent test in working places by a member of the supervisory force will no longer suffice, and must be supplemented by more systematic attention if ignitions are to be avoided. A fixed minimum routine of making tests must be worked out, based on experience at each mine and adaptable to the work of the moment, such as operations before and after blasting and during undercutting and drilling and continuous mining. Actually in many mechanized mines, a *hurried* and harrassed section foreman, responsible for production, is solely responsible for watching for gas on his section.

Methane detectors have recently been installed in *some* gassy mines in the United States, which gives an alarm or de-energizes the equipment whenever a predetermined percentage of methane is present. I will discuss this device a little later.

In 1940, Coal Age, prominent organ and spokesman of the industry, in its April issue under the Title, "130 Cues to Coal-Mining Profits," listed suggestions for more efficient and hence more profitable operation. The following appeared under the heading of ventilation:

Have ventilating practices been surveyed from the viewpoints of:

Increasing airway area to cut velocity and resistance and raise flow?

Sealing off old sections, driving new airways to cut travel, etc.?

Sinking shafts or making new openings at the back end of the property to establish one-way air travel?

Using more overcasts to eliminate doors?

Employing air locks, automatic doors, etc. for greater efficiency?

Better timbering of airways and regular cleaning to eliminate restrictions, reduce turbulence, etc.?

Use of vanes, curves, etc., to prevent turbulence and loss of power where direction changes?

Installation or increased use of brattice lines, auxiliary tubing blower, etc. in carrying away gas, smoke and dust?

Will a new fan supply as much or more air with less power?

Are standby fan drives provided?

Is the proper equipment for gas detection and air sampling available?

It is not expected that Coal Age would have compiled this list had the suggested improvements already been in general use in the industry. In offering them as a means of paving the road to profits, Coal Age, by implication, makes the important point that safety is consistent with profitable operations.

COAL DUST CONTROL

As a method of coal-dust control to localize and prevent the spread of explosions, rock-dusting to dilute and reduce the explosibility of coal dust has been advocated and used in the United States for more than half a century. At the same time to lessen the amount of coal dust, recommendations have been made to decrease spillage, to avoid excessive amounts of explosives in blasting, to load out machine cuttings before blasting, to use water on cutterbars of mining machines and to wet down coal with a hose before loading.

In 1940, only 481 out of 6,000 bituminous coal mines in the United States claimed to use rock dust, and of these only 10 percent were rock dusted adequately. According to the best information at that time very few mines used water to allay dust during operations at the face. This is true despite general knowledge that mechanical mining operations have increased the amount of dust many fold.

Mechanized mining is inherently more dusty than hand loading. Moreover the practice in many mechanized mines of speeding operations by neglecting to first load the cutting made by the cutting machine before blasting, and instead blasting coal down on top of machine cuttings, not only raises dust immediately at hand for possible ignition by the flame of the blast, but by making the entire loading operation extremely dusty, creates a health hazard. The loader, when opportunity is afforded, usually loads out machine cuttings before blasting, if for no other reason than to escape the discomfort of working in dust the entire day. In mechanized mines another bad practice occasioned by the speed of operations is to put into the "gob" (refuse left in the mine) any machine cuttings of high sulphur and high ash content, adding further to the dust hazard, as well as to the danger of fire from spontaneous combustion. Thus, in handling machine cuttings the methods employed in most mechanized mines are a distinctly backward step in efforts for safety.

Increase in the quantity of coal dust and its spread throughout the mine is, however, only part of the greater dust hazard resulting from mechanization with hand loading methods the dust had time to settle and to absorb moisture before other dust was added to it, which, together with rock dusting, reduced the hazard to a minimum. In mechanized mines, frequent blasting and heat from machinery raise the temperature and the air absorbs much of the natural moisture and carries it away. The difficulty of spreading rock dust is a problem in mechanized mines with multiple-shift operations.

REPORT OF GAS IGNITION

This mine is being developed in the Pocahontas No. 3 coalbed, which averages about fifty inches in thickness. The immediate roof consists of laminated shale and sandstone.

From this coal seam methane is constantly being liberated from the faces and its detection and removal recorded frequently. The Lee Norse Miners and Plows are equipped with methane monitoring devices which shut off the power when the methane content reaches two per centum. These for methane are made with a permissible flame safety light and methane detectors before the equipment is taken into the face area and during the mining operations.

This mine is ventilated by two eight-foot Aerodyne fans that are exhausting about 715,000 cubic feet of air a minute. The split system of ventilation is used on the advance sections. On the section where the ignition occurred there was a total of 48,000 C. F. M. The left split contained 24,000 C. F. M. and the right split 24,000 C. F. M.

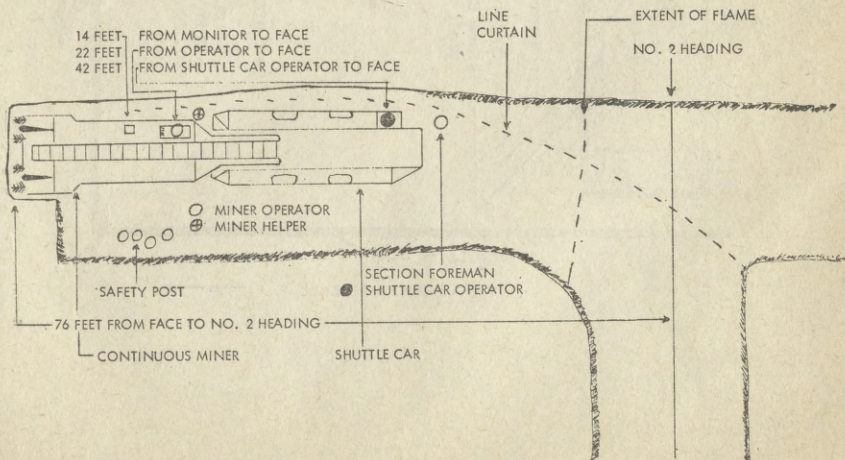
Prior to the ignition the crew of men started to work at 4:00 o'clock and everything had proceeded normally in operation up until lunch time. Near 7:30 p.m. the Miner crew was mining in the crosscut between No. 2 and No. 1 Heading when they went to lunch. Before returning to work, the section foreman stated that he would check the place for methane before mining operations began. He told the Miner crew, upon returning to the place, that it was clear of methane. This was near 8:00 p.m. In this place about six feet of coal had been mined on the left side and about five feet on the right side. This place was driven about seventy-six feet deep from the center of No. 2 Heading. Line curtain was extended to about fourteen feet of the face while mining. There was 10,000 C. F. M. entering this crosscut. The Miner operator had loaded two and one-half shuttle cars of coal when the ignition occurred. Once during this loading cycle the monitor had shut the machine down due to percentage of methane. This was cleared up by extending the line curtain. At the time of the ignition the Miner was cleaning the loose coal up on the right side and the bits were not in operation. The flame traveled for a distance of about sixty feet. Three of the four men in the place received first, second and third degree burns on the upper portion of their bodies. First aid was administered to the men and they were then taken to a hospital.

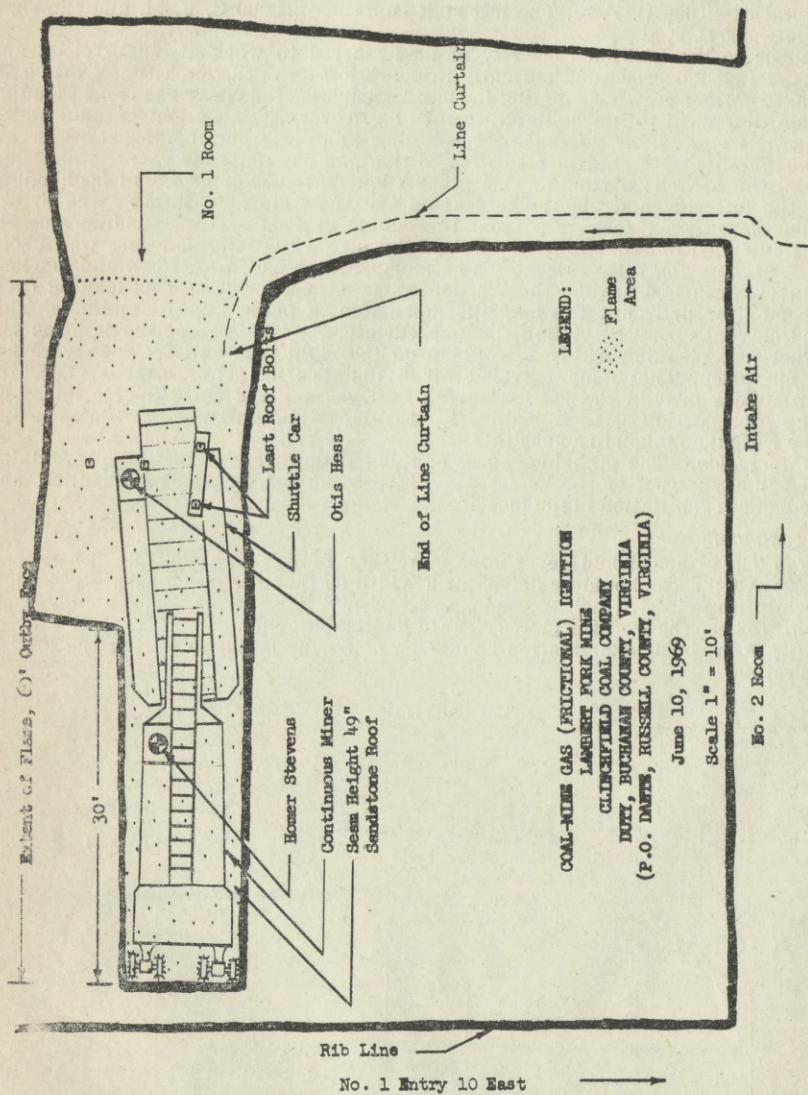
Conclusion.—The probable causes of this ignition were either the bits striking the sandstone roof or the loader arms hitting some rock which had fallen, and inadequate ventilation in the face area.

Recommendations

- (1) The Miner should never mine more than four feet on one side at a time.
- (2) All places should be driven at a width so that the space between the line curtain and rib will be large enough to permit the flow of a sufficient volume of air to keep the working places clear of flammable gases.
- (3) A frequent examination should be made for methane during the mining operation.

GAS IGNITION





The preceding Federal inspection was made April 10-11, 14-18 and 21-22, 1969.

DESCRIPTION OF OCCURRENCE

The 10 east crew entered the mine at 12:01 a.m., Tuesday, June 10, 1969, and arrived on their section about 12:30 a.m. The crew consisted of six men and the foreman. The face regions were examined by Fred Gilbert, section foreman, before starting work. The continuous mining machine was parked in No. 2 room in by No. 1 crosscut left. Gilbert instructed Stevens, miner operator, to load some loose roadbed rock from the shuttle car roadway in No. 2 room. After the loose rock was removed the miner was partly serviced. At 1:45 a.m. Stevens went to the face of No. 1 room (back cut) and examined the place and made tests for gas. Finding no methane Stevens trammed the miner to the face and began mining coal. The full width of the face was advanced about 12 feet. Stevens then positioned the miner on the left side and started a miner run about 9 feet wide or the width of the cutting heads of the miner. As the left side of the face was advanced Stevens stated he made tests for gas after every other shuttle car was loaded or at intervals of 10-15 minutes. Gilbert stated he visited the place frequently and also made tests for gas. Neither Gilbert nor Stevens detected any methane; however, due to the restricted area in the left shear, gas tests could not be made closer to the face than the miner operator's seat or about 20 feet away.

At 3:30 a.m., Otis Hess, No. 8 standard shuttle car operator, was relieved for lunch by Jimmy Honaker, a roof bolter. At 4:00 a.m. Stevens loaded No. 7 shuttle car operated by Jeremiah Chandler. But this time the miner run had been advanced to a depth of 30 feet. Hess returned from lunch, resumed control of No. 8 shuttle car and maneuvered it under the boom of the miner. Stevens was in the process of cutting coal from the face of the left shear when the cutting head bits struck the roof and the resulting sparks ignited a methane air mixture. The flame extended about 60 feet from the face. The concussion knocked Stevens and Hess out of their seats and both men were burned. Stevens was clothed heavily and wore a dust respirator. Hess was dressed in very thin clothing. Gilbert was in No. 1 entry of 10 east where No. 1 room (back cut) was to cut through when he heard the noise from the ignition. As he went through the line brattice across No. 2 room he encountered smoke and saw Hess coming through No. 1 crosscut. Garfield O'Quinn, repairman, arrived at the same time and Gilbert asked O'Quinn to take Hess to the first-aid station and get some self-rescuers. Gilbert continued on to No. 1 room (back cut) without the self-rescuers and found Stevens at the controls of the miner. He dragged Stevens away from the miner, then led him to the first-aid station. Transportation was not readily available and the two injured men insisted on starting to the surface. Gilbert requested Chandler and Honaker to accompany Hess and Stevens. Meanwhile, Gilbert contacted Hershel Waugh, general night foreman, and informed him of the occurrence, then Gilbert and the remainder of the 10 east crew started to the surface. Waugh met the men walking at 9 east and took them to the surface in a mine jitney. Some first-aid treatment was administered while waiting for transportation. An ambulance arrived about 4:45 a.m. Stevens and Hess were taken to Mattie Williams Hospital at Richlands, Virginia.

Other members of the 10 east crew with Gilbert returned to the 10 east section. The line curtain in No. 1 room (back cut), blown down by the concussion, was repaired; the shuttle car and miner in the place were moved to No. 2 room; a roof drill was trammed into No. 1 room (back cut) and 14 roof bolts were installed. Also, a large amount of rock dust had been applied on the section including the crosscut to No. 1 room (back cut). As members of the investigating party arrived on 10 east section, men were in the process of correcting permissibility defects on No. 8 shuttle car and the continuous mining machine. All work in the section was stopped promptly. It was the opinion of the inspectors that the work done after the ignition hindered in evaluating the actual conditions as they existed at the time of occurrence.

The investigation disclosed that No. 1 room (back cut) had been advanced entirely too far for safe mining practices in an attempt to connect the room with No. 1 entry of 10 east to improve ventilation on the section. Thirty-seven cars of coal and rock were loaded prior to the ignition; however, the amount of coal loaded out of No. 1 room (back cut) could not be determined.

CONCLUSIONS

Failure to provide face ventilation (line brattice 54 feet from the face) permitted an explosive mixture of methane-air to accumulate. The deep, narrow miner run (9 feet wide—30 feet deep) practically filled with a continuous mining machine made it very difficult to ventilate the face and did not allow thorough tests for gas to be made. Reportedly, visibility was poor and could have accounted for the cutting bits striking the roof and creating sparks.

RECOMMENDATIONS

Compliance with the following recommendations may prevent a similar occurrence in the future:

1. The line brattice shall be installed and maintained in such manner so as to direct sufficient volume of air to the faces, to dilute, render harmless and carry away any liberations of methane.
2. More thorough and frequent examinations for methane shall be made during mining operations. The rate of face advance, gas liberation, and the amount of air being conducted to the face should be determining factors as to the frequency of such examinations.
3. Continuous mining machines, which make narrow cuts, should not advance too deeply into the coal unless there is provisions for rapidly and adequately diluting and removing any gas that is liberated.
4. The ventilation and mining systems should be so arranged that the use of check curtains across shuttle car haulageways be kept to a minimum and check curtains across belt and track entires should be hung in pairs to form airlocks.
5. Methane monitors should be installed on continuous mining machines as an additional safeguard against mining in an explosive mixture of methane-air.
6. An adequate spray system with sufficient water pressure should be maintained at the cutting bits of the continuous mining machine at all times while coal is being mined.
7. Visibility should be such that the miner operator can prevent the cutting bits from contacting hard roof rock.
8. Permissible electric face equipment shall be maintained in permissible condition.
9. When ignitions or other serious accidents occur, the evidence surrounding such occurrence should not be disturbed until an investigation by Federal coal-mine inspectors has been completed.
10. The continuous mining machine operator should not advance inby the last line of roof support.

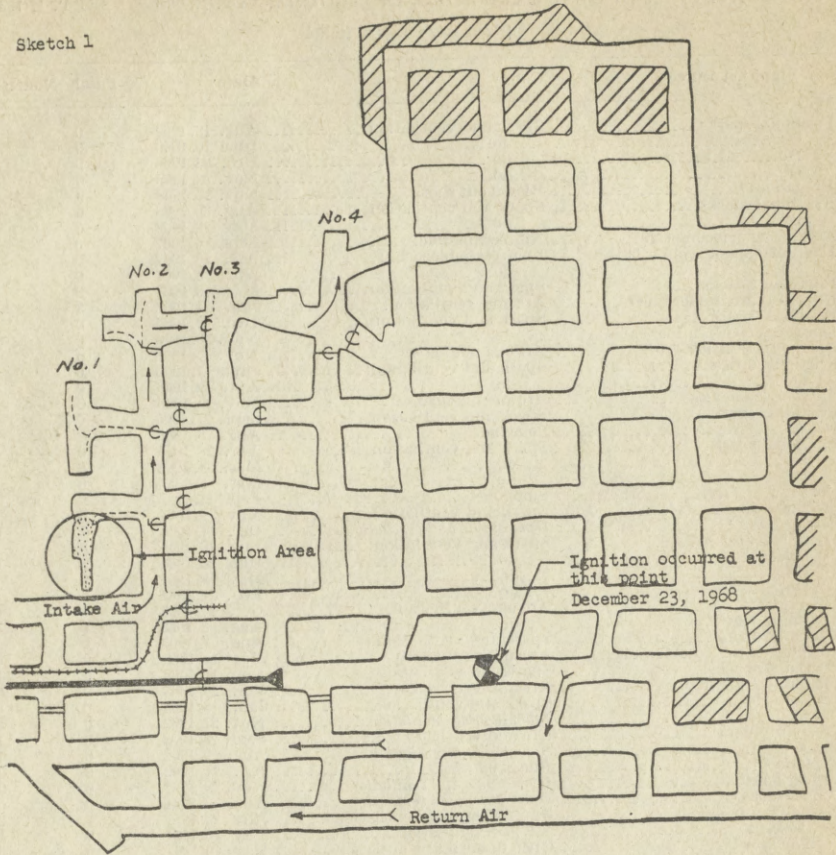
ACKNOWLEDGEMENT

The cooperation of company officials, employees, the representative of the United Mine Workers of America, Local Union 1426 and the State Mine inspector is gratefully acknowledged.

Respectfully submitted.

M. L. WEST,
Federal Coal Mine Inspector.

Sketch 1



COAL-MINE GAS (FRICTIONAL) IGNITION
 LAMBERT FORK MINE
 CLINCHFIELD COAL COMPANY
 DUTY, BUCHANAN COUNTY, VIRGINIA
 (P.O. DANTE, RUSSELL COUNTY, VIRGINIA)

June 10, 1969

LEGEND:

- || Permanent Stopping
- ⊕ Check Curtain
- Line Curtain
- Intake Air
- > Return Air
- + + + + + Track
- Belt
- Conveyor
- ▶ Shuttle Car
- Discharge Point

Scale 1" = 100'

GAS IGNITIONS AND DUST EXPLOSIONS IN VIRGINIA, JAN. 1, 1959 TO SEPT. 1, 1969
[Nongassy mines in *italic*]

Ignition source	Cause	Date	Fatal	Nonfatal
Frictional sparks.....	Spark and ventilation.....	Aug. 18, 1969	0	3
Do.....	do.....	June 10, 1969	0	2
Do.....	do.....	Dec. 23, 1968	0	1
Explosives ¹	Blown out shot.....	Nov. 22, 1968	0	0
Frictional sparks.....	Spark and ventilation.....	Nov. 13, 1968	0	3
Do.....	do.....	Aug. 30, 1968	0	2
Arc, battery, locomotive.....	Nonpermissible.....	May 8, 1968	0	2
Frictional spark (pillar fall).....	Ineffective bleeder.....	Sept. 6, 1967	0	6
Do.....	do.....	Aug. 10, 1967	0	0
Frictional sparks.....	Spark and ventilation.....	Apr. 3, 1967	0	0
Electrical arc, feeder line ²	Arc and ventilation.....	Mar. 6, 1967	0	3
Frictional spark.....	Spark and ventilation.....	Jan. 24, 1967	3	4
Frictional spark, miner cable.....	do.....	Dec. 2, 1966	0	1
Arc, nonpermissible drill.....	Arc and ventilation.....	Nov. 30, 1966	0	0
Frictional spark.....	Spark and ventilation.....	Nov. 7, 1966	0	1
Do.....	do.....	June 1, 1966	0	3
Arc from locomotive.....	Arc and ventilation.....	Apr. 19, 1966	0	1
Frictional spark.....	Spark and ventilation.....	Nov. 29, 1965	0	2
Match.....	Smoking.....	Sept. 27, 1965	0	1
Frictional spark.....	Spark and ventilation.....	Aug. 6, 1965	0	1
Do.....	do.....	Apr. 28, 1965	0	1
Do.....	do.....	Mar. 31, 1965	0	0
Match.....	Smoking.....	Mar. 3, 1965	0	0
Frictional spark.....	Spark and ventilation.....	Feb. 11, 1965	0	2
Carbide lamp ³	Open flame and ventilation.....	Nov. 9, 1964	0	0
Frictional sparks.....	Spark and ventilation.....	Oct. 14, 1964	0	0
Do.....	do.....	Aug. 18, 1964	0	0
Do.....	do.....	June 24, 1964	0	0
Do.....	do.....	May 8, 1964	0	0
Arc.....	Arc and ventilation.....	Feb. 24, 1964	0	0
Arc, mine Jeep.....	do.....	Oct. 12, 1963	0	0
Frictional spark.....	Spark and ventilation.....	Aug. 8, 1963	0	0
Arc, shuttle car.....	Arc and ventilation.....	Aug. 7, 1963	0	0
Frictional sparks.....	Spark and ventilation.....	May 14, 1963	0	0
Arc, mine Jeep.....	Arc and ventilation.....	Apr. 12, 1963	0	1
Frictional sparks.....	Spark and ventilation.....	Jan. 29, 1963	0	0
Match ⁴	Smoking and ventilation.....	Jan. 8, 1963	0	0
Arc, equipment.....	Arc and ventilation.....	Nov. 21, 1962	0	4
Match ⁴	Smoking and ventilation.....	Sept. 28, 1962	0	1
Explosives ¹	Blown out shot.....	Aug. 9, 1962	0	1
Carbide lamp ³	Open flame and ventilation.....	Jan. 11, 1962	0	0
Carbide lamp ³	Open flame and ventilation.....	Nov. 28, 1961	0	0
Carbide lamp ³	Open flame and ventilation.....	Aug. 3, 1961	0	0
Arc, welder.....	Arc and ventilation.....	July 29, 1961	1	2
Carbide lamp ³	Open flame and ventilation.....	May 16, 1961	0	1
Arc, battery, locomotive, while charging. ⁵	Arc and ventilation.....	May 9, 1961	0	0
Carbide lamp ³	Open flame and ventilation.....	Nov. 1, 1960	0	1
Cigarette lighter.....	Smoking and ventilation.....	Aug. 16, 1960	0	0
		Nov 4, 1959	0	2

¹ Dust explosion.

² Ignition not in face.

³ Carbide lamps and smoking prohibited by 1966 revised Virginia mining law.

⁴ Ignition in same mine.

⁵ Ignition of hydrogen gas while charging.

For this period there have been no fatalities and 12 nonfatalities in nongassy mines.

For this period there have been 4 fatalities and 44 nonfatalities in gassy mines.

Frictional sparks originated either from permissible loading machines, cutting machines or continuous miners unless noted.

If positive ventilation had been maintained in both the gassy and nongassy mines none of these ignitions would have occurred.

Attention is directed to the fact that only two ignitions have occurred in the face where the equipment involved was nonpermissible, one a coal drill, the other a locomotive. I have attached the U.S. Bureau of Mines' reports (11/7/66 and 11/29/65) of these occurrences and I would like to point out the factors causing the ignitions. Fortunately neither caused a fatality.

To sum up the above, we are discussing ignitions which were initiated by permissible equipment, twenty-three of which were from frictional sparks which cannot be made permissible. Arcs from equipment, smoking, open flame lamps and explosives. There were four ignitions, with no fatalities and 3 nonfatalities, ignited by sources other than electrical sparks and arcs.

Inadequate ventilation was a major cause of 43 ignitions causing all of the fatalities and 40 of the nonfatalities. In both classes of mines we are concerned with 4 fatalities (*all occurring in gassy mines*) and 56 nonfatalities.

From the above facts, ventilation is the number one requirement that needs attention. Smoking and carbide lamps are next. If these are corrected then all of the fatalities and 53 of the nonfatalities would not have occurred. The other 3 nonfatalities were from dust explosions. Carbide lamps have already been eliminated, leaving ventilation and smoking as the offenders which need attention. Ventilation will be the main key to solving the respirable dust problem as well.

Concerning fuse and caps, the 16½-year record of the U.S. Bureau of Mines does not show where a fatal accident from a gas ignition in a nongassy mine was ignited by burning fuse. I explained this position to the Subcommittee and my statement is a part of the record.

Mr. MULLINS. I do not intend to cause you any delay by rehashing statements that have already been presented to this committee. Congressman Dent, I was before your committee earlier in the year and I presented a document at that time. There is one thing I would like to briefly call to the attention of the committee in reference to testimony made by Senator Cooper earlier this morning. In presenting the 16½ year record of ignitions and explosions in the United States since July 1952, as investigated by the Bureau of Mines: in the gassy mines, the cutting machine bits caused 35 ignitions, loading machines caused 15, continuous miners, nine, and continuous miner bits, 113 ignitions.

Now, the cutting machine bits and continuous miner bits, we had 12 fatal accidents and 137 nonfatal. In nongassy mines from ignitions from the same source, cutting machine bits, we had one continuous miner bits. We had no fatalities, and two nonfatal accidents.

This printed statement that I have, Congressman, the first two or three pages give some statements of former Director Marlon Ankeny and John F. O'Leary, present Director of the Bureau of Mines. Senator Cooper referred to Mr. O'Leary's statement this morning in his presentation. Also there is contained in this document some cross-examination between Senator Cooper and Mr. Kelly, then the chief mine inspector.

There is also contained in here a statement which I would like to read. It is found on page 7 of my document and it is from page 163 of the report of H.R. 23. This is Mr. Dent's quotation.

"Now, there has been a gradual letdown, I know that, and you know it. Robena is only a few miles from my home, and we understand the problem, and there always is a certain period of laxity when things get going pretty good, and maybe the momentum of safety provisions got ahead of itself, and we just got caught up short in some of these disasters that might have been averted.

"However, if the old law as it is now had been completely complied with, I don't believe that you would have had either Robena or the Campbell mine.

"Now, in my humble opinion—and I say this to the chairman with all sincerity, and to the Department—I believe that House bill 23 ought to be pushed as an exclusive, sole piece of legislation. Now, hearings have been held on it. That particular phase of mine safety has been covered time after time, with hour after hour and ream after ream of hearings. Why can't the Secretary and the Department go along with the proposal that we strive to get House bill 23 up before the full committee and before the Rules Committee and before the House while continuing the hearings on the new proposal, which encompasses so much more?

"I know that it takes in the title I mines, but it puts them in the same category, outside of a 6-month so-called period of grace, and yet

you are saying to the small mines, who are economically in a much weaker position than the title II mines, that they must do in 6 months what we allowed the big mines to take 17 years to do."

In addition, Mr. Chairman, on page 13 I have a short section on coal dust control. This is an informative document and I am not fighting the need for coal dust control measures. I think it is essential and I think it is necessary. But I do not think we know enough about it yet to give you the answer.

Included in this packet dated August 26, 1969, headed "Gas Ignitions and Dust Explosions in Virginia, January 1, 1958 to September-1, 1969," nongassy mines are underscored where these occurred.

I will not read all of these because it is too time consuming. I just want to point out to the committee my summation of this document. For this period there have been no fatalities and 12 nonfatalities in nongassy mines. For this same period there have been four fatalities and 44 nonfatalities in gassy mines. Frictional sparks originate either from permissible loading machines, cutting machines, or continuous miners unless noted. If positive ventilation had been maintained in both the gassy and nongassy mines, none of these ignitions would have occurred.

Attention is directed to the fact that only two ignitions have occurred in the phase where the equipment was nonpermissible. One, a coal drill, the other a locomotive. I have attached U.S. Bureau of Mines reports dated November 7, 1966, and November 29, 1965 of these occurrences and I would like to point out the factors causing the ignitions.

Fortunately neither caused a fatality. To sum up the above we are discussing ignitions which were initiated by permissible equipment, 23 of which were from frictional sparks which cannot be made permissible. Arc, from equipment, smoking, open flame lamps and explosives were the other causes. There were four ignitions with no fatalities and three nonfatalities ignited by sources other than electrical sparks and arcs.

Inadequate ventilation was a major cause of 43 ignitions causing all of the fatalities and 40 of the nonfatalities in both classes of mines. We are concerned with four fatal accidents, all occurring in gassy mines, and 56 nonfatal accidents. I am sure this committee is interested in corrective legislation to eliminate as many accidents as possible.

From the above facts, ventilation is the No. 1 requirement that needs attention. Smoking and carbide lamps are next. If these are corrected, then all of the fatalities and 53 of the nonfatalities would not have occurred. The other three nonfatalities were from dust explosions. Carbide lamps have already been eliminated, leaving ventilation and smoking as the offenders which need attention. Ventilation will be the main key to solving the respirable dust problem as well.

Concerning fuse and caps, the 16½ year record of the U.S. Bureau of Mines does not show where a fatal accident from a gas ignition in a nongassy mine was ignited by burning fuse. I explained this position to the subcommittee and my statement is a part of the record.

Mr. Chairman, in addition to that document, I have another one headed "Gassy Mines in Virginia." This list gives the name of the company, date the mine was opened, and the date that the mine was classed gassy.

Chairman PERKINS. That will be inserted in the record.

(Document referred to follows:)

GASSY MINES IN VIRGINIA

	Opening date	Classed gassy
Ball Bros. No. 12, 03849	Oct. 18, 1963	Mar. 23, 1967.
J & L Ball Coal Co. No. 6, 04505	Mar. 31, 1965	Mar. 13, 1968.
Beatrice Pocahontas Coal Co., 00580	June 12, 1961	June 12, 1961.
Big Hagy Coal Co. No. 1, 04821	Nov. 10, 1965	July 22, 1968.
Bridge Coal Co. No. 5, 01136	Jan. 16, 1958	Nov. 28, 1962.
Castle Coal Co. No. 3, 00744	June 20, 1958	Dec. 4, 1961.
N. E. Clifton Coal Co. No. 10, 00446	Feb. 4, 1959	Aug. 3, 1961.
Clinchfield Coal Co., Chaney No. 2, 05125	Aug. 9, 1966	Oct. 6, 1967.
Clinchfield Coal Co., Moss No. 2, 00855	August 1954	1954.
Clinchfield Coal Co., Moss 3A, 00856	Oct. 21, 1957	June 23, 1959.
Clinchfield Coal Co., Moss 3C, 00858	do	Dec. 10, 1959.
Clinchfield Coal Co., Moss 3D, 00859	do	Jan. 22, 1960.
Clinchfield Coal Co., Open Fork 2, 05127	Aug. 9, 1966	Feb. 8, 1968.
Coleman Coal Co. No. 2, 05134	Aug. 15, 1966	May 1, 1968.
Diamond Jewell No. 3, 02669	Nov. 15, 1960	Oct. 17, 1967.
Doris Coal Co. No. 3, 02071	Aug. 4, 1961	Jan. 16, 1968.
Dorothy Mae Coal Co. No. 7, 02494	Oct. 12, 1951	Aug. 16, 1960.
F & J Coal Co. No. 1, 04941	Mar. 1, 1966	May 9, 1968.
Fields Coal Co. No. 11, 02054	July 24, 1961	Sept. 11, 1968.
G. L. Coal Co. No. 2, 02673	Sept. 5, 1962	June 29, 1967.
Harman Mining Co. No. 1	Jan. 1, 1935	1945.
Harman Mining Co. No. 3, 00215	Oct. 1, 1939	Nov. 3, 1964.
Horn & Whited Coal Co. No. 5, 02479	Jan. 11, 1960	1964.
Horn & Whited Coal Co. No. 7, 04876	May 16, 1967	May 16, 1967.
Island Creek, Va. Pocahontas No. 1, 04491	Mar. 16, 1965	Mar. 16, 1965.
Jame Coal Co. No. 1, 02639	June 9, 1960	Dec. 13, 1967.
Lambert Coal Co. No. 8, 00129	Feb. 6, 1959	Aug. 20, 1959.
Lambert Fork Mine, 04607	June 11, 1965	Sept. 5, 1968.
Lawson & Bond Coal Co. No. 2, 05366	May 8, 1967	Oct. 11, 1967.
Lea Coal Co. 00862	1928	1945.
McClure Coal Co. No. 1, 05003	Apr. 25, 1966	Nov. 14, 1967.
Meadows Coal Co. No. 22, 03788	Sept. 24, 1963	Apr. 12, 1967.
Murphy & Keen Coal Co. No. 2, 02485	Apr. 19, 1960	Jan. 23, 1967.
Oakwoog Red Ash Coal Co. No. 15, 03131	July 20, 1962	July 22, 1968.
Preacher Creek Coal Co., Derby No. 3, 00811	1923	1945.
R. H. & B. No. 2, 02008	Apr. 29, 1961	Feb. 21, 1967.
R. & W. Coal Co. No. 4, 00515	Feb. 26, 1959	Mar. 23, 1967.
R. & B. Coal Co. No. 4, 01442	Feb. 14, 1959	Aug. 9, 1962.
Sand Hill Coal Co. No. 2, 05514	Oct. 12, 1967	June 11, 1968.
Skeggs Branch Coal Co. No. 11, 04530	Apr. 23, 1965	July 22, 1968.
Sunset Mining Coal Co. No. 3, 03960	Feb. 3, 1964	Aug. 29, 1967.
Turner Coal Co. No. 11, 00044	1955	July 17, 1958.
Vandyke Coal Co. No. 10, 04282	Sept. 11, 1964	Oct. 17, 1967.
Virginia Pocahontas Coal Co. No. 2, 05250	Jan. 1, 1967	Jan. 1, 1967.
Ward & Honaker Coal Co. No. 5, 03771	Sept. 17, 1963	Aug. 9, 1965.
Westmoreland Coal Co., Derby No. 1	1923	1945.
Westmoreland Coal Co., Imboden No. 2	1902	1945.
Westmoreland Coal Co., Osaka No. 2, 02295	Nov. 20, 1961	Nov. 20, 1961.
Westmoreland Coal Co., Prescott No. 1, 03494	May 1, 1963	May 10, 1967.
White Birch Coal Co. No. 4, 03716	Oct. 7, 1963	Aug. 29, 1967.

Mr. MULLINS. Also, Mr. Chairman, I would like to insert in the record a U.S. Geological Survey topographical map of Wise County, Va. On this map I have marked in red ink the outcrop of the coal seam that goes under drains, as well as one in blue that is above drainage. I would like to have that in the record.

Chairman PERKINS. What is the purpose? Is one gassy and the other nongassy?

Mr. MULLINS. Yes, the lower seam which lies in the lower reaches of the mountain and the seam that goes back under the creek levels, this seam, when we mine it, we know it will be gassy shortly. Now, that is what I wanted to point out to you by the two different locations. I would like to say this, that I am very much acquainted with eastern Kentucky. I lived over there for a few years. My father was reared in that section.

Chairman PERKINS. Where did you live?

Mr. MULLINS. In Floyd County. The topography in eastern Kentucky and southwest Virginia where I am located at the present time and Tennessee, and for that matter the whole Appalachian area, is

similar. You have narrow hollows and steep ridges. That is why I would like to point out to you with this map graphically you can see these hollows and ridges.

Now, this subject of gassy, nongassy, has been brought up—as this document I have introduced will show—for a number of years, but gas does not lurk in a coal seam ready to jump out all at once. It does not work that way, especially in eastern Kentucky and southwest Virginia, Tennessee, and West Virginia. You have already had testimony this morning that people have told you that this gas, due to the formation of our terrain, has reached out through the natural cracks and crevices lying above the drainages. When you get below the water courses the water has a tendency to trap the gas in.

Also I would like to point out that from this map the location of these two seams, one way down low, the other up high does make a difference in the probability of gas being encountered.

Now, this record that I have introduced shows that ventilation, open flames and smoking has been the contributing factor to the ignitions. Another thing that I would like to point out to the committee, we have been talking of methane monitors. Within the last 30 days we had a gas ignition in a gassy mine, extremely gassy mine. This mine has a continuous miner in it. It has a methane monitor mounted on the machine. The sensor is 14 feet from the face. I will leave this sketch with the committee so you can see what I am talking about. The methane that is ignited accumulates at the bits where we are digging the coal from the face. That is where the largest concentrations are. The bits on this machine or the loading arms, one of the two, caused a spark which ignited the gas and burned three men.

I will leave that as well as a description of the occurrence. Also I would like to enter into the record a case of an ignition in a gassy mine on June 10, 1969, where the operator was not complying with known safety precautions to prohibit ignitions from occurring. The sketch and the description will explain it to your satisfaction.

The subject was raised a few minutes ago and I would like at this time to tell the chairman that as soon as I get back to southwest Virginia, I intend to make arrangements to have this new sensing device that you were talking about installed in a gassy mine and I think within 3 or 4 days we can tell you whether or not it works in a coal mine in Virginia. But, another point I would like to make on this gassy-nongassy distinction; to me that distinction is a good safety weapon because the operator knows if he gets classed "Gassy" that he is going to have a lot more problems. He has to have permissible equipment and most tests have to be made to operate his mine as far as production of coal is concerned.

To me, this is and does have a bearing on the number of ignitions that we have in the so-called nongassy mines, because the operator dreads the idea of being classed "Gassy."

I certainly appreciate your invitation to allow me to come up here and I don't want to lengthen this out, because this testimony has been very extensive on this subject.

Chairman PERKINS. What is your idea as to what percent of your production comes from gassy and nongassy mines?

Mr. MULLINS. In our nongassy mines percentagewise is equivalent to what Kentucky has, from 3 to 5 percent. I might point out at this

time, as far as the gassy mines are concerned, about 30 percent of our total production comes from gassy mines and from 3 to 5 percent of our mines were classed "Gassy." The balance of them were classed "Nongassy."

Chairman PERKINS. Thank you very much for your appearance here today.

Chairman PERKINS. The next witness is Glenn Ward. Tell us who you are and then make your statement.

STATEMENT OF GLENN WARD

MR. WARD. Mr. Chairman, members of the committee, my name is Glenn Ward. I live in McDowell, Floyd County, Ky. I am 42 years old. I have been a certified mine foreman in Kentucky for 10 years or more than 10 years. I have worked in and around the coal mines for about 22 years. Presently I am the operator of a truck mine which to the best of my knowledge is one of the largest truck mines in Floyd County.

We produce an average of 600 tons of coal a day. I make a personal inspection of this mine every morning before the men enter the mine, using the instruments required by the State and Federal for such inspections. If, for any reason, I am not able to make the inspection personally, I designate an individual who is also certified by the State of Kentucky as competent so that the men never enter the mine at the beginning of the day before the inspection is made and found safe to begin the day's work.

In my lifetime I know of no one having lost their life because of an explosion in a mine in Kentucky that was classed nongassy. In my opinion, the nongassy classification should be retained in any revision of our present law. The men who work in the mines every day find it hard to believe that Congress will group these small mines with the deep gassy mines of other areas and expect them to operate under the same regulations.

These small mines already have many handicaps and to add the fuller handicap and one that we believe is unnecessary, and will never save a life, will effectively legislate out of existence 90 percent of these drift-type mines.

Such a legislation will produce disrespect for Federal laws regulating the mining of coal. It would be an interesting fact to know whether the Federal inspectors who inspect these mines regularly, whether they agree or not, with this plan to eliminate the nongassy clause. That is about the extent of my statement.

Chairman PERKINS. Thank you very much.

STATEMENT OF ROBERT NEELY

MR. NEELY. Mr. Chairman, members of the committee. My name is Robert Neely. I am a certified public accountant. One of 10 partners in a CPA firm conducting a practice in east Tennessee and southwest Virginia. I am a partner in charge of the Grunde office in Buck County, Va. Grunde is located 13 miles from the West Virginia line and 13 miles from the Kentucky line in the extreme southwestern part of the State.

I am a native of Buck County, Va., and have lived there all my life except for about 10 years when my father moved to another county to teach school and when I was away taking my education and training.

I am completely acquainted with the financial problems of the small coal companies and also personally related to coal miners working in both gassy and nongassy mines. My area, because of its mountainous terrain and poor water supply, is not adaptable to other types of industry and cannot be farmed.

I have seen a great deal of personal sacrifice and hard work. I have seen coal miners put their life savings on the land, invested in small mining equipment and put up the real estate as collateral at the bank for the balance owing on their equipment.

Most of these operators are still at this time indebted to the bank. I have witnessed the building of a small coal industry and related equipment companies and supply companies that also go along with it and I have seen our local people adapt themselves and utilize their efforts in bringing this industry about.

The large mine hires more skilled and able-bodied men to work in the gassy mines. The small mines hire the lesser skilled and less able-bodied men to work in the smaller nongassy mines. It is pointed out that a large coal reserve exists that otherwise would never be mined if the small operator is forced out of business.

For instance, an area as small as 5 acres of coal is enough to warrant a small operator to invest his money to mine, while an area as large as 25 acres would provide steady employment for a small mine operator and his small crew for as much as 5 years.

Based on the Norfolk North and Western Loading Report of June 1969 in the Thacker District and Upper Buchanan District which embodies all of Buchanan County in Virginia and a small part of Pike County in Kentucky, your proposed bill which would eliminate the nongassy classification, in my opinion would carve out of the economy an estimated \$85 million per year in wages and buying power.

The large gassy mines—the Allen Creek mines, the shaft mines going in here, are not being developed at a rate which will absorb this work. In Buchanan County we have no cities and only one incorporated town. The town budget is approximately \$200,000 per year. The county budget, including the school system, is approximately \$8.5 million per year. The population is around 38,000 people.

The gassy mines I am told produce 25 to 30 percent of production and contribute that much to our economy while the nongassy mines contribute 70 to 75 percent to the economy of the area.

If the nongassy classification is removed I think it would cause an economic catastrophe in my area. We have very difficult time as it is maintaining our population. Our people need to be a proud people not on Government poverty row. The small coal company is really our only answer in that area.

You have to compare these small mines in my opinion to a farming area. The two industries are similar in that they are family type businesses, they are small businesses, they have limited capital, they have limited borrowing power. You can not expect a small farmer to rake up enough capital to operate a berry farm when in fact he only needs the equipment to run a small farm.

I think these are comparisons of investment between what this might bring about. The problems that I see, that are inherent in the proposed bill are, one, what do you do with all the equipment we have already? What happens to the previously existing loans and what is going to happen to the security behind these loans?

The loans to purchase new equipment do not cover existing loans. Is the Government willing to subsidize the small mine industry and erase all these existing liabilities prior to loaning enough money to install the new type equipment? Large commitments have been made by the small coal industry. The commitments made to coal sales agencies by land owners in connection with the royalty, very rigid lease agreements have been entered into.

All these commitments are going to have to be carried out. They all incur a large liability on the small operator. They will have to be taken care of. Really, the type of people that we are talking about that mine this coal in my opinion, if they are faced with having to revamp their mines to meet these more rigid requirements, they are going to take the attitude that it is not worth it.

They are accustomed to going to the local banks, dealing with the people they know, borrowing money and saying, "Mr. So and So at the bank will not foreclose on my house if I miss a payment or two on this equipment," but when it gets down to dealing with the Federal Government and the type of loans we are talking about, I just don't think these people will go along with it.

First of all, I can't see any point in taking a law that appears to be handling the problem and making a bigger problem than we already have.

Chairman PERKINS. Thank you very much. We appreciate your coming here today.

Mr. DENT. I do thank you for coming.

Chairman PERKINS. Come around, Mr. Burke. Reiterate the coal safety record. What did you tell us the safety record was in Pike County?

I said that we had one of the best safety records of any area, mining area, in the country. I didn't give the specifications.

Chairman PERKINS. In the last year, what was the record?

STATEMENT OF F. M. BURKE

Mr. BURKE. I don't have the statistics. I will be glad to supply them; 483 truck mines have one of the best safety records of any type of mines operated in the entire country.

Chairman PERKINS. What is the estimate of the number of trucks that have been purchased in Pike County?

Mr. BURKE. The estimate was given me here in the hearing room this morning of 3,000 trucks. Since that time I have verified some of the information, that the Mack Trucking Co., that has one of the largest outlets in the country located between Pikeville and Prestonburg, I am told that 283 Mack trucks, new trucks, were registered in Pike County last year and that the total estimate approaches 3,000 trucks. These trucks cost an average of \$30,000 each. They are individually owned and operated by the owner.

In other words, the owner drives and operates those trucks.

Chairman PERKINS. That is a group of people who have been bombarding me the past few weeks and likewise business people.

How many trucks would you estimate in Pike, Letcher, Floyd, Perry Counties in that coal producing section?

Mr. BURKE. The coal producing section of eastern Kentucky I would estimate in the neighborhood of 6,000 or 7,000 trucks. Coal is hauled a distance of 20 miles. That is not say all of it is, but a great deal of that coal is hauled a distance of 20 miles. You can begin to understand that it takes a great many trucks to truck a thousand tons of coal.

Chairman PERKINS. How long does a truck like that last?

Mr. BURKE. Well, 5 years. Of course during that period of 5 years, depending on the road conditions, they undergo a great deal of repairs and that involves a lot of cost. Most operators, coal producers, try to maintain a good quality roadbed of gravel or rock that will stand up during the winter and rainy season.

Chairman PERKINS. Now, if you were required to go to permissible equipment, is that equipment presently available?

Mr. BURKE. It is not. I would urge the committee—first we urge the committee to maintain the distinction between gas and nongassy mines, but if any bill comes out of this committee and is approved by Congress, and I feel confident this Congress is going to adopt some type of bill, some legislation in this area, that the committee and the Congress seriously consider a period of time that would enable the industry and particularly the small mine industry, to allow adequate time to get ready for the impact, the economic impact, of the legislation.

Chairman PERKINS. What period of time would you guess if you know the nature of the equipment and the time that it would take to acquire the equipment?

Mr. BURKE. My own feeling is that it should be in the neighborhood, this permissible equipment, of 4 to 6 years. That is for the committee in the light of all circumstances to consider. But to pass legislation that would burden the small coal industry of our country of the industry generally, with having to replace the present equipment which would be worthless it could not be sold except at scrap steel and iron prices, that I would urge that on any type of legislation that would have an adverse impact, the industry be given adequate time to prepare for it. In the meantime these inspections that are now going on, as a matter of fact under recent regulations, we are being subjected, the industry is being subjected, to about the same type of examinations, there is research going on, the inspectors are hitting the quality and quantity of dust, and they are gathering all the information that they can possibly gather and making stringent inspections and recommendations, and the industry is endeavoring and making strenuous effort to try to bring their operations within the recommendations that the inspectors are now giving.

These inspections are giving special emphasis to dust and to gas content, both. In addition, the inspectors are urging the operators and their supervisory forces to get the men safety conscious. I doubt if there is any industry in the country where the men are more safety conscious than the men who work in the mines under the hills. They say under the hills, because they are up on the mountain, but we have

considerable burden over the mine, although they may be 2,000 feet up on the hillside. They still have a substantial overburden. It is a hazardous industry and every man that goes in that hill knows he may not come out, because slate falls, there is no way to legislate against that except to impose safety standards of roof bolting which the industry is doing extensively, using roof bolts of 48-inch length and in some areas longer, and then, of course, in addition, timbering in a substantial sense.

One would think, sometimes, to read some of these stories that you see on the front page of newspapers and manazines, that this industry has no regard for the safety of the men who mine coal. Nothing could be further from the truth.

Mr. DENT. I am sorry, Senator. I have to go to a steering committee meeting over in the Speaker's office. I want to thank you for the additional information.

Mr. BURKE. Thank you, Mr. Dent.

Chairman PERKINS. Thank you very much, Senator Burke. Is Mr. O'Leary here? See if he can come back. The committee will recess until 3:30.

(Whereupon, at 3:15 p.m. the committee recessed until 4:45 p.m.)

(The following letter was submitted for the record:)

NATIONAL COAL ASSOCIATION,
Washington, D.C., September 8, 1969.

Hon. CARL D. PERKINS,
Chairman, Committee on Education and Labor,
U.S. House of Representatives,
Washington, D.C.

MY DEAR MR. CHAIRMAN: It is our understanding that the full Committee on Education and Labor will hold hearings on Tuesday, September 9, on the matter of the proposed elimination of the gassy/non-gassy distinction relative to coal mines now in existing law. Since we have testified at the appropriate time before the Dent subcommittee we do not desire to impose upon the busy schedule of the full committee; however, we take this opportunity to present additional views for your consideration and respectfully request that this letter be made a part of the record.

At the outset I would like to congratulate you on your continuing leadership in promoting the health and safety of the nation's coal miners. Throughout the hearings and subsequent consideration of the bill, the coal industry has favored and worked for a strengthened coal mine health and safety bill since we recognize that the men in the mines are our most precious asset. Coming as you do from one of our largest coal producing states, you have always displayed an awareness of the problems of the miners and the industry generally, and particularly the small producers who are so numerous in Kentucky.

1. GASSY/NONGASSY DISTINCTION [§305 (A)]

On the matter of the gassy/non-gassy distinction in the law, Mr. Woods Talmán, appearing on behalf of the American Mining Congress with the coal industry panel of witnesses before the Dent subcommittee on March 19, 1969, testified:

"The industry endorses narrowing the legal distinction between gassy and non-gassy mines. Such matters as pre-shift and on-shift examinations are illustrative as not justifying distinctions.

"The findings of .25% methane, the point which reclassifies a mine from non-gassy to gassy, is one-twentieth of the concentration of methane at its lower flammable limit, the range being 5 to 15%.

"Non-gassy should be checked regularly to ascertain that they maintain their non-gassy condition" [p. 138 of subcommittee record].

In his detailed analysis of proposed safety standards in H.R. 4047 and H.R. 7976, Mr. Talman referred to a recommendation which had earlier been developed by a special study committee of the Bituminous Coal Operators Association which, in addition to providing a reasonable period of time for converting to permissible face equipment, would have permitted continued use of already installed open-type electric face equipment provided it was equipped with a permissible methane monitor [see page 152 of subcommittee record].

Recognition needs to be given the economic consequences of a requirement wiping out suddenly and entirely the gassy/non-gassy distinction. However, the testimony referred to above affords some practical and meaningful ways of reasonable compromise without jeopardizing safety.

2. MINE CLOSURES FOR NON-IMMINENT DANGERS [§104 (I)]

The bill should be amended to allow mines to keep operating, with adequate protection for the health of miners, when management has taken all feasible steps to control dust but still cannot meet prescribed standards.

Beginning six months after enactment, all coal mines must meet stringent dust control standards which become more rigid as time goes on. The coal industry has pledged every effort to reach the dust limits, but the technology to make it possible in all mines does not exist. It hasn't been invented yet. It may not be developed in time.

The law must provide a way to protect the health of miners without massive mine shutdowns which would cause chaos in the national economy. We suggest an amendment which would require management to do everything possible to meet dust standards, but which would permit the operator to keep running the mine—with the Secretary of the Interior directing such special attention to the health of miners as more frequent x-ray examinations, accelerated monitoring, rotation of miners, and the encouragement of any available interim remedies including protective breathing devices where feasible—until the dust problem can be solved.

3. PRODUCTION TAX [§401 (C)]

The proposed tax of two cents a ton on coal, earmarked for health and safety research, is discriminatory. Coal's competitors pay no such tax. In fact, atomic energy (coal's leading competitor for the future fuel market for electric utilities) gets about \$25 million a year in free safety research from AEC, which is to say it comes from the general funds of the Treasury.

The tax provision was not in any bill before the House committee at the time of hearings and no testimony on it was heard. Furthermore, it is probably subject to a point of order since the tax has not been before the Ways & Means Committee.

4. IDLE PAY [§ 112 (a)]

The bill obliges the operator to pay miners for up to four hours of idle time when the mine is closed by order. Instead of creating incentive for greater safety, the idle-pay provision gives a motive for creating safety violations. Most miners are prudent and conscientious men—most, but not all.

The proposal adds a new penalty to the heavy civil and criminal penalties for violations. It sets a dangerous precedent for other industries—there is only a short step from this provision to a law guaranteeing pay to workers when management shuts down a manufacturing plant for any reason.

5. "BLANK CHECK" PROVISION FOR MINER'S SUITS [§ 501]

The bill would allow worker's damage suits against employers in federal court with trial by jury and no limit on the amount of recovery. It would deny the employer such common law defenses as assumption of risk and contributory negligence. It would permit a worker to sue and still collect under workmen's compensation should he fail in his damage suit.

This provision was not in either the Johnson or Nixon administration bills and no witnesses were heard on the point. Taking away common law defenses is a matter of grave consequence and its implications cannot be dealt with summarily. The provision should be stricken from the bill. At the very least, it should be considered by the Committee on the Judiciary.

6. REASSIGNMENT OF MINERS SHOWING EVIDENCE OF PNEUMOCONIOSIS [§ 203 (b)]

The bill provides that a miner with the beginnings of the disease shall be reassigned to work in a low-dust area of the mine "at the option of the miner." This mischievous option should be removed. There is no question that the miner should be reassigned at no loss of pay, but removing the phrase "at the option of the miner" would excise a potent source of labor-management disputes, seniority issues, and questions of whether the miner is qualified for the job he selected.

7. SAFETY PROVISIONS

The industry has supported most of the safety standards proposed in the bill. It even suggested many that are included. However, there are some of dubious merit that should have further study and consideration.

(a) *Rock-dust specifications and designation of areas to be rock-dusted* [§ 304(c)]

The law should recognize the value of water as an effective incombustible component, recognizing published U.S. Bureau of Mines Information Circular 8111. Also, the mine areas which have been scientifically determined to need no rock-dust application or reapplications should be exempted as in the present law (back entries—1,000 feet outby junction with first active entry). The interpretations on effective incombustibles, in many mines, have had the effect of mandating wasteful use of rock dust, beyond all proper and adequate need, such as to add up to \$0.15 per ton to the cost of coal. The dry roadway mandate further poses a grave problem in meeting any standard for respirable dusts. Recent tests of a number of sources of limestone dust meeting legal specifications reveal that from 20 to 25 per cent by weight of such dust is in the respirable sizes, i.e. 5 microns x 0.

(b) *Limitation of ventilating air on belt and trolley haulage entries* [§ 303(z)]

This proposal introduces new hazards and virtually unsolvable operating problems. Its value is questionable at best and it should be deleted. Item (e) below, as commented upon, would accomplish all that could be used to rationalize this provision, i.e., assuring a smoke-free exit for miners who may be in by a fire.

(c) *Oil and gas well barriers* [§ 317(a)]

The extreme provision for barrier protection, irrespective of depth of cover and without documentation from the record as to need, would effectively debar orderly mining layouts and would unnecessarily deny large tonnage volumes that are mined properly and safely.

(d) *Quality of air bled from pillared areas* [§ 303(q)]

The proposal seems to be based on lack of knowledge of the purpose to be served by bleeders and the capabilities and limitations of bleeders. Actually, many of the characteristics of the use of bleeder entries in the various coal seams are, at the present time, unknown. Optimum would be to strike this proposal and provide for concentrated research aimed at developing a standard by the end of a reasonable period. An alternate would be to substitute wording which would permit bleeders to perform their intended purpose. In extraordinary conditions of heavy gas emissions special controls by the operator could be required by the Secretary or his designated representative as conditions of approval.

(e) *Escapeways* [§ 317(f) (1) and (4)]

Requiring of a separate intake escapeway beyond main or submain entries is not necessary in the light of the proposed new requirement for self-rescuers. The providing of such smoke-free escapeways in main and secondary entries is not opposed. Provision should be made for the approval of escape facilities at shafts in lieu of stairways.

(f) *Methane monitors* [§ 303(m)]

The question of mandating methane monitors on permissible face equipment should be related to methane emission rates and should be confined to continuous miners, coal-cutting machines and longwall operations as being those which require this special protection while being operated. Warning at 1.5 percentum methane and automatic removal of power in the critical area at 2 percentum should be specified.

(g) *Rescue chambers* [§ 315]

The proposal should be amended to point out the need to incorporate the results of current government sponsored research in the development of standards and requirements for rescue chambers and/or alternate means.

(h) *Assignment of inspector to a mine each day* [§ 317(j)]

The proposal should be changed so that it would express guidelines for decision by the Secretary on conducting frequent inspections where the dangers are greatest. Such guidelines could be by reference to Sec. 303(i) and (j), H.R. 1047 as amended, providing also that for other cogent reasons the Secretary or his designated representative could invoke frequent inspections of affected areas.

(i) *Brakes for locomotives and haulage cars* [§ 314(e)]

Proposed Sec. 314(b) which provides that the Secretary shall establish standards to govern haulage of men and materials seem adequate to cover this situation without making particular reference to it. Nevertheless, the House version, although it could be clarified, is superior to the Senate version in that it offers some flexibility for means of safe control of moving trips.

(j) *Electrical standards* [§ 305-310]

These proposed standards contain a number of references which are questionable or controversial practices in the judgment of acknowledged electrical experts.

Very truly yours,

STEPHEN F. DUNN, *President.*