

WHY NOT COAL!

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CHAPTER I

INTRODUCTION

A. Problem Statement

The increased use of coal has been proposed as a primary means of reaching energy self-sufficiency by 1985. Is it reasonable to assume that coal can help achieve the goal of making the United States self-sufficient in energy by 1985?

B. Method of Study

To attempt to answer the question of coal's ability to help make the United States energy self-sufficient, I propose to study President Ford's "Project Independence" and Carter's "National Energy Plan" and their reasonableness in meeting the 1985 goal. I also proposed to analyze the realities of the energy situation today and the coal industry's capabilities in meeting the challenge. For this study I shall obtain copies of "Project Independence Report", "Project Independence Blueprint for Coal", and a review of Carter's "National Energy Plan". I propose to compare these plans and their goals for 1980 as to oil imports and coal production with actual import and production figures for December 1979. The current data will be obtained from coal and oil industry trade publications, Federal agency documents, and personal contracts with coal industry personnel.

C. Expected Results

The U. S. coal industry is optimistic about the capability of coal to meet the challenge for coal use. Coal is available, the technology for its use is ready, but few people in the coal industry expect coal to be used as outlined by the

energy plans. The primary reason being the increasing amount of governmental regulation and interference. It is not the total amount of regulation that is bothersome, but rather the conflicts between agencies and the constant changing nature of the regulations.

D. Methods of Analyzation

Comparisons will be drawn between the energy plans and expected levels of energy use and consumption during 1979-80 and actual levels for this time period. A review of governmental regulation will be done to show the effect on coal mine planning and development.

CHAPTER II

SUMMARY

Coal has been proposed as one of the key ingredients in solving the United States reliance on foreign energy sources. The coal industry has the capability and willingness to meet the challenge. The problem is governmental involvement and the increasing amount of regulations.

In "days-gone-by" the coal operator had little involvement with the process of obtaining permits from governmental agencies. The amount of information to be submitted was minimal and the permit usually came along within a few weeks or at most a few months. In fact there were many instances when the mine was actually operating before the permit was issued. Occasionally the operator was not even aware that a permit was required until it was brought to his attention by some particular incident, or a visit from a governmental inspector to the mine. This laissez-faire attitude existed on the part of both the regulatory agency and the operator.

If the coal mine operator or the regulatory agency followed such a policy today he would be severely criticized, possibly fined, be fired or become the subject of an injunction, resulting from a suit by someone who was "aggrieved." In fact that someone doesn't even have to be directly connected with the mine; under many of the present laws suit can be brought by any "interested person."

What is the situation today? Permits of various kinds are required from Federal, state, county, and/or municipal agencies. The amount of information required with the permit application has multiplied manyfold. This means that the regulatory agency must spend many more man-hours reviewing the

application. Many laws include specific time schedules, both to the applicant specifying his lead-time, and to the agency specifying its time for action. For instance, the proposed EPA regulation requiring environmental assessments to be submitted at least nine months before start of construction of the discharge. The Wyoming Industrial Siting Act specified that the Agency can take 450 days to review a permit application before action is required.

There is no uniform standard for permits applicable country-wide. In fact there is not even uniformity within an individual state, because of the varying conditions that are site specific to each mine. One of the first steps the operator should perform when beginning development of a new mining venture is to make an assessment of all of the permits anticipated. It is far better to prepare for all of these, even though uncertain whether certain specific ones will be required. It is easy to drop one from the list; but failure to include one at the beginning of development can result in costly time delays. The mine usually cannot commence without having all permits. The failure to have just one can prevent opening the mine and cause the operator to subject himself to legal action by the customer for failure to deliver coal.

CHAPTER III
THE ENERGY SITUATION

A. General

At the 1979 annual meeting of the American Mining Congress Coal Convention there was a mood of utter frustration. Against the backdrop of long lines at the gasoline pump and the aftershock from "Three Mile Island", speakers at the convention hailed coal as the logical solution to U.S. energy woes. Yet as the conference got underway in St. Louis, the U.S. coal industry was faced with 100 million annual tons of over capacity and 15,000 out of work miners due to slack demand. "In what should be its finest hour, the coal industry limps along at 84% of capacity," remarked West Virginia governor John D. Rockefeller IV. "The problem is lack of demand for coal," said AMC president J. Allen Overton Jr., "and we believe the principle causes of this insufficient demand for coal are government policies and actions which unnecessarily make coal use difficult, or impossible, or unnecessarily expensive." Speaker after speaker at the convention stated that the coal industries' woe was governmental coal policy, or rather the lack thereof. N. T. Camicia, chairman of the American Mining Congress and Chairman and Chief Executive Officer of the Pittston Co., issued a statement at the meeting which he said was prompted by the coal industry's inability to secure an accurate reflection of its position in the US energy crisis. In part Camicia said, "we have listened to three administrations tell the country that we had to reduce our dependency on foreign oil and that coal was the only way to do it. But in the five years since the oil embargo, coal use has grown just over 2% per year." (12) (Parenthetical numbers refer to references cited at the end of each chapter.)

During the 1970's several events took place that pointed up the United States vulnerability to the curtailment of energy supplies. The most significant factors have been the 1973 Arab oil embargo which drastically cut the

import of U.S. petroleum products and seriously hurt the U. S. economy. The recent turmoil in Iran has again raised the question; can the United States exist with the continuing problem of dependency on foreign petroleum products? Nuclear power has suffered major setbacks due to the problems at the Three Mile Island nuclear power plant, and the problems that have arisen at other power plants throughout the country. The future for nuclear power no longer looks as optimistic. (2)

Over the last six years the federal government has proposed several plans to make the United States self sufficient in energy. Three of these plans were President Fords "Project Independence" (6) of 1974, and Carters "National Energy Plan" (1) of 1967, and more recently Carters "National Energy Plan II" (11) of 1979. These plans aimed at making the U.S. energy self sufficient by 1985. One of the prime means of reaching self sufficiency was through the expanded use of coal.

B. Project Independence

Project Independence (6) was initiated in March of 1974 to evaluate the nation's energy problems and provide a framework for developing a national energy policy. Project Independence was the result of a massive inter-agency effort led by the then Federal Energy Administration and involved over 500 professionals. It represented the most comprehensive energy analysis ever undertaken by a federal government agency to that date. Project Independence consisted of two major parts; part one was the Project Independence report which listed the current state of the U.S. energy situation, and part two was a series of Project Independence blueprints for meeting the goals outlined in the Project Independence report by the various energy alternatives, one of which was coal. The Project Independence report was an evaluation of the nations energy problem.

It assessed the "base case" situation through 1985 if current policies were to prevail. It also evaluated the impacts and implication of a wide range of major energy policy alternatives. Rather than evaluate hundreds of alternative actions the report contrasted the broad strategic options available to the United States. These options include: 1) increasing domestic supply, 2) conserving and managing energy demands, and 3) establishing standby emergency programs. Each strategy was evaluated in terms of its impact on: 1) development of alternative energy sources, 2) vulnerability to import disruptions, 3) economic growth, inflation and unemployment, 4) environmental effects and 5) regional and social impacts. Project Independence analyzed each of the alternative energy sources available to the United States; crude oil, crude oil products, natural gas, hydro electric power, nuclear power, coal, and a general heading entitled miscellaneous energy sources, which covered all those new and potentially available energy sources such as solar, wind and wave action, hydrogen fusion and any other general topics which might come up. As esthetically pleasing as some of the new talked about sources are, none of them are proven economical to date and all of them require a large energy input to become operational. (6)

Project Independence listed coal as one of the prime ingredients for making the U.S. energy self-sufficient. Reasons included, that at the 1973 consumption levels the nation had enough coal reserves to last over 800 years. (See Table III-A) (7)

Project Independence analyzed the environmental aspects of coal mining and utilization, and their conclusion was; "The United States does not have to make an absolute choice between energy development and a clean environment. These goals are not mutually exclusive, although actions taken to develop energy will, in all probability, have environmental implications and uncertain environmental standards will strongly effect energy growth. Environmental

protection must be placed in perspective with other national goals such as economic development, social welfare and social security." (7) Mining and processing coal can be one of the more environmentally safer means of utilizing energy if it is done properly and if the proper regulations and economic incentives are applied. What do I mean by proper? If the coal industry is allowed to "charge off" those costs which are involved with environmental problems such as reclamation and stack gas scrubbing, and if it is allowed to make use of those proven technologies that are the most economically advantageous as long as they meet the legal, environmental standards, the use of coal will not adversely affect the environment.

TABLE III-A

Economically Recoverable Coal Reserves of the United States

Region	Billion Tons	Quadrillion Btu's
North Appalachia	73.2	1922
South Appalachia	39.1	1052
Midwest	104.6	2492
Gulf	4.3	71
Northern Great Plains	175.4	3364
Rocky Mountains	23.7	568
Pacific Coast	13.6	262
Total	433.9	9731

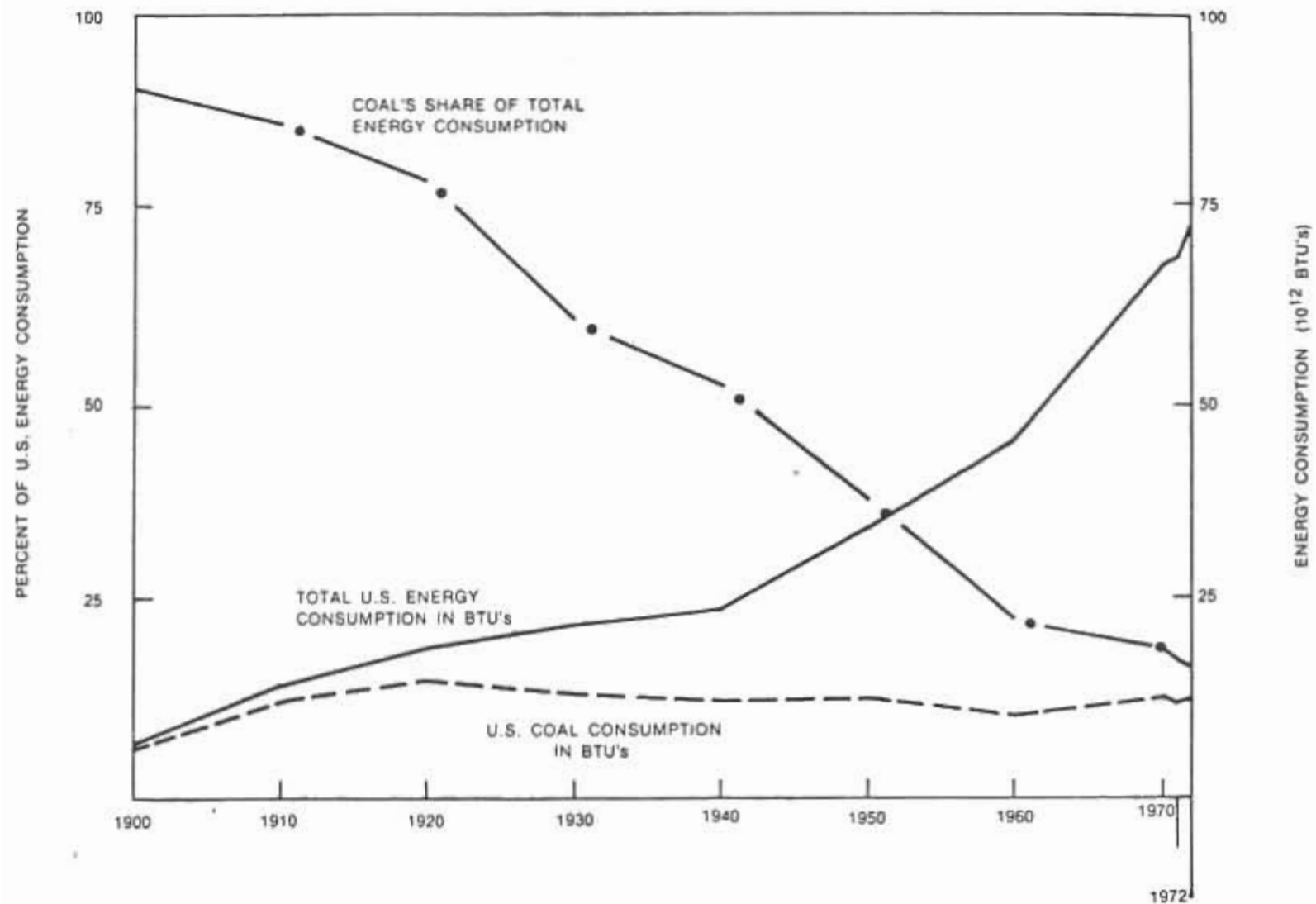
Source: Federal Energy Administration - "Project Independence"

One of the most interesting items that came out of the Project Independence study are shown graphically in Figure III-1. (6) While the overall energy consumption of the United States has risen sharply for the first part of this century until 1973, the overall share of the energy supplied by coal has gradually declined. Consumption of coal, in energy input units (British Thermal Units - Btu's), has remained almost constant since the 1940's. (7)

As part of the Project Independence study, Secretary of the Interior Rogers C. B. Morton established on March 4, 1974, an inter-agency coal task force with

Figure III-1

COAL'S DECLINING SHARE OF TOTAL UNITED STATES ENERGY CONSUMPTION



Source: Federal Energy Administration - Project Independence

instructions to study the nations coal resources and the coal mining industry in order to determine what steps needed to be undertaken to increase coal output. The task force was also to provide the necessary analysis on which to base policy recommendations which would lead to significant increases in coal production.

The specific assignment of the coal task force from the Federal Energy Administration was to determine how much domestic coal could be made available and at what price, under two business scenarios (business as usual and accelerated demand) in the years 1977, 1980, 1985 and 1990. The coal task force, also was to identify the corresponding requirements of capital, labor, mining materials and mining supplies which might act to constrain the reaching of the production levels determined. Price was defined as the average minimum acceptable selling price based on a 15% discount cash flow analysis over a twenty year mine life. It was generally assumed that coal reserves are great enough so that coal prices in the long run will be cost based rather than oil equivalent price based unless oil prices dip below \$4 per barrel (current oil prices, in the first quarter of 1980, are \$25 per barrel, Table III-B shows a comparison for oil and coal on a comparative heat value basis). From this work of the coal task force the coal production, shown in Table III-C, in the target years was developed. (7) This table will be referred to as we progress through this review. To be on target for being energy self-sufficient by the late 1980's, the Project Independence blueprint task force maintained that coal had to reach a level of 1.4 billion tons per year by 1980. This was over double the 1973 tonnage of 600 million tons.

Under the business as usual scenario no significant expansion was included in the mining capacity in the early years of the study because of the long lead times required both for mine development and for equipment and other related

Coal production in target years by coal supply region,
scenario and type of mining
(Million tons)

		1973	1977		1980		1985		1990	
		Actual	BAU	ACC	BAU	ACC	BAU	ACC	BAU	ACC
Underground Mines										
Coal Supply Region 1	-----	99	119	128	123	177	136	267	146	352
2	-----	135	172	200	195	300	237	446	273	588
3	-----	56	59	65	63	92	68	136	80	178
4	-----	-	-	-	-	-	-	-	-	-
5	-----	-	1	2	2	4	3	6	4	7
6	-----	10	11	12	12	18	15	27	17	39
7	-----	-	-	-	-	-	-	-	-	-
Total Underground*		300	361	408	397	591	459	882	520	1,165
Surface Mines										
Coal Supply Region 1	-----	78	82	93	93	136	107	192	138	270
2	-----	70	93	133	111	167	137	245	165	359
3	-----	94	119	139	134	196	159	288	188	416
4	-----	7	11	25	29	50	43	75	54	105
5	-----	32	64	97	100	183	152	298	185	375
6	-----	14	17	20	20	30	24	49	29	65
7	-----	4	8	12	12	23	18	34	22	48
Total Surface*		299	394	519	498	785	641	1,181	780	1,638
Total Production*		599	755	927	895	1,376	1,100	2,063	1,300	2,803

* Totals may not add because of rounding.

Source: Federal Energy Administration — Project Independence: Blueprint for Coal

Table III-C

requirements. For the later years it was assumed that there would be increases in production from mines already under development to replace worked out mines, to meet new long term contract requirements, and to meet requirements for more environmentally permissible coals. For all of this it was assumed that capital would be available. Also it was assumed that in the later years there would be some accelerated development in installation of stack gas scrubbers to promote the use of large volumes of otherwise unusable coal. A final assumption that there would be no major disruption to the geographic patterns and upward production trends in surface mining as a result of new legislation, and that in the early years of production methods of mining would be similar to existing methods, but that with the increased production of western coals to meet the low sulfur standards in midwestern and other markets, both the total number of and the percent of total coal mined by western surface mines would increase.

Production estimates for the accelerated scenario assumes some relaxation of pollution control regulations, including increased issuance of variances, more lenient public land leasing practices, and no seriously adverse limitations in surface mining. It was also assumed that there would be adequate capital available for the development of new mining capacity, including underground and surface mining. The overall result of the report and blueprint was to state that coal could meet the goals provided the proper incentives were given to the industry and no significant legislation was passed that would further curtail the capabilities and the availability of coal.

C. National Energy Plan

Following his election in 1974, President Carter developed, what he then called, his National Energy Plan and presented it to congress. It was quickly defeated. The plan was presented several times until, finally, his new, revised plan,

National Energy Plan II, was finally passed, in a watered down version, in 1979. The following is a summary of his original National Energy Plan. (1) The version finally passed by Congress was not significantly different in aims and objectives from the original plan, but it was less comprehensive in concept. The major thrust of the original plan was based on conservation. For the transportation sector, the plan proposed the following major initiatives to curb petroleum demand: 1) a graduated excise tax on new automobiles with fuel efficiency below fleet averages, 2) a standby gasoline tax to take effect if total national gasoline consumption exceeded stated annual targets. The new tax would begin at 5¢ per gallon and would eventually rise to 15¢ per gallon in ten years. (At the present time 28% of all gasoline prices are directly related to taxes, both federal, state, excise and foreign. This is taken from a report by the Exxon Company to its shareholders, titled: Profits and Investments, released in January 1980). Other initiatives in the National Energy Plan were; 3) fuel efficiency standards, and a graduated excise tax and rebate system for light duty trucks, 4) removal of federal excise taxes on intra-city busses, 5) increase in excise tax for general aviation fuel and elimination of existing federal excise tax preference for motor boat fuel, and 6) improvement in the fuel efficiency of the federal automobile fleet and an initiation of van pooling program for federal employees.

In an attempt to reduce waste of energy in existing buildings the plan proposed a major program containing the following elements. A tax credit of 25% for the first \$800, and 15% for the next \$1,400 spent on improved residential energy conservation measures. A requirement that regulated utilities offer their residential customers a "turn key" insulation service. Facilitate residential conservation loans by creating a new secondary loan market. Increase funding for the current weatherization program for low

conditions. Whenever the Federal Energy Administration, (or now the Department of Energy), has ordered a particular oil or gas fired facility to convert to coal, the Environmental Protection Agency has said no. Carter's administration was to provide a strong but consistent environmental policy. This would give the industry the confidence it needs to make investments in energy facilities. The basic aims of the National Energy Plan was the requirement of an installation of the best available control technology on all new coal fired plants, including those that burn low sulfur coal, for the protection of areas where the air is still clean, from significant deterioration, and the encouragement of states to classify lands to protect against significant deterioration, and to accelerate the states approval procedure for granting permission for new source standards.

Figure III-2



was almost exactly the same, and that the accelerated case was scaled down from 2.1 billion to 1.2 billion ton/yr. This shows a slightly more realistic aim.

TABLE III-D
Coal Consumption (Millions of Tons)

Coal Consumers	Current Policy		Carter Policy 1985
	1976	1985	
1) Electric Utilities	459	768	777
2) Household/Commercial	6	2	2
3) Industrial	156	206	360
4) Exports	60	90	90
Total	681	1,066	1,229

SOURCE: National Energy Plan and Congressional Budget Office.

The Carter administration has had several major impacts on the energy situation in the United States. One of the more outstanding ones has been the conversion of President Ford's Federal Energy Administration to the Department of Energy. Others have been the deregulation of the oil industry and the increased taxes on oil use and consumption.

D. Energy Today

Can the United States become energy self-sufficient? A look at our energy consumption patterns shows that in 1976 oil accounted for 46% of our energy consumption, natural gas for 30%, coal for 18%, nuclear 2%, and other sources, hydroelectrical, geothermal and others, counted for 4%. At the same time 90%

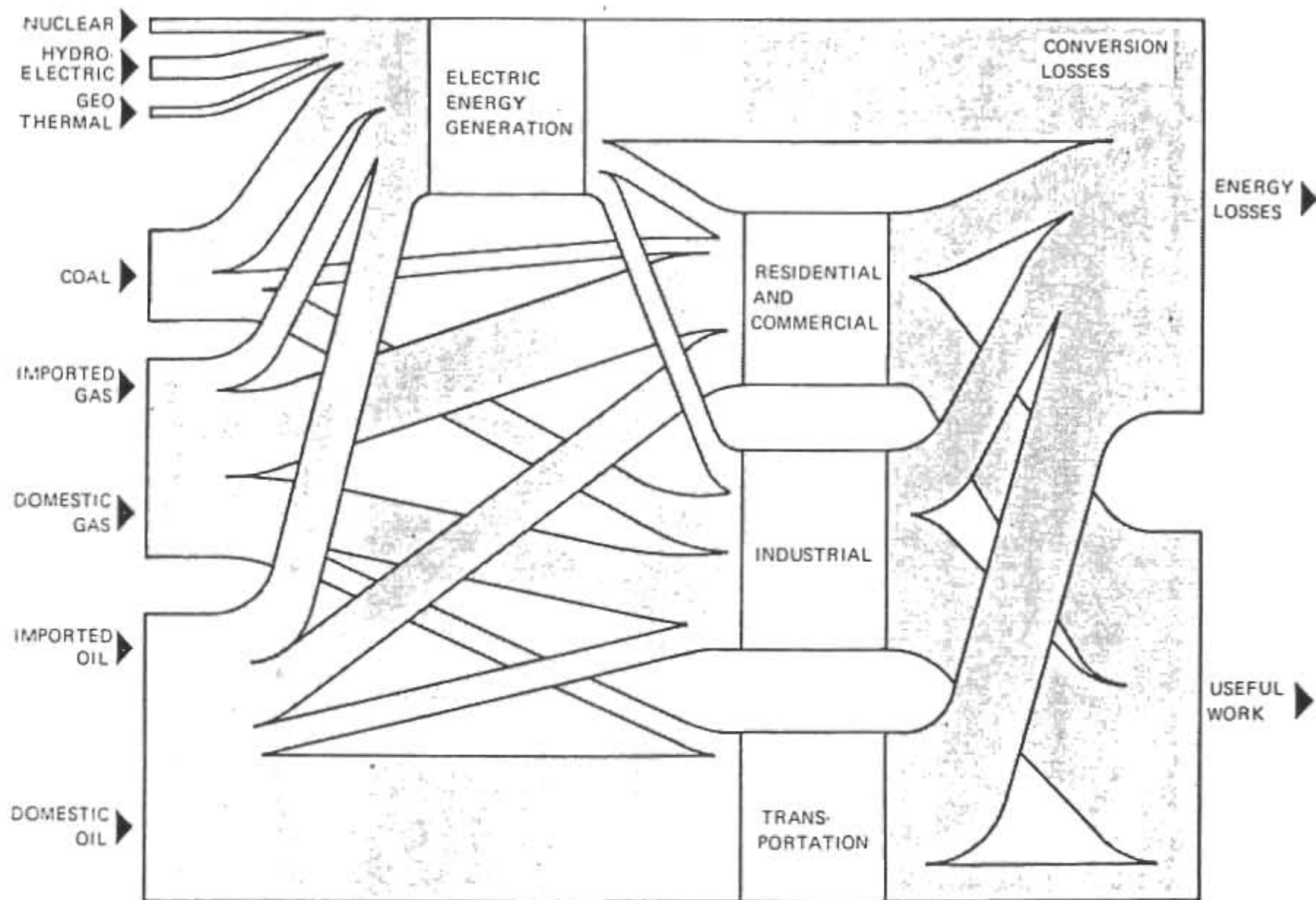


Figure III-3

Source: *The National Energy Dilemma*, Joint Committee on Atomic Energy, 1973.

ENERGY CONVERSION PATTERNS, 1980

about the rate of productive capacity, this fundamental fact is clear; within about four generations the bulk of the worlds supply of oil created over hundreds of millions of years, will have been consumed. (2) (3) (8) Of course actual physical exhaustion of oil resources will not occur. Even today, well over half of the oil in existing fields is being left in the ground as additional recovery would be too expensive. As production by conventional methods declines, and oil becomes more scarce, its price will rise and more expensive recovery methods and novel technologies will be used to produce additional oil. As this process continues, the price of oil will become prohibitive for most energy uses. Eventually the nations of the world will have to seek substitutes for oil as an energy source and oil will have to be reserved for petrochemical and other uses for which it has maximum value.

E. Coal's Future

What then is the alternative? Coal resources of the United States are huge. The U. S. Geological Survey estimates the total identified coal resources as being 1,600,000,000,000 tons. (1) (6) Another 1.6 trillion tons of unidentified resources are postulated. This is from the United States Mineral Resources Professional Paper 820, U. S. Dept. of the Interior, Geological Survey, 1973. By comparison, in 1972, the United States consumed and exported a total of .6 billion tons. Of the total resource, only some 434 billion tons are in deposits of the type considered amenable to mining, given today's economics and technology. Considering this 434 billion as the recoverable reserves and the .6 billion as the consumption, this gives a fairly conservative estimate of the present rate of usage and the present reserves of somewhere under 800 years of coal resources left at the current rate. If coal is allowed to grow to assume its major and dominant role in the U. S. energy market, whether in direct combustion for electric power or in making synthetic fuels and gases for other uses, and consumption is allowed to rise at the current rate of

increase for all energy uses, it is conservatively estimated that the U. S. has well over 200 years of energy resources in coal alone.

As recently as mid-1977, industry experts calculated productive capacity to be 780 million tons/yr of coal, but the actual 1977 production was only 688.6 million tons, and the estimated 1978 figure has been put in the neighborhood of an even lower 650 million tons. (9) Only one thing, the lack of growth in coal's consuming market, is responsible for the anticipated decline in coal production in '78 compared to '77. If the U. S. coal industry prepares to grow to meet the demand for new coal consumption, new coal production capacity from mines that are currently expanding or developing, combined with production from planned mines, will total 602 million tons by 1985. (9) That conclusion is the result of an industrywide survey by Keystone Coal Industry Manual completed early in 1979. This study located 404 expanding or planned mines that will contribute to the new capacity, projecting the combined output including the present production, at 874,000,000 tons/yr of bituminous coal and lignite. This figure does not include production from mines now operating that will not expand during the '78 to '85 period. The planned expansion is shown in Table III-E. (9) All figures shown represent current or new capacity for the mines indicated, and do not reflect the amount of replacement tonnage involved. As a rule of thumb, nearly all reported western area capacities will also represent new production.

As for the east, one estimate suggests an allowance for replacement tonnage of 12,000,000 to 15,000,000 tons annually. About 73% of the new capacity will come from mines west of the Mississippi River, where 184 mines will produce almost 600 million tons per year. Principal applications of the production from the

Table III-E New Coal Mines Development and Expansion
Of Those Mines by States by Years

State	Capacity at Full Operation (Mill.Tons)	Present Cap. (Mill.Tons)	Capacity Increments by Years (Millions of Tons)									
			1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Alabama	19.80	3.60	1.30	2.35	2.75	2.55	3.05	1.30	1.50	0.80	0.60	
Arizona	8.00	7.00	1.00									
Arkansas	7.50	-	-	-	-	-	-	-	-	0.80	3.00	3.70
Colorado	43.94	3.67	5.93	5.90	6.97	5.72	3.95	3.80	3.30	3.95	0.75	
Illinois	55.40	10.85	10.40	7.80	5.15	5.90	3.40	3.15	6.05	2.20	0.50	
Indiana	18.10	7.50	1.70	2.50	0.20	1.00	1.70	1.00	1.50	1.00		
Kansas	2.45	0.27	0.15	2.03								
Kentucky East	30.48	8.85	8.39	7.09	3.32	0.61	0.86	0.66	0.43	0.09	0.09	0.09
Kentucky West	17.70	4.95	4.45	1.75	1.25	0.50	1.00	2.10	1.10	0.60		
Maryland	1.80	-	0.70	0.80	0.30							
Montana	89.80	26.80	5.00	9.85	6.60	7.60	5.20	4.70	6.90	11.00	4.10	2.05
New Mexico	64.40	14.40	4.10	4.90	6.30	5.40	6.20	4.50	5.60	4.50	6.50	2.00
North Dakota	45.44	7.79	2.46	5.10	1.89	2.90	5.95	2.00	4.20	5.15	8.00	
Ohio	23.76	7.15	3.60	4.51	4.80	1.30	1.20	0.80	0.10	0.10	0.10	0.10
Oklahoma	3.15	0.40	0.80	0.90	0.60	0.10	0.10	0.10	0.15			
Pennsylvania	22.96	6.00	5.55	4.04	2.82	1.60	0.58	0.70	0.67	0.60	0.20	0.20
Texas	66.70	10.40	5.60	7.50	4.60	3.50	8.00	9.40	8.20	4.75	1.75	3.00
Utah	44.95	8.27	4.90	5.48	7.05	6.98	1.90	2.95	2.62	1.78	1.47	1.55
Virginia	6.30	0.90	0.60	1.25	1.05	1.05	0.95	0.25	0.25			
West Virginia (N)	8.50	3.40	1.40	2.20	0.80	0.30	0.30	0.10				
West Virginia (S)	41.70	8.90	7.90	9.23	8.71	4.21	1.90	0.75	0.10			
Wyoming	293.20	37.20	18.00	28.32	43.98	22.80	32.45	33.45	29.90	30.30	12.60	4.20
Total	916.03	178.30	93.93	113.50	109.14	74.02	78.69	71.71	72.57	67.62	39.66	16.89

Source: 1979 Keystone Coal Industry Manual

surveyed mines will heavily favor utility consumption, 89% will be steam coal. Metallurgical coal is expected to comprise about 9% of the total and about 2% is tentatively slated for consumption in gasification projects. The figures shown in the table for new coal mine developments show a heavy bias in favor of increased production the first couple of years, gradually tapering off. This should be used as an indication that more coal mine production increase is expected. It is known to the author that at least three major coal mine operations are planned for the same time period; two in Illinois, one in West Virginia, and two in Utah, but not listed in Table III-E.

E. Conclusion

Coal is available. Coal is there for us to use. Which brings us back to the question: Why not coal? The growth in coal usage in the past several years has been sluggish. Some blame has been put on labor unrest, particularly the UMWA, miner contract strikes every three years, transportation bottlenecks, and lack of consumption by the major users -- electric utilities -- but a major portion of this blame must be laid squarely on the Federal Government.

(12) The increase in number and constant changing Federal regulations that hinder the coal industry, and the electric power industry (the major consumer of coal), are the reasons that coal utilization is lagging. Some of the critics of the present environmental regulations get pretty strong. "If there had been an Environmental Protection Agency during World War II, there would be a German or Japanese colonel talking to you now, and the pride of the EPA would be standing on the banks of the Mississippi discussing the navigational habits of the catfish," T. O. Austin, Jr., chief executive and chairman of Texas Utilities Company, said recently at the Chicago Coal Conference. (12) Austin's view of history evoked applause from an audience of coal industry executives. Another coal executive put it this way: "What the people

who don't have to mine the coal or burn it don't understand is the enormous cost associated with removing that last 4 or 5% of impurities. I'm for clean air and water -- who isn't -- but, faced with the cost of getting it 100% pure and getting it healthy, I'll go for healthy every time." (12)

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CHAPTER IV

REVIEW OF GOVERNMENTAL REGULATIONS

A. Governmental Involvement

Coal operators face an overwhelming array of local, state, and Federal government agencies, boards, commissions, and departments when they file for permits to mine coal, all of which generates a staggering amount of paperwork and delay.

One of the most serious and difficult problems facing the mining industry today is to find out just who all the Federal, state, county, and local agencies are -- and the right people in them -- who must review and approve the ton of paperwork involved in getting a given coal mine off the drawing boards and into production. And the problem intensifies daily.

In a recent study by Kaiser Engineers for a new coal mine in Arkansas, (2) there was a list of ten Federal agencies or entities and 19 state and local agencies or entities that were concerned with the granting of permits for new mine construction. The concerns of the ten Federal agencies included:

- | | |
|-------------------------------|-------------------------------------|
| o backfilling | o explosives |
| o dams | o oil handling and storage |
| o waste disposal | o health and safety |
| o topsoil | o roads |
| o revegetation | o tower heights |
| o pollution control | o radio usage |
| o water control and treatment | o operators and contractors |
| o pump stations | o coal description & identification |
| o bridges | o operating plans |
| o cables | o firefighting |
| o trains | |

The concerns of the 19 state and local agencies included:

- | | |
|-------------------------|--------------------------------|
| o power lines | o socio economics |
| o roads | o streams |
| o waterlines | o dams |
| o explosives | o fuel handling and storage |
| o ground control | o authorization to do business |
| o drilling | o domestic drinking water |
| o open cut mining | o archeology |
| o waste disposal | o floods |
| o construction | o soil and land use |
| o air pollution control | |

Table IV-1 lists the various permits and Federal agencies involved in the coal mine permit application process. Interesting to note is the wide diversity of permits required and the broad diversity of agencies involved. The ten Federal agencies include The Department of the Interior, Office of Surface Mining, the Environmental Protection Agency, the U. S. Coast Guard, the U. S. Army Corps of Engineers, the Department of the Treasury, the Occupational Safety and Health Administration, the Bureau of Land Management of the Forest Service, depending on the locale, and the Mine Safety and Health Administration.

Table IV-2 lists the various permits and local agencies involved in the coal mine permit application process. The 19 state and local agencies include various right-of-way divisions, mine health and safety divisions, drilling divisions, Department of Pollution Control and Ecology, Division of Air Pollution Control, Pollution Control Commission, Public Service Commission, Soil and Water Conservation Commission, State Fire Marshal, Department of Health, Building Permit offices, archeological divisions, industrial siting divisions, and rezoning divisions.

TABLE IV-1

DESCRIPTION OF FEDERAL PERMIT REQUIREMENTS

The concerns of 10 Federal agencies or entities include backfilling, dams, waste disposal, topsoil, revegetation, air pollution control, water control and treatment, oil handling and storage, cables, drains, pump stations, bridges, explosives, health and safety, radio usage, tower heights, roads, operators and contractors, coal description and identification, operating plans, and fire fighting.

FEDERAL AGENCY/ ENTITY	PERMIT(S)*	CONTENTS AND/OR COMMENTS	PERMIT REQUIRED	ESTIMATED MONTHS FOR PERMIT PREPARATION**	ESTIMATED MONTHS FOR AGENCY APPROVAL
OSM	Mining permit	<ul style="list-style-type: none"> o Signs and markers o Backfilling o Disposal o Protection of Hydrology o Dams-waste material o Topsoil handling o Revegetation 	Prior to construction	15	6
EPA	Prevention of significant deterioration - PSD	<ul style="list-style-type: none"> o Location o Process flow o Equipment description o Process emissions o Impact of secondary growth o Air cleaning equipment 	Prior to construction	1 or as many as 13 if modeling or monitoring required	1 to 12
	Oil spill prevention control & countermeasure plan	<ul style="list-style-type: none"> o Facility drainage o Bulk storage tanks o Transfer operations o Loading & unloading o Security 	On file 6 months after oil storage begins	1	not required
	National pollutant discharge elimination system - NPDES	<ul style="list-style-type: none"> o Source o Quantity o Quality 	180 days prior to discharge	6 to 12***	6 to 12
Corps of Engineers	404 permits - dams, cables, conveyors, fills, drains, pump stations for work in any wetland	<ul style="list-style-type: none"> o Proposed activities o Adjoining property o Location information o Status of all approvals o Reason for any denials o Type of structure o Type of vessels o Facilities for handling wastes o Composition of dredge or fill 	<ul style="list-style-type: none"> o Prior to construction in navigable water, backup water, or US water 	2 to 12***	12
Coast Guard	(Bridge permit)	Bridge engineering	If bridge is constructed across navigable portion of river	2	12
Treasury	Explosive storage and usage permit	Use of explosives	Prior to explosive storage	1	1
OSHA	(Safety permits)	For operations not at mine site			
FCC	Radio permit	Emergency radio			
FAA	Tower permit	If tower is over regulation height	Prior to construction		
BLM/FS	(Tramroad or right-of-way permits)	If access roads cross Federal land	Prior to construction	1	12
<p>*Use of () with description of permit indicates less likelihood of being required</p> <p>** Includes baseline data collection</p> <p>***12 months if EIS is involved</p>					

Source: Kaiser Engineers, Sparta Mine Report

FEDERAL AGENCY/ ENTITY	PERMIT(S)*	CONTENTS AND/OR COMMENTS	PERMIT REQUIRED	ESTIMATED MONTHS FOR PERMIT PREPARATION**	ESTIMATED MONTHS FOR AGENCY APPROVAL
MSHA	ID no. and safety plans - Operator & contractors	<ul style="list-style-type: none"> o Specific mine ID no. given when submitting plans. o General contractors ID no. 	Prior to construction	1	1
	Legal identity - operator and contractors	Names of operators, mine, partners, corporation, agents	Within 30 days of opening	1	1
	Notification and preliminary plans - permits	<ul style="list-style-type: none"> o Location & Mine ID No. o Name/address of mine operator o Name/address of principal mine health and safety officer o Identity & height of coal bed to be developed o System(s) of mining 	Prior to construction	1	4
	First aid training of supervisory employees	Training and retraining for certification	Within 60 days of employee training.	1	1
	(Sanitary facility waiver)	If cannot provide regular sanitary facilities.	Start of operation (end of construction)	1	1
	Operational plans	<ul style="list-style-type: none"> o Names o Construction o Contractors o Characteristics o Location o Strata o Equipment o Safety 	Prior to construction	2	1
	Escape & evacuation plan & training	<ul style="list-style-type: none"> o Location of fire equipment, escape-ways, travel routes o Evacuation procedure 	During construction	1	2
	Fire fighting plan	<ul style="list-style-type: none"> o Equipment o Practices o Training o Fire-fighting procedures 	During construction	1	2
	Plan for health & safety training program	<ul style="list-style-type: none"> o Annual training for certified men o Annual training for qualified men 	During construction	1	2
	Cleanup program	Cleanup and removal program for accumulation of coal, dust, and other combustibles	During construction	1	1
	(Mining around oil or gas wells program)	Avoidance or temporarily abandoning well.	Prior to mining within 300 ft of a well.	1	1
	(Refuse pile plan certification and abandonment)	Report within 180 days of acknowledgement of preliminary location letter: <ul style="list-style-type: none"> o Construction o Map o Drainage o Cross section o Stability 	Prior to starting construction on pile.	1	1
	Impoundment plan certification, inspection, and abandonment	<ul style="list-style-type: none"> o Name o Location o Purpose o Watershed effecting o Foundation o Construction material o Drawings o Instrumentation o Graphs o Runoff o Spillway o Slope stability o Location of mine 	Prior to any construction (ponds of 20 acre-feet or dam height of 20 feet or more).	2	1

*Use of () with description of permit indicates less likelihood of being required

**Indicates baseline data collection

TABLE IV-2

DESCRIPTION OF STATE AND LOCAL PERMIT REQUIREMENTS

The concerns of 19 State and local agencies or entities include powerlines, roads, waterlines, explosives, ground control, drilling, open cut mining, waste disposal, construction, air pollution control, socioeconomic, streams, dams, fuel handling and storage, authorization to do business, domestic drinking water, archaeology, floods, and rezoning and land use.

STATE AGENCY/ ENTITY	PERMIT(S)*	CONTENTS AND/OR COMMENTS	PERMIT REQUIRED	ESTIMATED MONTHS FOR PERMIT PREPARATION**	ESTIMATED MONTHS FOR AGENCY APPROVAL
Right-of-Way Division	Right-of-way and/or relocations	Powerlines Roads Waterlines Railroads	Prior to construction	1	2
Division of Mine Health and Safety	Operational maps	General mining maps	Prior to construction	1	2
	(Explosive storage Certificate of Compliance)	o Location of magazine o Explosives to be stored o Distance to magazine	Prior to storing explosives	1	1
	Ground control plan	Safe control of pits and spoil banks	Prior to mining	1	1
Drilling Division	(Ground injection permit)	o Location o Type of well o Drilling & casing o Notification of population within 1/4 mile	Prior to disposal of water	1	2
	Dewatering well permit	o Location o Use o Method o Depth o Bond o Power of attorney	Prior to drilling	1	2
Department of Pollution Control & Ecology	Open cut mining permit	Implement OSM Requirement o Map o General information o Construction o Refuse disposal o Mine discharge	Prior to construction	15	3 to 6
	(Permit to operate a mine)	A few additions or changes to the construction permit	After getting permit to construct	1	1
	Disposal permits for water discharge	Sewage discharge Mine water discharge Storm water discharge	Prior to discharge	4	5
	(Permit to sever natural resources)	To affect other major land uses	Prior to cutting significant quantities of trees	1	1
Division of Air Pollution Control	Air quality permit to construct	o General o Emissions from major sources o Combustion sources o Control equipment	Prior to construction of such items as conveyors, crushers, and boilers	2 to 15	3
	Air quality permit to operate	Same as permit to construct	Prior to operation of source equipment	1	2
*Use of () with description of permit indicates less likelihood of being required					
**Includes baseline data collection					

Source: Kaiser Engineers, Sparta Mine Report

STATE AGENCY/ ENTITY	PERMIT(S)*	CONTENTS AND/OR COMMENTS	PERMIT REQUIRED	ESTIMATED MONTHS FOR PERMIT PREPARATION**	ESTIMATED MONTHS FOR AGENCY APPROVAL
Pollution Control Commission	Solid waste disposal facility permit	Trash, ash, coal refuse	Prior to construction	4	3
	(Deep well injection permit)	Mine water	Prior to injection	4	12
Public Service Commission	Certificate of environmental compatibility and public need	Socioeconomic & Environmental	Prior to construction	1	1
Soil & Water Conservation Commission	Surface water diversion	Streams flowing 5 ft ³ /s or more or with a drainage basin area over 10 mi ²	Prior to construction or activities in stream which impact waterway	2	3
	Dam construction permit	For impounding water	Prior to dam construction	1	3
	(Pump station permit)	To withdraw water from stream	Prior to construction	1	3
	Water rights	Allocations	Prior to construction	1	2
State Fire Marshall	Service station permit	If dispense gas or diesel fuel from storage tanks	Prior to construction of gasoline and oil storage and pumping facilities	1	2
State	Certificate of insurance and authorization to do business in state	Usually covered under nationwide certificate	Prior to submitting most permits	1	1
Department of Health	Sewage facility permit	<ul style="list-style-type: none"> o Location o Rate of flow o Type of waste o Service o Disposal field o Water table 	Prior to construction of sewage treatment facility	1	3
	Domestic drinking water system and water source permit	Emphasis on source and site of facility	Prior to construction of drinking water system	1	3
Building Inspector	Building permits	County may handle	Prior to building construction	1	1
State Archaeologist	Archaeological clearance	Inspection arranged by company but done by approved archaeologists	Before earthwork	2	2
Industrial Siting Board	(Industrial siting)	This may be a very involved review covering such considerations as socioeconomic, environmental	Prior to any construction	10	12
COUNTY AGENCY					
Regional Planning Commission	-	Recommendations to County	-	-	-
County Land Use Division	(Special review use permit)	Socioeconomic & environmental considerations	When county develops procedures	6	12
	Right-of-way	Pipelines, railroads, powerlines, roads	Before right-of-way construction	1	2
	Building permits	State may handle	Prior to building construction	1	2
	(Floodplain clearance)	100-year floodplain exclusion	Prior to any construction	1	1
	(Rezoning application)	Rezone to heavy industrial	Prior to any construction	1	3
MUNICIPAL OFFICE					
City Manager	(Rezoning application and land use approval)	When mine is within jurisdiction of local municipality	Prior to construction	1	3
*Use of () with description of permit indicates less likelihood of being required					
**Includes baseline data collection					

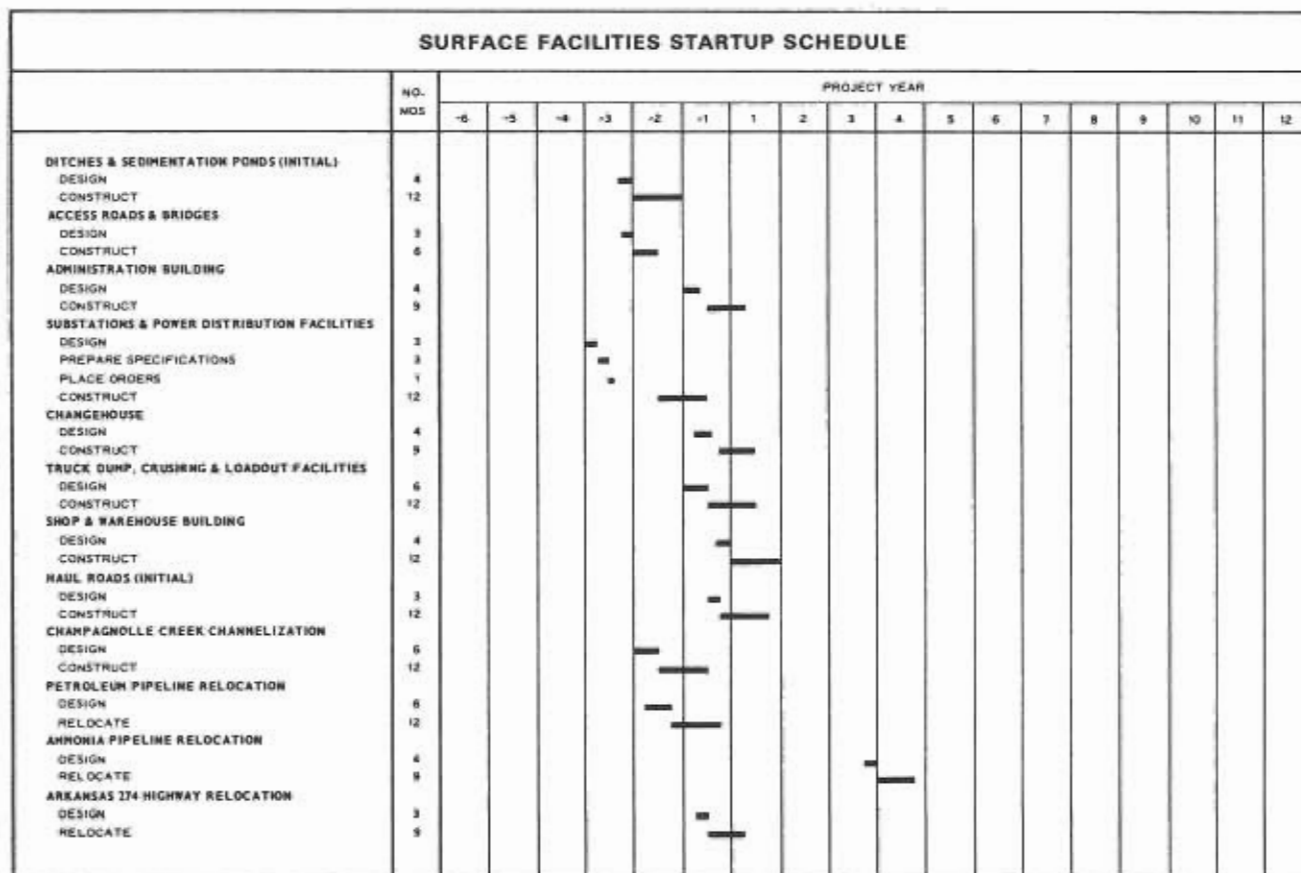
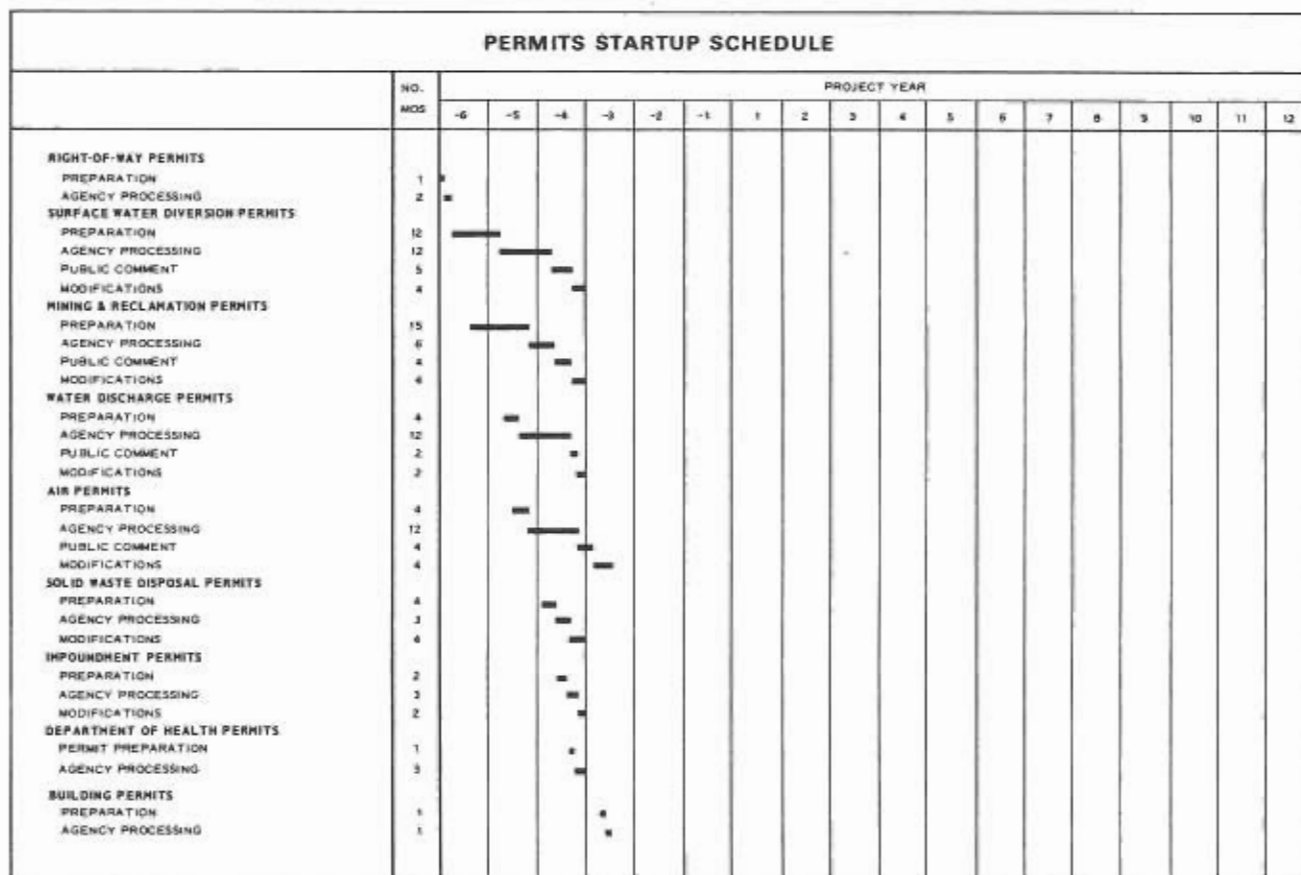
Federal agency involvement can be rather surprising. One of the most interesting permits involved is from the Coast Guard, involving a bridge permit that is required before bridge engineering is done if a bridge is constructed across navigable portions of a river. It normally takes approximately two months to prepare the permit and 12 months for agency approval. The Treasury Department's Bureau of Firearms and Alcoholic Drug Administration involves the explosive storage and usage permit, which takes only one month to prepare and one month for approval, which is relatively innocuous as permits go. The U. S. Army Corps of Engineers comes in when a Section 404 permit is involved, which pertains to dams, cables, conveyors, fills, drains, pump stations, or work on any land that involves drainage into navigable waters of the United States. The Mine Safety and Health Administration of the Department of Labor requires thirteen individual permits before construction.

The state and local permits, listed in Table IV-2, often duplicate Federal permits. In some cases, Federal permitting is done through local and state agencies, but these that are listed are only agencies issuing permits in addition to the Federal permits. There are no less than three different permits listed for mining alone, two of which are for the same agency -- Department of Pollution Control and Ecology, which requires an Open Cut Mining Permit and a Permit to Operate a Mine. Some of the more interesting permits are a Service Station Permit from the State Fire Marshal if a company plans to operate a service station to dispense gas or diesel fuel from storage tanks, which most coal mines do. Another interesting permit is archaeological clearance from the State Archaeologist, where inspection is arranged by the company but done by approved archaeologists. It is required before earthwork is commenced. Normal time requirements are -- two months for permit preparation and two months for approval.

An article appearing several years ago had the halfway joking title of "One Ton of Coal Produces One Ton of Paper." (4) This was meant as a semi-joking poke at the constantly increasing and changing requirements for coal mine regulations, which makes it almost impossible to keep up with the present news because changes are made constantly.

B. Permit Schedules

It is normally considered that three to five years or more must be spent in applying for, preparing, issuing, and justifying permits for new coal mine construction. This is without any major problems in the permit application and considering smooth sailing through the permitting procedure. See Figure IV-1, which is again from the same Arkansas coal mine permitting procedure, but shows a relatively easy permitting plan. Many other plans are considered much more involved. Four years ago in 1976 in Illinois, a new coal mine only required nine different agencies for permit application and approval. (8) There were only three U. S. governmental agencies involved, Mine Enforcement Safety Administration of the Department of Interior (which is now the Mine Safety Health Administration of the Department of Labor, the Department of Interior is still involved through other agencies, U. S. Bureau of Mines, Bureau of Land Management, etc.) the U. S. Army Corps of Engineers, and the Environmental Agency. The primary agency involved in the Arkansas project, the Office of Surface Mining, was not in existence in 1976. In Illinois there were five state agencies and only one county agency in 1976. Part of this happens because in the Arkansas project there were two local towns involved while in the Illinois operation there were none. In 1976 almost nobody took into account the archaeological implications of new mine construction, while now, in California for example, even to put in a new house one has to do an archaeological survey of the area.



Source: Kaiser Engineers, Sparta Mine Report

C. Complexity of Permitting

From Table IV-1 and 2, it follows that seven of the Federal permits involved are directly related to or attributable to water and water use at or near the mine site. Eleven of the state and local agencies with permits involved were also related to water and/or water use at the mine site.

The Office of Surface Mining's General Mining Permit covers: the protection of hydrology, dams and waste material, and top soil handling and revegetation which are directly related to the water and water runoff in the mine site. The Environmental Protection Agency has several permit areas: prevention of significant deterioration, which includes process flow and process emissions; oil spill prevention, control and countermeasure plan, indirectly related to the water runoff at the mine site; and the national pollution discharge elimination system (NPDES), which concerns the source, quantity, and quality of both air and water emissions from the mine site. The Corps of Engineers gets involved through the Section 404 of the NPDES activating law, which also established the EPA.

If for any reason one has to bridge a navigable stream one must get permission from the Corps of Engineers and the Coast Guard.

Mine Safety and Health Administration must issue a permit when mining around oil or gas wells, and in obtaining refuse pile and water impoundment plan certification and inspection.

The state and local agencies involved in coal mine permitting range from state department of mines, to local city councils and are varying not just by state but also by exact site within a state. The complexity and variability of

state and local regulations precludes all but the most cursory look at them. A brief look at local laws governing coal mining in even one state would be well beyond the scope of this report. I will concentrate on major Federal laws affecting the coal industry.

D. History of Federal Regulation

Since the late 1960's the coal industry has operated under increasingly stringent regulations. One operator now can be regulated and inspected by many different state and Federal agencies. These regulations have affected both coal producers and consumers. Longer planning lead times, costlier investments and higher operating expenses are required to comply with regulations. At the same time, the regulations have imposed serious total production constraints on the industry.

The first law that had a significant impact on the coal industry was the 1969 Mine Health and Safety Act, which still requires additional men in both surface and deep mines to perform non-production tasks related to health and safety. While improving conditions for miners, this law cut productivity in half for underground mines, and forced out of business smaller operators unable to comply with the regulations. (6)

The surface Mining Control and Reclamation Act, passed by Congress on August 3, 1977, also has had far-reaching effects on the production capability of the surface mining industry, particularly in the short term. In essence, this law requires more pre-mining engineering, adds more steps to the permitting process and sets national reclamation standards. A fee of 35¢ per ton is included to reclaim orphaned coal lands. Return to approximate original contour of all mined-out coal land (except land for mountaintop removal mining) will be required.

The law also establishes requirements for the designation of prime agricultural lands. In addition to requiring a more extensive initial permitting process after mining is complete, the law says the land must be returned to the highest level of use that could have been achieved prior to mining. At those mines already in existence when the law takes effect, all man-made structures must be brought into compliance with applicable performance standards. The need for additional capital, coupled with higher production costs, will almost certainly force many small marginal operators out of business.

Some reserves have been rendered unminable by the regulations. Restrictions on the mining of alluvial valley floors and prime farmland will affect operators in the West and Midwest, respectively. The requirement of returning most strip-mined land to approximate original contour is impractical in areas with very steep slopes. It will prevent surface mining of many reserves in Appalachia under current economic and technological conditions. (A comparison of West Virginia and eastern Kentucky surface production provides some indication of the impact of this new law in Appalachia. West Virginia passed a tough surface mining law in 1971. In the preceding year, the state produced 27.7 MM tons from surface mines; under very similar circumstances, eastern Kentucky produced 29.3 MM tons. In 1976, output from surface mines in West Virginia dropped to 20.5 MM tons, while eastern Kentucky (without the strict law) increased surface mine production to a total of 47.7 MM tons).

The Clean Air Act Amendments of 1977 established SO_2 emission standards so strict that no bituminous steam coal will be in compliance. The law requires all new power plants not in the permit state to meet an emission standard of 0.2 lb SO_2 per MMBtu, or a reduction of 90 percent of the sulfur originally contained in the coal. Since no coal can meet the 0.2 lb SO_2 limitation, the

standard in effect requires best available control technology (scrubbers) on all new power plants. (Coal cleaning will be allowed to count toward the 90 percent reduction.) The cost of scrubbing has been estimated at \$7-10 per ton of coal burned. In addition, the amendments require an EPA permit for all emissions at the mine and preparation plant. One-year ambient air-quality monitoring is required at new mine sites before permits can be issued.

Congress also recently passed black lung legislation that makes miners eligible for black lung disease compensation after 25 years of service. To pay for the benefits, a fee of 50¢ per ton for surface mined coal would be charged.

Since 1969, the Department of Interior (DOI) has maintained a quasi-moratorium on coal leasing of government lands. The 1976 amendments of the 1920 Leasing Act were intended to pave the way for renewed leasing of western lands by introducing the concepts of diligent development and percentage royalties, in addition to competitive lease bonus bidding. In late 1976, nominations were taken from industry and area-wide environmental impact studies were begun. Guidelines were set up to allow short-term leases in special cases in which coal was needed to maintain an existing mine's output, as called for in supply contracts. Subsequently, the court case NRDC vs. Hughes resulted in a ruling that DOI's environmental impact statement on leasing of Federal coal lands was inadequate. More stringent short-term leasing standards were set, while the question of large-scale, long-term leasing was left uncertain.

In the midst of these problems, Congress recently passed an act that could benefit the industry. Included in the new National Energy Act is a stipulation that large industrial boilers and utilities using fuel oil and natural gas convert to coal. This section of the energy bill would force coal conversion at many sites, particularly in the eastern United States.

Obviously, there are inherent conflicts between the national goal of greatly increasing coal production, and the requirements of the environmental regulations mentioned above. In the present regulatory environment, the surface mining industry is confronted with significant impediments to increasing its production. A thorough, definitive study of all state and Federal regulations affecting coal production must be initiated to eliminate duplication.

Governmental regulation are diverse and complex. To show the complexity the next chapter will analyze the Federal regulations pertaining to water, both ground and surface, and the permitting requirements that pertain to water.

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CHAPTER V

GROUND AND SURFACE WATER REGULATIONS

A. Governmental Regulation

With infrequent exception, governmental intervention complicates and often impedes the mining process. There is little the coal industry can do but comply with these new laws and regulations. The primary example of complexity is the National Pollution Discharge Elimination System (NPDES) permit application.

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit system in Section 402 of the act. This system provided that any permits for discharges into the navigable waters of the United States must comply with the effluent limitations that were to be established by the regulations of this act.

The U. S. Environmental Protection Agency (EPA) was given the responsibility of formulating and administering these rules and regulations, which provided the guidelines for processing these NPDES permits. Under the act, the individual states were given the opportunity to formulate their own laws, rules and regulations, enabling each state to administer its own NPDES permit program. Several states have drafted such legislation. Other states have allowed EPA to administer the NPDES permitting within their borders.

(States that operate their own NPDES programs are: Colorado, Illinois, Indiana, Missouri, Montana, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wyoming. States that leave the NPDES administration to EPA are: Alabama, Arkansas, Arizona, Kentucky, New Mexico, Oklahoma and Utah.)

The Federal Water Pollution Control Act was amended again in 1977. These amendments established New Source Discharge Performance Standards that have had severe effects upon the coal industry. Any discharge categorized as a new source and within the EPA jurisdiction, will require an environmental impact assessment or report. This process will make discharge permit applications more complicated, more time consuming and a great deal more expensive. As an example, Peabody Coal Co. recently submitted an environmental impact report to the Army Corps of Engineers (required as a sub-section to Federal Water Pollution Control Act when "Waters of the United States" are involved) for Peabody's River King Mine Pit No. 3 extension, St. Clair County, Ill., which required 7,300 man-hours over three years and cost \$275,000.

With the passage of the Federal Surface Mining Control and Reclamation Act, in addition to the regulations listed above, the coal mining industry now faces the prospect of having to invest substantial sums of money in investigations relating to ground and surface water in order to apply for operating and reclamation permits. The regulatory program for coal mining that has been developed by the U. S. Government contains numerous specific references to water, although many of these references are so loosely worded that they can be interpreted in a number of different ways. The regulations convey the intent of a particular requirement, but they leave the details of how to comply up to the operator. Although this approach might seem to allow flexibility, the operator is confronted with the vexing problem of not knowing the types of investigations, the level of effort, and the related costs that are necessary in order to be in compliance.

Protection of the water environment is a complex matter, which only lately has come into focus as a result of recent legislation placing the Federal government in the role of the protector of the nation's waters.

B. The Mine Operational Water System

The operations of the mine and the concern for the environment require the coal mine operator to develop plans for controlling water originating from the surface and from the ground. The total operational water system can therefore be considered as an aid to the mining operations as well as meeting the environmental regulations at governmental agencies. Figure V-1 shows a typical operational water system flow diagram. (7) The diagram of the operational water system flow illustrates the main sources of inflow and outflow; and the related operational handling of domestic, ground and surface water. Some of these illustrated systems may change, depending on levels of elements and compounds found during operations. Because of this variability, the probable courses of action are indicated as solid lines and the less likely possibilities as dashed lines.

Sources of water are ground water and surface water. Ground water is the subsurface water found in water tables and aquifers. Depending on the location and depth of the ground water, depressurization and dewatering wells may have to be sunk to remove this water. If the ground water supplies the drinking water for a city or town special consideration (such as reservoirs and new aquifers) may have to be done to allow the mining. Surface water is the drainage and runoff from the operation due to rains, streams, lakes, or rivers. Drainage from coal handling, road, and shop areas may contain oil which will require treatment. Other considerations such as diversion ditches, collection ponds, settling ponds, and discharge sites are required.

C. Federal Water Pollution Control Act

On October 18, 1972, Congress enacted the Federal Water Pollution Control Act Amendments of 1972 with the announced purpose of restoring and maintaining the chemical, physical and biological integrate of the Nation's waters. (3)

The FWPCA established a number of goals, requirements, prohibitions and programs to achieve this purpose, and addressed the problems of water pollution by using many different approaches. The amendments provided Federal financial assistance for major research and demonstration projects and the construction of publicly owned waste treatment works. They also provided programs to deal with various sources and types of pollution, including toxic, oil, and hazardous substances. Section 208 of the act provides for the development and implementation of area wide waste treatment management planning processes to control all sources of pollution.

Section 301 of the FWPCA prohibits the discharge of pollutants from discernable conveyances (defined as "point sources") into "navigable waters", (defined in the FWPCA as "the waters of the United States, including territorial sea"), unless the discharge is in compliance with Sections 402 or 404 of the act. (The subject of "point sources" is an entire area that also effects the coal industry as much of the rest of this topic area. In the sake of brevity this area will not be discussed.)

Section 402 establishes the National Pollution Discharge Elimination System (NPDES) to regulate industrial and municipal point source discharges of pollutants into the Nations waters. The NPDES permit program is administered by the Environmental Protection Agency (EPA) and provides an opportunity for the transfer of this responsibility to those States that have the capability for administering the NPDES program (see Section V-A).

Section 404 of the FWPCA establishes a permit program, operated by the Corps of Engineers, to regulate the discharge, into the waters of the United States, of dredged material and of those pollutants that comprise fill material.

Applications for Section 404 permits are evaluated by using guidelines developed by the EPA in conjunction with the Corps. The Corps can make a decision to issue a permit that is inconsistent with those guidelines if the interests of navigation require. Section 404(c) gives the EPA authority, subject to certain procedures, to restrict or prohibit the discharge of any dredged or fill material that may cause an unacceptable or adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning or breeding area), wildlife, or recreational areas.

The Federal Water Pollution Control Act Amendments of 1972 were passed to give teeth to the original act in the fight against deterioration of the water quality. The main purpose behind Section 402 was to prevent further damage to the surface water runoff. Section 404 was for protecting the navigable waters. To illustrate this turn to page V-9 (4) of this chapter, which gives the Corps of Engineers definitions. All references are to the navigability of the water. Almost all flowing streams are tributary (definition a(3)) to navigable water or Corps maintained lakes (definition a(5)). All activities that do not come under Section 402 require a permit from the Corps. Typical types of activities that would require a permit are; piping stations on streams, fresh water impoundments, bridges, and of course, loading docks. Loading docks and bridges would also require several other permits, such as Coast Guard clearances.

D. The Surface Mining Control and Reclamation Act

On August 3, 1977, President Jimmy Carter signed into law a Federal statute that has had a profound effect upon the operating practices and the cost of coal mining. The new Federal Act required sweeping changes nationwide in the way surface coal mines and surface operation of underground coal mines are operated and policed by regulatory agencies. The most significant thing the

law does is provide a unified national enforcement policy, together with a set of stringent national standards for regulating surface mine operations and reclaiming surface mined lands.

The operating and regulatory agency for this act is the Office of Surface Mining (OSM), which has oversight authority for all regulations and regulatory bodies pertaining to surface mining and surface operations. Other Federal and state agencies may be designated as the lead agency for permitting if that agency has the capability and the authority for that particular area. An example of this would be having the Corps of Engineers as lead agency when work pertains to the construction on or near a corps responsible waterway.

The ground water sections of the surface mining regulations are contained in section 770 - 795 and 810 - 828. The following will review key areas of those sections. (6) Sections 770 - 795 cover general requirements and 810 - 828 cover specific activities.

Section 779 of the act requires, that in relation to the ground water environment, a complete hydrological description of any aquifer system in the mine and adjacent area will have to be provided in a permit application. The collection of this information requires cooperation between drillers, soils engineers, chemists, and ground-water geologists. The determination of the uses of the water in aquifers will require a regional search if the information is not already on record with a state agency. All of the above information will probably require a ground-water geologist to bring it into focus. New mapping requirements are for potentiometric and/or cross sectional maps at any aquifers.

Section 780 requires that there be a narrative explanation of the construction, modification use, maintenance, and removal of the following facilities unless the retention of such facilities is necessary for post-mining land use:

- (1) Dams, embankments, and other impoundments.
- (2) Overburden and top soil handling in storage areas and structures.
- (3) Coal removal, handling, storage, cleaning, transportation areas, and structures.
- (4) Spoil, coal-processing waste, non-coal waste removal, handling, storage, transportation and disposal areas, and structures.
- (5) Mine facilities.
- (6) Water-pollution and air-pollution facilities.

Also, each application shall contain a complete plan for reclamation of the lands within the proposed permit area. These plans must include details on the protection of hydrological balance at the mine area. The application will include a plan that considers proposed sedimentation ponds, water impoundments, coal-processing, waste banks, and dams or embankments within the proposed mine plan area.

Further sections go into more detail on each of the above. The surface mining act places a very stringent burden upon coal mine operators.

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CHAPTER VI

IMPACT OF COAL MINE REGULATIONS

A. General

In "days-gone-by" the coal operator had very little trouble with governmental agencies in obtaining permits. The amount of information to be submitted was minimal and the permit usually came along within a few weeks, or at most a few months. In fact there were many instances when the mine was actually operating before the permit was issued. Occasionally the operator was not even aware that a permit was required until it was brought to his attention by some particular incident, or a visit from a governmental inspector to the mine. This laissezfaire attitude existed on the part of both the regulatory agency and the operator.

But if either followed such a policy today he would be severely criticized, possibly fined, be fired or the subject of an injunction, resulting from a suit by someone who was "aggrieved." In fact that someone doesn't even have to be directly connected with the mine; under many of the present laws suit can be brought by any "interested person."

Times are tough for coal operators, production costs are rising and the market is weakening. Inflation has affected labor costs, equipment and maintenance purchases, and interest on borrowed capital. The expected surge in coal demand has not materialized, and the president's call for industry conversion from oil and gas to coal has not produced the expected market increase. (5)

The following excerpt from Land Marc gives a general feeling of the coal industry:

"Throughout the country, Federal regulation has hit the industry hard. Even the biggest coal producers are having difficulty complying with the technically demanding and expensive requirements. Small operators are expected to meet the same guidelines with smaller staffs and budgets.

Feelings run high on the subject of the new surface mining rules. Although small operators range from the newcomer to seasoned mining veteran, and from the hardly to the highly educated, they are almost unanimous in their dismay at the regulations' enormous demands. No matter what section of the country one visits, the reaction is the same.

In the coal fields of southeastern Ohio, Bob Genile, of N & G Construction, complains of the mountain of paper work the regulations have forced on his company. "Federal reporting alone has tripled over the last three years," he says. "I now file over 300 separate forms with state, local and Federal agencies." These forms cover his six active sites in Jefferson, Harrison and Belmont counties. Considerable technical knowledge is required to collect and analyze the data for these forms.

Gentile also points out that operators trying to comply with these regulations are handicapped by constantly changing rules. "This year alone," he says, "the government has published four separate sets of regulations: proposed-interim, final interim, preproposed final and proposed final regulations." Each set varied somewhat from the previous rules, and required different reporting schedules and procedures. Many operators complain that these regulations are enforced on a local level by inspectors who are inexperienced with the changing requirements as the operators themselves.

Fortunately for Gentile, he is better prepared than many comparably sized companies to deal with the more clear-cut rules. Many other operators have neither the business background themselves, nor the staff to assist them, to fulfill these confusing and burdensome requirements. (5)

B. Management and Planning

Coal mines, like Rome, are not built in a day. The overall time frame for inception to full production can run from an optimistic eight to a pessimistic 10 years. To show the length of time involved, the following is a "short" land time coal mine schedule, it only considers engineering design and construction. (2) An additional five years are required for full production.

The proposed schedule of construction, shown in Figure VI-1, includes the following:

- o provision for obtaining permits
- o provision for completing feasibility studies
- o preliminary engineering
- o bid package work prior to detailed engineering and construction
- o detailed engineering
- o time lag for long delivery items of equipment
- o plant construction

On the basis that mine production will begin at the start of the second quarter of year 1, the schedule shows that the submitting of applications for the various permits must start as close as possible to the beginning of year minus 3. Since permits (particularly those associated with environmental aspects) take several months for processing, it is assumed that the base data necessary to satisfactorily complete the applications will have been accumulated prior to year minus 3.

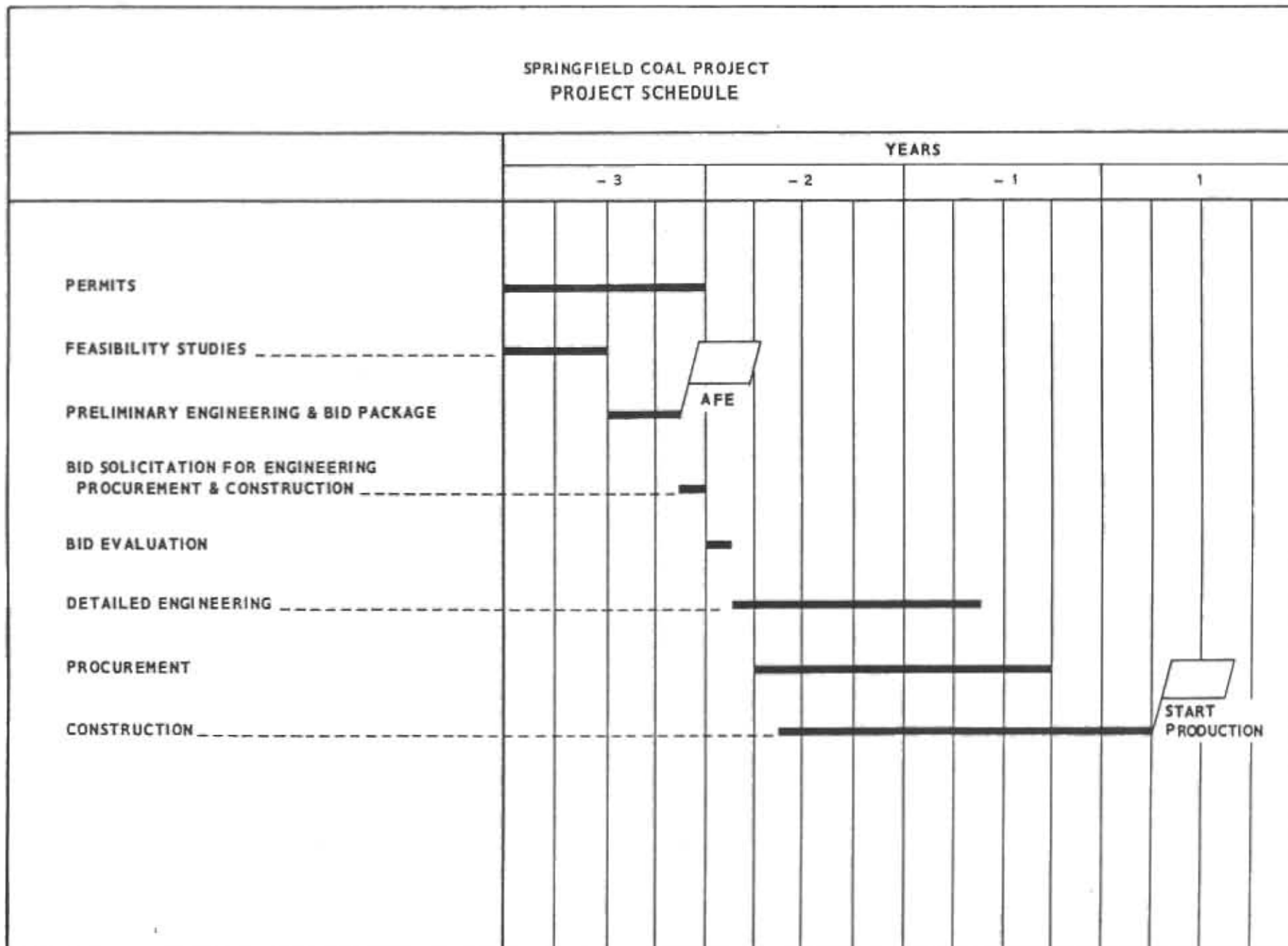


Figure VI-1

Feasibility studies, if any, should be started at the beginning of year minus 3. This allows preliminary engineering and bid package preparation to begin about half way through year minus 3.

Approximately 2 months is allowed for the solicitation of bids for engineering, procurement, and construction, followed by 2 months for evaluation of the bids and award contracts.

Detailed engineering must begin immediately following the award. Awards for the slope and shafts will be given first consideration. The design of other facilities follows in order of priority.

It is necessary to begin preparation of specifications and bid requests early in the engineering program to allow for long delivery items.

Site preparation is not required for development of the slope and shafts. Consequently, the schedule for this work will be delayed until the latter part of year minus 2, but in time to permit the work to be completed before the winter season.

Construction of the rail loop is scheduled to begin during the last quarter of year minus 2 so that rail deliveries of materials and equipment can be made. It is customary for the railroad company to install the spur switch to their line and signalling system. This requires early negotiation with the Railroad to ensure their cooperation in installing these facilities before the scheduling of the loop construction.

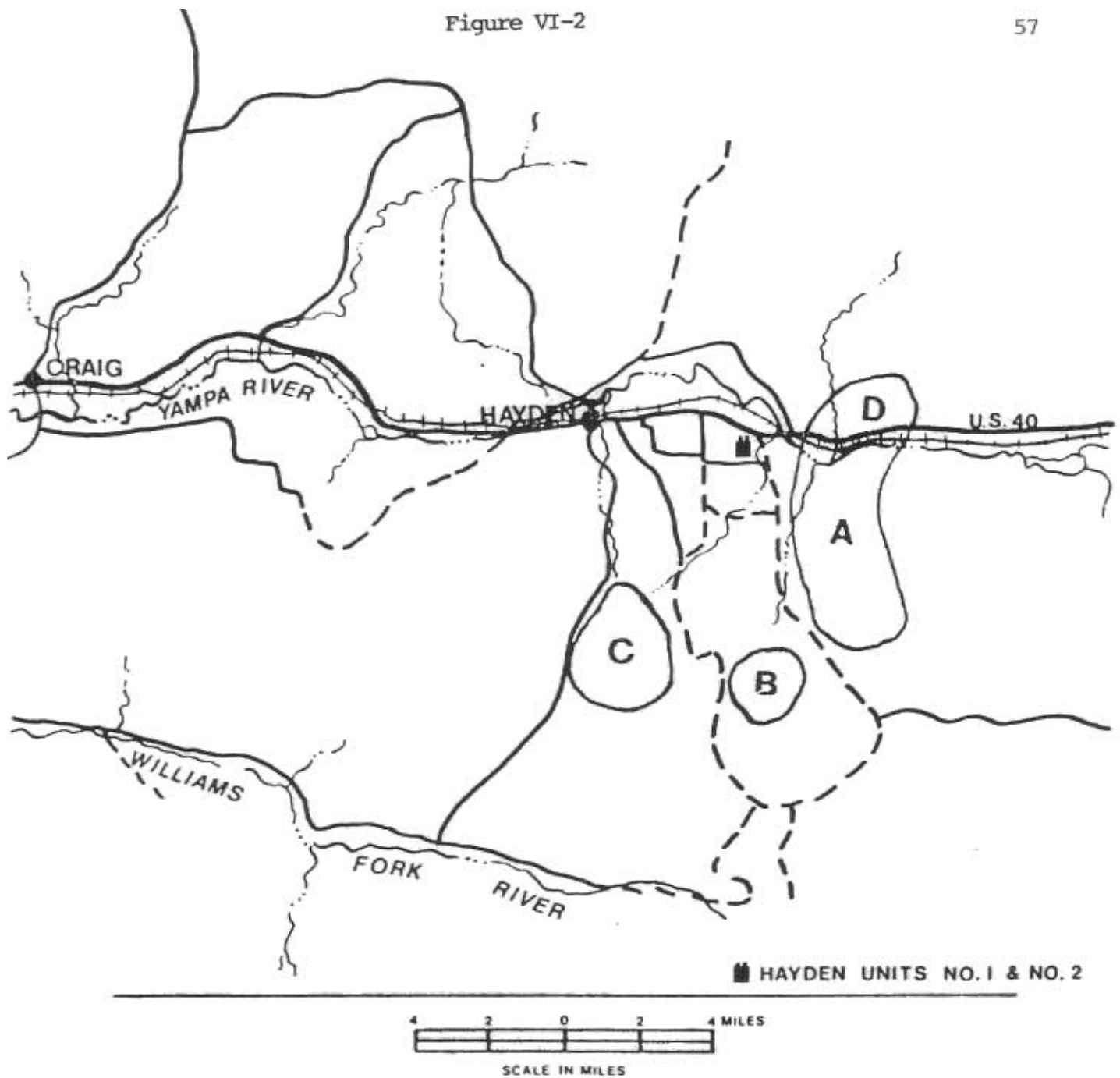
A period of 12 months from date of order has been allowed for delivery and preparation of the first mining units. First mine production is scheduled to commence at the beginning of the second quarter of year 1.

A period of time has been allowed for the commissioning and providing of the coal preparation plant and ancillary facilities. It is expected that each particular section or facility will be tested upon completion for mechanical and electrical operation. Time has been allowed for the correction of water leaks and other unforeseen problems. Final adjustment of the coal washing process will, of course, have to wait until coal is available.

This has been a very optimistic look, Peabody Coal Company has experienced the other extreme. (8)

Peabody Coal Company has a mine in Northwestern Colorado called Seneca. It consists of four mining areas designated "A" through "D" as shown in Figure VI-2. Sececa Coals Ltd., a joint venture between Peabody Coal and Western Utility Coal Company, which functions with Peabody Coal Company designated as operator, began operation of the Seneca Mine in 1965 in area D. east of Hayden and north of U. S. Highway 40. In 1968-69, the operations moved South of U. S. Highway 40 to an area designated as Seneca 2. This Seneca 2 area, currently in operation, lies approximately 2 miles southeast of Hayden. Coal from Seneca 2 is used at the Hayden Power Plant, operated by Colorado Ute Electric Association and the Salt River Project Agricultural Improvement & Power District.

In 1973, Colorado Ute and Salt River Project began construction of Hayden Station Unit 2, a 250 MW generating unit originally projected to be operating commercially in April of 1976. Seneca Coals Ltd. contracted to supply coal



DEDICATED COAL RESERVES

		Strip Underground		
		Million	Tons	
A	SENECA COAL LTD.	15	20	EXISTING SENECA 2
B	PEABODY COAL CO.	7	0	YOAST AREA
C	UNITED ELECTRIC	12	0	SENECA 2-W
D	RECLAIMED AREA			ORIGINAL SENECA MINE

for the new generating unit beginning January, 1976. This meant that the initial box cut should be started in October, 1975. To supply coal required under this contract, Seneca Coals Ltd. intended to open a second pit at the Seneca Mine complex in the area "C" in Figure IV-2, designated as Seneca 2-W. The area includes both privately owned and Federally leased coals.

Peabody started on the current round of permits and approvals with the submittal of a mining and reclamation plan to the Geological Survey for approval of mining in the Seneca 2-W area in March, 1974.

Peabody was advised by the Area Mining Supervisor the following month (April) that an Environmental Assessment would be prepared. Anticipating the eventual need for a full EIS, Peabody started on an applicant's Environmental Impact Assessment, utilizing personnel of the Company as well as outside consultants.



Figure VI-3

Essentially, the Environmental Quality Department functioned as a general contractor: utilizing other Departments of the Company where appropriate and consultants for expertise not currently in the Company; wrote the basic Assessment coordinating the various consultant's reports and in-house data; and had it printed in the Company's facilities. To accomplish this task, the Departments, shown in Figure IV-3, were utilized.

The environmental effects of the proposed mine were evaluated in detail. For ease of evaluation, the report was prepared in the format paralleling the requirements for an environmental impact statement as set forth by the Council of Environmental Quality in Code of Federal Regulations, Title 40, Chapter D, Part 1500. The assessment of impact contained in the report was the result of an extensive interaction between the owners, engineers and environmental consultants. Peabody's assessment was submitted as partial fulfillment of the requirements of National Environmental Policy Act (NEPA) of 1969, (public law 91-190) USGS regulations set forth in Title 30, Code of Federal Regulations, Part 211; the Rules and Regulations of the Colorado Land Reclamation Board developed for the administration of the "Colorado Open Mining Land Reclamation Act" ("Open Cut Mining Act" as amended, 1973); and the zoning amendment procedures for the Routt County Regional Planning Commission and the Routt County Board of County Commissioners. The 201 page Assessment along with its 478 pages in three Appendices was delivered to the Geological Survey in January, 1975.

By submitting their mining and reclamation plan to the U. S. Geological Survey 20 months before operation was to commence, the Company felt it had provided adequate lead-time to obtain approval with good business discretion. In October, 1974, the Area Mining Supervisor recommended that an EIS be prepared

before approving the mining plan. However, in March 1975, a year after our mining plan was submitted, the Bureau of Land Management and the Geological Survey decided that a Regional Environmental Impact Statement would be needed for the three Northwestern counties of Colorado, and that the expansion of Senca to include Seneca 2-W would be included therewith. The overall general timetable, not specific, indicated that it would be the Summer of 1976 before any action could be taken on the Peabody mining plan. But this was nine months after Peabody was to commence operation and six months after contracted delivery of the additional tonnage to Colorado-Ute Hayden Station! The construction of the power plant was underway. Therefore, Peabody had a definite contractual problem.

Accordingly, the Company's Legal Department, with the aid of outside counsel, contacted various agencies of the Department of Interior, including the Solicitor's Office; defined the problem and explored what alternatives for obtaining approvals were available so that Peabody could meet its production commitments. It was Peabody's feeling the the Mine had been included in the REA Environmental Impact Statement for the expansion of the Power Plant and it should not be subjected to the NEPA process twice. In August of 1975 the Solicitor's Office rejected this view.

In the meantime, Peabody had been studying various alternatives, and had notified its customer of the problems which have been encountered, along with the potential delays and costs. One alternative was to instigate legal action through the courts to force a decision and approval of the mining plan by the Department of Interior. This alternative was ultimately rejected because lawsuits do not produce coal. Secondly, the time to go through such a process would be so lengthy that resolution of such legal action would be well past the coal delivery date specified in the contract.

An 18 cubic yard stripping machine, Bucyrus Erie 770B Dragline had been sitting at the Seneca 2 mine office awaiting a decision as to where it should be erected. It was now June 1975 and with an anticipated six months requirement for machine erection, the Company was up against a critical deadline. Colorado-Ute had already advised Peabody that it expected to receive coal, and that it was their responsibility to provide such from somewhere.

The alternative of supplying coal, suitable for the boiler unit, from some other mine was hurriedly reviewed and ultimately dropped; because the Power Plant did not have rail unloading equipment, and secondly, cost would be prohibitive under the existing contract terms. Therefore, the Company was reluctantly faced with a third possible alternative; namely, the erection of the second machine in the present Seneca 2 area and the start-up of a second pit. It was a viable alternative from the standpoint of being able to have the machine operating close to the scheduled delivery time for the expanded coal production.

However, it has two major drawbacks, and another specific Federal action is required in order to make the plan viable. It requires an expensive and time consuming process that will come into play three to four years down the road. The machine will have to be dismantled, moved to the Seneca 2-W area and re-erected. This means additional cost and also a period of approximately twelve months when stripping equipment for uncovering coal will not be available. Some means will have to be found, either with storage of uncovered coal in the pit or storage at the Power Plant for that period of time. Colorado-Ute has been advised of this future problem. Only July 3, 1975, Peabody reluctantly made the decision to erect the machine at the present Seneca 2 area, although \$14,500 had already been spent on engineering to bring a power supply to the Seneca 2-W area. Peabody advised the USGS of its change in plans.

This undesirable, but necessary, decision brought about new complications. The Company had already obtained zoning from the Routt County Commissioners for the development of the Seneca 2-W area for the first two years of operation, but it had no approval for the expansion of the present Seneca-2 area. Peabody then had to start all over again with the Planning Commission and the County Commissioners, providing new maps, time schedules, field survey data and other specific information regarding the exact site for the second pit operation.

In March, 1975, coincidental with the Department of Interior decision to prepare a Regional EIS for coal development in Northwestern Colorado, the Colorado Division of Wildlife advised Peabody of an additional problem. A new haul road to serve the Seneca 2-W area would cross the spring "dancing ground" of the Greater Sandhill Crane; an endangered bird species in Colorado. The Crane dances in its mate-selection process for about three weeks each April. Peabody's diminishing good-business-discretion lead time did not permit field work for the full EIS to get underway until late spring of 1974, and they missed the fact that their new haul road did, indeed, cross the major Colorado dancing ground for the Crane. A new route had to be selected at significant cost to Peabody. Sufficient lead time for preparation of an EIS had to be planned to allow collection of four, full seasons of environmental data for the EIS to avoid these kinds of problems.

A second roadblock was the fact that the State permit application had been submitted in July, 1974 to include the continuation of the present Seneca 2 area with the expansion to be covered by Seneca 2-W. The state never took action on this application since a new law with extensive new regulations was in preparation. Therefore, Peabody had to start over again on the State permitting process. Now, under critical time pressure, this would mean extreme

care must be taken to prevent any delays in obtaining the state permit for the existing mine. A modified state permit application was submitted for a two-pit operation at Seneca 2, in compliance with then proposed regulations, on March 12, 1976. Peabody still did not have the permit for the additional area at Seneca 2, therefore having to operate the second machine in the area previously approved for Seneca 2 under the old permit. Besides being restricted regarding machine movement they were almost out of land area that had been permitted for mining.

Further specific Federal action is required to effectively utilize this alternative mining plan. Issuance of Federal leases on four, 40-acre tracts of coal in the Seneca 2 area were necessary. These areas are an example of the "windows" which exist in coal holdings in the West, because of the mixed Federal, state and private ownership of coal.

Peabody believed that these tracts met the short term leasing policy of the Department of Interior. Now that the approval for Seneca 2-W was being delayed, the urgency on these four 40-acre tracts became greater. The Company was advised by the Denver office of the BLM that it should withdraw its request for competitive lease-sale and instead request an amendment to the existing lease. This was done in September, 1975, only to have the decision reversed when the matter reached the Washington level. So once again, in November, 1975, Peabody requested that these tracts be placed for competitive lease sale. At that time the Company was advised that the sale would be held in January of 1976. As of May 1976 (date of available information) the sale was expected in June of 1976.

To conclude this example of permitting for the Seneca Mine Complex, the mine still needed the following governmental approvals to realize its long range plans.

1. County zoning for the expanded Seneca 2 area: Zoning has been granted for a two to three year period area, single-pit operation at Seneca 2, but we will now have a two-pit operation there. Further, the new state mining permit will cover a five-year area.
2. Colorado mining permit. On July 1, 1973, Colorado passed the Open Mining Land Reclamation Act, but copies of the Act were not distributed until March 1, 1974. Final rules and regulations were promulgated January 9, 1976. Because of this, 1974-75 permit applications were approved for one year under the 1969 law. Application forms were not available for the 1975-79 permit until March, 1976. Peabody's present State Mining Permit expired July 1, 1975, but Colorado would not accept or process their 1976-81 permit application until the new regulations were adopted, but allowed them to operate on their 1974-75 permit area. As stated, new State forms were not available until March of 1976, so their application for the 1976-81 State Mining Permit was made March 12, 1976. At that time they were hopeful that this would be issued shortly.
3. Colorado Department of Health (fugitive dust) air pollution emission source permit.
4. USGS mining plan approval for a two-pit operation at Seneca 2.
5. U. S. Bureau of Land Management leases for the additional four, 40-acre tracts of Federal coal in the Seneca 2 area.
6. NPDES permit from the Colorado Department of Health, Division of Water Quality Control. The current permit for Seneca 2 had been issued but the Company requested an adjudicatory hearing from Region VIII of the Federal EPA, since it was a federally issued permit. Application for a Water Discharge Permit for Seneca 2-W was also submitted to the Federal EPA before the State of Colorado had an

approved water quality control implementation plan. A proposed permit and public notice of it was issued on July 17, 1975. Peabody is currently awaiting issuance of a final permit.

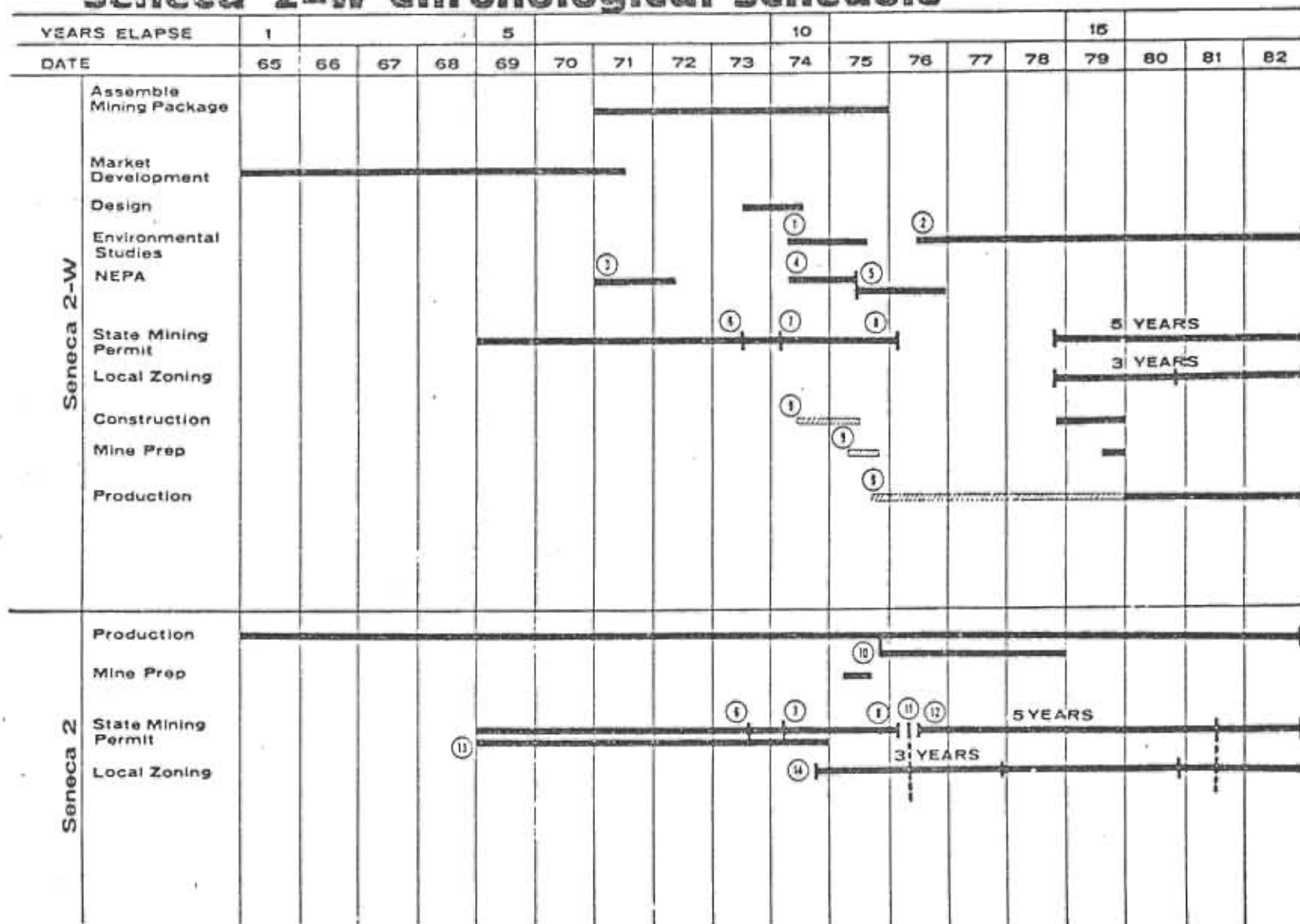
A long lead time has been required to obtain all of the permits to mine coal at Seneca. Several had to be obtained simultaneously. Two were mutually dependent. Figure VI-4 shows the schedule evolved to obtain these permits. As the figure illustrates, work on some of the permits was proceeding at the same time. This meant that many people at Peabody were involved just in the permitting effort: right up to the then Peabody president, Ed Phelps.

What is the point of this detailed discussion? The significance is the long lead time necessary to expand mining operations which were part of the original plan when the mine commenced operation in 1965. Peabody had initiated action to obtain permits for the expanded operation 20 months ahead of the date for increased coal deliveries. At the time, 26 months since the original application was filed with the Geological Survey, the date for commercial operation of Hayden Station Unit 2 was delayed by three months, which means that coal would not be required until April of 1976. However, present indications are that all approvals can't be expected for another six to eight months (near the end of 1976). Thus a total of about 32 months lapsed during the permitting process for what had been originally expected to be a fairly routine mine expansion.

As of May 1976, Peabody had expended \$229,025 plus approximately 1500 manhours on environmental studies, permit applications, appearance at meetings and hearings, outside consultants, travel, legal fees, etc., etc. And they still did not have all of the required permits and approvals!

Figure VI-4

Seneca 2-w Chronological Schedule



With Figure VI-4

INDEX TO SENECA BAR CHART

1. Environmental Studies for the EIR
2. On-going Environmental Studies
3. REA EIS
4. Site Specific EIS
5. Northwest Colorado Regional EIS
6. Colorado Open Mining Land Reclamation Act amendments
7. Publish printed copies of Act
8. Final rules and regulations of Act adopted
9. Projected time schedule
10. Extra production because of 2-W dragline erected at 2
11. File new five year state mining permit application
12. Approval of new five year state mining permit
13. Annual permits under original Open Cut Mining Act
14. Three year local zoning amendments to mining necessary for new five year state mining permit
(problem area because no time coincidence)

Governmental regulation has had a significant impact on planning and scheduling a new coal mine or the expansion of an existing mine, as Peabody's experience shows. But what are the dollar costs that can be attributed to coal mine regulation.

C. Economic Impact

Delays, such as those experienced by Peabody, are costly and can break a company. There are other costs involved. One overlooked area is the requirement for performance bonds to assure reclamation of mined land. (4)

Since the Office of Surface Mining (OSM) first began drafting regulations under the Federal Surface Mining Control and Reclamation Act of 1977, industry criticism has centered on difficulties with permitting procedures, design criteria and performance standards. Nevertheless, an entirely different provision -- one that does not even address the technical aspects of mining and reclamation -- has emerged as a critical problem. Though largely neglected, this one provision has the potential to damage or destroy many coal operators more quickly than all the other regulations combined.

Under an approved state or Federal regulatory program to be implemented next year, additional bond requirements will be necessary for permit approval of both new and existing surface mines. The requirements will make it difficult for most small and medium-sized operators to obtain the performance bonds mandated by the Federal surface mining act.

The true impact of the bonding requirements to the industry is made clearer by comments submitted to the Office of Surface Mining (OSM) by the Surety Association of America (SAA). The SAA said, "We would be less than candid if we told you we believed the bonding procedures proposed in the September 18 regulations

you we believed the bonding procedures proposed in the September 18 regulations are workable. Quite frankly, we do not feel the small surface mining operators will be able to obtain bonds under these regulations and (we) question whether anyone except a 'Fortune 500' underground operator will either." (4)

To substantiate the growing concern of the surety industry, a letter from one of the country's major underwriters to many of its field agents said, "We have identified areas in these proposed regulations which we feel must force us to declare a complete moratorium on the writing of all surety bonds covering mining regulations. This moratorium . . . is to be effective immediately for new accounts and those that are presently on our books. We will consider, however, on an individual-case basis the continued handling of accounts now on our books on a 100 percent collateralized basis." (4)

On a national basis, less than six-tenths of one percent of total surety revenue can be attributed to coal-related bonds. Sureties generally set the maximum premium rate for small and medium-sized operators at \$12.50 per thousand dollars of coverage, and then offer reduced rates to some preferred customers -- such as the New York Stock Exchange and Fortune 500 companies. Obviously the profits these arrangements bring in are as important to the surety companies as crumbs on a baker's floor.

Many of the problems now facing bonding companies and, ultimately, the operators seeking bonds lie not only in the proposed regulations, but also the Surface Mining Control and Reclamation Act. The regulations require the regulatory authority to determine the bond amount based on the estimated actual cost of performing the work itself. This criterion is not a particular problem until it is coupled with section 502(d) of the Federal surface mining act. That

section requires all operators expecting to operate mines after eight months from the approval date of the state or Federal program to re-permit, at which time a new bond must be furnished. At present there is no available criteria by which a surety company can determine the anticipated bond amount required at a later date. In addition, there are no solid guidelines regarding the additional bonding requirements for associated structures and facilities that service existing permits. So, what currently is a \$100,000 bond requirement for the "XYZ Coal Company" could easily double or triple under an approved state or Federal program.

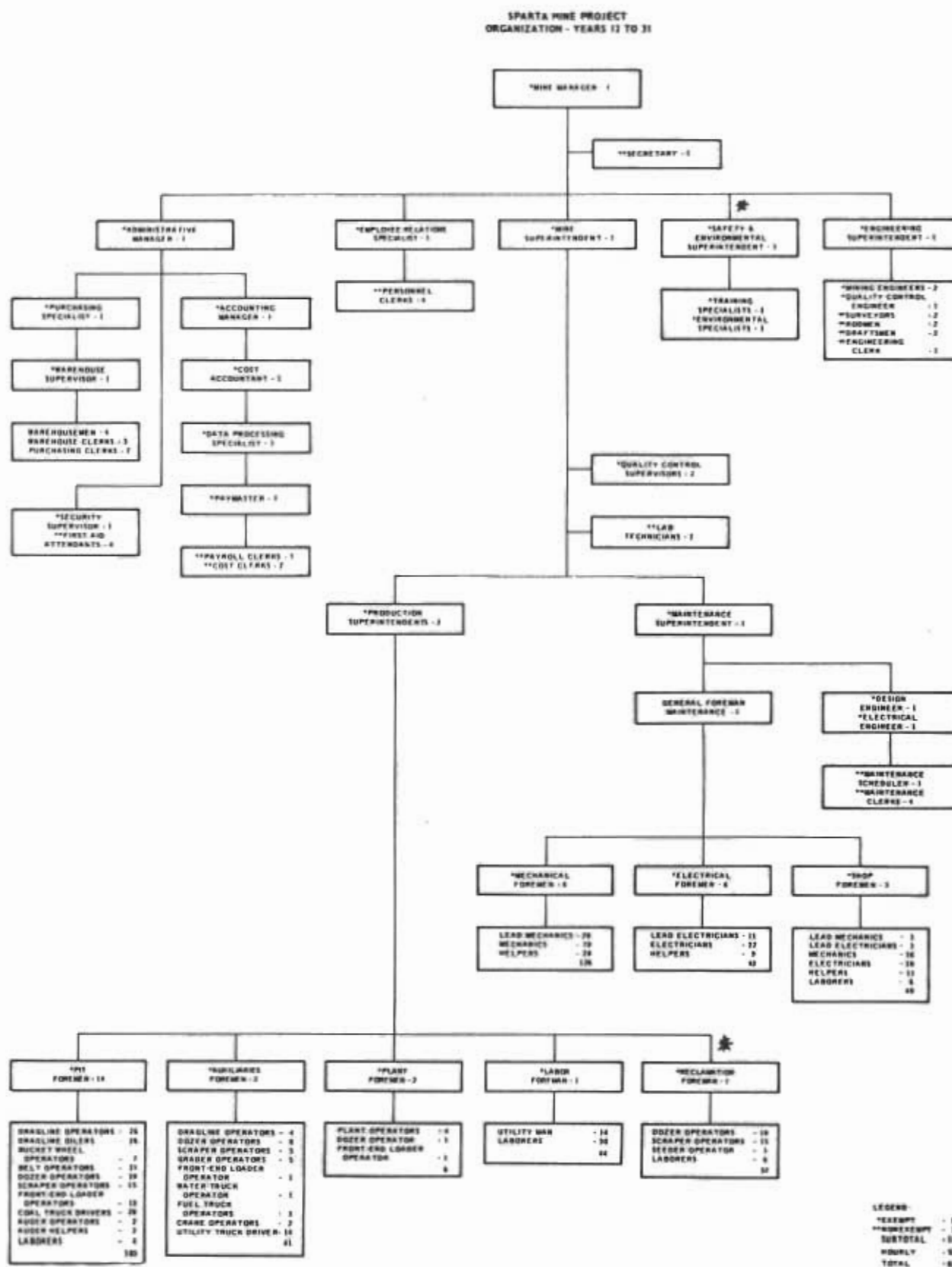
In essence, implementation of the bonding requirements of the proposed Permanent Regulatory program will cause irreversible disruption and discontinuance of coal production by small and medium-sized operators. The economic impact associated with the proposed regulations relating to the low availability of bonds for new or existing mines has been neglected.

Given the increase in term, liability of a bond for coal mining, anticipated adjustments to the bond and changes in environmental regulations, the surety marketplace will be unable to handle the capacity that will be required when the proposed rules, in many cases, disallow the extension of bond credit.

Most industry officials maintain that large companies will be able to weather the bonding storm, while many smaller operators will be forced out of the market. The situation is put into dramatic focus by a top insurance industry official who has said, "the principal writers all agree that these bond requirements will be satisfied only by the giants of the industry. The smaller coal operators (will be) finished." (4)

Regulation compliance has had an impact on direct operating costs as well. Figure VI-5 shows a fairly typical surface coal mine organization chart. (3) The (*) segments can be directly attributable to meeting regulations, this is an additional 32 hourly and 8 salaried personnel, plus related equipment. This mine was projected to have a total work force of 635 employees at full production. This means 6% of the work force at one mine was required because of regulations. It should be noted that of the 595 other employees, a significant number of them were also not required prior to the increase in legal red tape. The direct wages for the reclamation crew is \$612,300 per year. (3) \$39,177,000 dollars had been estimated as the total capital costs, for this same mine (3), that could be directly attributable to regulations. A rough figure of 30% of total capital costs is generally accepted to be due to regulation and government involvement. (1) (5) (7) (8) Ten to 15 percent of operating costs are directly attributable to regulation, and it is estimated that 25 percent are caused by regulation. (1) (2) (3) (7) (8) For two recent studies by Kaiser Engineers directly related operating costs were \$.15 out of \$3.78 (3), and \$.12 out of \$4.25 (2). As in the Peabody case the true total cost of governmental involvement is almost immeasurable, partially because we know we must count the costs for producing the goods and services required to produce the coal.

Figure VI-5



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CHAPTER VII

CONCLUSION

Over the last six years, several plans have been proposed to make the United States self-sufficient in energy. Two of these plans were; President Ford's--"Project Independence" of 1974, and Carter's--"National Energy Plan" of 1977. Both of these plans placed 1985 as the target date for energy self-sufficiency. A prime means of reaching self-sufficiency, for both plans, was the increased use of coal. Is it reasonable to assume that coal can help make the United States self-sufficient in energy? Coal can help make the United States energy self-sufficient in energy, but it will not be able to do so.

Coal is available, coal is there for us to use. Which brings us back to the question: Why not coal? The U. S. Coal industry is optimistic about the capability of coal to meet the challenge for coal use. (See Figure VII-1) Coal is available, the technology for its use is ready, but few people in the coal industry expect coal to be used as outlined by the energy plans. The primary reason being the increasing amount of governmental regulation and interference. Coal operators face an overwhelming array of local, state, and Federal government agencies, boards, commissions, and departments when they file for permits to mine coal, all of which generates a staggering amount of paperwork and delay.

One of the most serious and difficult problems facing the mining industry today is to find out just who all the Federal, state, county, and local agencies are -- and the right people in them -- who must review and approve the ton of paperwork involved in getting a given coal mine off the drawing boards and into production. And the problem intensifies daily.

Figure VII-1

Mr. President and Members of Congress:

WE MUST RESTORE AMERICA'S ENERGY SECURITYTHIS MEANS REDUCING OUR DEPENDENCE ON IMPORTED OIL,
INCREASING OUR RELIANCE ON DOMESTIC FUELS**WHY NOT COAL?****COAL IS THE MOST ABUNDANT OF OUR DOMESTIC FUELS.** It constitutes 82% of the total energy reserves of the United States, yet it fulfills only 18% of our current energy needs.**COAL COSTS LESS THAN EITHER OIL OR GAS AS A FUEL FOR PRODUCING ELECTRICITY.** It may soon be cheaper than nuclear power.**COAL IS A SECURE DOMESTIC SOURCE OF ENERGY.** Neither price nor supply is subject to foreign manipulation.**COAL PRODUCES JOBS IN THE UNITED STATES.** It is not a drain on our balance of payments. It does not weaken the dollar.**COAL IS AVAILABLE NOW.** The industry has the surplus capacity to produce an extra 100 million tons per year. That is the equivalent of 1 million barrels of oil per day, or 11% of our current oil imports.**COAL IS RELIABLE.** The 1976 coal labor agreement has brought new harmony to the industry. Unauthorized labor stoppages have been dramatically reduced.**COAL IS CLEAN.** All new coal-fired plants will be equipped with extensive controls (scrubbers) to remove sulfur emissions, and technology is now available to convert scrubber waste to useable solids. New reclamation requirements for surface mining fully protect the land.**COAL IS VERSATILE.** The technology exists to convert coal to gas or liquids. Only the incentives for commercial-scale plants for coal gasification and liquefaction are lacking.

THREE ADMINISTRATIONS HAVE CALLED FOR THE INCREASED USE OF COAL AS A MEANS OF REDUCING OUR DEPENDENCE ON SOURCES OF ENERGY. YET, IN THE 6 YEARS SINCE THE OIL EMBARGO, COAL CONSUMPTION HAS GROWN AT AN AVERAGE ANNUAL RATE OF 1.23%. SINCE THAT TIME, OIL IMPORTS HAVE RISEN AT AN AVERAGE RATE OF 6.8% PER YEAR. THE GOVERNMENT MUST DO MORE TO ENCOURAGE, INCREASED COAL USE.

WHY AREN'T WE USING MORE COAL?

Powerplants capable of burning coal are still burning oil and gas.

We are importing oil to generate electric power in areas which could be served by powerplants using coal.

Uncertain of recovering the high costs of environmental control systems, many utilities continue to use existing oil-fired power plants, rather than convert or replace them with new coal-fired facilities.

Development of commercial coal liquefaction and coal gasification facilities in the United States has lagged.

Federal, state and local permit requirements for new power plants are delaying the substitution of coal-fired facilities for oil-burning plants.

New air emission standards now under consideration could disrupt the growth of coal use, and effectively reduce our available reserves.

WHAT CAN BE DONE?

There are some 70 power units which could be converted to coal. This would save some 150,000-200,000 barrels of oil per day. These conversions should be made.

Power transferred from coal-fired plants is already saving 180,000 barrels of oil per day, but changes in the rate structure would encourage more transfers of coal-derived power to areas dependent upon power generated from imported oil.

Changes in allowable depreciation rates and other cost recovery incentives would encourage conversion or replacement of existing oil-fired powerplants with coal-burning facilities using appropriate environmental control systems.

The technology for such facilities exists today. The government should encourage construction of commercial-scale plants through pricing mechanisms, loan guarantees and guaranteed market prices.

Procedures for issuing power plant permits should be reformed and streamlined. They now take up to 10 years. This should be cut in half.

Soon-to-be-issued air emission limits for new power plants must not be more restrictive than the already stringent limits set by EPA to protect health. Stricter standards for sulfur emissions could make a significant portion of our eastern and midwestern reserves unburnable, even with up-to-date pollution control equipment (scrubbers).

We recognize that public policies affecting energy involve complex and difficult choices. One issue is clear. We must develop more of our domestic energy sources to protect our national security and stabilize our economy. One source, coal, is available now; it is abundant, and it is cheaper than oil or gas. It can be mined and burned without harm to health or environment. Best of all, our supply is secure.

**A STRONG NATIONAL ENERGY POLICY REQUIRES
A STRONG NATIONAL COAL POLICY . . . NOW**AMERICAN COAL COMPANY
BETHLEHEM STEEL COMPANY
CAMPBELL SOFT DRINKS INC.
LANARK FUEL COMPANY
MONTROSE COAL COMPANY
NORTHWESTERN COAL COMPANY
PACIFIC COAST COAL COMPANY
PACIFIC COAST COAL COMPANY
PACIFIC COAST COAL COMPANY
PACIFIC COAST COAL COMPANYINDEPENDENT COAL COMPANY
INTERMOUNTAIN COAL INC.
KANSAS CITY COAL COMPANY
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(For signature: Wm. L. B. Jr., N. W., Washington, D. C.)

In a recent study by Kaiser Engineers for a new coal mine in Arkansas, there was a list of ten Federal agencies or entities and 19 state and local agencies or entities that were concerned with the granting of permits for new mine construction.

Four years ago, in 1976, in Illinois, a new coal mine only required nine different agencies for permit application and approval. There were only three U. S. governmental agencies involved, Mine Enforcement Safety Administration of the Department of Interior (which is now the Mine Safety Health Administration of the Department of Labor, the Department of Interior is still involved through other agencies, U. S. Bureau of Mines, Bureau of Land Management, etc.) the U. S. Army Corps of Engineers, and the Environmental Agency. The primary agency involved in the Arkansas project, the Office of Surface Mining, was not in existence in 1976. In 1976 almost nobody took into account the archaeological implications of new mine construction, while now, in California for example, even to put in a new house one has to do an archaeological survey of the area.

In "Days-gone-by" the coal operator had little involvement with the process of obtaining permits from governmental agencies. The amount of information to be submitted was minimal and the permit usually came along within a few weeks or at most a few months. In fact there were many instances when the mine was actually operating before the permit was issued. Occasionally the operator was not even aware that a permit was required until it was brought to his attention by some particular incident, or a visit from a governmental inspector to the mine. This laissez-faire attitude existed on the part of both the regulatory agency and the operator.

If the coal mine operator or the regulatory agency followed such a policy today he would be severely criticized, possibly fined, be fired or become the subject

at the constantly increasing and changing requirements for coal mine regulations, which makes it almost impossible to keep up with the present news because changes are made constantly.

It is normally considered that three to five years or more must be spent in applying for, preparing, issuing, and justifying permits for new coal mine construction. This is without any major problems in the permit application and considering smooth sailing through the permitting procedure. Another two years is spent in developing the coal mine before full production is reached. A new coal mine takes from five to seven years from inception to full production including permitting, constructing and production buildup. Over the last several years some regulations have changed monthly.

Why not coal? With a lead time of over five years, and no guarantee that the coal can be used, investors are hesitant to put the required capital expenditures into coal mine expansion. If the legal framework under which coal is mined and utilized would remain constant, coal can help meet our energy needs. Unless the laws governing coal mine construction and operation and coal utilization remain unchanged for the next five to ten years, coal will not help meet our needs. This is WHY NOT COAL!