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ABSTRACT

A selection of papers presented at a consultation sponsored by the Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming Advisory Committees to the U.S. Commission on Civil Rights address the inequities of benefits received by women and minorities from resource development activities in the Intermountain West. The introduction discusses the impact of resource development on women and minorities. The next section, on boomtowns, contains five papers addressing women and minorities, human services, and social/psychological problems inherent in communities experiencing rapid growth. Section 3 provides three papers dealing with the economic position of women and their employment opportunities in energy development, women working with energy, and effects of energy development on rural women. The fourth section includes seven papers detailing energy development and the disadvantages, i.e., the effects on Blacks, Hispanics, women, and other disadvantaged. Section 5 provides four papers covering Indian reservation resources, such as coal and water, and conservation practices. Three papers on economic opportunities for Indians and other minorities in energy-related businesses conclude the document. (AH)

Energy Resource Development Implications for Women and Minorities in the Intermountain West

A selection of papers presented at a consultation sponsored by the Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming Advisory Committees to the U.S. Commission on Civil Rights at Denver, Colorado, November 2-3, 1978. These papers will be submitted to the Commission for its information and consideration. Information, opinions, and recommendations contained in this collection should be attributed to the individual authors and not to the Commission or its State Advisory Committees.

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Energy Resource Development

—A selection of papers presented at a consultation sponsored by the Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming Advisory Committees to the U.S. Commission on Civil Rights.

ATTRIBUTION:

Information and recommendations contained in these papers are to be attributed to the individual authors and do not necessarily reflect either the positions or policies of the U.S. Commission on Civil Rights or its State Advisory Committees. This collection of papers will be submitted to the Commissioners for their consideration.

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PREFACE

This report contains selected papers presented at the consultation, "Resource Development in the Intermountain West: Its Impact on Women and Minorities," sponsored by the six State Advisory Committees to the U.S. Commission on Civil Rights in the Rocky Mountain region on November 2–3, 1978, in Denver, Colorado, at the Stapleton Plaza Hotel. These six Advisory Committees represent citizens from North and South Dakota, Montana, Wyoming, Colorado, and Utah.

The need for energy by the Nation and the rest of the world has resulted in plans for hundreds of projects in the Intermountain West to develop oil, oil shale, gas, uranium, soda ash, and other minerals below the earth's surface. Battle lines are being drawn to fight for the rights to water required in immense quantities to mine, process, and transport these substances. Unlike other areas of the country, the people of the West are experiencing not only the added burdens of increased energy costs, but also the socioeconomic effects that accompany energy production. While it might appear that this production would be a boon to the people of the region, there is good reason to believe that minorities and women are not receiving an equitable share of the benefits and, in some areas, are being adversely affected.

For some time, the Commission has received inquiries and comments concerning the effect of energy development upon the disadvantaged. Native Americans have expressed considerable concern that they receive fair treatment when dealing with energy development companies. Recent reports have stated that, in some instances, distributors have paid more to overseas sellers of energy than when purchasing the same resources from Native Americans. Indians also have been concerned that their water rights, as spelled out in the U.S. Supreme Court's *Winters* decision, are not abrogated in the water-hungry West. A large influx of non-Indians onto the reservations in pursuit of jobs and resources has already had a profound impact on Indian culture and economy.

Comments from women and minorities and those on fixed incomes who cannot obtain employment in the developing fields contributed to the interest of members of the six State Advisory Committees in examining resource development and its effect upon minorities and women. Considerable information on the economic plight of the poor and disadvantaged contained in scholarly journals and studies that are concerned with the sociological effects of the Nation's new wave of energy development further stimulated the Advisory Committees to explore the impacts of resource development. The disparate effect of energy pricing upon the poor (disproportionately minority) was frequently noted.

Reports of violence towards women in boomtowns and inadequate police response to this violence additionally motivated the Advisory Committees to

undertake a consultation that, among other issues, explored the impact of natural resource development on women. Information that demonstrates an alarming increase in child abuse and the rate of attempted suicide by women in such situations gave added impetus to the project.

Staff of the Commission's Rocky Mountain Regional Office conducted research on natural resource development in the region and contacted over 80 persons knowledgeable about such development. A number of these persons were invited to present papers at the consultation, which included panels entitled:

- Directions for the Future in Region VIII
- Boomtown Sociology
- Resource Development: Problems and Opportunities
- Energy Development, Energy Policies, and Reservations
- Mitigation of Problems for Minorities and Women
- Ways of Participating in the Opportunities
- Policy Initiatives for the Future

What follows is a compilation of some of the papers presented at the 2-day consultation. The contents of these papers do not necessarily reflect the position or policies of the Commission or its Advisory Committees. The Advisory Committees, however, will issue an analytical report on resource development and civil rights issues with a summary of resultant findings and recommendations.

ACKNOWLEDGMENTS

The six Advisory Committees wish to thank the staff of the Commission's Rocky Mountain Regional Office, Denver, Colorado, for its help in organizing the consultation and in preparing these papers for publication. The consultation was the principal staff assignment of Dr. Roger C. Wade and summer intern Jeanne Stibman, with assistance from William Levis and Ronald W. Taoka. Writing assistance was provided by Cal E. Rollins and support assistance by Esther L. Johnson, Wyona L. Hill, and Polly S. Flobeck. The project was undertaken under the overall supervision of Dr. Shirley Hill Witt, Director, and William F. Muldrow, Deputy Director, Rocky Mountain Regional Office.

Final preparation of the report for publication was done by the Publications Support Center, Office of Management.

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INTRODUCTION

Resource Development in the Intermountain West: Its Impact on Women and Minorities

By the Rocky Mountain Regional Office Staff, U.S. Commission on Civil Rights

The conventional view of the West is from the East, the direction from which the viewers approached it. *The West should not be looked at from the outside, but from the center.*

K. Ross Toole, *The Rape of the Great Plains*

Natural Resources in the Region

The vast stores of natural resources contained in the States of the Rocky Mountain region (Colorado, Montana, North and South Dakota, Utah, and Wyoming) have resulted in plans for hundreds of projects to develop oil, oil shale, gas, uranium, soda ash, and other minerals that lie below the earth's surface. The U.S. Department of the Interior in 1976 cited plans for 45 new, or explored, coal mines in Colorado, 9 in Montana; 9 in North Dakota, 30 in Utah, and 33 in Wyoming, with the capacities of 25 of these mines unknown at that time. The anticipated annual production was to be approximately 276.37 million short tons per year. These plans also included projects for utilization of fossil fuels and nuclear and hydropower generating stations. Forty-seven of these projects were to be in Colorado, Montana, North and South Dakota, and Wyoming.[1]

Energy Crisis and Controversies

Many people in the affected Rocky Mountain States fear that the region will become an energy colony to the rest of the Nation. And as with all colonies, it might be expected that people in other places will reap the benefits while the colonized and colonists suffer disruption and loss of control of their lives. U.S. Energy Secretary James Schlesinger was quoted in *Harper's* as having suggested that the energy crisis might bring about the "Balkanization" of America.[2] The unrest caused by the energy boom in the Rocky Mountain region does, indeed, resemble the Balkan conflict, setting groups, agencies, and even regions at odds.

A fact of life is that the people of the West, especially in the Rocky Mountain region, will experience both increased energy costs and also the socioeconomic impacts inherent in large-scale energy development. Ellis Cose, formerly of the Chicago *Sun-Times*, has pointed out that energy development is dangerous to the poor (disproportionately composed of minorities and women) because such development depends on higher prices with no guarantee that impoverished persons will be able to sustain the financial burden.[3] Cose has further pointed out that energy-related problems of the poor seem to be considered of little importance in formulation of the Nation's energy policy. The poor have been lost sight of as policymakers focus on what they perceive to be a larger problem.[4]

A Consultation on Resource Development

A search of the literature concerning resource development in the Rocky Mountain region reveals

[1] U.S., Federal Energy Administration, *A Report Regional Profile Energy Impacted Communities Region VIII* (Denver: Socioeconomic Program Data Collection Office, July 1977), p. 19.

[2] Kevin Phillips, "The Balkanization of America," *Harper's*, vol. 256, no. 1536 (May 1978), p. 37.

[3] Ellis Cose, "JCPS Energy Roundtable Discussion," *Focus*, vol. 5, no. 5 (May 1977), p. 3.

[4] Ibid.

that, although much thought has been devoted to the impact of natural resource development on the environment and on nonminority persons, comparatively little consideration has been given to mitigation of the potentially adverse cultural and social effects that development may have on the lives of minorities and women in the region. Even less attention has been paid to the need for providing equal opportunities to minorities and women to enable them to share in the economic benefits energy development would bring. Very little has been done to assure that the voices and interests of minorities and women are heard in places where energy policies are made and promulgated.

A consultation entitled "Resource Development in the Intermountain West: Its Impact on Women and Minorities" and sponsored by the six Advisory Committees to the U.S. Commission on Civil Rights in the Rocky Mountain region examined issues of concern to minorities, women, and low-income persons. These include resource development in the region during the immediate years ahead, the effects of boomtowns, energy policymaking, energy development on Indian reservations, employment, and mitigation of problems caused by rapid resource development.

Demographics of the Rocky Mountain Region

Table 1 shows that there is a large concentration of Native Americans and Hispanics in the coal-producing States of the Rocky Mountain region. Of these six States, Colorado has by far the largest total and minority population (16.8 percent of the State's inhabitants), while North Dakota has the smallest (3.1 percent). Hispanics (6.4 percent) and Native Americans (1.8 percent) outnumber blacks (1.5 percent) and Asian Americans (0.3 percent), with the greatest number of Hispanics being in Colorado (13.0 percent).

Boomtown Problems

As a result of natural resource and energy development, the history of the West is replete with periods of boomtown activity and its concomitant rapid economic growth. Deserted towns, mine tailings, and ramshackle mansions yet remain as ghostly reminders of the 19th century gold and silver rushes. The 1950s brought to the West a boom in uranium, followed more recently by an influx of population to newly developed recreational facilities and retirement communities.

Myths of the old American West romantically portrayed boomtowns as open and free, with minimal police and court protection. The view was that, despite lack of social controls and sanctions, good conquered evil and justice prevailed. Recent studies of boomtowns, however, have shown that the romantic notion of boomtowns is totally false.[8] Energy boomtowns in the western portions of the United States are often characterized as highly undesirable places in which to live and work because of the adverse conditions created by the rapid growth associated with resource development.[9]

A boom community can be identified by a number of elements, including increased economic activity and accelerated population growth.[7] Forces outside the community, in order to capitalize on the community's resources, offer economic inducements for its growth. Rapid population growth leads to a breakdown in municipal and institutional services, which quickly become inadequate. Control of such communities often appears to be external, with planning lagging behind the changes that are taking place.[8]

Boomtowns develop when there is unmanaged growth as the result of many different corporate, governmental, and individual decisions made independently of each other. Such towns can be a major source of social tension in an area or region because, very often, the original inhabitants of the community find themselves in conflict with new people coming into the area and are unable to cope with rapidly changing racial patterns.[9]

Because of the development of vast resources in the six States, over 200 towns adjacent to mines and construction sites in the Rocky Mountain region have been dramatically affected.[10] In addition, due to automobile transportation that allows workers to commute to development sites, communities far

[6] Ronald L. Little, *Some Social Consequences of Boomtowns* (Logan: Department of Sociology and the Institute of Social Science Research on Natural Resources, Utah State University, September 1977), p. 1.
[7] John S. Gilmore, "Boom Towns May Hinder Energy Resource Development," *Science*, vol. 191 (1976), p. 535.
[7] Little, *Some Social Consequences*, p. 2.
[8] Ibid.
[9] Gilmore, "Boom Towns," p. 535.
[10] Charles F. Cortese and Bernie Jones, "The Sociological Analysis of Boom Towns," *Western Sociological Review*, vol. 8, no. 1 (1977), p. 1.

TABLE 1

Population, Rocky Mountain Region, Minorities and Women

	No.	%
Total Population	5,565,580	
Asian American	19,251	00.3
Black	81,575	01.5
Native American	98,953	01.8
Hispanic	359,061	06.4
Total minorities	558,840	10.0
Total women	2,714,357	48.8
Colorado Total	2,207,259	
Asian American	10,388	00.4
Black	66,274	03.0
Native American	8,836	00.4
Hispanic	286,467	13.0
Total minorities	371,965	16.8
Total women	1,106,067	50.1
Montana Total	694,409	
Asian American	1,099	00.1
Black	1,995	00.2
Native American	27,130	03.9
Hispanic	7,771	01.1
Total minorities	37,995	05.4
Total women	319,479	46.0
North Dakota Total	617,716	
Asian American	608	00.0
Black	2,494	00.4
Native American	14,369	02.3
Hispanic	2,007	00.3
Total minorities	19,478	03.1
Total women	306,152	50.0
South Dakota Total	665,507	
Asian American	467	00.0
Black	1,627	00.2
Native American	32,365	04.8
Hispanic	715	00.1
Total minorities	35,174	05.2
Total women	335,474	51.0
Utah Total	1,059,273	
Asian American	6,386	00.6
Black	6,617	00.6
Native American	11,273	01.0
Hispanic	43,550	04.1
Total minorities	67,826	06.4
Total women	481,544	46.0
Wyoming Total	332,416	
Asian American	966	00.2
Black	2,568	00.7
Native American	4,980	01.0
Hispanic	18,551	05.6
Total minorities	27,065	08.1
Total women	165,641	50.0

Source: Data are based on the 1970 census reports from the U.S. Bureau of the Census and later Census reports on special groups, as well as reports by other organizations. Percentages computed by the Rocky Mountain Regional Office, U.S. Commission on Civil Rights.

removed from mines and construction areas are also affected by rapid population growth.[11]

The most visible impacts of boomtowns, identified in a study done by Charles F. Cortese and Bernie Jones, are those made on local governmental institutions that are required to provide basic municipal services to an exploding population. Such services include fire and police protection, water supply, sewage systems, and street and road construction and maintenance. Because of what Cortese and Jones characterized as quantitative impacts, these local governments are asked to increase the amount of services they are already providing and, hence, put a financial strain on the community. However, problems resulting from these quantitative impacts are relatively simple to rectify with good planning and adequate resources.[12]

More complicated are qualitative impacts that result from local governments being called upon to render the kind of services that have never before been provided. These include such services as planning and zoning, taxation schemes, and sophisticated types of intergovernmental relations. Local governments laboring under qualitative impacts are required to upgrade their governmental skills appreciably—a much more difficult task.[13]

When communities experience a boom, their basic social structure is profoundly altered. Rapid change brings numbers of people into a community who have lifestyles and values that differ greatly from those of the original inhabitants and that may be viewed as antisocial. Crime rates skyrocket, and incidents of women battering and child abuse, although not adequately documented, seem to proliferate. Institutions such as schools and churches and community organizations are required to adapt to a more diverse population. Individuals in a boomtown become more and more insignificant, relationships increase in complexity, and transactions between people become formal and contractual. Oldtimers in a community increasingly experience disassociation and loss of a sense of community.[14]

Certain aspects of basic changes in boomtown communities have to do with roles people play in community institutions. The influx of people into a community requires the creation of new roles for them, more positions within existing roles, differentiation and specialization, and redefinition and replacement of old roles.[15] Local boom communities, because of their new-found cultural diversity, seem to become less provincial and isolated. Levels of professionalism are raised and respect for expertise is increased. Concepts of centralization and the trend towards making major support services bigger and better reflect value shifts characteristic of boomtowns. Local inhabitants are stimulated to make money from new opportunities presented in a boom situation, and this has an effect upon their value systems. Others in the community increasingly rely upon public institutions for a solution to their economic difficulties and social problems. Not only do the original inhabitants of boom communities show an increased need for institutions, they also demand more from these institutions.[16]

All of these changes tend to make boom communities more complex, and the rapidity of this diversification is astounding. The speed of urbanization, however, tends to exacerbate the frustrations of local inhabitants inasmuch as they either are not equipped to deal with the changes taking place or are opposed to what outsiders might consider to be progress. Cortese and Jones argued that communities should have an opportunity to decide whether or not they wish to be affected by a development boom and that they should be made aware of the ultimate effects of that choice.[17]

Natural resource development in the West, at its current accelerated pace, entails an interaction of elements that is not understood.[18] No one has yet described or designed a structure to keep the social problems inherent in boomtowns from disrupting the community and hampering the resource development projects that spawned them. The central role of implementing such a structure, once it is developed, should be taken by the States in the Rocky Mountain West. As States are responsible for the health, safety, and welfare of their citizens, they will, no doubt, find it necessary to design programs to carry out their responsibilities.[19] As the necessity for this type of planning increases, the Federal Government may be more inclined to lend support to solving the social and economic problems caused by rapid growth in the region. Since the Federal Government is initiating change at a rate faster than

[11] Ibid.
[12] Ibid.
[13] Ibid., p. 7.
[14] Ibid., p. 8.
[15] Ibid., p. 9.
[16] Ibid., p. 10.
[17] Ibid., p. 12.
[18] Gilmore, "Boom Towns," p. 539.
[19] Ibid.

State systems can cope, it is being called upon to play an essential role in financing the public costs of energy resource development. Because the Federal Government has called for an expanded program within the States, until such time as the affected States can develop systems that will handle growth and the public costs, Federal support will be required.[20]

Effects of Rising Energy Costs on Minorities and Women

Poor women, minorities, and fixed-income people (who are also disproportionately minority and female) find themselves affected enormously by the escalation in the costs of energy and the other goods and services that are energy related. Lenneal Henderson of the political science department of Howard University has observed that minorities and the poor use less natural gas for heating and cooking, less gasoline for transportation, and less electricity for lighting and appliances than middle- and upper-income whites. This is believed to be because minorities and women have smaller homes, fewer energy-consuming appliances, and fewer automobiles.[21] Energy consumption by the poor and minorities is generally essential and basic. Henderson has further stated that, although the poor and minorities have less income for energy purchases, a larger proportion of their budgets is spent for energy products.[22] Because many of these two groups tend to live on fixed incomes or are unemployed, they are adversely affected by the rising cost of energy.

Of the poor affected by the Nation's energy crisis, President Jimmy Carter has said:

> No segment of the population should bear an unfair share of the total burden, and none should reap undue benefits from the nation's energy problems. Particularly. . .the poor and those on fixed incomes should be protected from disproportional adverse effects.[23]

Eddie N. Williams, president of the Joint Center for Political Studies, has asked several questions about President Carter's April 1977 energy proposal to the Congress and the Nation as it affects the poor:

1. Is the plan fair to all American citizens?
2. Does it cushion the poor from unnecessary suffering?
3. How much will the plan cost families with incomes below the poverty level?[24]

Vernon Jordan, president of the National Urban League, in elucidation of President Carter's plea for energy parity for the poor, said:

> Black people and poor people have seen their fuel costs rise, their jobs endangered, and their interest ignored. To date, Black people and low-income families have been allowed to participate to the extent of bearing the burdens of energy prices. It is time now for those groups to participate in framing the policies as well, so that their interests, their concerns, and their needs may be honored.[25]

In the *Critical Mass Journal*, Richard Pollock has observed that no group in America has been more hurt by the energy crisis than poverty-stricken families. He supported the view that low-income housing lacks insulation and poor households pay a greater share of their incomes for energy than do families at middle- and high-income levels.[26] Henderson, in support of Jordan's statement, called for a more comprehensive assessment of the impact of energy policies (current and future) upon minorities and the poor.[27] He pointed out that opportunities for addressing energy needs of minority and poor citizens are greatest when new energy programs are being contemplated and initiated as they now are in the Rocky Mountain region.

Employment Issues

Several years ago, at the outset of the energy crisis, it was generally accepted that the boom resulting from the development of new natural resources would bring better paying jobs and more employment opportunities to a community. Attendant to this prosperity would be a broadened tax base and economic stimuli that would benefit boom communities. In the Rocky Mountain region today, however, a spreading attitude seems to be that uncontrolled growth and disrupted lifestyles may

[20] Ibid.
[21] Lenneal Henderson, "Energy Policy and the Poor," *Focus*, vol. 5, no. 5 (May 1977), p. 4.
[22] Ibid.
[23] Eddie N. Williams, "Perspective," *Focus*, vol. 5, no. 5 (May 1977), p. 2.
[24] Ibid.
[25] Richard Pollock, "Black America Speaks Out on Energy," *Critical Mass Journal*, vol. 3, no. 12 (March 1978), p. 13.
[26] Ibid.
[27] Henderson, "Energy Policy," p. 5.

not be desirable even though the employment level could rise to great heights.[28] Individuals and groups throughout the Nation have called for a recognition that the increased prosperity caused by energy resource development may not be benefiting minorities, women, or the poor.

Even though some proponents of resource development agree that there are favorable aspects to such development, they also think that the adverse effects could be greater than the advantages and that efforts to mitigate them should be undertaken. They are also calling for greater employment of minorities and women.

Corporate energy developers are vigorously urging the expansion of energy production. The Carter administration has estimated that the new energy expansion could create from 125,000 to 150,000 new jobs across the Nation. Energy agencies in the Federal, State, and local governments, according to the Carter administration, will create many of the anticipated positions, while the remainder will result from conversion to coal, solar, nuclear, and geothermal energy sources.[29]

Currently, only 6.8 percent of the jobs in gas and electricity production, coal mining, oil production and other energy-related industries throughout the Nation are held by minorities.[30] Because unions dominate these industries, Henderson wrote that it is doubtful that job opportunities for minorities and women, against whom some unions have traditionally discriminated, will significantly increase.[31]

Changing lifestyles and work habits of women, as the energy boom creates economically attractive jobs, will shape their attitudes toward working and increase their agitation to participate in energy-related jobs.

In the articles about boomtowns, little concern has been shown about the employment needs of women and the aged inasmuch as employment opportunities for these two groups have traditionally been extremely limited.[32] One reason given for lack of employment for women in the energy industry is its heavy emphasis on construction and mining—areas in which women have not traditionally worked. This can be changed if energy-related industries initiate policies favorable to hiring women. Additionally, unless there are basic and rigorous energy-related government job-training programs and monetary incentives given to industries when hiring women and minorities, success in such employment may be minimal.

Of the participation of minorities in the job market stimulated by the energy boom, former Colorado Lt. Gov. George Brown, Colorado's first black to hold that office, has said:

> the greater the American dependency upon higher energy production levels, the more jeopardy Blacks are in. For example, who was laid off in 1973 when the Arab oil embargo went into effect? It wasn't top management but those in the lesser-skilled jobs with least seniority—often Blacks. Moreover, the technological advances made possible through increased fuel consumption have meant for Blacks fewer jobs, higher prices, and a higher level of training needed for employment.[33]

Robert J. Brown, Under Secretary of Labor, speaking specifically to the problem of Hispanic underemployment in the Rocky Mountain region, noted:

> This energy program of the Carter administration would create many new jobs associated with energy conservation and the development of non-petroleum energy sources. Most of these would not be new types of jobs requiring new skills and knowledge of new technologies. Rather, these jobs would require current skills for which training is readily available. There would also be a number of entry level jobs to go along with the expansion of skilled employment opportunities.[34]

Ultimately, the question is: will the new energy boom create jobs for minorities and women?

Energy expansion as a springboard to economic growth, according to some economists and sociologists, may be an American myth. Two writers for the Environmentalists for Full Employment have reported that studies have shown that Americans use as much as two times the energy per person as do West Germans, Swedes, and the Swiss. Yet unemployment in West Germany, Sweden, and Switzerland is much lower than in the United States, with

[28] Ibid., p. 4.
[29] Ibid., p. 5.
[30] Ibid.
[31] Ibid.
[32] Robert L. McKeown and Alma Lantz, "Rapid Growth and the Impact on Quality of Life in Rural Communities: A Case Study" (paper prepared for the Colorado West Regional Mental Health Center and the Denver Research Institute), p. 4.
[33] Sydney Howe, "Environment: A Major Issue for Minorities," *Focus*, vol. 5, no. 6 (June 1977), p. 4.
[34] Robert J. Brown, "Jobs in the Carter Energy Program," *La Luz*, January 1978, p. 7.

standards of living in those countries comparable to or higher than those in this country.[38] The Environmentalists for Full Employment express the view that, historically, American industry has sought to substitute energy for human labor. If such a view is correct, then minorities and women, in terms of employment, may not fare well in the newly created energy market.[36]

Native American Development Issues

It is estimated that 50 percent of the Nation's energy resources in the West are under Indian lands.[37] In the Rocky Mountain region, Indian land accounts for 26,000 square miles. The 24 Indian reservations in the Rocky Mountain region, 10 of which are each larger than Rhode Island, have a population of 80,000 people and consist of 13 million acres that contain a large portion of the available energy resources.[38]

Because of these facts, State and Federal agencies are seriously interested in development of energy on Indian lands. The Council of Energy Resource Tribes (CERT), made up of 25 Indian tribes representing one-third of the Nation's Native Americans, serves as a powerful Indian voice in the Nation's capital. Since Indians own half of the U.S. uranium reserves and billions of dollars in other energy resources, Ed Gabriel, executive director of CERT, has spoken of Indian people as "energy rich."[39] He said of the 25 tribes, "You're talking about 250,000 people owning billions and billions of tons of uranium, and 4 percent of the oil and gas."[40]

Although Indian tribes occupy only 4 percent of the Nation's land, they own half the uranium reserves, 16 percent of the coal areas, and 4 percent of the natural gas and oilfields.[41] Beneath six Indian reservations in Montana and the Dakotas, which are home for 25,000 Native Americans and encompass 5.6 million acres of trust land (an area larger than New Jersey), lie billions of tons of coal. On the Standing Rock Reservation (in both Dakotas) coal reserves are estimated at 100 million tons. The Fort Berthold Reservation in North Dakota is reported to contain from 4 to 20 billion tons of recoverable coal. The Fort Peck Reservation in Montana is reputed to have lignite reserves estimated at several billion tons, and Montana's Northern Cheyenne possess coal reserves in excess of 5 billion tons.[42]

Resource development on Indian lands, then, is a key issue in the development of the Nation's energy resources. Pertinent to that issue is the nature of the country's trust relationship with Indian tribes (the legal obligation of the U.S. Government to protect Indian lands, resources, and the right of self-government) and the concept of ownership of Indian land. Senators Warren G. Magnuson and Henry M. Jackson, Democrats of Washington, are reported to have complained to Attorney General Griffin Bell that the Federal Government's advocacy of Indian claims to natural resources has contributed to tensions between Indians and other citizens.[43]

The National Congress of American Indians (NCAI), however, in policy resolutions adopted at its 33rd annual convention in October 1976, stated: "Indian rights to their natural resources are private rights for the exclusive use and benefit of Indians and are not public rights to be controlled by the unilateral action of the United States or any of its officials."[44] NCAI expressed support for policies and programs within the Federal Government that have as their purpose: "Protection of natural resources owned by Indians, by fostering development that Indians expressly desire and by prohibiting development that Indians oppose."[45]

The U.S. Commission on Civil Rights has said of the Federal Government's Indian trust relationship:

> The exact parameters of the relationship are. . .not entirely clear and perhaps never will be. One commentator has likened the trust relationship to the Bill of Rights in the Constitution. ". . .It is evolving, dynamic doctrine which has been expanded over the years as changing times have brought changing issues."[46]

Because of the trust relationship, Indian reservations are sovereign and political entities with their own legal systems and political structures. Wayne Ducheneaux, former chairman of the Cheyenne River

[36] Richard Grossman and Gail Dancker, *Guide to Jobs and Energy* (Washington, D.C.: Environmentalists for Full Employment, 1977), p. 3.
[37] Ibid., p. 1.
[38] Eric Natwig, *Mitigating Adverse Socioeconomic Impacts of Energy Development: Indian Considerations* (Denver Research Institute, November 1977), p. 1.
[39] Billings, Montana, Bureau of Indian Affairs in Cooperation with the Tribes of the Northern Plains, *Indians in the Northern Great Plains*, p. 1 (hereafter cited as *Indians*).
[40] *The Denver Post*, Sept. 6, 1978, p. 19.
[41] Ibid.
[42] Ibid.
[43] *Indians*, p. 13.
[44] *The New York Times*, June 6, 1978, p. D–14.
[45] *American Indian Journal*, vol. 3, no. 1 (January 1977), p. 25.
[46] Ibid.
[46] U.S., Commisison on Civil Rights, "South Dakota Indian Hearing" (staff paper, July 1978), pp. 45–46.

Sioux Tribe in South Dakota, said in elucidation of Indian sovereignty and Indian control of natural resources: "I foresee a day when the state and the Indians are going to have to work together, fighting other states and the federal government. . . ."[47]

As an example of the impact of energy development upon Indian reservations, it was estimated that mining operations will bring a large number of managers, workers, and technicians onto the Northern Cheyenne Reservation. The Consolidation Coal Company indicated to the Northern Cheyenne that a proposed gasification complex on the reservation would require 30,000 workers.[48] Since these employees will have to live on or near reservation land, cultural and social changes will be substantial. Non-Indian employees will require additional housing, shopping and recreational facilities, public services, roads, and schools.[49]

As on many Indian reservations, it is likely that the customs of the Northern Cheyenne will be affected by numerically superior outsiders who will undoubtedly bring in different values, lifestyles, and cultural approaches. Stresses in tribal government and structure are expected to result.[50]

In an effort to undermine the concept of tribal ownership of land rich in natural resources, Members of Congress as well as State and private citizen organizations are working to disrupt Native American gains in ownership of natural resources and are seeking leverage in Congress. Indian tribes are inundated by developers with plans far exceeding the tribes' abilities to supply labor and capital to complete them.[51] The result has been an influx of outside labor, causing friction between Indians and non-Indians. In addition to the aforementioned pressures upon Indian people is the realization by Indian leaders of the need to develop an economic base that will continue after energy resources have been depleted.

Water Rights Issues

In the Rocky Mountain region where nearly all surface water is being used by farmers, ranchers, the recreation industry, and cities, energy resource developers are in direct competition for use of that resource. The vast amount of strip mining competes for use of resources under the land in the region, and the scarce supply of water adds another dimension to the conflict.

Because the Crow Indian Reservation and the Northern Cheyenne Reservation, as well as others, have large quantities of coal available for strip mining and vast quantities for deep mining, the role of Indian water rights in the development of natural resources on and off Indian land needs clarification. In 1908, the U.S. Supreme Court ruled in *Winters v. United States* (207 U.S. 564,) that the priority of Indian water rights was so paramount that they could only be diminished voluntarily by the Indians themselves. Basically, Indian rights to control the use of water are superior to all other rights. Those rights are not now open to private acquisition under Federal law. The Joint Committee on Indian Water Rights, formed by the National Tribal Chairmen's Association and the National Congress of American Indians in October 1977, in an effort to clarify the status of Indians' use of water on reservation lands, has stated:

> . . .Indian nations and tribes have jurisdiction, as owners of the full equitable title to those lands and rights to the use of water, to control, administer, and allocate water resources within their jurisdiction, and the United States, as trustee, should at all times act to protect those tribal rights and control. . . .[52]

In addition to claims by Indians and non-Indians on water for strip mining and deep mining, water is also needed to restore coal-depleted land. Reclamation of land disturbed through strip mining will require large quantities of water (at least 10 inches per year in rainfall), yet many locations of strip mines have less than this and require irrigation.[53]

Without doubt, use of water for energy development in the Rocky Mountain region is a serious issue. It is imperative that Indian tribes and the Federal Government resolve their differences over control of water on and flowing through Indian lands. Since Indian water rights are immune from State jurisdiction, only the Federal Government could compromise Indian rights to water as the Nation seeks to relieve the energy crisis through coal production on Indian land.

[47] *American News*, July 19, 1978, p. 7.
[48] Native American Natural Resources Development Federation, *Declaration of Indian Rights to the Natural Resources in the Northern Great Plains States* (1974), p. 20.
[49] Ibid.
[50] Ibid.
[51] Natwig, *Mitigating*, p. 2.
[52] *American Indian Journal*, vol. 4, no. 4 (April 1978), p. 35.
[53] Jane Weil, "The Impacts of Western Coal Development," *Current Focus* (Washington, D.C.: League of Women Voters Education Fund, 1978), p. 3.

Former South Dakota Governor Harvey Wollman has spoken of the need for the Cheyenne River Sioux Tribe and non-Indians in his State to unite on the water issue:

> We face a common challenge—the demands for water both upstream and downstream. If we can join forces on this issue, we will be a powerful force. If we cannot. . .if we do not hang together, we will surely hang separately.[54]

Appropriate Technological Alternatives

As stated in the opening pages of this paper, increasingly over the past years in this country humanists, scholars, and laymen have vocally expressed their concern about skyrocketing utility rates and the disparate effect such rates are having upon the poor and the disadvantaged. The Environmentalists for Full Employment have commented on this problem:

> Energy industries say they must expand for the sake of the poor and disadvantaged. If energy industries were truly concerned about these people, they would be spending money to develop inexpensive, energy-efficient and long-lasting appliances. Yet. . .the industry spends *eight* times as much money on advertising as it does on research and development of energy-efficient consumer goods.[55]

In relationship to utility rates and the energy industries' concern for the poor, the organization argued that:

> In addition, utilities would not be opposing affordable, "lifeline" utility rates, and would not be charging higher rates to the smaller users. They would not be opposing clean air and clean water regulations, since foul air and polluted water affect the poor more than those who can afford to escape to cleaner realms. They would not be fighting commercialization of safer, cleaner, cheaper solar energy systems and energy-efficiency techniques (which they usually fight with rate-payer money). . .They would not be misleading about where the jobs are.[56]

Even though the energy crisis in this country affects everyone, it is generally the low-income persons who are in need of assistance. Appropriate natural resource technology may offer solutions to the rapidly rising costs of energy, the ever-increasing shortages of nonrenewable energy sources, and the problem of providing individuals and communities with the means for self-sufficiency and self-reliance.[57]

Senator Edward M. Kennedy, as chairman of the Technology Assessment Board for the Congress, has said:

> The increasing impetus throughout the nation toward the development of "appropriate technology" is aimed at ameliorating some of our serious and persistent problems. The conservation of energy and natural resources, environmental protection, economic development for low income people, and revitalization of individual and community enterprises may all be significantly aided through this approach to the utilization of technology.[58]

The National Center for Appropriate Technology (NCAT), located in Butte, Montana, and funded by the U.S. Community Services Administration, was organized in October 1976 to develop and apply technologies appropriate to the needs of low-income communities.[59] The organization's objectives for the first year included lessening the effect of rising energy and food costs on the poor by rapidly disseminating simple technologies such as insulation, solar window heaters, wood stoves, and small greenhouses.[60]

NCAT stated that much progress has been made in Montana in response to energy costs and pricing. For example, the Montana Legislature passed several bills creating tax incentives for energy conservation and the establishment of alternative energy systems.[61]

The Congressional Black Caucus, commenting upon the effect of alternative energy systems upon the poor, has stated:

> an energy policy which will assure the long-term health of the economy will include a strong emphasis on energy conservation. It is a fallacy that continued expansion of energy producing industries and of traditionally wasteful practices in commercial and industrial oper-

[54] *American News*, March 1978, p. 7.
[55] Grossman and Daneker, *Guide*, p. 20.
[56] Ibid.
[57] National Center for Appropriate Technology, *First Annual Report 1977-1978* (May 1978), p. i (hereafter cited as NCAT).
[58] U.S., Congress, Office of Technology Assessment, *Selected Federal Programs in Appropriate Technology* (September 1978), p. 1.
[59] NCAT, p. i.
[60] Ibid., p. ii.
[61] National Center for Appropriate Technology, *Impact of Energy Price Policies on Region VIII* (October 1978), p. 8.

ations is the only way to assure real economic growth and expanded employment. Energy production is a capital intensive enterprise which employs not only a few workers but even fewer minority or disadvantaged workers entering the labor force.[62]

Although the potential of solar energy to make a major contribution to America's future energy needs is well recognized, a great deal of controversy still exists over its economic feasibility. Supporters of alternative energy sources tend to disfavor nuclear energy development, but favor solar energy. Vernon Jordan, apprehensive about the development of nuclear energy, has noted that:

> There are. . .serious safety considerations: there is no known way in which radioactive nuclear wastes can be safely disposed. This is not an idle consideration; the health and safety of the nation are involved.[63]

The Congressional Black Caucus voiced similar concerns when it announced:

> Nuclear energy is low labor intensive and produces less energy per dollar invested than any other sources. The development of alternative energy sources such as energy conservation and a solar energy industry will provide more permanent jobs and will be more environmentally sound than nuclear energy.[64]

Still, the National Association for the Advancement of Colored People, while acknowledging the future benefits of alternative energy technologies such as solar, wind, and geothermal and of energy conservation, dismissed them in favor of rapid expansion of the energy supply by such means as light-water nuclear reactors.[65]

Henderson, in expanding upon the applications of solar energy to the poor, was in agreement with NCAT that a national energy policy package should contain direct incentives to low-income communities to convert to solar energy. He said: "Community solar energy plants could provide low-cost energy to the poor, stimulate minority business involvement in solar heating, and extend minority community participation in energy decision-making."[66] He concluded by stating that current and future design and construction of low- and moderate-income housing must reflect energy conservation. Such design and construction would include simple technologies such as weatherization and basic solar heating.[67]

[62] Pollock, "Black America," p. 13.
[63] Ibid.
[64] Ibid.
[65] Ibid.
[66] Henderson, "Energy Policy," p. 5.
[67] Ibid.

THE BOOMTOWN: PROBLEMS AND POSSIBILITIES

Overview of the Boomtown Phenomenon and Its Effect on Women and Minorities

By Donna C. Davidson*

The development of the energy resources of the Rocky Mountain region is taking place at a rapid rate to meet demands for future energy needs. Coal mines, uranium mines and mills, electric powerplants, oil shale plants, and other energy production projects are springing up in the Rocky Mountain region in a modern-day version of the gold rush. This has caused many small towns and rural areas to have population growth rates ranging from 10 to 15 percent per year to a doubling or tripling of population within a single year. There are some 20 to 30 communities in the Rocky Mountain region that presently have high enough growth rates to be called "boomtowns." Within the next 5 years it is anticipated that many more communities will experience boom-type growth.

A 1975 study(1) by the Federal Government of the six States in Region VIII found that 131 communities were expecting to be impacted. Of these, 38 percent had less than 500 population, 51 percent had from 500 to 5,000 population, and only 11 percent were over 5,000 in population. Of the 131 communities, 45 percent had less than 1,500 population *and* were more than 100 miles from a metropolitan area. And these were only the States in Region VIII. Many more communities having the same characteristics will be impacted in the resource-rich States of New Mexico, Arizona, and Utah.

Industry Development and Population Growth Pattern

When a major energy facility such as a mine or a powerplant is being constructed, a fairly large number of workers are needed during the construction phase. Once the plant is completed, a much smaller number of employees are needed as the permanent operating work force. For example, construction of an electric powerplant may take 2,200 workers, but the operating work force may be only 800 employees. A mine may require a construction work force of 350 people and an operating work force of only 130. The typical pattern of work force development for a single project is illustrated in figure 1.

At first there is a small number of workers during the initial stages of site preparation. Then there is a rapid surge as construction starts in earnest. The duration of contruction generally lasts from 3 to 5 years, although some projects may take longer. As the project nears completion, the number of construction workers drops off and the number of permanent workers builds up. During the construction stage a small but slowly increasing number of permanent workers from the operating company will move into the area. These are mostly supervisory and management personnel until the operating work force is hired.

When development occurs in rural areas where there are no preexisting industrial support facilities, more than one project will be under construction in the same vicinity at the same time. For example, if an uranium mine is developed, then a mill must be built to process the ore. Both the mine and the mill require electric power, so generating facilities and transmission lines must be built. If a powerplant is to be built, it must have a source of fuel—for example,

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coal. Coal must be transported to the generating station, so railroads have to be built. Figure 2 shows the effects of several projects developing at once. The basic buildup, surge, and establishment of a permanent work force curves are similar for each project. But added together, in the same time frame in the same locality, they can create a cumulative effect with very high surge peaks. These population surges place tremendous demand on public services, housing, and the social fabric of a community.

When development occurs in rural areas where population is sparse and skilled workers are few, people migrate into the region to take the jobs. The total population influx into a region will include many more people than just the direct employees of the project. Employees will bring their families. A recent study of 17 major energy development projects(2) showed that on the average the direct population influx due to 100 nonlocal construction workers is 227 people: the 100 workers, 49 spouses, and 78 children. In addition, there will be the indirect population influx, people coming in to do the construction for new housing and public works. People will arrive to work in the government sector—education, law enforcement, public administration, Federal land administration. As local business begins to expand, people will arrive to work in the commercial sector.

Predicting the total population that will be added during the surge and after is difficult. Important factors are: the size of the resident labor force in comparison to need, services available within a community at the start of construction and how much needs to be added, the general uncertainty of the energy market and the lack of a Federal energy policy, and the constant changes in rulemaking by government agencies that can cause delays or even abandonment of proposed projects. In some areas the inability of tribal governments and industry to reach agreement creates uncertainty for predicting population growth. The uncertainties involved in trying to predict how many people will arrive, when they will arrive, and how long they will stay make it very difficult for local authorities to plan for growth management.

What Is a Boomtown?

A boomtown is a community that has a population growth rate which is so rapid that basic facilities and services cannot be established in time to meet the needs of the population. A simpler definition is that a boomtown is a community which has a population growth rate in excess of 15 percent per year. It is important to remember that it is the *percentage rate of annual growth*, not the absolute numbers, that creates a boomtown.

For example, if the population of New York City, currently estimated at 7 million people, were to grow at 33 percent per year, the population of the city would double in 3 years. The city would be in chaos. Where would all the people find a place to live? How would the sewer system handle an additional 7 million people? Would drinking water have to be rationed? With the declining base of the city, where would the money come from to build new water and sewer systems? Where would the money come from to pay new teachers and new policemen? It is easy to imagine the trauma New York City would experience under boom-type growth because the numbers are large.

Exactly the same kind of difficulties can occur in a small rural town, even though the numbers are small. The capacity of the sewage treatment plant has to be doubled or tripled. The drinking water supply has to be expanded—and in the arid West water may have to be brought in from long distances. A school building built for 400 children has to be expanded to accommodate 800 children. New personnel have to be hired. And where is the money coming from to do all this? The ability o small rural communities to raise the funds necessary to meet boom-type growth is very limited. Moreover, there is a history of boom and bust with mining enterprises. Local governments and financial institutions have learned to be very cautious about committing large sums of money based on the promise of future resource development.

The "Boomtown Syndrome"

The first several communities that were impacted by energy development—among them Gillette (Wyoming), Rock Springs (Wyoming), Colstrip (Montana), and Hayden (Colorado)—developed a common set of problems that have come to be called the "boomtown syndrome." Physical infrastructure such as water supply systems, sewer systems, schools, and hospitals could not be built fast enough to meet the needs of the newly added population. The tax base of the rural communities was not sufficient to finance the massive new public works construction needed. Even though local taxes were raised there was still not sufficient money to provide

FIGURE 1

Typical Pattern of Work Force Development for a Single Project

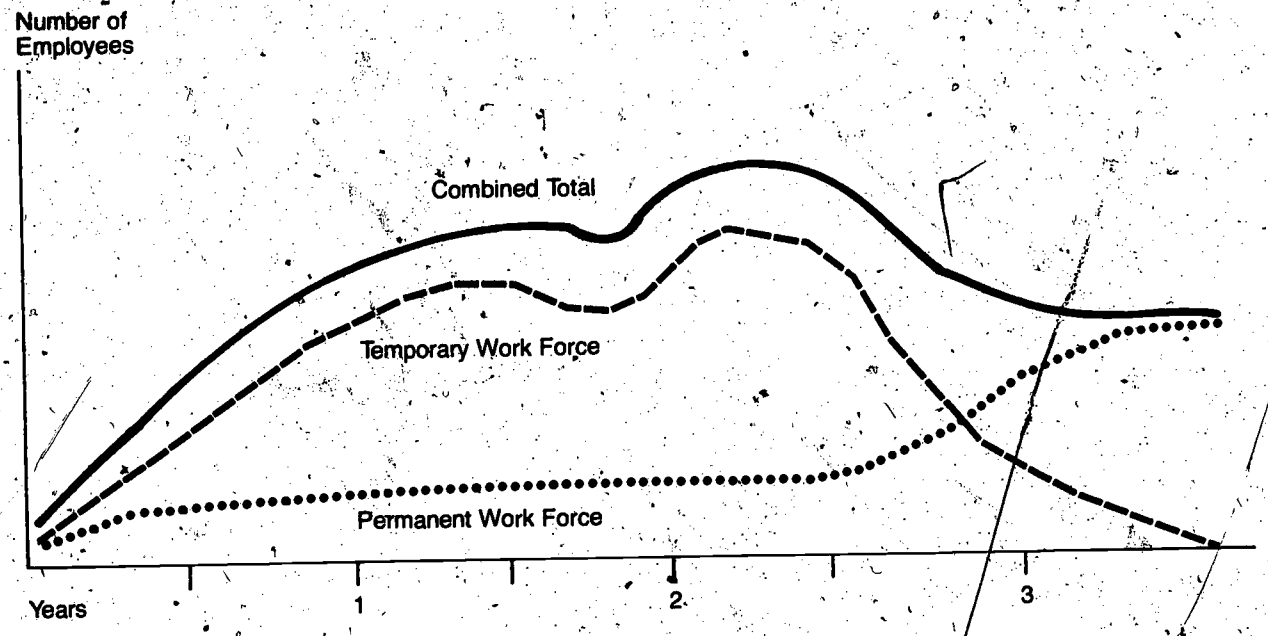
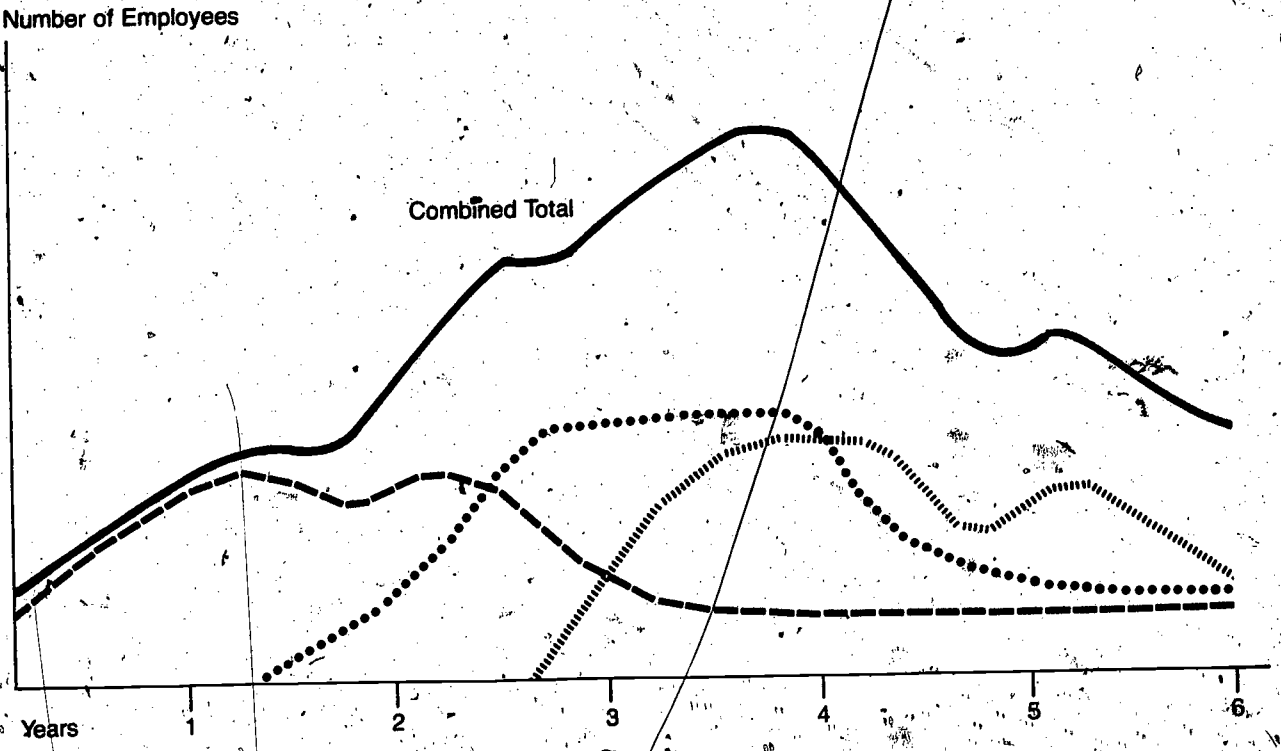


FIGURE 2

Hypothetical Example of Work Force Buildup for Three Projects Developing in the Same Vicinity



adequate services in the areas of police protection, fire protection, health care, and government administration. There were severe housing shortages. Whole families were living in camper-trailers for months at a time; shift workers were sharing motel rooms on a hot-bed system. Slum-like trailer courts—aluminum ghettos—sprang up uncontrolled.

The stressful living conditions created social disruption. Crimes rates and juvenile delinquency soared. Alcoholism, drug abuse, rape, child abuse, and crimes of violence increased at rates well above the population growth rates. Needs for mental health services increased tenfold, becoming much higher than the national average. The local governmental systems became paralyzed because they were too unsophisticated to cope with the responsibilities placed on them for rapid growth management. Persons living on low and moderate incomes were hit hard by the rising taxes and by the local inflation and resented the well-paid energy workers. The social and human interaction systems of the indigenous population could not accommodate vast numbers of newcomers with different lifestyles. Antagonisms between oldtimers and newcomers developed. Individuals began to feel isolated and frustrated with the poor living conditions, which led to further alcoholism, violence, and mental health problems. A vicious cycle developed that could only be broken by massive amounts of outside aid and intervention.

Preventing Boomtown Syndrome

Much has been learned from the unhappy experiences of these early boomtowns. Communities that are expecting to be impacted by energy development now and in the future seek to prevent the boomtown syndrome from happening to them. States have passed legislation to provide some form of financial assistance to impacted areas. Wyoming has passed the Industrial Siting Act that requires the impacting industry to provide a certain amount of mitigation of adverse social and economic impacts.

Industry itself has learned that unless decent housing, recreation, and health care are provided for the workers there will be so much absenteeism and turnover that the construction costs will be excessively high. Industry is now taking the initiative to provide housing for its own workers. It must be noted, though, that some companies are far more progressive than others in their attitudes towards impact mitigation.

Local governments are beginning to recognize the necessity of hiring professional city managers and administrators in advance of impact. Impact management task forces composed of elected officials and community leaders have been organized in a number of impacted communities. But even with all that has been learned, and the steps that are now being taken to prevent the worst aspects of boomtown syndrome, there are still many problems facing impacted communities.

Public Finance

The most severe problem is finance. It is estimated that $4,000 to $5,000 of new capital facilities are required for each new resident of a town. That comes to $5 million for every 1,000 persons added to a community. Add to that the annual operating expenses for more teachers, more policemen, more administrative personnel, more garbage collectors, etc. Urban areas get the money to build new facilities by issuing bonds. Small communities do not have the capacity to borrow large sums of money on the bond market. Even if they had the rating, the sums needed in boom areas are so large that the communities could not expect to repay them all out of future taxes. A certain amount of infrastructure has to be financed by grants from the State and/or Federal Government. The amount of grant money available to rural communities is very small compared to the amount of money available to urban areas. On top of that, there is fierce competition among rural communities nationwide for the small amount that is available.

There is also the tax lead-time problem. Local governments raise money from property taxes, sales taxes, and other local sources. The local tax base does not increase significantly until after the new plant is in production and permanent homes and new businesses are in place. But the revenue is needed before the project even starts construction and during the time of development. Because of this 3- to 5-year lag in time between when the revenues are needed and when they actually come in, many services are shorted during the period of greatest growth impact.

Another problem is the maldistribution of taxes. Energy developments take place on county lands and their taxes go to the county government. The people, on the other hand, live in the municipalities, often in a different county from the one that is receiving the taxes. Historically, the counties have

been very reluctant to share their increased revenues with the municipalities that are receiving the impact and even more reluctant to share them with another county.

Private Sector Finance

The first and most significant difficulty within the realm of private sector finance is housing construction. Local and regional contractors in rural areas do not have the capability to build massive new housing developments. Local and regional banks do not have the assets to finance massive amounts of new construction. Both capital and capability have to be brought from the outside. Impacting industry has been forced to take the lead in this matter, whether it wishes to or not.

Several types of accommodations are needed in the early stages of boom growth: rental units, camper-trailer spaces for short-term construction workers, and mobile home parks. One of the reasons for using mobile home parks is that they can be put in quickly, and they can be converted to sites for permanent homes or reclaimed for other purposes after the construction worker surge is over. Construction of single-family homes proceeds at a slower pace throughout the development period. New housing construction in rural areas is expensive; the developer has to put in all new utilities and streets, and materials must be transported long distances to the site. Therefore, virtually all of the new housing or trailer spaces built are beyond the means of low-income people. At the same time, the costs of existing units in town rise.

Retail business and services that are financed by the private sector lag behind the population growth. The retail sector does not expand in anticipation of a market, but waits until a population of a certain size is already in place. There is about a 3-year lag time before any significant amount of new businesses and services begins to appear, although existing ones will expand. During this time existing services become overcrowded, and local merchants raise their prices. It must be pointed out that a portion of the rise in prices that merchants charge is due to the increased taxes levied on them, a portion is due to the increased wages they must pay in order to retain labor if the area is labor short, a portion is due to national inflation in general, and a portion is due to the merchant's instinct to charge what the traffic will bear.

What all this leads up to is an extreme rise in the cost of living in boom areas. Taxes are raised for all, the price of retail goods and services goes up, and the cost of housing skyrockets. Persons making middle-income wages find that their purchasing power is reduced. Persons on moderate incomes find they are penny pinching. And persons on low incomes, which includes many women and minority members, suffer real hardship.

Human Services

Both the quantity and the quality of human services declines in boom areas. Most human service programs—social welfare, social services, public health, mental health, drug and alcohol abuse—require that matching funds be provided by the local communities. This is frequently done through county or municipal governments. Under the fierce pressure to use all available local funds for basic construction and safety, there is very little left to provide matching funds for human services. At the same time, due to the strained living conditions and the psychological stress of change itself, there is more stress on members of the community and more need for human services. While State governments have begun to react to the need for financial assistance for capital facilities, their reaction to the need for augmented human services has been abysmal. State legislatures have not made funds available so that human service agencies can hire new and/or qualified staff and expand their programs to meet the basic population growth needs, let alone the higher than normal service requirements imposed by boom conditions.

Who Are the People?

Throughout the history of civilization there have been settlers who stayed in one place and worked the land and there have been people who traveled from place to place—the nomads. The migrating construction workers are the nomads of today.

Throughout history there have been value differences between nomads and settlers. Settlers have valued permanence and stability. Nomads live a life of constant change. Settlers develop complex, interdependent relationships. Nomads pride themselves on their individual self-reliance. Settlers develop habits of saving and making long-range plans for the future. Nomads are concerned with survival in the present. Settlers have traditionally viewed nomads as being immoral, high-living, and spendthrift. No-

mads have traditionally viewed settlers as being ignorant of the world, narrow minded, and dull. Both sides have gouged the other economically.

These basic value differences still exist today as much as they did in prehistoric times, but in a contemporary setting. The nomad construction workers of today have blue-collar values and culture. The power elite of the settlers has white-collar values and culture. There is now a caretaking system available to the nomads through the human service providing agencies. But the rules by which these agencies operate are made by urbanized bureaucrats. The migrating construction workers go from job to job living wherever they can find a place, unconcerned with political boundaries. The governing systems function within political boundaries and cannot, or will not, cope with problems caused by cross-boundary mobility of people.

The Local Residents

Local residents have to make adjustments to changing roles, changing values, and new lifestyles. Some do this successfully, others need counseling, and some move away. Many of the things about population growth that are irritating to local residents are small things. Coping with heavy traffic is one of the most frequently stated complaints. Quality of services in stores is lowered. People who have traded in a store for 30 years are suddenly asked by a new young clerk to produce identification. People have to start locking their doors and windows against burglary. These are customary conditions of urban areas, but they are new to small-town residents.

There is a widening of the generation gap. The migrating construction workers have different lifestyles than the settled folk. Their children tend to have more individual freedom. Local teenagers start to imitate the freewheeling styles of their migratory peers. This widens the generation gap in many settler families, causing internal family conflict.

In certain communities leadership is in the hands of an older generation who have very traditional views regarding morality and authority. Sometimes these values prevent the leadership from being able to cope with management in a setting that requires an urbanizing orientation and a less judgmental attitude. Leaders who cannot adjust are eventually replaced. But while they are in power, they can create severe obstacles to growth management and prevention of boomtown syndrome.

The ranching and farming people who live out of town are not particularly affected socially. They tend to maintain their own friendship groups and lifestyles. They are, however, affected economically by the generally higher prices in the region. If the area is labor short, they will have difficulty getting hired hands. A man can get better pay and shorter hours working for industry than for agriculture.

The Migrating Construction Workers

The migrating construction workers are mostly young males. A study of workers on 14 energy construction projects(2) showed that 24 percent of household heads were in the 14–24 year age bracket and 40.5 percent were in the 25–34 year age bracket. About two-thirds of married, nonlocal workers bring their families with them. The percentage of families present varies by size of family. About 72 percent of two-person families (i.e., spouse only) were present, but this percentage decreases as family size increases. For families with four or more children, only 55 percent were present. Transient families stay from only a few days to several years. Median income for construction-worker households in the studied impacted communities was $17,000 in 1975. The United States median income for the same year was $12,500. Their salaries are high, but by the same token their living expenses are high.

The migrating construction workers do not feel that they are part of a community. The nomad style of life precludes their putting down roots. The nomads feel that the community is ripping them off: rents are exorbitant; the price of trailer hookups is exorbitant; the price of groceries is high. Oldtimers in the community resent the changes and upheavals brought by the new development, and they blame the new workers. Newcomers are often deliberately excluded from social groups in the area. People who are transients over the years build up a protective reserve as they go from one community to another.

The blue-collar nomads integrate very little into the community. They socialize with coworkers and neighbors for the most part. They have been described by one psychologist as emotionally drained people—they move too often. They are tired of extending to neighbors when they will move on in a few months. They tend to build up an "I'll take care of myself" attitude. They do not take the local newspapers. Attempts at reaching them through newsletters or door-to-door canvassing have had only low success.

If labor is in short supply, the workers often put in a great deal of overtime, leaving the women alone without help or relief from the children. The overtime may mean little or no time is left for personal or family recreation. This can create a stressful situation within the family.

The New Professionals

The impacting industry will bring in a group of technical and management professionals—engineers, accountants, pollution control experts, etc. New professionals will also arrive in town as teachers, city and county administrators, health personnel, etc. This group, although small in numbers, is a very valuable resource to the community. The new professionals usually settle in and integrate with the community very rapidly. This is basically an organizing group—people who are dissatisfied with boom conditions and form committees, clubs, organizations, etc. to do something about the problems. The men will usually join one or more local service clubs such as the chamber of commerce, Lions, or Kiwanis and be active both as representatives of their organization and as individuals. The women tend to be civic minded and are active in forming organizations such as newcomers clubs, hospital auxiliaries, and the like. The new professionals may create new leadership roles for themselves to help the community deal with growth management. They may sometimes oust old leaders. This group is considered to be a good source of volunteers by service agencies and civic administration. Members of this group can be mobilized to pressure for changes and reform.

Wage Differentials and Status Dislocation

Incoming industry usually pays considerably higher wages than do local business firms and State and local governments. As a matter of fact, some local governments pay such low wages that some of their employees qualify for food stamps. This wage differential can foster antagonisms between the oldtimers and the newcomers.

Wages do not track with traditional status patterns. For example, a barely literate truckdriver can make about $15,000 a year working for industry while a high school teacher with a master's degree may make only $12,000 a year. An unskilled laborer working for industry will probably earn more money than a policeman working for the municipality. Ranchers, farmers, and merchants find that their financial status is lessening in comparison to the earnings of skilled professional and technical workers in industry. Since financial status is bound up with social status and self-esteem, this has a disturbing impact upon the social order.

Senior Citizens—The Victims of Growth

Senior citizens are the victims of growth. The cost of living becomes so high in boomtowns that many seniors have been forced to move out. Many have had to sell the homes they have lived in for years because they can no longer afford the taxes and the upkeep.

Seniors may feel the culture shock very severely. Seniors who have lived in a community or a region for most of their lives, in a certain style of life, suddenly see their world collapsing and changing around them. People who built the community with their own hands and took pride in its permanence and quality suddenly hear that what they did was not sufficient—it's not good enough any more. Younger strangers make snide remarks about hick towns. The new residents in town are predominantly young people; seniors lose importance as resources are devoted to the needs of another age group. As the population grows, seniors become a smaller and smaller percentage of the people, and they lose the strength of their voting power. For seniors it can be more than just culture shock—it can be a constant barrage of psychological insult as they and the old community they cherished are slowly but surely pushed into the background.

It sometimes happens that a town under impact has a disproportionately large percentage of aging population. The reason for this is usually that the town had been declining economically before the energy boom so that all the young people had left to seek jobs elsewhere. Those who remained may be coming to the age where the community needs to build nursing homes and extra senior-care facilities just at the time the population impact of younger people is starting up. Unless there is a strong advocacy group—and some real grantsmanship—available for the seniors, they can be placed in a desperate situation.

The principal recourse for seniors is protection—protection in the form of tax relief and low-income housing; protection in the form of social support groups; protection in the form of activist political

groups, Gray Panthers as it were, to see that their needs are recognized and accommodated.

Impact on Women and Minorities

The minorities of concern are Spanish Americans (Hispanics) and Native Americans—Chicanos and Indians. There are very few blacks in the rural West. With respect to economic impacts, there is bad news and good news. The bad news is the effect of local inflation. Most minority members are in the low-income category; many receive public assistance. Women who are self-supporting or who are female heads of households also tend to be in the low-income brackets. Many single female heads of households receive Aid to Families with Dependent Children (AFDC). As the cost of living goes up, these families find they must do with less and less. The government makes no adjustments in AFDC payments to cover the excessively high costs of local boomtown inflation. The good news is that energy development and the general economic growth create job opportunities. In most boom areas, the number of families receiving AFDC declines due to job availability. But day care must be available for single-parent families.

There is a trickle-down effect in the job market. According to a University of Utah study,(3) when local labor is utilized by impacting industry it results in a skill upgrading for the most qualified segment of the labor force. "Because the most qualified are already employed, a vacancy is created in their previous jobs. This job is now available to someone less qualified to take, which results in another job being vacated. Eventually this trickle-down effect works its way down to the most disadvantaged segment of the local labor force."(3) In addition to the new jobs in industry, new jobs in service occupations are also created, many of these taken by the most disadvantaged segments of the labor force. In many areas industry and community colleges have instituted a wide range of vocational training programs to maximize the skill upgrading and utilization of local labor. Where labor is in short supply, companies have been willing to hire and train women for blue-collar positions. In most energy boom areas, the job opportunities made available by the energy boom have benefited women and minorities.

Surplus Female Labor

If the impacted area has a labor surplus, the position of women worsens with the energy boom. In regions where most employment opportunities are traditionally male jobs—for example, mining, steelmaking, lumbering, construction—there is a surplus of female labor available. Because there are many women competing for the few available female jobs, the wages of these jobs are held low. A considerable number of women filling the traditionally female jobs are wives providing a second income to the family or daughters at home between school and marriage. These women can afford to work for lower wages because they are not providing primary support.

When energy development starts, the new jobs available are traditionally male jobs. In an area with a surplus labor force, they are taken by available male workers. As new families begin migrating into the area, more women will arrive, many of them secondary wage earners, and begin competing for the traditionally female jobs. The number of female jobs available will increase somewhat, but not as fast as the number of women competing for these jobs. This surplus of female labor has the effect of keeping wages in certain categories low even though wages in other categories are skyrocketing.

The local female labor force is also likely to be at a competitive disadvantage. Many of the new women will be wives of technicals and professionals and will have higher education and skill levels than the local rural labor force. These women will take a job just to have something to do; many of them will take jobs below their skill-qualification level. This puts the rural, less skilled, female labor force at a competitive disadvantage.

So, where there is a surplus of local labor available, an energy boom can create hardship for the female who is providing primary support, because local inflation is high but wages for traditionally female jobs are held low by competition. There are not too many areas in Region VIII where there is a female labor surplus, but the condition does exist in energy resource areas of New Mexico and Arizona.

Indian Employment

There are a number of Indian reservations throughout the Rocky Mountain region that have potentially developable natural resources. The development of such resources could create significant

wealth and economic opportunities for the tribe. Development of resources on almost all reservations is currently being delayed by jurisdictional disputes involving State, Federal, and tribal governments and/or by the inability of tribes and industry to reach agreement on royalties, leasing, and other considerations.

Where energy developments are being negotiated, the trend is for tribes to require the industry to give preference to Indians in hiring. In some cases definite percentages are stated; e.g., the company must hire 80 percent Indians. The question then arises: you can lead a horse to water, but can you make him drink? There is a strong welfare mentality among some individuals of Indian tribes. Some companies have had disastrous experiences with good-faith efforts to recruit and train Indian labor—companies have spent thousands of dollars to recruit and train Indian workers only to have them quit within a few weeks or months. On the other hand, some companies have had very good experiences with Indian workers. There is no doubt that development of energy resources on or near Indian lands can create job opportunities for Indians. The question is: how many individual Indians will take advantage of these opportunities?

Small Business Opportunities

The general economic growth caused by energy development creates business opportunities for minorities and women. As the population increases, there is need for small businesses in the service sector—everything from service stations to dog grooming. But entry into small business should be undertaken very cautiously. The rate of failure of small businesses in boomtowns is considerably higher than the national average. Consider also that the success rate of minority business enterprises in general has been fairly low. This has been attributed to a number of factors: lack of knowledge on the part of the entrepreneur, failure to provide adequate technical assistance to new entrepreneurs, and sloppy practices on the part of banks and the Small Business Administration. In boomtowns, it is likely that an additional cause of failure is lack of adequate market research at the outset. There have probably been a number of business ventures in boomtowns that were started prematurely—the permanent population had not yet grown to the size necessary to support such a business.

Social Stress

Women and minorities feel the same social stresses that everyone else does. Studies done in towns that have experienced severe boomtown syndrome indicate a much higher than normal need for mental health services, social services, protective services to children, and drug and alcohol abuse treatment. A great deal of this was attributable to the lack of housing, lack of recreation, and lack of basic facilities for health and safety. Creating a decent physical environment and providing a variety of year-round recreation activities reduce the amount of social stress considerably. Local governments and impacting industry are the principal agents responsible for providing decent physical living conditions.

There are several stress factors that affect women in particular. One is physical isolation for women who are living in trailer camps several miles from town. The woman living in such a place has to drive, generally over poor roads, for everything. She is not near any recreation facilities, nor are there any playgrounds or preschools for her children. Laundromats, drugstores, movies, ice cream stands, etc. may all be 20 to 50 miles away over dirt roads or icy roads. The physical atmosphere of the camp may be very depressing—wind, dust, muddy parking lots, and not a tree for miles around.

Another factor that causes stress to women in particular is the shortage of, and distance to, health-care facilities. Women are the ones responsible for the health of children and getting them to a doctor in emergencies. When a mother has to drive an hour over icy roads and then wait in a doctor's office for 3 hours with a sick, cranky child, her nerves can get pretty frazzled. There are a number of small inconveniences for the housewife and mother in a boomtown. Added together, these create a significant stress factor.

Money management can be a significant stress factor for persons in low-income brackets, which includes many women and minorities. One of the greatest causes of tension and family quarrels is not having enough money. As inflation rises, low-income people find their resources extremely strained, which increases stress on the whole family. There is an opposite side to the money-management problem. When people who have been living on low incomes get good jobs and start making real money for the first time in their lives, they don't know how to handle it. The first thing they do is go out and buy some of the things they've always wanted—a new

sofa, a washer and dryer, a new car—and the next thing they know they are overextended with time payments. Their wages are being garnished, they have legal troubles, and there is not enough take-home pay to make all the time payments and buy the groceries too. One of the most pressing needs in boom areas is for legal aid and financial counseling for such people.

Social Integration

Social integration is a term that has become fashionable lately among boomtown sociologists, particularly with respect to the interactions among oldtimers and newcomers. But just how is social integration defined? Everybody has different expectations. Social integration for the cooperative extension agent may mean having all the new kids come out for 4–H programs. Social integration for the high school coach may mean having all the kids come out for football and basketball. And social integration for the kids probably means having a gang to hang out with at the local Dairy Queen. Social integration for the president of the woman's club may mean having a lot of newcomers attend meetings and contribute cakes for the bake sale. On the other hand, social integration for the newcomers may mean having a few friends and neighbors to play cards with at home. For the city councilman, social integration may mean having everybody register and vote for him at election time—but they should not integrate so much that they come to council meetings and complain about the potholes.

Quite frankly, there are a lot of people who don't want to be "integrated." There are people who like to participate in clubs and organized activities and people who don't. Very few people nationally participate in local civic affairs unless they have something to complain about. There is no reason to cry wolf because newcomers to a town do not instantly join a dozen social clubs or fill all the arts and crafts classes. Those who wish to participate will; others won't. Participation, or integration, is a two-way street. The street must be open, and the opportunities must be there, but people will make their own choices as to whether or not they will extend themselves. There is an old saying that applies here: birds of a feather flock together. People tend to socialize with other people who have similar lifestyles and interests. The nomadic construction families have comparatively little in common with the agricultural and commercial settlers. They are more likely to socialize with other construction families because they speak the same language and they tell the same kinds of stories. Avenues of socialization and participation that they are likely to use in a new locale will be the kind that do not require 10 years of residence to "belong."

The term "social integration" is also used in the jargon of minority rights. But here again it has a whole number of different meanings. It may mean equal pay for equal work or being invited to join the country club or being treated with the same personal respect as majority members of the community. Energy development creates jobs, which raises the economic status of minority members, which raises their social status, which is a positive benefit in the thrust for social acceptance and integration. For Indian tribes there is the problem of cultural adaptation. Industrial development requires adjustment to urbanization, bureaucracy, contract law, and white man's time. If the tribes wish to benefit from development of their natural resources, they will have to develop the organizational and governmental skills to manage both the industrial development and its social consequences. They will have to deal with the problem faced by every ethnic minority: how to retain their heritage and traditions while adapting to the behavioral requisites of full participation in a modern industrial society.

Summary

The boom growth condition, because of its rapidity and turbulence, creates both economic opportunities and social stress. The degree of stress on all, including women and minorities, can be minimized by provision of housing, particularly low- and moderate-income housing, recreational facilities, and basic health and safety services. Day care must be provided so that single parents can take jobs. Legal aid and financial counseling are services that are particularly needed by low-income persons. Other human services should be staffed up enough so that early assistance can be delivered in order to prevent crisis. Over the long time frame, after the localities start receiving enough income to provide better services, and after people have adjusted to the new conditions—which include expansion and enrichment of community life—the net result of energy development for women and minorities is undoubtedly positive. It is the first 5 years of boom that are the hardest.

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The Rock Springs Experience

By Arthur L. Waidmann*

Wyoming: the plains where antelope play and ranchers in Stetson hats ride among their grazing cattle; the rivers, mountains, and lakes where the young and not so young play; where fishermen fish and hunters hunt. It's also an ancient place, once the bed of a great sea, shaped and sculpted by wind and water into fantastic forms; a place where geothermal mysteries bubble up in incredible colors. It's a place where the great drama of the American West unfolded, where the cavalry fought with the Native American, and every rail that was laid on the transcontinental railroad changed the course of American history and helped create a country.

Wyoming was the first State to give women the right to vote and the home of the first woman Governor and first woman justice of the peace.

Wyoming was a place where the opening of mines turned deserted canyons into boomtowns overnight. Boomtowns of the 19th century—boomtowns today—coal, oil, natural gas, uranium, trona—bringing thousands of people to a once sparsely settled land.

The energy crisis especially has focused attention on Wyoming's coal. In Sweetwater County alone, there are an estimated 12 billion tons of coal reserves.

In 1970 the least populated State in the continental United States, today Wyoming is one of the fastest growing States. That means energy-impacted areas, boomtowns. It means explosive change and, for many people, trouble. It's happening in the north of the State, in Sheridan and Gillette, and in the east in Douglas. It's happened and is still happening in Sweetwater County in the southwest.

In just 5 years, between 1970 and 1975, the population of Sweetwater County doubled, and the population of the town of Rock Springs has almost tripled.

Rock Springs welcomed the boom at first. The oldtimers, those who had lived most of their lives there, remembered the 1950s when everyone thought the town would become a ghost town—when the coal mines shut down and the trains changed to diesel fuel. A boom would mean jobs and economic growth; it would mean money and a better life for everyone. But as the traffic poured into the town streets, a 10-minute trip to the grocery became an hour and a half, parking places disappeared, and potholes appeared; as it became apparent that the town was full of strangers, where once everyone had known everyone else, the oldtimers were no longer as certain that a boom was a good thing. Older people on fixed incomes found life especially painful as prices soared and, as often, their rents doubled and tripled.

In the stores, food, clothing, and other goods were not only more expensive, but limited in selections and often picked over. Perhaps worst of all, the streets were no longer safe, and many people began locking their doors.

Of course, for some oldtimers the boom did mean money. It meant money for local businesses, both licit and illicit. It meant money for those who owned property, especially for oldtimers like Upland Indus-

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tries, the brother company to Union Pacific Railroad, who, with the Federal Bureau of Land Management, owned 85 percent of the land in the county.

Nevertheless, there are a lot of unhappy people in an impacted area—both oldtimers and newcomers. Change is constant, tumultuous; everything—homes, jobs, friendships—seems temporary. Most of the newcomers planned to stay only a few months, one year, or at the most two.

In Rock Springs, in the beginning especially, most of them were construction men working on the Jim Bridger Project of Pacific Power and Light, a proposed 1,500-megawatt powerplant that would transport power out of the State over a thousand miles into Idaho and Oregon. They were also coal miners who would mine the 14-mile-long strip coalfield that was to fuel the steam electric plant, or they were miners in the growing numbers of trona mines and reopened underground coal mines, or they worked in the developing oilfields whose derricks sprung up like giant Erector sets in the desert terrain. Some of them were truckdrivers and railroad workers responding to the need for increased transport to ship the riches of the county out to the rest of the country and, of course, supplies in.

Many were just people looking for jobs who had heard there was money to be made in Sweetwater County. In the beginning most of them found work; later, especially if they were unskilled, they ended up on public assistance or moving on to another town. For everyone housing was nearly impossible to find, and they ended up living in trailers in isolated canyons or in the makeshift trailer camps where the rents were prohibitive and the sanitation and other facilities unreliable and the land and climate inhospitable.

In the trailer camps and parks, the wives of workers locked their doors against the battering of the wind and the dust that covered everything. For days and nights at a time, while their husbands worked long hours and split shifts, their only social exchange would be with their children—if they had children.

If they had access to a car, there was no place to go but to town to shop. There were no community centers of recreation or day care, and churches and clubs seemed like the bastions of the established community. None of them were reaching out to the newcomers and, at best, would only reluctantly welcome them should they appear at the door.

It was "a man's world": most of the jobs were for men. This brought many single men and men without their families to the area. In some of the camps, locked in their trailers and campers, women could hear the men drinking and brawling after a day's work.

The incidence of rape in Sweetwater County went up with the boom. So did wife beating and child abuse. Tired, irritable husbands would come home to their depressed, lonely wives, and violence would inevitably follow. Many times it was augmented by alcohol and drugs, which became major problems in Rock Springs, not only among adults, but among young people. One mental health worker reported that it's not unusual for children as young as 11 or 12 to offer him a marijuana cigarette or speak of a recent beer bust.

Schools had been overwhelmed by the initial influx of young people. The problem was not only one of additional students but of student turnover, with classes changing constantly. There was a fairly stable teaching staff, but teachers were frustrated by the job as well as by living conditions in Rock Springs.

Even before the boom, young people looked forward to the day when they could leave the town, and even after the school and job situation improved, their problems persisted. That there was nothing to do in Rock Springs was the most familiar complaint. They hung out at night around the local parking lots of grocery stores and on the business frontages along the city's major thoroughfares. There have been several youthful suicides.

Medical services, too, fell short when the impact began. The county hospital had been built in 1894 and was inadequate even for the 1970 population. Here, as in other areas, local government, plagued by corruption and inefficiency, was slow to move, but a new hospital has now been completed. And, of course, doctors were, and still are, difficult to get and keep in a town like Rock Springs.

Mental health and counseling services were also found lacking. The Southwest Counseling Service was inundated with people in emotional trouble. The small staff found itself working more than 60-hour weeks. The pressures on the staff of both the job and the place itself meant that few of them stayed on for more than a year. After 3 years, one worker was senior member of the staff.

Even ministers fared no better. Carl Stark, LCA pastor in Rock Springs since 1974, counts himself today as one of the senior ministers in the county.

Today, while the rate of change in Sweetwater County has slowed and many of the problems have begun to seem manageable, other parts of the State are at other stages of the same process. Although each situation is different, all of them face one overwhelming problem: the need to work as whole communities to cope with impact.

But how can a community be created where so many of the people have only just arrived and look forward to leaving again soon? Many of the newcomers choose not to get involved because they know they'll soon have to say goodbye. Many, both oldtimers and newcomers, either feel indifferent or, worse, like helpless victims. They are isolated, waiting for someone to reach out to them. No one does.

Even the agencies that were supposed to be working to solve the problem were isolated from one another in Sweetwater County. When former Episcopal Bishop David Thornberry visited Rock Springs at the height of the boom, he found at a meeting he'd called that the city and county planners were meeting each other for the first time. The various social service agencies working in Rock Springs had little or no contact with one another.

The churches had done no better. Even today most of them are not cooperating with one another to help the people in trouble in Rock Springs. However, in Green River, about 15 miles away, the Ministerial Association provides emergency assistance to transients passing through the area.

The MIA (Ministry to Impacted Areas), established by the Wyoming Church Coalition, functioned in Rock Springs and Sweetwater County to bring concerned people and agencies together. The coalition was seeking to help community leaders assess their situations, needs, and resources; promote ecumenical fellowship and planning; assist local church leadership in developing plans of action to meet human need; and maintain lines of communication among the various segments of the community.

The result has been the establishment of the Volunteer Information and Referral Service to coordinate local volunteer needs and provide information to new and old residents and the creation of the Child Protection Council, a citizens' action group to try to prevent child neglect and abuse, and Rock Springs' first YWCA, still the only community organization reaching out to women. In the process of being organized also is Youth Home, Inc., a residential program for troubled youngsters.

These programs have helped to develop new leadership in the community—a need that exists throughout the State. Hopefully the churches will become involved in the near future in training to retool old skills and build new ones so they can help their communities deal creatively with impact.

Newcomers to Wyoming are not only bringing problems with them, but fresh ideas and skills that can help transform problems into opportunities. Many people in Rock Springs welcomed the boom because it opened up a closed community to the rest of the country and the world. For instance, Wyoming, "man's country," is becoming, as it was in its beginning, a place of new opportunities for women.

Yes, there has been economic growth and new opportunities, but through it all there remain many unsolved problems and unanswered questions. If the communities really work together, they can determine the *kind* of change that impact brings with it. For example, is it good for the community when business moves from downtown to a new shopping mall at the town limits, or does it mean that Rock Springs, like many larger cities, will lose its downtown area to urban decay?

Or again, is every mine or oilfield an unmixed blessing, or is the environmental damage sometimes unacceptable as many ranchers and Indians in the Sheridan area feel? What should be the role of the church in all this? If it is concerned for people—as the Gospel says it must be—then shouldn't it stand with them? Shouldn't it help to heal them when they hurt? Shouldn't it prod, struggle, enable—do whatever is necessary in the search for community and justice in a tumultuous time?

"Is Wyoming a frontier or a colony?" That sounds like a legitimate question, given all of the rapid growth and seeming colonization by oil, gas, coal, and other companies after its natural resources. It would appear that the gross national product has definite priority over public sector needs, especially when a U.S. Department of Interior employee states publicly that Wyoming must be sacrificed for the good of the Nation.

"We don't really look upon ourselves as mining this land; we're just plowing furrows 80 feet deep to recover our coal crop," states a coal company manager. Contrast that attitude with one of a senior citizen:

> Well, I was born here and I'm 83 years old, so I know a little bit about it and I like it the way it was in the old days. I just wish my father had bought a lot of land here in those days. He could have bought all of Maine. Oh golly, I get sick every time you come in. Everything's just a little bit higher. . . I couldn't manage on my social security if I didn't have a brother and son that helped every month. . . you just couldn't do it—no way.

Thus you have an inevitable conflict of values that emerges in a rapidly growing or impacted community.

"Hello, hi. I'm collecting opinions of the situation here, what with all the new people moving in and what-not, and I'm just finding out how people feel about it. How do you feel about it?"

"Well, if I had a million dollars, I'd leave town and never come back."

What is happening in Rock Springs and other impact areas that causes such a reaction?

It seems to me that you can predict five areas of concern that will develop wherever rapid growth occurs beyond a community's ability to cope in planning and implementing necessary changes. These areas of concern have a direct effect on the overall "quality of life" of residents, both oldtimers and newcomers. It is my feeling that those who are affected the most are the elderly and women.

What are the five areas and what impact have they made on women especially, both positive and negative? The process in Wyoming is really one of rapid urbanization of basically a rural society.

First, there is the inevitable *housing* shortage and the resultant development of trailer parks or mobile villages both within and outside town or city limits. These "aluminum ghettos" develop with little or no siting and zoning restrictions. Few amenities are available to residents. In most of the Rock Springs parks or villages, people experienced dusty or muddy roads and yards with a multiplicity of problems for women, including no playgrounds for children and no animal control.

Second, there are the purely physical concerns about *utilities and streets.* Finance of good streets and sewers becomes a major issue. The demand for utility hookups is beyond the companies' ability to keep up. In one trailer park, the telephone company simply had to install one phone booth to service all the residents.

A third issue is one of *fiscal* problems. Most of the problems that arise are local and demand immediate attention, whereas the financial resources are supplied to regional or county governments and are 1 or 2 years in coming.

Fourth, there is an upheaval within the *political arena.* The old way of doing things is challenged by the newcomer, who most often has higher expectations of governmental structures. Power struggles develop and new leadership threatens the established order.

Finally, the big area of concern is one of *community life* . It is an issue of the quality of life and has heavy implications for the women and elderly populace. Issues that evolve include, but are not limited to:

1. An increase in the pace of living.
2. Congested streets and overcrowded housing and neighborhoods.
3. Inflated prices.
4. The franchization of the business community. Older, family-owned businesses are replaced by fast-food operations and department stores controlled by management in major urban centers outside the region.
5. A fear of all the rapid change among older residents. All of a sudden there are a number of strange faces and places to encounter.
6. A lack of activities (recreational and personal growth) for newcomers with high expectations. There is a lack of institutions and programs to enable a feeling of "belonging" for the newly arrived worker and family.
7. An increase in use of alcohol and other substance abuse.
8. An increased caseload for mental health services. People experience stress and need help in coping.
9. There is a shortage of basic services; i.e., medical, educational, recreational, and law enforcement.
10. Cultural differences are prominent between oldtimer and newcomer. "Culture shock" is sometimes experienced by the incoming family.
11. Family tension increases and marriage breakdowns occur for all.
12. The incidence of crime increases with crimes against the person, including such things as sexual assault, child abuse, and battering of women.

With this backdrop, let me offer a few observations regarding problems and opportunities for

women. Some would say that Wyoming, as in its beginning, is a place for new opportunities for women. The two areas in which you could group problems and opportunities are economic, and social and cultural.

Within the economic arena, my observation is comparative (data have not been kept by the State employment office) that there has been a drastic increase in the number and variety of jobs, such as in highway construction, mining, and fast-food service. But things have not really changed for women and minorities. Perhaps the job category that has increased the most is service jobs. These have been and continue to be the traditional labor market for minorities and women. Not by coincidence, the service jobs are the lowest paying. Even in a professional category you see the traditional low-paying jobs inhabited by women—the case in point in Rock Springs is the Job Service Office. In impact areas men can make greater sums of money in all industry so, why work for the government? Consequently, the Job Service Office is almost exclusively female.

Even though there are more jobs available, I have not seen any clear indication that affirmative action plans have produced upward mobility and nontraditional job placements for women.

The economics of women working induce the necessity for a second or third vehicle in the family, plus the need for day care or nursery schools or babysitters. Most working women with children seem to be the newcomers. Consequently, their family support systems are not in place in the impacted community to provide care for children.

On the positive side, there has been more employment available for women so that their opportunities have increased for more independence in their lives. Some women have been able to open their own businesses, while many others find employment in social service kinds of agencies.

One other opportunity is open in the political arena. More women seem to be running for public office at all levels, from local city council and mayor to State offices.

A second aspect of community life wherein women find both problems and opportunities is their sociocultural affairs. The major opportunity within impact areas is the chance to participate in community organizations and events and exercise leadership skills. The person moving from major urban areas gets the feeling that, "I'm a bigger fish in a smaller pond." There is often a void in leadership positions and a woman with any degree of experience can step right in and "make things happen." This new opportunity and resulting experience lead to a greater sense of worth and self-esteem.

The YWCA in Rock Springs has proven to be an organization that meets the social and cultural needs of women. It grew from 45 charter members in 1976 to 450 in 1977. It offers programs of enrichment, a day-care facility, classes of many varieties (stained glass art to tennis lessons). The "Y" has offered many lonely women a place to meet other women and allowed for the development of new relationships. A coalition of social agency types was instituted by the YWCA to begin dealing with the problem of battered women. Thus a women's group, organized and run by and for women, has been a symbol of successful organization to meet needs of women in an impacted area.

There has been one additional organization besides the "Y" that has served to maintain and add quality to life for women in Rock Springs and that is "New Women." It provides for consciousness raising and an ongoing support system for women. Support groups can play a lifesaving role for women moving into impact communities from more urban and family-tied towns and cities. The culture shock can be alleviated by a variety of support mechanisms. Women's groups, colleges, churches, and "Ys" are essential ingredients for a healthy adjustment and maintainence system for women in impacted areas.

Western Wyoming College has proven to be an invaluable resource for women looking for cultural and educational fulfillment. It was the first and still is one of the only community colleges in the State of Wyoming to provide a quality child-care program for children of parents attending the college. This program has allowed many women to return to school to complete or supplement their educational interests.

The social and cultural problem areas for women include such phenomena as "single women being marked targets" for sexual harassment and abuse. The experience of being single in an impacted community makes social life difficult. If you go out, the choices are limited—usually night spots or bars. Women get tired of being immediately hustled and become guarded in social relationships. Obviously, this causes sincere, nonhustling, single males addi-

tional problems. Both tend to develop major relationships with the same sex or married couples.

The problem of loneliness is immense in Rock Springs, especially for women in trailer parks. In a "macho" society, a man's world, some women are discouraged from pursuing their professional interests and have to stay at home or uninvolved. Recreation is male oriented, and if a woman is not outdoors oriented (hunting, fishing, etc.), she gets left at home on weekends as well. Consequently, additional coping mechanisms must be found to combat loneliness. The incidence of alcoholism, battered women, extramarital experience, and marriage breakdown has increased, perhaps because of this problem of loneliness and isolation.

In conclusion, I would observe that change is ever present and the shape of that change and its effects on target groups such as women, the elderly, and minorities is up to all of us. Industry, government, the church, community groups—whatever—cannot solve all of the problems of impact. It seems extremely important that those parties concerned about the quality of life ensure that all affected parties in impact areas be represented, informed, and given an opportunity to participate in community decisionmaking centers. Otherwise, they join the long line of the disinherited down through history. We need to examine what it is that people desire and prefer for their towns, cities, and total community life. Then we need to assess whether our goals oppress others or disinherit some. All civil rights must be protected.

Ultimately, I have to ask the value question, "Are all of these changes really producing a better way of life?" Yes, it may be that we want the wrong things and the result will mean a decline in the quality of life for us and for the next generations. How much longer will we, as whole communities as well as special groups (women, elderly, and minorities), have the ability or luxury of deciding what shape change is going to take—in fact, of deciding whether or not we want all of this rapid growth to impact on *our* communities? What are the ultimate effects? We need many more answers. Immediate problemsolving has preoccupied us all—what about the future, the long-range plan for growth and change, for solutions and plans for impact alleviation?

What is the role of the Civil Rights Commission? I have the feeling that many persons are not even aware of their rights, let alone the infringements on those rights. I would hope that the Commission begins to struggle with the issue and perhaps gets into preimpact situations and educates and informs us and protects our rights.

The Wyoming Human Services Project: A Model for Overcoming the Hugger-Mugger of Boomtowns

By Judith Ann Davenport and Joseph Davenport III*

The voracious appetite of industrial society for energy has immense physical and social consequences. Coastal oil spills, polluted air and water, pipelines through wilderness areas, and land devastated by strip mining provide harsh and constant reminders of the physical aftermath of energy development. Caudill, in looking at coal development, stated graphically:

> Coal has always cursed the land in which it lies. When men begin to wrest it from the earth, it leaves a legacy of foul streams, hideous slag heaps, and polluted air. It peoples this transformed land with widows and orphans. It is an extractive industry which takes all away and restores nothing. It mars but never beautifies. It corrupts but never purifies.[1]

Stronger environmental safeguards might lessen such devastation, and continuing scientific development might well result in the large-scale use of cleaner alternative energy supplies (e.g., solar energy). However, available indicators point to the immediate continuation of rapid development of fossil fuels.

Since social workers and other human service workers have only minor impact on major energy decisions, and since the rapid development of fossil fuel resources, in all probability, will continue in the immediate future, it behooves the helping disciplines to develop service-delivery strategies aimed at mitigating the resulting problems and needs.

This article will examine the social consequences and problems of energy development in small western communities; it will describe the history, operation, and results of a model program designed to mitigate the deleterious effects of impact; it will pay special attention to the problems of women and minorities in impact areas; and it will offer implications and recommendations for the future delivery of human services in such communities.

Social Consequences and Problems

Public and professional attention is increasingly being focused on the social consequences, including human service needs, of energy development. Professional attention is attested to by the burgeoning number of conferences, institutes, workshops, seminars, books, articles, and papers devoted to the topic. Disciplines involved in such activities include anthropology, communications, law, psychology, social work, sociology, and others. Findings, conclusions, implications, and recommendations are based on data that range from highly impressionistic personal accounts to fairly rigorous social science research efforts.

A common theme mentioned by many authorities is the "boomtown" effect of energy development in or near small western communities. Such boomtowns are certainly nothing new to the West. In fact, Cortese and Jones point out that this region has experienced a succession of such phenomena, to wit:

> The gold rush in the late nineteenth century created boom and bust communities out of the rock and sand of mountainsides and creekbeds; the uranium boom of the 1950's revived "bust-

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[1] Harry M. Caudill, *Night Comes to the Cumberlands* (Boston: Little, Brown, and Co., 1962), p. x.

> ed" boom towns of that earlier era and created many new ones; the recreational boom, ski industry development, second-home, and retirement home development have done the same during the 1960's and 1970's.[2]

This "boom and bust" phenomenon is, of course, evident in other parts of the country, notably in Appalachia where the fortunes of towns have ebbed and flowed for decades depending upon the vagaries of the coal industry.

Boomtowns, then, have been a feature of society for some time. What may be new about this phenomenon is: (1) an increasing societal conviction that the physical, social, and cultural environment should be protected; (2) an increasing ability and capacity of the social and behavioral sciences to develop social indices that measure such factors as the "quality of life"; and (3) an increasing interest by the profession of social work and other helping disciplines in the problems and needs of rural America.

The 1970s have witnessed a renewed interest in the environment. This interest frequently conflicts with a national policy calling for the rapid development of energy resources, as witnessed by the confrontations between environmentalists and proponents of such activities as offshore drilling, nuclear powerplants, and strip mining. However, even most supporters of development do not favor growth at any cost. A substantial and growing number of people believe in at least some degree of planning and preparation.

Tools for analyzing the social impact of rapid growth have been designed and are in an ongoing process of honing and refinement. According to Cortese and Jones:

> concern with the social changes and potential social problems accompanying the boom-town phenomenon has contributed to the emergence of the field of Social Impact Assessment. Social impact assessments are multiplying almost as fast as the proposed energy exploration and extraction projects themselves. The literature on the social impact of energy boom developments and the research from which it emanates is notable primarily for its inconsistency of approach and its lack of an explicit theoretical base.[3]

While this new field of social impact assessment obviously needs further refinement, social planners and human service personnel cannot wait for the millenium to arrive before they ply their trade. Enough data exist on the negative consequences of boomtowns to warrant efforts at prevention and amelioration.

Social work and other helping disciplines, which are charged with preventing and ameliorating social problems, are increasingly turning their attention to the problems of small towns and rural communities. Such attention is a welcome departure from their traditional preoccupation with urban society. The social work profession, in fact, emerged essentially as a response to social problems created by the industrial revolution and urbanization.[4] However, a more balanced professional perspective appears to be forthcoming. This is evidenced by the formation of the Rural Social Work Caucus, the publication of the journal *Human Services in the Rural Environment*, and the creation of an annual National Institute on Social Work in Rural Areas. These latter developments are fortuitous indeed, since the basic knowledge, skills, and values of social work appear to be well-suited to the problems of impacted communities.

Impact problems appear similar to those of any area experiencing rapid industrialization. They are, however, accentuated by the relatively small population base in most western communities. For example, a metropolitan area might experience some problems in accommodating an industrial plant, or even several plants, employing several thousand workers. However, the ensuing problems (e.g., need for additional classrooms) are manageable within a framework of planned and orderly growth. On the other hand, a small community of several thousand persons may be all but overwhelmed by the construction of a powerplant requiring several thousand new workers plus their families. Such a project results in significant changes in the physical and social aspects of the community. These changes, while perceived and defined somewhat differently, affect "oldtimers" and "newcomers."

Bates, in looking at the "people problems" of western boomtowns, found that "frontier expan-

[3] Charles F. Cortese and Bernie Jones, "The Sociological Analysis of Boom Towns," *Western Sociological Review*, vol. 8, no. 1 (1977), pp. 76–77.

[3] Ibid., p. 76.

[4] An excellent analysis of the impact of industrialization on the supply and organization of social welfare services, including the development of social work as a profession, in the United States may be found in Harold L. Wilensky and Charles N. Lebaux, *Industrial Society and Social Welfare* (New York: Russell Sage Foundation, 1958).

sions" were consistent in their crash, unplanned development, and that boomtown results:

> seem always to leave in their wake the grim statistics of spiritual depression, family disorganization, emotional damage and alcoholism, impaired social development of children, delinquency, suicide, dissipation and death.[5]

Hanks, Miller, and Uhlman described the sociophysical problems arising from impact as:

> *superinflation* by which the already critical national inflation is exacerbated with the special added inflation of the boom town arising from high labor costs, shortages (such as in housing and shopping facilities and services), and quick-buck exploitation by "get-rich" entrepreneurs: the *indundation of demands from the markedly increased population* on government and related facilities and services, such as law enforcement, courts, streets, sewers, schools, hospitals, retailers and supportive business services and all social services, such as mental health, welfare, senior citizen programs, vocational rehabilitation, employment services, and Social Security District services.[6]

Inflation rates vary, of course, but a rule of thumb developed by the Department of Housing and Urban Development (HUD) is that "the prices of lots and houses double during the course of construction, while the rents for housing double or triple."[7]

Demands for increased public services also "boom," but the local fiscal wherewithal is generally insufficient to meet these increased needs. Fiscal benefits of energy development tend to be long range and regional (i.e., taxes imposed on the project come in after it is completed and they may go to the county and State); however, the negative impacts are immediate and local.[8]

Social problems associated with these sociophysical problems include:

> high rentals and building costs, and trailer home living;
>
> alcoholism, gambling and prostitution associated, in part, with isolation, stress and the lack of alternative, immediately accessible recreation facilities; increased incidence of depression and substance abuse associated with housewives isolated in overcrowded trailers with small children while their husbands work long hours for six days per week and provide little emotional support for their distraught spouses;
>
> family crises, such as desertions, separations, and divorces, "family wars" and critical parent-child emotional difficulties;
>
> truancy, school drop-outs, rapid turnover of children in classes associated with the highly transient population and the contributing family-related problems;
>
> mental health and personal adjustment problems, where youth are in overcrowded schools, often lacking in extra-curricular activities or where isolated young adults manifest behavior problems associated with substance abuse, such young adults having been attracted to the community for work, but having few solid supportive relationships and not easily relating to the inadequate existing facilities;
>
> the special vulnerability of the elderly, whose fixed incomes cannot cope with increased costs of housing and food, and whose way of life is disturbed by increased crime, traffic, alcoholism and drug abuse, and the hurly-burly of large groups of "strange" newcomers who over-tax both familiar and totally new shopping facilities and services.[9]

Admittedly, many of these problems exist in any community. Available evidence, however, strongly suggests that they are compounded and intensified by the impact environment and experience.[10]

At the very least, human service programs, which are typically understaffed and underfunded, are not prepared for the increased caseloads brought on just by the huge influx of people. Even if the types and incidences of "people problems" remain the same, agencies and programs tend to be overwhelmed

[5] V. Edward Bates, "The Rural Impact of Energy Development: Implications for Social Work Practice," in *Social Work in Rural Areas: Preparation and Practice*, ed. Ronald K. Green and Stephen A. Webster (Knoxville, Tenn.: University of Tennessee School of Social Work, 1977), p. 55.

[6] John W. Hanks, Keith A. Miller, and Julie M. Uhlmann, "Boom Town Interdisciplinary Human Services Project" (paper presented at the Fifth Biennial Professional Symposium of the National Association of Social Workers, San Diego, Calif., Nov. 22, 1977), p. 3.

[7] U.S., Department of Housing and Urban Development, *Rapid Growth from Energy Projects: Ideas for State and Local Action* (1976), pp. 19-20.

[8] Ibid., p. 2.

[9] Hanks, Miller, and Uhlmann, "Boom Town," pp. 3-4.

[10] An excellent compilation, including an annotated bibliography, on the problems of impact communities may be found in Charles F. Cortese and Bernie Jones, "Boom Towns: A Social Impact Model with Propositions and Bibliography" (paper prepared for the Socio-Political Risk/Impact Panel of the Committee on Nuclear and Alternative Energy Systems, National Research Council, December 1976).

before they can request or document the need for additional resources.

The Denver Research Center concluded that a small town could accommodate a 5 percent increase in growth. However, it also concluded that "an annual growth rate of ten percent strains local service capabilities. Above fifteen percent seems to cause breakdowns in local and regional institutions."[11] Wheatland, Wyoming, is a good example of the population changes created by energy development. This town had 2,350 residents in 1960 and 2,498 in 1970. The development of the Laramie River Station by the Missouri Basin Power Project precipitated a jump to an estimated 3,705 in 1977, and it is further estimated the population will peak at 8,000 in 1979.[12] This rate of increase is obviously far beyond the breakdown point for local service agencies.

Local agencies, in addition to being chronically short of personnel, find it difficult to retain their present staff. Social workers and other human service workers sometimes experience the phenomenon of "burn-out,"[13] especially in conservative rural areas where one finds little professional support, but no shortage of anti-human services attitudes. Feelings of burn-out, combined with low salaries, often result in workers accepting other positions providing more money and less stress. This problem is probably aggravated in Wyoming by the paucity of professionally educated social workers in many public agencies. Service workers committing themselves to a career via education and training are less inclined to move out of the human services than those who accepted such positions merely because they needed jobs.

Problems of Women and Minorities

Women and minorities suffer from many of the same problems (e.g., alienation, loss of a sense of community) as the general boomtown population. However, they also encounter additional difficulties because of their different status. Groups experiencing such extra problems include women and the aged. Racial minorities are certainly not exempt from added problems, but they constitute a very small percentage of Wyoming's population. Blacks, for example, comprise only 0.7 percent of the State's population, while Chicanos comprise around 5 percent. In fact, boomtowns may be a boon to racial minorities. Cortese and Jones state, "The gradual introduction of racially heterogeneous newcomers contributes to minimizing local racial problems and breaking some stereotypes."[14]

The Aged

Many rural counties have a high percentage of the elderly in their population. Platte County, Wyoming, which is not atypical of rural counties, has over 23 percent of its population over the age of 60, according to the 1970 census. The impact of the Missouri Basin Power Project placed special hardships on this group. According to HUD:

> Most of the elderly have been in the community for a long time, and counted on a quiet retirement in a community they knew. With the rapid growth, the community is no longer quiet and may not be recognizable.[15]

This may result in increased alienation among some senior citizens and tends to have the effect of making them "strangers in their own land."

The superinflation created by the boom can have devastating effects upon the old. Many elderly, especially those on fixed incomes, are hit hard by the inflation in rents and prices. Renters may be forced to leave the community. Even homeowners find it difficult to pay for the skyrocketing costs of repairs and maintenance.[16] Low-rent or subsidized housing is not often found in most rural communities and has, in fact, often been resisted by conservative elements.

Older residents, along with others, often experience problems in obtaining health care in rural areas and small towns.[17] The elderly, who tend to require more health services than other segments of the population, are particularly affected by the paucity of rural health resources. Their problems are exacerbated by the sudden influx of people who place additional pressures on an already strained health-care delivery system. However, some resources are not fully utilized due to a lack of knowledge, a lack

[11] Denver Research Institute, *A Growth Management Case Study: Sweetwater County, Wyoming* (report prepared for Rocky Mountain Energy Company, December 1974).

[12] University of Wyoming, Division of Business and Economic Research, *The Socioeconomic Impact of the Proposed Laramie River Station* (Laramie: 1975), p. 72.

[13] A description of the "burn-out" phenomenon and means of coping with it may be found in Christina Maslach, "Burned-Out," *Human Behavior*, vol. 5 (1976), pp. 16–22.

[14] Cortese and Jones, "Boom Towns: A Social Impact Model," p. 31.

[15] HUD, *Rapid Growth from Energy Projects*, p. 25.

[16] Dennis Freeman, community coordinator, Platte County Human Services Project, interview, Oct. 3, 1978.

[17] A good overview of rural health problems may be found in Milton I. Roemer, *Rural Health Care* (Saint Louis: C.V. Mosley, 1976).

of transportation, or other factors. Health-related social services, which can enable people to make use of existing resources, are almost nonexistent in rural areas.[19]

Another problem lies in the apparent inability of most older people to see themselves as potentially influential in the community's decisionmaking process. The large percentage of older people in most rural areas could make them a potent force, especially at the polls. Few, however, are social activists, and not enough are even politically active on issues of vital importance to them. Movements and organizations such as the Grey Panthers are infrequently found outside of metropolitan America. A possible contributing factor to this apathy and lack of organized political and social activity is the extremely high percentage of females in the aged cohort. Societal conditioning and institutional sexism have tended to prevent women from perceiving themselves as "movers and shakers" in important political and social concerns.

Women

Women of all ages, not just the old, suffer adverse consequences from impact conditions. Poor women, like the aged, are hit hard by the boom-fueled inflation. Unable to maintain even a subsistence level of existence from the largesse of their public assistance check, some Aid to Families with Dependent Children (AFDC) mothers simply leave the community. Leaving a home community, familiar surroundings, and a network of relationships can create additional social and emotional problems for these women and their children. Those who remain must cope with the added financial and emotional strain of "trying to make ends meet" with decreasing purchasing power. County welfare workers, faced with sharply rising caseloads, have even less time to work with AFDC families.

A HUD report indicated that boomtowns are not good places for wives of construction workers.[18] Due to the lack of standard housing, many of these wives live in crowded trailer courts, sometimes referred to as "aluminum ghettos," on the fringe of town. Wives free to work find few opportunities and much discrimination in securing construction jobs. Support jobs, which do accompany construction jobs, do not increase as fast as the population.

Wives from other parts of the country may find that activities—educational, recreational, social, and cultural—are limited. Rural residents are often oriented to "outdoors activities" (e.g., hunting, fishing, hiking, backpacking), whereas many persons from urban environments are more familiar with other forms of entertainment and recreation. Women moving from an urban area to a rural one or East to West or South to North, or all three, may suffer from "culture shock" and/or "future shock."[20] The "we-they split," which often separates oldtimers from newcomers, frequently accentuates these problems.

Wives, especially mothers, who must cope with life in the aluminum ghettos find it to be a formidable struggle. Kohrs, a social scientist and clinical director of the Central Wyoming Counseling Center in Casper, Wyoming, gives a graphic description of life in an energy production boomtown:

> A housewife, after fighting mud, wind, inadequate water and disposal systems, a crowded mobile home and muddy children all day, snaps at her husband as he returns from a 16-hour shift. He responds by heading back downtown and spending the night at a bar drinking and trading stories with men from similar circumstances. This typical occurrence came to be called the "Gillette Syndrome."
>
> Divorce, tensions on children, emotional damage and alcoholism were the result. Children went to school in double shifts; motels turned over linens in triple shifts. Jails became crowded and police departments experienced frequent changes in personnel in the tradition of frontier justice. Out of frustration with the quality of living, it appeared that mayors shuttled in and out of office like bobbins in a loom. Depression was rampant with suicide attempts at a rate of one per 250 people. Suicide attempts were rarely fatal but they became *the* tool to regulate the lack of human concern. It was the ultimate method to express that something was wrong and needed changing.
>
> When neglect went beyond tolerable limits, divorce was the natural consequence. Fatigued men working long shifts and driving long

[18] A description of one innovative program designed to enable senior citizens to make minimum use of existing health resources in rural areas may be found in Joseph Davenport III and Judith Ann Davenport, "Health-Related Social Services for the Rural Aged: Problems and Opportunities," *Social Perspectives*, vol. 5 (December 1977), pp. 36–40.

[19] HUD, *Rapid Growth from Energy Projects*, p. 25.

[20] These women often experience many major changes in a very short time span. A good discussion of the adverse effects such rapid change may precipitate may be found in Alvin Toffler, *Future Shock* (New York: Random House, 1970).

distances to work came home to equally fatigued wives coping with a mud-spattered world.

Trailer courts offered only a mud patty for children's play as they raced between trailer houses and trailer court traffic. Even schools were in trailers similar to those in which the children lived. Nothing seemed permanent. Difficulty in coping with transient living, angry school personnel teaching under less than adequate conditions, and parental conflicts led to poor school adjustment and achievement, then truancy, then delinquency, and finally a residential environment.

Jails often became a protection of wives from beatings by drunken spouses rather than detention for real crime. Psychiatric and alcoholic withdrawal problems were maintained in the jail because of overworked medical personnel and inadequate medical facilities. The hospital was a first aid station to maintain life until transported to a hospital in Casper, Billings, or Denver.

The pattern of depression, delinquency and divorce was so well documented that the consequences were predictable.[21]

Women, facing and sometimes breaking under these immense pressures on their family and personal lives, may encounter difficulties in securing supportive services.

Services frequently found in more urban areas may not exist. There will probably be no local family service association agency or women's resource center. Existing resources, such as the county welfare office and perhaps a branch of the regional mental health program, carry a relatively high degree of stigma in rural areas. Even so, these local agencies tend to be so overwhelmed with new cases and problems that they have little time for outreach, community education, and preventive programs. This results in some women not knowing of possible resources. Others may suffer from problems that could have been ameliorated if not prevented. For example, a mental health program can sponsor classes or groups that better equip people to cope with major changes such as moving to a new location, beginning a new job, or making new friends. However, mental health personnel beset by large numbers of people with pressing individual and family problems often forego such programs. As the old saying goes, "It's hard to plan how to drain the swamp when you're up to your waist in alligators"

The large number of young wives of construction workers increases the demands on the health-care and child-care service systems. Rural health-care systems, generally deficient in facilities and personnel, are seldom prepared for the increased demands for general health care, let alone the extra needs in areas such as obstetrics, gynecology, and pediatrics. Adequate child-care services are not usually available. This poses a hardship on women desiring to work and women who want a break from the household routine.

Sexual assault and spouse abuse are other problems that are difficult to deal with in nonmetropolitan areas. While the incidence of rape may not be higher in impact communities, small-town victims suffer from additional problems not generally experienced by the urban victim, to wit:

a greater lack of anonymity and confidentiality, a greater pressure not to report the rape because of damage to the community's social fabric, a lack of objectivity in courtroom procedures because "everyone knows everything about everyone else," a hometown bias against outsiders if the rapist is a local male and the victim from outside the community, and a general lack of rape crisis services.[22]

Spouse abuse, a problem receiving increasing and much-needed attention in many parts of the country, is still not easily discussed or dealt with in small towns, including impact communities. While spouse abuse is a common problem in boomtowns, few specialized counseling services, shelter facilities, or other resources exist. The need for such services in any given small town generally does not justify the development of a separate program or organization even if funds are available.[23] Furthermore, feminist groups, which tend to spearhead such developments in metropolitan areas, are not prevalent in small-town America.

[21] ElDean V. Kohrs, "Social Consequences of Boom Growth in Wyoming" (paper presented at the Rocky Mountain American Association for the Advancement of Science meeting, Laramie, Wyo., Apr. 24–26, 1974).

[22] Judith Ann Davenport and Joseph Davenport III, "Training Volunteers for Rural Rape Crisis Services" (paper presented at the Second National Conference on Training in the Human Services, Atlanta, Ga., Oct. 16–18, 1978), p. 11.

[23] An example of how specialized services may be provided in rural areas through use of existing resources is found in Judith Ann Davenport and Joseph Davenport III, "A Model for Rape Crisis Services in Rural Communities," *Human Services in the Rural Environment*, vol. 2 (December 1977), p. 47.

Wyoming Human Services Project

The Wyoming Human Services Project (WHSP) is an attempt to mitigate the human problems created or exacerbated by rapid resource development. An interdisciplinary group of University of Wyoming faculty members met on an ad hoc basis during 1974–75 to discuss social change theory, especially as it related to preventive measures in Wyoming communities.[24] Their attention was narrowed to focus on the boomtown effect of rapid population growth due to the development of mineral resources. This attention was translated into a funded National Institute of Mental Health project in 1975.

The purpose of this project is (1) to determine how best to train and use human service personnel (e.g., nurses, psychologists, social workers) to solve the "people problems" that inevitably accompany the rapid social change found in communities undergoing impact and (2) to derive guidelines and suggestions for other communities in similar situations about how most effectively to cope with human service problems (e.g., alienation, child abuse) found in impact conditions.[25] Major project components include a university-based training program and a community-based service program.

The *university component* is administratively located within the department of social work. Personnel include a project director, field director, research assistant, and secretary. Staff members are responsible for recruiting students into a two-semester course aimed at developing skills in community development and human service delivery in impact communities. Students, who must be seniors or in their last year of graduate school, are recruited from a number of "people-oriented" disciplines (e.g., psychology, social work, anthropology, nursing, recreation, adult education, law, communications). The training is multidisciplinary, with the faculty team coming from the same "people-oriented" disciplines. Education and training cover such areas as: the nature and problems of impact communities, team building, establishing helping relationships, community development, and community resources. Following graduation, teams of around five members are selected for 1-year appointments to the community-based program. These teams then receive additional intensive training for 1 month on campus and in the community.

In the *community-based service program*, teams go into impacted communities that have requested assistance. Team members, called project associates, are funded by the local community from a variety of sources (e.g., Economic Development Administration, municipal funds, State funds, and power companies). Project associates are placed, at no direct salary cost to the agency, in settings related to their educational preparation. For example, a nurse might be placed in the county health department and a social worker might be placed in a mental health center.

Agency service personnel tend to be so overwhelmed that they welcome any kind of help. Team members spend 20 hours per week providing direct services. This tangible assistance not only provides a needed service, but helps in securing community sanction for the team. The remaining 20 or more hours each week are spent in team "project" activity. Team members, usually from five or so different disciplines, work together to help the community define impact-specific problems of service delivery and design and implement measures intended to alleviate those problems. Such activities and measures are extremely difficult for existing agency personnel to engage in. Attempting to cope with the influx of people and problems makes them so "crisis oriented" that they have virtually no time for planning and preventive activities. Project associates work closely with a community advisory board and local agency personnel to ensure local input and involvement in problem definition and solution. In effect, the community-based service component functions as a rural adaptation of a traditional social work program—the health and welfare planning council, found in most urban areas and called by such names as council of community agencies or council of community services.

Specific WHSP objectives include:

1. To help community personnel define problems of human service delivery relative to impact conditions.

2. To aid service delivery agencies in their direct service activities by providing team members as staff members in those agencies.

[24] A more detailed account of the history of the project may be found in Hanks, Miller, and Uhlmann, "Boom Town," pp. 1–10.

[25] Keith A. Miller, "Application for Support of Impact Community Team Project" (submitted to U.S. Department of Health, Education, and Welfare, Office of Planning, Research and Evaluation, Social and Rehabilitation Service, July 1977), p. 7.

3. To help design and execute experimental projects and programs in the community intended to alleviate problems in the community caused by a rapidly changing social situation.[26]

Clearly, the thrust of the project is toward enhancing the community's ability and capacity to solve its own problems. Therefore, the team does not attempt to impose its own definitions of the problems. Problems are identified and addressed by the community, with team members serving as catalysts, enablers, and facilitators. General problem areas identified by the Gillette Wyoming Human Services Project and the community were as follows:

I. *Children Services and Care*
Lack of: adequate day care, adequate foster homes, recreational outlets
Abuse/neglect
Classroom turnover
Alcohol and drugs

II. *Group and Community Involvement*
Lack of: transportation, activities fitting the backgrounds of newcomers, volunteers, information about availability of activities
Long working hours
Alienation
Different cultural backgrounds of newcomers

III. *Mental Health*
Lack of: community involvement, public education, recreational and social outlets, adequate crisis intervention/long-term care, outreach efforts
Presence of symptomatic behaviors (depression, alcohol abuse, suicide, drug abuse)

IV. *Health*
Lack of: family planning services, adequate M.D.s and nurses, medical facilities, free and accessible clinics, information and educational facilities, emergency transportation
High staff turnover
Venereal disease
General negative attitudes about preventive medicine

V. *Recreation*
Lack of: public education, gyms and other facilities, programs for adolescents and elderly, park and recreation departments

VI. *Other Social Issues*
Lack of: adequate housing, jobs for women
Delay of services
High agency personnel turnover
Persons on fixed incomes relative to superinflationary prices
Traffic problems and other demands for law enforcement[27]

These problem areas are fairly typical for many western boomtowns, including Wheatland, Wyoming, site of another WHSP team. Some problems (e.g., depression, alcoholism) affect all societal groups, including women and minorities. Others (e.g., lack of child care) primarily affect women and minorities.

Interventions for Women and the Aged

Project personnel initiated a variety of services aimed at helping all segments of the community, but having special value for women and minorities. For example, a "Help Line" was established to provide information as well as crisis and referral services. This was of great value in linking women and minorities, many of whom were newcomers unfamiliar with local resources and services, with needed assistance. The crisis service is heavily used by women and appears to be a much-needed resource.

A Golden Age Discount Card program was established to reduce the inflationary burden on senior citizens. Under this plan, local participating merchants give a 10 percent discount to elderly persons possessing the Golden Age Discount Card. The team also completed a survey on housing needs in Wheatland. Needs identified in the survey were heavily publicized via community meetings and newspaper articles. Community interest, stimulated by this activity, has resulted in the involvement of city and county officials in planning for low-income housing. Officials have made a zoning change that will allow a developer to construct low-income housing. This will be of special help to many elderly and women.

Alienation and isolation of the aged in Gillette and Platte County have been reduced in part through the establishment of high school classes on gerontology. Students learn more about the aged, and a strong volunteer component places them in contact with older people in various settings.

A project associate placed at the Platte County Senior Center helped to increase programming and

[26] Ibid., p. 9

[27] Problem areas as adapted by Judith Ann Davenport from Keith A. Miller, "Wyoming Human Services Project: Overview and Evaluation of First Year Operation in Gillette, Wyoming," November 1976, pp. 40–41.

provide more direct services. Project personnel aslo helped to recruit and involve the elderly in a program aimed at analyzing and reducing energy consumption. Through these efforts, seniors were able to make their limited dollars go further.

One project associate, a nurse, helped to provide much needed health services through the Platte County Health Department. The many health needs of this group (e.g., home health care), combined with the paucity of health resources, made this an extremely important form of assistance.

A service of special importance to women was a cooperative day-care program. Sixteen participating families share responsibilities in running this program. This relieves stress on women by allowing them free time for shopping, social, and recreational opportunities. Team members have also supported other efforts at increasing and enhancing the limited child-care services in the community. Increased child-care services not only provide more immediate employment opportunities, especially for women, but they also enable mothers of small children to seek other available employment. A preschool drama program, similar to Sesame Street and offered once a week, gives educational and recreational opportunities to children while allowing respite to their mothers.

Alienation and isolation of women is lessened through a volunteer program. Many women are among the volunteers who find meaningful involvement in such activities. Such volunteer programs provide needed services and enable newcomers to feel more of a part of the community. Contact between oldtimer volunteers and newcomer volunteers also tends to mitigate the "we-they" split so often found in boomtown communities.

One volunteer project established was "Special Friends," patterned after the popular Big Brothers/Big Sisters concept. Children in need of special attention, usually from low-income families and/or female-headed households, receive individualized attention from their "Special Friends." This gives their parent(s) free time and supplies the children with different adult role models. They are able to go on trips and engage in activities otherwise unavailable.

Project members also were instrumental in getting a G.E.D. (General Education Development) program for the Platte County area. These programs are of much value to women and minorities who need education and skills to prepare them for employment.

A community workshop on "prejudice in impacted communities," presented to the service providers and community at large, served to dispel myths and stereotypes about women and minorities. The large numbers of female and minority team members also served to dispel myths and to provide needed role models. A Chicano project associate was especially effective in communicating with Spanish-speaking families about family planning matters.

Social and recreational needs have been met through the addition of a project associate (recreation major) to the district parks and recreation department. This person has been extremely active in planning and programming activities for women (e.g., women's softball teams).

Future Actions for Women and Minorities

One caveat that should be remembered is that the WHSP exists to help the community identify and solve its own problems. It is not intended to serve as an advocacy group for any particular interest. Therefore, while team members may voice their own opinions and make recommendations and suggestions, selection of problem areas requiring intervention rests with the community.

However, future action by project personnel and/or other interested parties might well be in the following areas: continued development of informal and formal child-care services to enhance child development, relieve strain on parents, and free women for employment; increased development of recreational facilities and programs to counter alienation and isolation of women and the aged; continued focus on housing needs of low-income persons, including support of subsidized housing units; increased staffing for health, mental health, and social service programs aimed at providing such services as family planning, home health care, marriage counseling, and alcoholism counseling; increased development of outreach programs (e.g., classes on coping with change) to prevent or lessen mental and emotional problems; continued development of educational and training measures to better equip women and minorities for employment opportunities; increased community awareness (through conferences, workshops, news articles) of needs of women and minorities; increased efforts at enabling women and others to organize (e.g., local chapter of

Grey Panthers or NOW) and press for needed changes and continued efforts to improve the community's ability to plan and coordinate services.

Conclusion

Concluding, this article described the social and human service problems of communities impacted by rapid development of energy resources; it discussed the special problems of women and minorities such as the aged; it detailed the history and operation of the Wyoming Human Services Project, a project designed to mitigate human service problems created or exacerbated by boomtowns; and it identified possible problem areas for future intervention by the WHSP and/or other interested parties. The authors believe that this model of impact mitigation or a variation of it might well be emulated in other areas of the country affected by impact.

Social/Psychological Problems of Women and Their Families Associated with Rapid Growth

By Alma E. Lantz and Robert L. McKeown*

Craig: A Case Study

Introduction

As the national demand for an increasing supply of energy grows stronger, attention is being focused on the regions of America where large, generally untapped resource reservoirs exist and is primarily directed toward new and more massive uses of coal, including extensive development of coal-fueled, steam-generating electrical facilities. Secondarily, industrial and governmental investments in solving the mysteries of synthetic fuels are steadily growing.

For communities experiencing the early impact of these efforts, the consequences have been significant. Practically by definition these communities have been relatively small, usually stable rural towns with an economy based primarily on agriculture. The sudden growth stimulus has produced many changes, but none are felt more strongly than the rapid increase in the incidents of negative social behavior and the lessening of a sense of psychological well-being.

Nearly everyone in the community is affected by the change, including women, men, and children, new residents attracted by employment opportunity, oldtimers living through unaccustomed stress, local governments attempting to plan and coordinate responses to new situations, and community agencies and services usually working at capacity in dealing with existing problems. Even under the best possible circumstances, it has appeared that "boom" growth produces a higher number of emotional and life-stress problems than would a comparable increase in population occurring over a greater period of time. It is that phenomenon and its effect on the community which is discussed in this paper.

The Colorado West Regional Mental Health Center, using the community of Craig, Colorado, as the project site, undertook a community agency caseload review to attempt to determine the actual increase of reported incidents in certain problem-area categories. Financial support was provided by the Colorado State Legislature, which expressed interest in using the data as a part of its information base when considering appropriations requests by human service agencies working with boom growth problems. The design and implementation of the project was carried out by the Denver Research Institute.

The economy of Craig has historically been based primarily in agriculture. The county in which it is located maintained a generally consistent population level, estimated to be 7,000 in 1973. In that year the economy shifted toward mineral (coal) extraction and electric power generation. Construction began on the first of two powerplants, while coal leases were being developed. By mid-1976 the county's population had grown to 10,300, an increase of 47 percent in 3 years. (This figure does not reflect temporary workers who did not give Moffat County as their place of residence during the interim census.) Community living problems seemed to be taking the exponential leaps in frequency as had been reported by other boomtowns.

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Methodology

To address the planning needs of the various community agencies, the total number of complaints and/or incidents within the problem-area categories were obtained from as many agencies as possible. Since a high degree of interrelationship was expected among the categories, a primary and secondary problem area was delineated on the data-collection forms. For example, alcohol abuse, child behavior problems, or emotional disorders often result in family disruption. Because of the interrelationship among problem areas, assignment of an incident to a category was occasionally subjective or arbitrary. Consequently, although the total number of incidents/complaints is derived from primary data sources; there may be room for disagreement about assignment to specific categories.

Table 1 details the operational definitions of each problem area, e.g., the types of data included in each. For example, alcohol-related problems were defined as the sum of the number of complaints/incidents involving drunk and disorderly behavior, driving while intoxicated, the number of hospital admissions for detoxification, and the number of cases opened at the mental health center where alcohol abuse was listed as the primary problem.

Since confidentiality of information appeared to be a sensitive issue, the actual data collection was done by agency personnel in most instances. Specifically, after a briefing from Denver Research Institute staff, a person within the agency was asked to review the files for the relevant months and to record the complaint/incident anonymously. On the basis of the information on the returned form, judgments were made as to the problem area in which the incident should be included. The data were collected for November and December, for the years 1973 and 1976 (table 2). Total incidences for the entire year were taken, in order that the typicality of those 2 months might be verified. In each agency, November and December were found to be average months.

The emphasis of the project was to examine the frequency of various types of problems and the extent to which they increased. Therefore, the data include events differing in degree of seriousness. Moreover, in some data sources, substantiated and unsubstantiated cases were used. The rationale for including unsubstantiated cases is that unsubstantiated cases also are acted on by the agencies. For example, the number of logged calls as well as arrests made were collected from the sheriff's office and police departments. On the other hand, only the cases opened, but not caseload or contacts, were used for the mental health center. (Active caseload or contacts compiled for the mental health center for November 1973 and 1976 showed an increase from 80 to 178, or a growth of 123 percent.)

Finally, checks were made within each agency for changes in recordkeeping and other practices that might influence the reliability of the figures used. Few were found within the agency. Judging from the data, however, there were changes in reporting practices on the part of the citizens. Especially when neighbors or friends were involved, the citizens may have handled their complaints informally; when strangers were involved, they registered formal complaints to an agency.

As noted earlier, the data represent the number of problem incidents, not individuals encountered. Therefore, some double counting of individuals did occur. For example, a person may have been arrested several times for driving while intoxicated, as well as having been admitted to the hospital for detoxification. Again, however, since multiple agencies realistically often deal with the same individual, this datum was considered appropriate for use in planning decisions.

Results

The data presented in table 3 represent reasonable indicators of the increase in the number of problem incidences that may occur with rapid growth. Most categories show an increase in excess of what would be expected during a time when the population doubled. The variation in increase among problem categories may be at least partially due to differences in the stringency of the criterion for inclusion.

Each of the categories is, in fact, a type of social/psychological problem in its own right or results in psychological problems; e.g., substance abuse may be an outgrowth of emotional problems, and it may create emotional problems for those who must live with the substance abuser. Realistically, many of the problems that were categorized in the Craig study primarily impact women—child behavior problems typically more intimately involve women than men.

In an effort to delineate those groups most heavily impacted by rapid social change, the cases opened at the mental health clinic were broken down in order

TABLE 1
Types of Data in Categories

Substance Abuse

Law enforcement—driving while intoxicated, drunk and disorderly, complaints and arrests

Hospital—admissions where primary diagnosis was alcoholism

Mental health center—number of cases opened, where the primary diagnosis was alcoholism

Emotional Disorder

Law enforcement—suicides, mental disorder referrals, and/or detentions

Mental health clinic—cases opened by primary diagnosis

Hospital—psychiatric admissions

Child Abuse/Neglect

Social services—caseload of dependent and neglect, abuse and neglect, child abuse complaints

Family Disturbance

Law enforcement—family disturbance calls, arrests for "family" assaults

Social services—foster care, voluntary placements, custody investigations service only

Child Behavior Problems

Social services—CHINS (Children in Need of Supervision), delinquent

Law enforcement—complaints/arrests involving juveniles

Mental health—cases opened with adolescent as patient or as primary problem

Crimes Against Persons

Law enforcement—assault, rape, murder

Crimes Against Property

Law enforcement—burglary, theft, robbery

TABLE 2

Average Reported Complaints or Incidences Per Month, by Agency (Averaged from November/December 1973 and November/December 1976)

Problem area	Sheriff & police department		Mental health center		Hospital inpatient		Social services		Total		Average increase
	1973	1976	1973	1976	1973	1976	1973	1976	1973	1976	%
Substance abuse	4.0	40.0	1.5	1.5	1.0	5.0	0.0	0.0	6.5	47.0	623
Family disturbance	3.5	21.0	3.0	6.5	1.0	1.0	6.0	32.5	13.5	61.0	352
Emotional disturbance	0.0	0.0	4.0	5.5	1.5	2.5	0.0	0.0	5.5	8.0	45
Child abuse/neglect	0.0	0.5	0.0	0.0	0.0	0.0	11.5	25.5	11.5	26.0	130
Child behavior problems	0.0	14.5	2.5	1.5	0.0	0.0	0.5	17.0	3.0	33.0	1,000
Crimes against property	29.0	93.5	0.0	0.0	0.0	0.0	0.0	0.0	29.0	93.5	222
Crimes against persons	2.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	20.0	900

TABLE 3

Total Average Complaints or Incidences Per Month

Problem area	Total average complaints/incidences per month*		Percent increase
	1973	1976	
Substance abuse	6.5	47.0	623%
Family disturbance	13.5	61.0	352
Self-reported emotional disorder	5.5	8.0	45
Child abuse/neglect	11.5	26.5	130
Child behavior problems	3.0	33.0	1,000
Crimes against property	29.0	93.5	222
Crimes against persons	2.0	20.0	900

*Total includes cases reported to law enforcement, social services, hospital, and mental health clinic.

TABLE 4
Types of Problems Experienced, by Sex, 1973 and 1976

	1973		1976	
	M	F	M	F
Alcohol/substance abuse	3	0	2	1
Family problems/disruption	0	4	7	9
Depression/suicide	3	4	2	7
Juveniles	6	2	2	2
Total	12	10	13	19

TABLE 5
Persons Seeking Help, by Agency and Residency, 1976

	Social services	Hospital/substance abuse	Junior high discipline problems	Sheriff's office/person complaining	Total
Newcomers	18	10	33	51	112
Oldtimers	33	7	24	64	128*

*The population was approximately evenly divided between oldtimers and newcomers.

to estimate differential effects by sex. The breakdown by sex showed: 1973—12 males, 10 females; 1976—13 males, 19 females.

The diagnoses of the cases opened were also tabulated in order to estimate differences in types of problems experienced by males and females (see table 4).

Despite the extremely small number of cases, the number of males seeking treatment increased slightly, while the number of females increased dramatically; this might suggest that women suffer more during rapid growth than men. As interesting, however, is the high percentage of males seeking treatment in 1973—it is contrary to common clinic experience to see more males than females.

Another tabulation was conducted to ascertain whether newcomers or oldtimers were causing or having the bulk of the problems. By necessity, only 1976 incidents were used since a 2-year residence was the criterion of an oldtimer. We were able to do this in only some instances, since length of residence was not always available.

Although these figures, shown in table 5, are by no means reliable, they demonstrated that oldtimers as well as newcomers experience living problems.

Discussion

The data from the Craig study confirm the observations made in other boom communities of substantial increases in community living problems. Further, preliminary evidence suggests that these burdens fall heavily on the women and children.

One must be careful not to disregard the small numbers in the base-year data. Rather, the new reported problems in 1973 underscore the impact of the growth on the community structure. Where, for example, a small law enforcement staff may have been able to handle a family dispute or to take an alcoholic friend home to a neighbor, the sudden increase in activity tends to prohibit such informal settlements. This is partially due to the workload, but largely because of the shift in the composition of the population.

On the other hand, one must be extremely careful in interpreting these small numbers from nonrandom sources as conclusive. In fact, the figures should be used to generate only hypotheses to be examined; they are suggestive indicators at best.

Since both substantiated and unsubstantiated incidences were used, it seems likely that the data reflect an increase in the *perception and handling of problems, not necessarily the actual problems.* In other

words, the residents perceived more danger/problems and likely reported problems to authorities more readily. This perception is, in and of itself, a problem, but our data do not necessarily show large increases in actual substance abuse, child abuse, and so on.

The reasons for the problems observed tend to appear with consistency in the narratives of boomtown agencies and were substantiated by our informal observations.

1. *Lack of individual space.* People pressure in growth communities tends to force regulatory agencies to approve substandard developments that, as one Wyoming environmental health officer stated, "at least keep the people out of those tents." Once approved, however, temporary quarters tend to become permanent housing despite the absence of basic health and sanitation features. Mobile homes, often parked on recently graded sagebrush flats, are located so closely together that individual privacy is nonexistent. Social and recreational facilities are crowded beyond reasonable use, where they are available at all. Schools expand into trailers resembling those in which the children live. Nothing seems permanent as little is planned for permanency.

2. *Limitations on meaningful communication.* Many new residents try to maintain contact with family and friends in other places, to feel some of the personal support not available in their new location. However, even this can be difficult in a community where a minimum waiting period of 18 months may be required before a new telephone can be connected, as has been true in Rock Springs. Use of public telephones offers an alternative but little privacy as the waiting line listens to the sequence of conversations.

3. *Limitations on community recreational facilities.* Most impacted communities are quite small, with limited existing recreational resources. Those that are available were designed for the pregrowth population. Often in boomtown living developments little attention is paid to supplementing these resources, even to the extent of failing to provide a grassy playground with a few pieces of play equipment.

4. *Little concern for the needs of women.* In the energy development industry, it appears that working opportunities for women are limited. With the pressing demand for housing, facilities for children's day care are often overlooked. The housewife contends with inadequate water and disposal systems, a crowded mobile home, and muddy children and has few opportunities to pursue personal needs and interests.

5. *Changes in community attitudes toward the aged.* Most stable rural communities are responsive to the needs of their senior population. However, in a new orientation toward planning and providing for the needs of energy industry workers, the aged may be overlooked.

6. *Increased frequency of alcoholism-related problems.* In much of the West, heavy alcohol use has historically been a feature of the culture. The small, stable communities have quite effectively dealt with the overt problems of alcoholism, much as they have cared for and protected the mentally ill. With drinking a major recreational outlet in a boomtown, however, there is noted a marked increase in alcohol-related incidents.

Research Underway at Denver Research Institute

The Denver Research Institute has received a grant from the National Institute on Alcoholism and Alcohol Abuse to study alcohol-related problems of several boom communities over a 3-year period and to encourage these communities to initiate their own prevention efforts.

The research represents an effort to encourage "grassroots" prevention or minimization programs by providing citizens with education concerning the way alcohol problems affect them and their pocketbooks. The hypothesis to be tested is that awareness of direct social and economic effects of alcohol-related problems will result in some preventive steps being taken by the community to minimize the impact of the problems.

Our approach to the problem is dictated by the following facts. The literature clearly suggests that community support is necessary for primary prevention (e.g., Cahalan, 1975). Community support is unlikely if the alcoholic is seen as different. This requires that prevention activities concentrate on problems other than "alcoholism." Since the problems associated with alcoholism are not singular, problem identification should emphasize the identification of patterns of problems. Further, since the emphasis is on the family and the community, analysis of problem patterns would include information concerning environmental or "situational" contributing factors and enable early case finding, both for family members and institutions. Finally, it

follows that "naturally occurring" mechanisms that lead to responsible nonproblem drinking would be isolated.

These communities provide a unique opportunity to examine the effects of alcohol problems on the family structure, family members, and on the community as a whole. And, since alcohol abuse appears to accompany rapid social change with amazing regularity, these towns provide an ideal natural laboratory in which to examine the effects of prevention efforts. That is, prevention efforts may be instituted before towns undergo "booms." The results of these efforts may be evaluated against: (1) control towns that are also undergoing similar changes, (2) towns that have previously experienced these changes, and (3) towns that remain stable.

The goal/objectives of the study are:

1. To determine what mechanisms serve to mitigate alcohol abuse in stable rural communities and to determine what systems cease to operate when drinking becomes a highly visible and disruptive factor in community and family life. Our working hypothesis is that a strong sense of community and family and people's knowledge of their neighbors' activities are important variables in alcohol use and alcohol abuse.

2. To determine the effects of alcohol abuse on both individual family members and the community. Further, the roles played by family members and the community at large in compounding, condoning, or containing alcohol problems will be observed.

3. To utilize the information on "naturally occurring" prevention efforts and on the effects of alcohol abuse on the family and community members to encourage prevention efforts by local citizens.

In all of the towns chosen, detailed incidence and prevalence data on drinking problems will be compiled, and drinking patterns will be directly observed. Using a multifaceted approach, problem *incidences* coming to the attention of *all* service agencies will be used, and the number of individuals having these problems will be estimated. Surveys on attitudes toward drinking will be made of a large sample of the population. Based on the results of the data-collection effort, an education/prevention effort emphasizing the economic and social costs of excessive drinking to *all* individuals in the town will be developed for one-half of the towns. Then, a grassroots community organization will be encouraged in these towns. The actual mechanisms occurring during the prevention efforts will be well documented. The final phase of the proposed effort will be an evaluation, again measuring the incidence and prevalence of alcohol problems, attitudes toward problem drinking, and regulatory, legislative, or insulation controls developed by the community where an intervention has occurred, in comparison to the "control" communities.

Theoretical Framework, Alternative Strategies, and Needed Research

It is not difficult to discuss what is needed in the way of research: to date we don't even know the basics. We don't know *what* really happens to the individuals and the community as they undergo rapid change, much less *why* it happens, *who* it happens to, or *when* the effects may be observed.

The data presented in this paper underscore this point: in a literature search conducted for the Craig study, we found no other real data on the incidence of social/psychological problems. And our data are unsatisfactory from a researcher's point of view due to small numbers and sampling procedures: they can in no way be considered conclusive.

In sum, despite a rather overwhelming amount of papers published on boomtowns, none of them contains longitudinal research necessary to understand the impacts of the changes. Yet these towns provide an ideal "laboratory" or naturally occurring experimental situation to examine these impacts.

A Theoretical Framework

Although the total absence of facts and figures regarding individuals within a rapidly growing community would suggest that *any* longitudinal data would be valuable, understanding of a problem is often facilitated by a common usage of definitions and theoretical frameworks.

It is difficult to establish such a framework when there are no facts on which to base its development. However, we would like to present one framework as a point of departure.

Such a framework would posit the following: previous studies have indicated that rapid change may create stress and that this stress may produce increased susceptibility to a wide variety of physical and mental disorders. Recently, preliminary evidence has suggested that social conditions and/or social support groups may be important in determining an individual's susceptibility to illness. This

general approach to the changes occurring with rapid growth is illustrated by figure 1.

Rapid Change as Stress

The term "stress" conveys the idea that people are beset by powerful pressures which greatly tax both biological and psychological adaptive resources. Although there have been many different definitions of stress, Lazarus (1966) has noted that all definitions emphasize the fact that when stress occurs a person's most important values and goals are disrupted or endangered.

Many studies of individual life events have hypothesized and/or found that any change, whether positive, such as marriage, or negative, such as the death of a spouse, increases the susceptibility of the individual to any type of pathology (Holmes and Rahe, 1967; Ostrander et al., 1972; Gunderson and Rahe, 1974; Sanua, 1970; Dohrenwend and Dohrenwend, 1974). For example, one study of a community relationship between the adults over a 2-year period found a positive relationship between the number of changes in an individual's life (e.g., relocation, marital status, family, health, finance, and community crisis) and the individual's level of psychological well-being (Ostrander et al., 1972).

Environmental change may also adversely affect an individual's physical or mental well-being, as Cassel (1976), who has reviewed the human and animal literature on stress, has concluded. For example, if the size of an animal's social group increases, health is affected negatively, even though all other factors remain constant. Cohen (1976) has hypothesized that:

> any sudden or abrupt dislocation in the arrangements of groups which make up the social structure of the society, of its normative avenues of mobility, or of its normative lines of communication, will give rise to overtly psychotic behavior in a significant segment of the group and/or its patterns of behavior (p. 507).

Finally, a study conducted by the National Institute of Mental Health (1974) supports Cohen's argument and demonstrates that community instability or rapid change is positively correlated with an increased risk of mental illness. These findings suggest the importance of examining the rapid change of a community as a stressor for its residents.

Boomtowns as an Example of Rapid Change

In the past there have been few studies of the epidemiological implications of rapid social change on stable, nonmoving populations. Most of the studies that do exist describe the cultural deviance or mental illness which results from rapid change in relatively primitive cultures (e.g., Carpenter's 1961 studies of a remote Eskimo community, studies of immigrants to the U.S., or studies of rural to urban migration within the U.S.), even though one current study is investigating whether the rapid change of the present-day Shetland Islands from an isolated rural community to a more industrialized community will adversely affect the health of the population (Voorhees-Rosen and Rosen, n.d.).

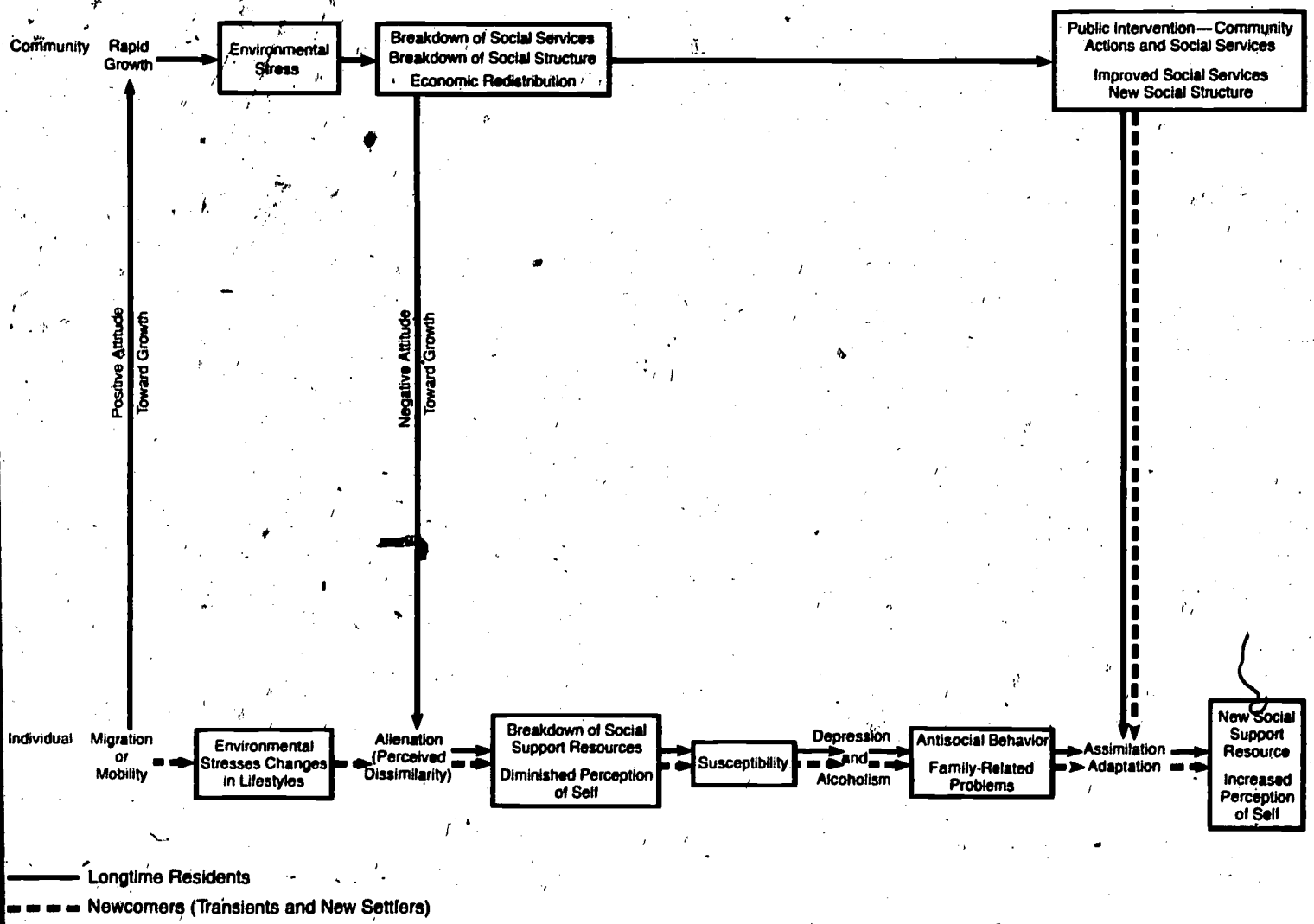
However, rapid social change is also affecting previously stable communities in the United States. In the past decade the rapid growth characteristics of boomtowns have received much attention, and the amount of literature that has been written reflects how widespread the rapid growth phenomenon really is. In rural western towns alone, rapid change is expected to affect 2 to 3 million Americans in the next 10 years (Graber, 1974; Albrecht, n.d.; Christiansen and Clark, 1976; Smith et al., 1971), and it has recently been estimated that there are over 200 boomtowns in the Rocky Mountain and Northern Great Plains area (Cortese and Jones, 1977). In addition, Rabkin annd Streuning (1976) have pointed out that approximately 20 percent of the U.S. population experiences rapid change because of internal migration.

The impact that rapid growth or sudden energy-related development has upon previously small, stable, isolated, and primarily agricultural communities is dramatic. Within a 2-to 5-year period, these towns may become sprawling industrial centers (Cortese and Jones, 1977; Gilmore and Duff, 1975; McKeown and Lantz, 1977). In several respects the rapid change process that occurs in boomtowns resembles the basic urbanization or industrial revolution process (Morrison and Wheeler, 1976).

In addition, the nature of the populations of these towns may change so that conflict occurs between oldtime residents, newcomers who intend to settle permanently in the towns, and newcomers who are essentially transient, as well as between the old ranching or agricultural elite and the new elite, which consists of industrial managers. Thus, the boomtown may become a battleground of conflicting values and lifestyles.

FIGURE 1

Flow Diagram of Rapid Change and Its Effects on the Community and Individuals



The sudden and massive shock that this change may produce on social, economic, and political institutions, such as local governmental service units, local businesses, school systems, churches, and recreational facilities, has been described in detail. A number of studies have dealt with boomtown growth management and have focused on the effects of population increases upon service facilities, employment possibilities, and revenue bases (Cortese and Jones, 1977; Gilmore and Duff, 1975; Donald, 1977; Gold, 1977; Foundation for Urban and Neighborhood Development, 1974; Federation of Rocky Mountain States, 1975).

Yet, the impact of rapid social change on individuals and social groups has rarely been discussed. Greenstein (1978), who has reviewed nearly 100 studies of boomtowns, has noted that only a few of these studies discuss the human impact of rapid change, much less document these changes, even though evidence indicates that they may be serious and dramatic.

The Role of Social Support Resources in Reducing/Inducing Susceptibility

Recently, epidemiologists have sought to explain the connection between stressful life events and susceptibility to mental and physical illness by examining "social support resources," a concept that is derived from the sociological concepts of social network theory and the primary group. As has been stated previously, theorists have suggested that social reinforcement is needed in order to mitigate or cushion individuals from the effects of the stress that they encounter. Specifically, they have hypothesized that the potential harmful effects of a changed and/or confusing social environment can be reduced by the buffering effect of a strong system of social support resources (Dean and Lin, 1977; Cassel, 1974, 1976; Dohrenwend and Dohrenwend, 1978; Caplan, 1974b; Henderson, 1977).

While this theoretical development is of considerable significance, it is difficult to evaluate, since conceptual confusion surrounds the notion of "social coping resources." Although research has been conducted on such subjects as social networks, formal and informal social bonds, social support systems, and confidants, no precise definition of social supports has emerged.

Caplan (1974b), one author who has defined social supports, has argued that they are a "range of enduring relationships" which help individuals to deal with life events. He has also identified four specific functions of social supports in reducing the individual's susceptibility to psychological problems because of stress:

- They supply cognitive guidance, tools, or materials that improve the individual's handling of the stressful situation.
- They help the individual to master his or her emotional burdens.
- They provide the individual with a refuge or sanctuary from the stressful environment.
- They assist the individual in realistically interpreting feedback that would otherwise be incomprehensible.

Some preliminary empirical evidence supports the contention that social resources protect individuals from illness. More specifically, in studies where animals have been subjected to noxious stimuli, such as electrical shocks, overcrowding, and territorial invasions, the incidence of illness has been reduced when litter mates, parents, or even familiar groups were present (Cassel, 1974, 1976; Henderson, 1977; Dean and Lin, 1977). In studies of humans, Langner and Michael (1963) have demonstrated that having three close friends, visiting relatives, or being affiliated with organizations and pursuing large-group activities greatly decreased the risk of mental illness. Miller and Ingham (1976) have corroborated these results in their study of the relationship between contact with friends and confidants and the incidence of psychological and physiological symptoms. Brown et al. (1975) have concluded that an intimate relationship between a woman and her mate reduces the likelihood of depression following a stressful life event. Lowenthal and Haven (1968) have found a relationship between the risk of depression and the buffering role of the confidant. Other authors (e.g., Cassel, 1976; Dean and Lin, 1977) have cited evidence from combat studies that suggests a relationship between social support resources of various types and the effects of severe battle stress. Finally, a recent study of Nuckolls et al. (1972) has demonstrated that social support resources are a key element in lowering susceptibility to illness in stressful situations.

These studies are provocative but not conclusive. First, many studies utilized an experimental sample that was already ill. Thus, it is difficult to determine whether the lack of meaningful social contact was a cause or an effect of illness. That is, no study utilized a longitudinal methodology. Second, each study

examined a different aspect of social support and operationally defined "support" differently. Finally, none of these studies examined the underlying mechanisms by which social resources influenced individual susceptibility.

Most importantly, none of the preliminary studies have addressed three important dimensions of social support resources: the active component, the dynamic dimension, and their role as both an independent and dependent variable.

The term "social support" implies passivity, and the phenomenon has been discussed as only a passive resource. Its active component has still not been defined, even though this dimension, which includes the actions of the individual in developing and sustaining the support network, may greatly influence susceptibility. For example, an individual who serves as a social support to another network member should feel needed and therefore experience an increase in self-esteem and a decrease in helplessness. Further, if an individual sets up a social network, he or she should have increased feelings of power, control, and self-esteem.

The dynamic changing aspect of social support has also been largely ignored, even though all aspects of social support are likely to change over a period of time. It is interesting to note that, although the problem of changes in a support group has been theoretically ignored, its importance is evidenced by the large number of "life events" that tap changes in support systems. In addition, even if a support network remains intact, many changes may occur in the roles that an individual plays in the network and the quality and quantity of the support provided and/or social interaction. In sum, changes in support groups may also be a stressor.

Finally, studies of social supports have failed to ask whether stressful life events demand an increase in social support resources to prevent heightened susceptibility to disease, or whether the mere maintenance of resources in times of stress is sufficient to buffer individuals from the full effects of stressful conditions in the social environment.

The concept of social support is especially germane to women who reportedly often derive a greater proportion of their self-esteem from external sources and who typically demonstrate higher needs for affiliations. The problems of obtaining even moderate amounts of social support in a boom community may be monumental, given its rapidly changing population and isolation of its female residents. The avenue of utilizing this background of research to examine the consequences of rapid change on women and their families may be a fruitful endeavor, both to the theoretical understanding of these populations and also to design mechanisms to mitigate their problems.

Possible Mitigating Strategies

The established community support structure can resolve many of the problems in a stable community. With a large influx of strangers, however, there is neither the capacity nor interest to respond to them in the same manner. In fact, considerable hostility may exist because of community changes attributed to the newcomers. For many of the construction workers, the short time spent in the community prohibits developing new support systems, even if there were a personal interest in doing so. Where these short-timers live together in relatively large numbers, it appears that the primary community response to their social and psychological needs is to provide crisis-oriented services. The community capacity to extend those services must expand with the population growth.

These crisis-response capabilities must also be available to the newcomer who is involved in the continuing operation of the new facilities, but an investment in primary prevention may prove most productive. Assistance in the building of support systems within the new settlements of permanent residents can help to replicate the fabric developed by the original community. Such an effort should be a prime objective of the community human service agencies, and they should be supported with sufficient resources so that the objective is not lost in the inevitable crush of crisis services.

One example of such a social support group was piloted by Ms. Jody Kassover, administrator of the mental health clinic located in Granby, Colorado, who has instituted what might be termed a "social support network." The effort was conceived in the winter of 1976 when she had 10 attempted suicides in 2 weeks (the total population of the area is about 7,000) and the clinic was inundated with depressed newcomers who knew no one in the community. As she looked around, she discovered that the only recreational outlet in the area was the local bars. Consequently, she set up, under the auspices of the professional training group (a CMHC function), a support group. The members had lived in the area between 2 weeks and 40 years and ranged in age

between 19 and 68 years old. Even though some members of the group had to drive an hour and a half for each meeting, no one dropped out; in fact, they added a member.

Based on this experience, a human relations welcome wagon was initiated (now known as the Grand County Greeters). Forty people were "trained" to become members. Their activities include the publishing of a human service handbook, a dial-a-friend program, and the circulation of a list of their names to local professionals, requesting that appropriate individuals be referred to them. They placed posters around town, accompanied by postcards, telling newcomers to contact them. In fact, many newcomers who contacted them were invited to the training session. The Greeters have become a support group not only for newcomers, but also for themselves.

A final observation is that consideration should be given to spreading energy-development activities over a greater span of time. This could permit a smaller force of construction workers to work on several successive projects, allowing them the same opportunity to become a part of the community they are helping to build. Permanent plant operations staff would arrive in smaller numbers over a greater time span, with a greater likelihood that they would move into a community with developing support systems. Under these conditions, it is quite probable that the impacts discussed in the paper could be largely avoided.

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An Ounce of Prevention: Another Approach to Mitigating the Human Problems of Boomtowns

By William R. Freudenburg*

As anyone who attended yesterday afternoon's sessions is probably well aware, rapid energy-related growth can cause substantial problems for women, for minorities, and for other human beings who live in the energy-impacted regions of the Intermountain West. That point, I suspect, has been made so effectively that there is no real need to reemphasize it here. But there are two other points that may not have been made as clearly and yet that are worth keeping in mind.

First, the problems of boomtowns are not simply economic and not simply logistical. Some of the most obvious and pressing problems are indeed economic in nature—all the new people moving into an area will need new homes and water.

But as everyone in this room knows, it takes more than water and sewer hookups to keep a human being functioning properly, and in addition to the economic and logistical problems, people in boomtowns experience a variety of social problems—problems that are caused by the disruption of the social system and that we really cannot solve by throwing dollars at them.

If we had time, we could discuss at some length the noneconomic problems caused not only for women and minorities, but for all the human beings who live in a boomtown, oldtimer and newcomer alike. We would see that while social and cultural disruptions often cause problems for the better-off members of boomtowns—established ranchers, local governmental officials, and so on—ironically, the people who usually suffer the most are the people who are in the weakest position to begin with. The poorer members of the community find they cannot afford inflated rental prices. Adolescents, precisely because they are less "set in their ways" than their parents and also because they have a harder time ignoring the newcomers, find that their community has become strange, stressful, and bewildering, and they respond with what urbanites might call "juvenile delinquency," causing further problems. "Weaker" people in the community—those who need a little extra help to get by—suddenly find that friends and neighbors are busier and less willing or able to help. The list could go on, but the message would be the same: for women, minorities, and other human beings, boomtowns cause problems that are essentially independent from standard, economic, "mitigating" measures. (For more detailed information on the social disruptions caused by boomtowns, interested readers are urged to consult Albrecht, 1972, 1978; Cortese and Jones, 1976, 1977; Freudenburg, 1976, 1978a, 1978b; Freudenburg et al., 1977; Gold, 1974a, 1974b, 1975, 1976; Little, 1976, 1977; and Massey, 1977.)

Even under the best of circumstances—for example, we could have the "first and second lines of defense" mentioned by Donna Davidson yesterday (housing and recreational facilities) in place; we might have a very useful technical assistance of the sort provided by Burman Lorenson's office; and we might even have the assistance of the Wyoming Human Services Program, which pays a great deal of attention to the problems of a boomtown—even under these circumstances, we would still just be making the best of what remains a bad situation,

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applying Band-aids to wounds that are still wounds and that might have been preventable. Many of these wounds, in fact, cannot be healed with simple Band-aids—and under worse circumstances we might not even have a supply of Band-aids.

Actually, there is also another problem of standard mitigating measures, even when they are available and applied: almost by their very nature, they are formalized, tax supported, professionalized, and bureaucratized; and when we turn to them to lessen some of our problems, we actually worsen another set of problems—the increasing formalization, professionalization, bureaucratization, and other kinds of sociocultural changes that are a major course of boomtown stress (Cortese and Jones, 1977).

But a second point also needs to be made: growth is definitely not all bad. Many of the towns that are fearing growth today have been searching for growth for decades; the problem is that they are facing a different kind of growth today. The biggest single difference in the type of growth is its sheer amount: as a general rule of thumb "g" stands for "growth," for "gradual," and for "good," while "b" stands for "boom," "bust," and "bad." The boomtown, ironically, is suffering from too much of what would otherwise be a good thing.

Given this background, I would like to suggest that we use this session as an opportunity to respond to a challenge Polly Garrett issued yesterday: let's do some creative thinking about what we would like the future to look like and talk about some specific suggestions that might actually improve the situation. If we are talking about impacts that are occurring right now, the best we can realistically hope for is to make the best of a bad situation—mitigating measures. But if we were willing to look at the longer range—facilities that are likely to be built a decade or more into the future—we could do far more.

The boomtown may be one more place where the old adage holds true: an ounce of prevention may be worth far more than a pound of mitigating measures. The best way to mitigate the social problems of women, minorities, and other human beings in boomtowns, to put it simply, is to avoid them in the first place. The suggestion is not nearly so radical as it might sound; there is really no need for us to go back to caves and candles. When we restrict ourselves to looking at impacts that are already occurring, there is a tendency to assume that we are forced to choose between throwing innocent communities into chaos or throwing the American economic system into darkness. But realistically, we can choose from a far broader range of options over the longer run. It is entirely possible for the Nation to benefit from western energy without wreaking human havoc on western communities; we simply need to go about it more intelligently.

The economic and the social problems of boomtowns have one thing in common: the worst disruptions are caused simply by having too many new people coming into an area too quickly. In both the economic and the sociocultural spheres, all other things being equal, the greater the influx, the greater the problem.

There is nothing inherently evil about growth, provided it is a reasonable level of growth. Problems arise only with relatively massive kinds of growth—with boomtowns. We are likely to get growth—some growth—wherever we develop fossil fuel resources. However, we only get boomtowns under some fairly unusual conditions. Let's look at some actual figures for coal developments.

As a crude rule of thumb, opening a "standard-sized" coal mine will not generally cause that many problems for a local area, provided the usual environmental constraints are operating. Even a hefty-sized mine—say one that produces a million tons per year—will take only 100 to 150 workers if it is a strip mine; a deep mine putting out the same amount of coal would need more workers—perhaps 250 or so—but because of the nature of deep mining operations, the workers would only be hired gradually, in crews of about 30 at a time. Moreover, most western mines have had a fairly easy time hiring people who already live in the area, further lowering the size of any population influx.

In other words, it is entirely possible for us to mine the western coal without causing boomtowns, so long as we do not open several mines all at once in the same area. We will get growth, certainly, but it is the kind of growth that can provide many or most of its jobs to locals, and growth that will generally be gradual enough to do considerably more good than harm. To get a boomtown—a genuine, nasty boomtown—we have to do more than open one mine at a time. This brings us back to Harris Sherman's comment yesterday that there is a big difference between extraction and conversion of coal. The boomtowns that have hit the *New York Times* and the network news have, for the most part,

been communities where conversion facilities of one kind or another—usually electric powerplants—were being built, and occasionally where several facilities were being built and expanded at the same time. Moreover, there are not generally too many dislocations once the plants are "up" and operating. The boomtown impacts we have seen from coal development in the Intermountain West have generally come from the *construction* phases of coal conversion plants.

Here is a specific example. Craig, Colorado, is a town that has achieved a fair amount of notoriety lately for its boomtown problems, which in a way is unfortunate because the local citizens have actually done a fairly impressive job of dealing with a difficult situation. But in addition to its "socioeconomic" difficulties, Craig has experienced substantial social impacts, as indicated by some of the classic indices of social pathology. As Alma Lantz mentioned yesterday, the population went up about 100 percent in just 2 years—but meanwhile, crimes against property went up 220 percent, and crimes against persons went up 900 percent; family disturbances rose 250 percent; child behavior problems went up an even 1,000 percent; alcohol-related complaints rose 550 percent, and other drug-related reports went up about 1,400 percent. Despite substantially increased police expenditures—the town did not even have an administratively independent police department until November of 1975, yet a year and a half later they had over 20 officers and a department with a quarter-million dollar budget—the residents of Craig were more than twice as likely to have feared for their safety than residents of three preimpact communities and more than three times as likely to have been the victims of crimes (McKeown and Lantz, 1977; Freudenburg et al., 1977). Nor was the Craig experience unique; other communities—for example, Rock Springs, Wyoming—have fared even worse.

Where did these depressing statistics come from? A simple, straightforward—but big—coal-fired electricity generating plant. Not that burning coal causes crimes, mind you—at least not directly—it is the way the plant was built.

When the "Yampa Project" (as it is called) is finished, it will employ between 100 and 200 people—mine plant and all (Rural Electrification Administration, 1974)—and many of those employees will be locals. But building a plant has been another matter entirely. At the peak of construction, about a year ago right now, there were 1,900 workers on the site. After adding spouses, children, and ancillary workers, that translates into a population increase of 4,000 to 6,000 persons; and the injection of 6,000 persons into a single community, one that only held 5,000 to begin with, is a virtually foolproof method of creating social disruptions. Had the same plant been built in an urban area, an influx of 6,000 persons would scarcely have been noticed; but this was a rural area.

Yet, not even the construction of large plants in rural areas is uniformly evil or disruptive. The Nation has been encouraging "rural industrialization" for at least a quarter of a century now, and yet we only have been hearing about serious impacts for the last 3 or 4 years. Are we simply more sensitive today to the kinds of disruptions we ignored in the past?

That may be part of a reason, but a bigger part, believe it or not, is rainfall.

Here is another example. one of the most carefully monitored impacts in history was that of a large steel plant built just outside of Hennepin, Illinois, in the late 1960s: The plant was to have an eventual work force of over a thousand, and Hennepin had a 1970 population of only 535. Surely, if there were ever a chance for a massive impact, this was it. Yet a team of very competent researchers monitoring the town found essentially no social disruptions worth reporting (Erickson, 1969; Summers, 1973). Why not? Because relatively few of the workers lived in Hennepin, the massive influx simply did not occur.

The Hennepin area gets about twice as much rainfall as the Craig area. Vegetation and crops are much more dense in the region, and accordingly, the farms are much smaller (which means closer together); people and towns in Illinois are closer together as well. It is a simple, straightforward connection, but it makes a big difference in the kinds of impacts that will result from building even identical plants. In the Hennepin example, workers moved into at least 68 different communities that were within 57 road miles of the plant, but a 57-mile drive from Craig would gain a total of about three more towns. Craig is the county seat and only major community in all of Moffat County, which covers a larger area than the States of Delaware and Rhode Island combined. Hennepin's entire county (Putnam) grew by only 14 percent in 5 years—and with a labor force growth rate that was actually lower than the Illinois statewide average for the same period—

while Moffat County, Colorado, grew by about 100 percent in 2 years. The claim, in brief, was that the problems in Craig have not been the result of evil intention on anyone's part; they really could not have been avoided by getting people together and talking things out. The disruptions, social and economic, resulted from the size and speed of the influx—which, as mentioned earlier, is one of the saddest ironies of the whole situation: Moffat County's disruptions came from simply having too much of an otherwise good thing, in the wrong places.

If standard mitigation procedures leave us with an inproved, but still bad, situation, and if we know from past experience that it is possible to have mines (and probably even plants) in rural areas without creating boomtowns or their problems, then the sensible question to ask is this: how can we best avoid boomtown problems in the future, while still assuring ourselves of the energy supply we need?

For facilities that are already entering or nearing the construction phase, the first three commandments of impact prevention would be these: (1) hire locals first; (2) hire locals first; and (3) hire locals first. It is worth noting that these three commandments can be particularly effective in moderating the size of the population influx if we are willing to hire persons from that half of the population which is most likely to be underemployed, namely, the women who already live in an area.

Over the longer run, there is a much broader range of options available to us. The most obvious way of lessening boomtown problems has been pointed out well by Carl Whitman in the previous session—we need to be considerably more careful in our estimation of how much energy we "need," and we can prevent a large number of problems by devoting more of our attention to energy alternatives that do not require massive installations, specifically including, for example, decentralized and renewable technologies for wind and solar energy utilization. Boomtown-creating plants are highly capital intensive—which in plain English means that they provide far fewer jobs per investment dollar than do the decentralized technologies. Moreover, if we are interested in providing significant employment for urban-dwelling minority groups, we need to remember that for them, most jobs in boomtowns are in the wrong place and will go to the wrong race. This paper will not say much more about conservation, soft energy paths (Lovins, 1976), and the kinds of appropriate technologies just described by Lee Topash, but that is not because these options are of no likely importance in preventing boomtown problems; rather, it is that adopting decentralized technologies would lessen boomtown problems in an almost automatic way. It is only when we stick with large, centralized installations that we even need to worry about boomtowns.

However, even if we assume that we will need to depend on fossil fuels for at least some interim period, that still does nothing to make boomtowns inevitable. In fact, the only way to *get* a boomtown is to do everything wrong.

More specifically, we need to foul up in three different ways, all on the same installation, before we can get a real boomtown; we have to build a facility that is too large, we have to bring our workers into an area too rapidly, and we have to bring them into an area that is too sparsely populated to be able to absorb them well—rural Illinois just will not do it. If we get even one of those factors right—size of the plant, rapidness of the influx, or the population density of the host region—we simply will not have a boomtown, because we will not get the kind of population influx that causes one. Let us take a closer look at the three factors involved.

1. *Size:* The two units of the Yampa Project that are already nearing completion will have a total capacity of 760 million watts, which is theoretically enough juice to keep 7.5 million 100-watt light bulbs burning night and day. One or two additional units may be built in the future, perhaps even doubling that output. Did the plant really have to be that large? Not as far as the residents of Craig are concerned—it seems unlikely that they would ever be able to use up more than a tiny fraction of a 1,500 million watt output, even if they stayed up all night long under those burning light bulbs to consider alternatives. Most of the power will be carried to cities hundreds of miles away; Craig gets most of the impacts, but others get most of the energy.

The plant was built the way it was, where and when it was, simply because a set of charts and balance sheets said that was the right thing to do. Those calculations, however, did not pay much attention to the human costs built into a boomtown situation; if they had, an entirely different decision might have been made. Powerplants may have certain economies of scale, but if we consider the full cost of larger plants—including everything from inherent diseconomies of scale, through direct and

indirect boomtown costs, and on to the additional but noteworthy consideration that bigger plants make much better targets for lawsuits—we may find that the benefit is not nearly so great as we have suspected in the past.

2. *Construction Technology:* We might give the matter some thought and still conclude (for one reason or another) that we do indeed want all of our powerplants to be at least the size of the set now being built near Craig.

The environmental impact statement prepared for the Yampa Project stated that the construction period had been "lengthened" (although the document does not provide any data on the degree of lengthening) "in order to spread production employment as evenly as possible" (Rural Electrification Administration, 1974, p. 176). If this course of action had been followed with real conviction—by limiting peak construction employment to 300, for example, instead of 1,900—the boom simply would not have been as explosive. Economic benefits to the local area would still have existed—although they probably would have lasted longer—but the human and the logistical disruptions of the boomtown would have been reduced to negligible proportions.

If we are thinking about future plans, we have two options for achieving this leveling off of the influx. The first and most obvious is simply to stay within our present technology, but to spend longer building the plant with fewer people on site at any given time. This would currently be an extremely unpopular idea with energy companies, however, because inflation costs and the inherent costs of borrowed capital (which will generally not be repaid until the plant starts operating) would make it an expensive alternative.

So the second option might have a good deal more to be said for it over the longer run, particularly if we are willing to think now about the kinds of plants we will be building a decade or more into the future and to question our whole approach to building powerplants today: could we place a greater emphasis on building components of the plant elsewhere—perhaps even gaining the economies of mass production on some of them? If we were to put our minds (and our engineering research dollars) to the task, we might find that it is entirely reasonable, both economically and technically, to put much more of the plant together someplace else, then ship in the largely completed components, which would simply be bolted together by a much smaller crew of workers on site. Urban minority-group members would be able to get jobs assembling components near their homes, without needing to migrate to rural towns that are sometimes strange and hostile to them. Workers would be able to keep their jobs—and their families—in one spot for longer lengths of time, as they would no longer need to move from site to site just to stay employed. At the same time, boom-and-bust problems, caused by having massive waves of workers moving in and out of impact communities, would simply be avoided. With the benefits of more research, in fact, we might even find that it can be more economical to build a series of 75 megawatt plants—especially if they can be put up relatively quickly, only when and where they are needed—than to build a handful of boom-creating giants. And that arrangement would actually save money for consumers at the same time as it lessened the strains we would otherwise be creating for future boomtown dwellers.

3. *Location:* Finally, in the interest of general equity as well as of avoiding boomtown problems, we might consider moving the entire plant—final assembly and all—to the region(s) where the energy will be used. When we mine the coal, we either mine it where the coal is found or not at all. Burning it, however, is something that can be done nearly anywhere conditions are right.

Building plants in the areas where the energy is used would probably increase the dollar costs of transporting the energy—although in the case of electricity, engineers tell me it could actually cost less in terms of energy, given the terms of substantial losses that occur in long transmission lines. However, when the plants are located in the regions where the energy is used, the costs as well as the benefits of the plants are likely to accrue to the same region—that is, the pollution as well as the social and economic disruption of the plant would stay in roughly the same region where the energy would be used, as would the tax base provided by the plant itself. Additionally, the closer proximity to urbanized areas and industrial customers would greatly increase the opportunities for "cogeneration"—for using the plant's "waste" heat in domestic and industrial applications, instead of just using it to evaporate vast quantities of (scarce) western water in plant cooling.

Finally, and more in line with our present discussion, the heavier populations of energy-using areas would make those areas more likely to have existing

supplies of the particular labor skills required (meaning that less of an influx of workers would be required for building the same plant); yet at the same time, more densely populated areas are less likely to be disrupted even by an influx of the same size. In other words, an influx of the size experienced in Craig would scarcely have been noticed here in Denver, yet the influx might actually have been smaller, since a respectable portion of the workers on the plant came from the greater Denver area in the first place. Unfortunately, coal-fired plants are still so dirty, and the Denver area air is already so polluted, that it would be environmentally unacceptable to build the plant in Denver right now even using today's best available pollution-control technology. For the future, however, we may be able to improve present emission-control techniques at the same time we are improving present construction technology. At a minimum—even if we decide to stay with the present plant size, keep the same construction techniques, and keep on building the plants in rural areas—the Hennepin example cited earlier tells us what kinds of rural areas to pick: areas where the impacts can be absorbed in several towns instead of overwhelming just one.

Summary and Conclusions

One of the problems of inviting academics to conferences is that they always seem to end their papers with calls for "more research," and I am afraid I am about to do the same thing. This is not a standard call for more research, however: I am not going to ask for more money for the kind of research I have been doing (although I would scarcely want to discourage it); I think we need more engineering research.

The people of Craig and other boomtowns are getting understandably tired of having a stream of impact researchers (and other "instant experts") coming through town, usually telling them how good or bad they are supposed to feel, but seldom saying much about how the situation could be improved. They have a right to expect something better. We certainly do not know all the answers yet, let alone all the right questions, but we are starting to get a fairly good idea of what happens in energy boomtowns and why it happens. In the words of Jones and Cortese (1976, p. 21):

> We *know* that we have problems; further research is hardly needed to establish that. The question now is "what are we going to do about it?"

That brings us to the call for more research. We have all heard the complaint that social science research—unlike physical and engineering research—never provides us with solid answers to our questions, at least not in time to do any good. But this may be one of those rare areas where just the opposite is true. Social scientists are indeed beginning to provide us with solid and consistent answers about what happens to the social structure of boomtowns, and about what happens to human beings as a consequence; the next step, it seems, is for *engineers* to do more research.

This paper, written by a social scientist, has offered us a set of fairly specific suggestions for actions we could begin to take today. All of them appear to offer the possibility of avoiding the human problems of boomtowns in the future; with the exception of the conservation option, moreover, all of them involve the need for at least minor technical and engineering changes, and none of them would require any future social science research, except perhaps for monitoring the effectiveness of the changes. We can conserve energy and place a greater emphasis on decentralized technology so that we simply do not build as many plants in the first place. When we do stick with fossil fuels, we can make sure that we only open mines one at a time in any particular area. We can build smaller plants. We can build them in different places—either in urban areas or in more densely populated rural areas—and preferably in places closer to where the energy is being used. And finally, we can build plants of the same size and even build them in the same places, but build them with fewer construction workers on site at any given time—either because we are building the same plant more slowly or because we are building it with a technology that moves finished components (instead of masses of workers) to the construction site.

Most persons would not guess (unless the relationships were explained to them beforehand) that new and improved construction techniques could help to prevent juvenile delinquency, drug abuse, and the other social problems of boomtowns, just as most would not have guessed that rainfall could help prevent boomtowns in Illinois. Yet in both cases—with the rainfall and with the construction tech-

niques—the connection is direct and relatively straightforward.

We cannot do much to alter historical patterns of rainfall, unfortunately, but we can do a great deal today to alter the technologies of tomorrow—and doing so can bring us human as well as environmental returns on our investment. With renewable and decentralized sources of energy, as well as with new fossil-fuel technologies, we may find that relatively small research and development expenses today can help prevent massive human problems tomorrow.

This paper has concentrated largely on coal-fired electric plants, as they are the most notorious source of present-day booms. But there are new technologies on the horizon that—depending on the way they are designed today—could either dwarf present-day booms if they are built later on or else show how unnecessary today's booms really were. One common response to current-day pleas to slow down an influx is that it is "too late" to alter the construction plans to any major degree: decisions were set into motion years ago and they are now virtually set in concrete, or at least in dollars. But it is not yet too late to be thinking about the technologies of tomorrow or to start including human costs and benefits in our calculations about them. In fact, we need to begin now to consider the human implications of fossil-fuel technologies such as magnedohydrodynamics, fluidized-bed combustion, and oil-shale plants, as well as of renewable technologies for the utilization of solar, wind, and geothermal energy.

There are some good things and many bad things about a boomtown, but perhaps the worst thing of all is that the worst of the negative consequences are inherently avoidable, for women, for minorities, and for nearly all other human beings. Perhaps this Craig resident's words summarize the situation best:

> I'm not the least bit opposed to building powerplants. If America needs the energy, and if people decide they want to use our coal to provide it, then that's fine with me, and I'll be happy to do my share. But I am opposed to the way this plant's been handled—they've done a lot of things that were just plain stupid.
>
> It's too late for you to be able to do much good here, of course—but it's not too late for a bunch of other towns.
>
> You asked me what I would like, so I'll tell you. I don't want you to go out and shut down powerplants—I like my color TV too much for that. What I would like is for you to learn something from our mistakes here. I'd like to see you learn enough that people in those other towns don't have to put up with the same kind of trouble we've had here.

We own it to him as well as to them to try to do just that.

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WOMEN AND ENERGY

The Economic Position of Women and Their Employment Opportunities in Energy Boomtowns

By Jane H. Lillydahl and Elizabeth W. Moen*

Introduction

This paper is based on an exploratory study of the consequences of rapid growth for women in energy boomtowns that was undertaken during the summer of 1978.[1] An exploratory study was necessary before we could engage in more systematic research, because virtually nothing is known about women in energy boomtowns. In our review of the literature, we rarely found more than a sentence or two, and certainly no more than a page, on the impact of energy development on women (e.g., NGPRP, 1975:54; Gilmore and Duff, 1974; Mountain West Research, 1975:11). Women in the labor force are an even more overlooked topic. While there are discussions of labor force opportunities in the majority of studies, there is virtually nothing about job opportunities (or lack of opportunities) for women. In fact, it is generally assumed that shopping, not employment, is a major concern of women in boomtowns (Cortese and Jones, forthcoming). Furthermore, there is no mention of female-headed households and the kinds of economic problems they encounter or of women in the labor force who must work to supplement their husbands' inadequate incomes because of the high cost of living in boom communities (Greenstein, 1978).

In this paper we cannot discuss all of the economic and social costs and benefits that energy development brings to women. Instead, we will concentrate on the economic position and employment opportunities of women and especially upon those aspects of employment that have important policy implications. We shall discuss pre- and post-boom employment opportunities for women and attitudes about the employment of women in terms of traditionally female and nontraditionally female occupations. We shall then discuss various groups of women who have special employment problems. Finally, we shall raise some questions for the Commission on Civil Rights and make some recommendations for energy development planning and policy.

Methods

Our research was conducted in two western Colorado towns—Craig, which has recently experienced rapid energy growth due to the development of a 760 megawatt coal-fired generating plant and two surface coal mines, and Paonia, a long-time coal mining town that will boom if current energy development proposals are fulfilled. Paonia provides some idea of what conditions are like for women in a small town before it experiences a boom. We conducted indepth interviews with over 100 women in the two towns and had discussions with public officials, employers, and a variety of other residents.[2] Both towns are fairly typical of towns in energy development areas in that they are relatively isolated, conservative, and often described as "red-

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[1] The research was supported by a Fleishmann Foundation grant. Elise Boulding, Leslie Gagney, and Risa Palm were also involved in the fieldwork upon which this paper is based.

[2] There were very few minorities in the sample. However, we hypothesize from our limited observations that any minority women moving into towns like Paonia and Craig would be in double jeopardy, suffering negative consequences as women *and* as minority-group members.

neck" by newcomers. Both towns have experienced a history of hard economic times, and consequently, many long-time residents have welcomed energy development uncritically. In neither town did we encounter much sympathy for or knowledge of the women's movement, except amoung some of the urban in-migrants and counterculture groups. Local women in both towns have been and continue to be socialized to strive for the goals of high school cheerleader, wife, and mother, and to believe that women should work only out of economic necessity. In addition to the generally strong feeling that wives and especially mothers should not work, the locals feel that women who must work should be employed in traditionally female occupations.

In Paonia and preboom Craig, the sluggishness of the local economies had caused a dearth of full-time jobs for women, and the few job opportunities for women often paid below the minimum wage (e.g., waitress jobs and sales clerk positions). Nevertheless, almost all of the women we interviewed had been employed at one time or another, often doing part-time or seasonal work. For example, in the fruit-packaging plant in Paonia, 95 percent of the seasonal workers are female. This general finding is consistent with national statistics which show that 9 out of 10 American women are employed at some time during their lives.

A number of women in Craig and Paonia are now being forced back into the labor force as both towns experience substantial inflation that often causes one income to be insufficient to support a family. The inflation rate is especially high in Craig where housing prices have skyrocketed; but, in both towns, the relative distributions of income have been affected, with the elderly and the female-headed households being hurt the most by inflation. Among the long-time resident women who have gone to work in recent years, a number of them indicated that their status in their household increased considerably after they started working outside the home. They found that they had more say in important household decisions once they started earning a salary. Their experiences support the feminist theory of the importance of women being financially independent in order to have any power or clout in the home or community.

Women and Employment in Energy Boomtowns

Only recently have economists begun studying the labor force participation of women. They have found that about two-thirds of employed women work out of economic necessity—they are either single, divorced, widowed, or their husbands earn less than $7,000 per year. Now almost half of the Nation's married women and 40 percent of mothers with children under age 7 are also employed—a sharp increase over the previous decades. Reasons for the increase in wives' labor force participation include: economic necessity, which sometimes results from rising expectations of American families that have been accompanied by rapidly increasing costs of living; personal satisfaction; and relief from the boredom of housework. To some extent, these national trends are also occurring in small towns like Paonia and Craig.

Most of the analyses of women's positions in the labor force have been done on a macro level, with economists studying national averages. Little, if any, attention has been given to the effects of specific national and local policies on the employment of women, and no one has studied the effect of energy development on female employment. With rapid energy development taking place in the United States, especially in the West and Northern Great Plains, and with the expectation of much more energy development in the future, the potential consequences of energy development on women's employment become an important issue. From our study we have concluded that women in preenergy boomtowns need more options and opportunities and that energy development *could* improve the situation of women, but, consistent with history, it has not.

Previous research also suggests that women's employment needs and desires are not served by energy development and that their relative economic status may actually diminish. For example, Gilmore and Duff (1975) found in Sweetwater County, Wyoming, that employment opportunities for women had not increased as rapidly as total employment, even though more than one-third of the women they interviewed indicated that they had occupational skills which were not being utilized. Massey (1977), studying the energy impacts in Wheatland, Wyoming, found that the high wage scales brought in with the boom were not shared by all workers in the area, and he specifically cited women employees as a

relatively disadvantaged group. He concludes that women's postboom wages are at or nearly slightly above what they would have been without the energy development. Clemente (1975) has found that female heads of households do not directly benefit from industrial development, and in fact, their relative economic status actually decreases with development. Our general findings are consistent with the above studies. We found that women are economically disadvantaged in Paonia and they were also in preboom Craig. Furthermore, few Craig women have improved their economic situation as a result of Craig's economic and population boom, except indirectly through an increase in their husbands' incomes. In fact, it is the Paonia women who are more likely to open a business or enter a male-dominated occupation because this town has attracted more independent, nontraditional women than has Craig.

Female-Dominated Occupations

Employed Women. As is the case for the United States as a whole, most employed women in Paonia and Craig are in traditionally female occupations.[5] The top 10 occupations of American women, which account for half the employed women, are: secretaries, food-service workers, teachers (excluding college professors), sales clerks, bookkeepers, personal-service workers (e.g., hairdressers), private household workers, professional nurses, cashiers, and typists. According to economist Marina Whitman, most women end up in this "employment ghetto" of women's work that is characterized by low-skill, low-wage jobs. Bergman (1974) has theorized that women are allowed to enter relatively few occupations while access to all others is restricted. This "crowding" effect keeps women's wages artificially low and men's wages artificially high because so many women are available for a limited number of opportunities.

Typical salaries for women in Paonia include: $1.00 per hour plus tips for waitresses, $3.00 per hour plus tips for barmaids, $2.35 per hour for retail jobs in town, farmwork, and work at the fruit-packing plant, and $3.00 per hour for nurses' aides. In Craig, the wages are slightly higher: $1.60 per hour plus tips for waitresses, and $2.65 to $3.50 per hour for secretarial and clerical work. In both towns women are well represented in bank jobs, which are notoriously low paying.[6]

Some urban economists have theorized that the competitive influence of the high wage rates earned in the "export sector" (in this case the energy industry) leads to wage increases for local service workers. Specifically, they suggest that when construction workers, miners, and other energy-related workers have higher wages than manufacturing workers in general, there may be a substantial "area effect" or "wage roll-out effect" causing retail clerks, domestic service workers, etc. in the energy boomtown to make more than their national counterparts. This in turn increases the cost of living in these towns.

In the case of Craig, one consequence of the rapid economic and population growth has been the introduction of national chain stores into the area. These stores do pay more for sales and clerical work and will, no doubt, influence local wage rates to some extent; just as the energy industry has influenced local wage rates for "men's work." However, to date, this effect has been relatively unimportant, and women's wages in Craig are not substantially higher than women's wages in other western Colorado towns that have not boomed. Furthermore, the cost of living has increased, but wages remain lowest in the traditionally female occupations; so women are as bad or worse off (relatively) than before the energy boom. It appears that the only way to improve the economic well-being and earnings of women would be to unionize women's work or to encourage women to enter traditionally male occupations and men to enter traditionally female occupations.

According to Gary Becker's theory of discrimination (1957), employers have "tastes for discrimination" and they must be compensated for hiring those groups they choose to discriminate against. One way to be compensated for hiring the "undesirable" groups is to pay them lower wages. Two other types of discrimination Becker described are employee

[5] If work is defined as an activity that produces something of value, then virtually all women work (homemakers and women employed in the formal labor force alike). Often the term "working women" is narrowly used to refer only to those women employed outside the home. Since this is an accepted connotation of the term, we will sometimes use the term "work" when we mean "employment outside the home."

[6] The wages referred to in this paper are either local women's perceptions of the wage scales or are based on information obtained from the Colorado Job Service. They may not be perfectly accurate. Teachers do make considerably more than the minimum wage, their exact salaries being determined by experience and training. Starting salaries for teachers in both towns are about $10,000 per year. Delta County (where Paonia is located) had the lowest pay scale for teachers of any county in the State in 1977.

discrimination and consumer discrimination. If co-workers are prejudiced against women, they must be paid higher wages for working with women than for working in all-male establishments. Likewise, if consumers discriminate against female-produced goods and services, they too must be compensated for buying goods and services produced by women by lower prices than exist for comparable male-produced items. A consequence of consumer preferences is that employers pay women lower wages.

A fourth type of discrimination that exists in Paonia and Craig is discrimination against newcomers. We were told that many local stores prefer hiring the long-time residents of the community, a practice that especially discriminates against in-migrant women. In-migrant men move to these towns with jobs already lined up, usually in a profession like medicine or law or in an energy job like mining or construction. Consequently, it is their wives who face barriers if they choose to work. Economists have found that the consequence of any wage and employment discrimination is that it lowers the economic welfare of the community, since the most productive and capable people may not be hired for a particular job.

Homemakers. Some of the full-time homemakers we talked with expressed no desire to work outside the home, others have been told not to seek employment. However, with the cost of living rising faster in energy boomtowns than in the rest of the U.S. (especially for such necessities as food and housing), many women in traditional marriages are finding that they must find a job so the family can maintain its standard of living. This is especially true when the husband is not employed by an energy industry or is not prospering from the resulting economic and population growth.[8] Homemakers who decide to enter the labor force face the employment problems previously identified, and they are particularly disadvantaged by a lack of job counseling and child-care facilities in the town.

Male-Dominated Occupations

The employment alternatives for women provided by the energy and construction industries are limited. A relatively small number of women in Craig and Paonia are in male-dominated, nontraditionally female occupations such as mining and construction. In Paonia, women earn $7.50 to $8.50 per hour as construction workers or $9.50 per hour in the mines. In Craig, women's alternatives include working at the surface coal mines or at the powerplant for $9.00 or $10.00 per hour. These salaries are only applicable to nontraditional jobs for women such as dragline operator, utility truckdriver, laborer, etc. and do not apply to the office jobs created by the energy companies.

Most of the local people in Paonia and Craig do not feel that women belong in mines or doing construction work. They feel that women are not physically capable of doing the work and that such work makes women tough and unattractive. The same people, however, accept the fact that women farmers do equally strenuous physical work. (Society has not shown concern over farm women's physically demanding tasks nor have farm women been stigmatized as have women working in mines and construction.) Several male construction workers told us that they resented women entering construction work because women were given the easier assignments that at one time had been reserved for older men. But it is not clear if, or how often, this practice occurs. Historically, women were not allowed in the mines, for at one time miners believed that it was bad luck for women to be in underground mines. Furthermore, State laws in Colorado and elsewhere prohibit women from working underground. However, if challenged, these laws would be found unconstitutional. Therefore, they have not deterred a few mines from hiring women.

Previous research on manual and service occupations has found that many of the requisite tasks are often taught on the job to younger workers by the more experienced workers (Aronowitz, 1973; O'Farrell, 1975). O'Farrell found that while 80 percent of such work is learned on the job, women in craft jobs are often excluded from peer training. Consequently, they often do not learn their jobs as well as new male workers, which causes the negative attitudes and stereotypes about women's ability to do such work to be reinforced. Baker (1978) and others (Rubin, 1976; Massey, 1977) have found that working-class men, like working-class women, may

[8] A totally different situation sometimes occurs among couples where the husband is drawn into high-paying energy work. In these cases, the wife may be discouraged from entering the labor force or encouraged (or even forced) to stop working. The wife is put in a very precarious position, for as she becomes increasingly less able to support herself and children, she becomes increasingly dependent upon a man whose work may be both dangerous and of uncertain tenure.

have a very precarious sense of self-worth. According to Baker:

> The status system of the larger society does not value manual labor no matter who does it. It is unfortunate, however, that these men assert their worth and achievement in job-related definitions of masculinity that inhibit women's attempts to secure greater financial security and occupational identity. (1978, p. 367)

We, too, have found that the macho culture is pervasive in both Paonia and Craig, and that it hinders the acceptance of women in nontraditional work. In fact, traditional attitudes are so strong that most women who seek such work do not even have the support of other women in the community, except those in their same position.

Since the economic activities created by energy development are generally administered from distant locations, only a handful of white-collar jobs are created in the boomtown. Men are generally brought in to fill the few local administrative posts, and although the clerical positions pay more than equivalent positions in town, the salaries are far below those of the miners and construction workers. These jobs, of course, are not unionized. It is interesting to note that the position of security guard, normally "men's work," is low paying and not unionized at the Yampa powerplant in Craig and consequently is filled entirely by women, except for the supervisors. Furthermore, the only mine to hire more than one or two token women miners is not unionized. Historically, women have been excluded from union jobs. Today, only 12 percent of women workers are union members, compared with a comparable statistic of 30 percent for men. The Joint Economic Council has pointed out that "apprenticeships, one of the most important doors to skilled and well-paid jobs, remain all but closed to women today because of custom and outright discrimination. Women account for only slightly more than 1 percent of all registered apprentices."

The employment situation is not helped by the U.S. Department of Labor's affirmative action programs that set minimum guidelines for the hiring of women and minorities in construction. We were told by construction workers and foremen that the minimum guidelines for hiring women and minorities were also used as maximum levels for hiring, so once the guideline level is reached "it is impossible for a woman to get a job." And since affirmative action programs make it difficult for an employer to fire women, foremen just use layoffs to get rid of women workers. It is clear that women do not have equal opportunity in the construction industry by virtue of both the affirmative action guidelines and their implementation. When we consulted the Denver Office of Federal Contract Compliance about affirmative action programs for coal mines, we were told that women were to be hired on the basis of "demographic availability." Since the office could not define demographic availability or give us a formula, we have no idea what affirmative guidelines exist for coal mines. Moreover, this office was totally disinterested in any form of discrimination other than blatant cases filed by an individual and refused to talk with us about how affirmative action guidelines and layoffs might also hurt women and minorities. It thus appears that women don't have equal opportunity in either the coal industry or the construction industry, and the low number of women coal miners supports this conclusion. Only 6 of the 3,000 members of the United Mine Workers in the district, which includes western Colorado, are women.

Women Miners. Women working in mines is a relatively new development, for, according to the Labor Department, there were no women in deep mines in the United States 5 years ago. In a few of the coal mines in and around Paonia, women have been hired. In fact, the nonunion Westmoreland-Orchard Valley mine may have the highest proportion of women miners in the country (recently, 15 out of 125 workers were women). Westmoreland Coal Company presents an unusual case study. According to the vice president for Western Operations of Westmoreland Coal Co., it was comparatively easy to hire women for the Orchard Valley Mine because it was new, nonunion, and hired primarily first-time miners, and veteran miners presumably would have raised traditional complaints about women coworkers. Nevertheless, the women miners at Orchard Valley Mine are not free from harassment by their male coworkers.

The women miners we talked with cited wages as the main reason they chose mine work. Many of the women miners are heads of households and are faced with the choice of trying to support a household earning less than $3.00 per hour, holding a traditionally female job, or earning $9.50 per hour working in a mine. The women miners described their jobs as hard physical work requiring one to

remain alert at all times. However, they pointed out that coordination and timing are perhaps equally or more important than sheer strength for performing their jobs and that the heaviest work is often done by machines. They found the work routine but not boring and said that time goes by especially fast when one's working underground. Some of the women actually preferred underground work to aboveground assignments. A common complaint among them, however, was having to work shifts. In addition to the unpleasantness of alternating work and sleep hours every 2 weeks, the women miners who were mothers found the shifts made it more difficult to arrange for child care. Company policy at some mines prohibits husbands and wives from working the same shifts, which inconveniences husband and wife miners. The women we talked with did not plan on working in the mine for the rest of their lives—one often-stated reason being the fear of getting black lung disease from working underground too many years. These women generally see their jobs as a means to an end, not an end in itself. Several women expressed the desire to save money while working at the mine in order to buy a home, to go to college, or to start a business in the future.

The attitudes of male miners toward their female coworkers were mixed. Some of the men accepted women miners, and the women pointed out that being on a crew with cooperative men was very important. Work is very difficult, however, for women on crews with hostile men. These women are not only constantly having to prove themselves on the job, but severe harassment has also caused some women to quit their mine jobs; and other women, having heard of such situations, have decided not to apply for mining jobs. Male hostility causes women more than personal discomfort. We found, as Aronowitz and O'Farrell did, that male miners do not always share the information women need to do the work. This puts the women at a severe and dangerous disadvantage, since they receive no formal training at the mines and are entirely dependent upon the good will of their coworkers to learn their jobs.[8]

Women Construction Workers. A woman who has done both mining and construction work told us that mining is probably easier. Nevertheless, there may be slightly less opposition to women doing construction work than coal mining. Most of our investigation of construction work was carried out at the Yampa powerplant project in Craig, which was employing about 1,000 construction workers in the summer of 1978. Personnel officers for the various contractors generally felt that women performed their jobs as well as men. However, we found that women construction workers are just as likely to be harassed on the job as women coal miners. The major difference between coal mining and construction work is that women can be segregated on the job in construction work. Virtually all of the women at the Yampa project were employed as laborers, who sweep and put things away, or as equipment operators. One personnel director told us women make better equipment operators than men because they are more patient and conscientious and don't get bored as easily as men. Many male construction workers told us that if women have to be in construction, then sweeping and putting away is the best work for them. Thus, even in higher paying jobs such as construction, women are stereotyped and segregated into "women's work."

The only female craftworkers we heard of had been, or were soon to be, laid off.

Women in Business. Not many women in Craig and Paonia have taken advantage of the rapid population growth in the two towns and established their own businesses. They may have been restrained from doing so by the conservative stereotype of women's role in these towns, or they may have been unable to borrow money, or they might have assumed that they could not raise the necessary funds and, therefore, not attempted to start up a business.

We are aware of more women in Paonia than in Craig who have established their own businesses, but many of them are being financed by family capital. The businesses that women do start are generally extensions of woman's traditional roles—i.e., restaurants, flower shops, beauty parlors, welcome wagons, and other service-oriented businesses—they require long hours and are not highly profitable. Many of these women have a hard time making a go of it, possibly because they lack the background, confidence, access to credit, etc. In a number of cases, women are in charge of running businesses, but their husbands are behind the operations. We heard of some jointly owned, husband-wife businesses, but it wasn't clear if they were

[8] It is our understanding that Westmoreland used to provide formal training, but, for some reason, no longer does. Clearly, more than the basic mine safety course that every miner must take is essential if women are to become successful coal miners.

really co-owned or whether they were titled in the husbands' names.

Women with Special Needs and Problems

Women in energy boomtowns face the same employment problems as all women in the United States. They also have two specific problems: they live in highly conservative areas that basically disapprove of women working, and the only jobs available that pay well are in nontraditionally female occupations. In addition, there are women in energy boomtowns who have unique needs, expectations, and qualifications and, therefore, have unique problems. We shall discuss the following subgroups of women separately: the unpartnered women, wives of middle-class in-migrants, and wives of construction workers. These women need special attention in boomtown research, planning, and policy design.

Unpartnered Women. Self-supporting women in Craig and Paonia, especially those with children, often must choose among the following options:

1. holding a traditionally female, low-paying job and, consequently, having a very low standard of living;
2. holding several jobs at once;
3. collecting welfare, which both requires and maintains a low standard of living;
4. going to work in the mines or construction and earning a "decent" wage but possibly having to work rotating shifts.

For many women these are nonchoices. First, it is very difficult to work either two shifts or rotating shifts, especially if one has children. Second, few people want to be poor or to collect welfare. Third, many women feel that they are not capable of doing manual labor and/or that it is not appropriate work for them to do.

The predicament of being self-supporting was aptly summed up by the woman who told us that if a woman finds she must support herself, she "can cry a lot or get out of town quick."[7] Furthermore, while it is recognized that the only way such women can adequately support themselves is in mining or construction, there is such opposition to their entering these fields that people told us it would be preferable for a woman with children to collect welfare. This is a harsh judgment in places as conservative as Paonia and Craig where welfare is opposed and welfare recipients are stereotyped as parasites. Even young mothers told us that, if something were to happen to their husbands, their only option would be to collect welfare.

Middle-Class In-Migrants. Energy development and subsequent growth brings new professionals, managers, and business people to the boomtown. Virtually all of them are men who have been transferred to the area or who come to take advantage of economic growth. Their wives, many of whom are highly educated and have had careers of their own, do not have many suitable employment opportunities. These women tend to use their considerable energies and skills in volunteer work. As one woman in Craig told us, "You are needed in a town like this. . .here anything you do for the community is welcome." We were frequently told, however, that women who are able to fill "the leadership vacuum" that exists in Craig and Paonia are quickly overburdened with responsibilities and work. And with so many opportunities and invitations to serve, the community women may feel that they are being exploited. A very active woman in Craig, who has done considerable volunteer work wherever she has lived, was most vocal about this point. She feels that: "Communities are run on women's volunteer work. Men make big decisions, but it is women who do all the work." Now she is ready to "quit or be paid."

In some cases, the occupation of the husband influences the options of the women with respect to community involvement and employment. For example, women whose husbands work in the energy industry cannot become active in environmental organizations.

Whether active in the community or not, many of these women are subject to depression and symptomatic behavior such as drug and alcohol abuse because they do not have adequate opportunities for meaningful employment and education.

Migratory Construction Worker Wives. With increased energy development, a population of migratory construction workers has emerged, because there are not enough such workers in the preboom towns and there is no place for them in the postboom town. The majority of these workers do not choose a nomadic lifestyle; they adopt it because they cannot find permanent employment and do not want to collect unemployment. These families are faced with two choices: to keep a permanent home

[7] There is a problem of missing data. We have no information on the women who have chosen to leave these towns.

and roots, but live apart, or to stay together by traveling from place to place and living in mobile homes.*

Although some women adapt readily to the migratory lifestyles and thoroughly enjoy it, many are severely disadvantaged by it. For a variety of reasons, many construction workers' wives are less able to become socially integrated into the boomtown than the middle-class in-migrant wives (Moen, 1978). It is not clear how many of the construction workers' wives are employed; estimates among themselves range from 10 to 50 percent. A study of construction workers residing in 14 western energy towns, including Craig, found that 12 percent of the wives had jobs outside the home (Mountain West Research, 1975). The Colorado Job Service in Craig said that a large share of the women who came to them in search of jobs were construction workers' wives. These women who sought jobs through the job service were shocked at the low wages, but their main reason for seeking employment was not financial—they wanted an outlet to relieve the boredom of trailer court life.

A number of severe barriers exist that either discourage or prohibit these women from working. Since many of the couples are from very traditional backgrounds, some wives feel they belong at home and are very content; others have been told to stay at home by their husbands who do not want people to think their wives must work. As we have noted earlier, there are not too many job openings in Craig outside of construction and not many training opportunities within construction. We know of only one construction worker's wife who is also in construction, and she had been laid off. Local employers often refuse to hire these women because they are likely to move and moving about keeps them in fairly dead-end and low-paying jobs. According to Phelp's theory of statistical discrimination, an employer may maximize profits by minimizing hiring costs. If it is expensive to collect detailed information on each individual job applicant, a rational employer may simply use categories such as race, sex, spouse's occupation, or age to distinguish among applicants. The employer simply assumes that average differences between groups apply in each individual case (e.g., each woman is assumed to have the intermittent work force pattern of the average woman). Although it may be rational, profit-maximizing behavior for an employer to use such stereotypes, it is nevertheless discriminatory.

We talked with a number of construction worker wives who wanted to complete college and begin careers of their own, but their husbands' work rarely took them to a college town or let them stay long enough to complete their studies. Not only are these women cut off from educational and employment opportunities, but they are also not encouraged to participate in community affairs. In addition, living in a mobile home deprives them of many of the activities of homemakers, especially the more creative outlets such as gardening, remodeling, and decorating. Consequently, they, too, are subject to depression and, along with the middle-class, in-migrant wives, contribute to the statistics about personal and family problems that seem to boom in energy boomtowns (Khorš, 1974; McKeown and Lanz, n.d.; Kneese, 1974; Gold, 1976).

Conclusions, Recommendations, and Questions for Further Research

Energy development could provide a variety of employment opportunities for women. However, our research in Craig suggests that it hasn't. A very small percentage of local women in Craig have gotten high-paying jobs in the energy industries; most of the better paying jobs both in the energy industries and in towns that opened up as a consequence of economic and population growth have gone either to local men or to men who have been brought into the community specifically to fill the employment posts. There appears to be no effort on the part of employers to hire and, if necessary, train local women.

In addition, there is a lack of medium- and high-paying jobs for those who are qualified and a general mismatch of skills. There are women living in these towns with skills that cannot be utilized, while at the same time there are jobs that cannot be filled by locals because the townspeople do not have the requisite training. Local employers complain about not being able to keep good help—that their top workers leave for higher wages in the energy-related industry. They complain also that they cannot find people with the right backgrounds to fill the openings. For example, in Craig there was a

* Our data come from interviews with employees of the Yampa power project and their wives. We know very little about the women who are left behind. Perhaps they have better employment and educational opportunities, but they are also left with the full responsibility for the home and children.

shortage of local teachers this past year because of an inorease in school enrollment. The school system was short 14 teachers, but couldn't recruit teachers into the area because its salary scale was too low. It was forced to hire teachers without adequate teaching credentials and to double class sizes. This is only one instance of the need for formal training programs for women in energy boomtowns.

We have found a number of other barriers that prevent women in towns like Craig and Paonia from entering the labor force.

(1) The community's and often husbands', negative attitudes towards wives, and especially mothers, working.

(2) The lack of child-care facilities.

(3) The lack of skills and self-confidence for many women resulting from earlier socialization and education as well as limited or no employment experience.

(4) The lack of job counseling services.

(5) The lack of higher education and vocational training programs, either in town or within commuting distance.

(6) Limited access to union jobs and apprenticeship programs.

(7) Limited access to credit or capital to start one's own business.

(8) Employer discrimination against women, particularly against in-migrant women and construction workers' wives.

It has been theorized that with energy development there will be an accompanying "wage roll-out" effect. We found that there was a very slight increase in the salaries of women due to the high wages in the energy industries. For example, waitresses in Craig may start at $1.60 per hour, compared with $1.00 per hour in Paonia. However, *relatively*, women are now considerably worse off. If we assume that the national wage average held for preboom Craig, women earned 57 percent as much as men 5 years ago. It is possible that energy development has caused this percentage to decrease to 30 or 40 percent, since nearly all of the high-wage energy jobs are held by men. Self-supporting women are especially hurt by the redistribution of income in favor of the energy industry's employees. The high wages in the energy industries cause prices to rise locally, especially for housing. In fact, one study reported that Craig's cost of living exceeded that for Denver.

It is important to point out that there are some positive consequences of energy development for women. More facilities and conveniences become available with energy development and the concomitant growth in population. For example, day-care facilities, bakeries, laundries, fast-food chains, and department stores are introduced when towns reach certain threshold populations. These changes may make it easier for women to hold jobs outside the home and/or may allow women more leisure time. Women, for instance, may no longer have to drive several hours to the nearest city for certain shopping needs.

There are a number of policies that could be implemented in pre- and post-energy boom communities which would provide more employment opportunities for women and/or would lessen the negative effects of energy development on women in general.

1. Employers could make work hours more flexible to better suit women's (and men's) needs. For example, the Westmoreland mine in Paonia has workers alternate shifts every 2 weeks and prohibits husbands and wives from working the same shift. Rules like these could be altered to benefit the employees.
2. University extension activities and vocational education could be brought into the communities. Opportunities for training and for higher education are desperately needed.
3. Employment counseling services for women should be provided. These services are especially needed in conservative towns that have negative community attitudes about wives and mothers working.
4. The energy industries should be encouraged (perhaps given tax breaks) to train and hire local women, men, and minorities. This would help the local residents, as well as help reduce in-migration.
5. Unionizing women's jobs is one possible way to increase female wages in these towns.
6. Quality day-care facilities need to be provided to facilitate women working. Clearly, not all women want to work. However, there are some women who choose to work for personal satisfaction and, as has been noted earlier, the majority of working women must work out of economic necessity.
7. It would be desirable to convert local, volunteer jobs into paid positions. The increased revenue from severance and income taxes could provide the funds necessary to support these jobs. If the services are

vital to the community, then they should be provided and the workers should be reimbursed.

8. Loans should be made available to capable women who want to start their own businesses.

9. Meaningful and well-paying employment opportunities that could be conducted at home need to be identified.

One researcher has suggested as a solution for the lack of jobs for women in energy boomtowns that, when a male-dominated industry enters a town, thus causing a boom, a female-dominated industry enter at the same time, e.g., a textile industry (Clemente, 1975). This strategy keeps women segregated in low-paying, traditionally female, dead-end occupations and, thus, is not a desirable solution. It seems preferable to integrate women into the labor force. Economic theory tells us that, if people (regardless of race or sex) are employed in those jobs for which they are most qualified and productive, then national output and welfare will be higher than if society discriminates against certain groups. If the energy-related industries adopt policies favorable to hiring women and if adequate training programs are made available, energy development could improve economic opportunities for women, not just for men.

In closing we would like to ask the Commission on Civil Rights some questions, with the goal of stimulating further research.

1. How are affirmative action guidelines set? Are they determined fairly and are they used only as minimum, not maximum, hiring levels? Does it really make sense to fight discrimination by basing employment goals on the proportion of women and minorities already employed in the particular occupation? Who looks after affirmative action when employment is not under a Federal contract?

2. Are men and women being hired for comparable jobs at different wages? Is the Equal Pay Act enforced in these towns? Could information about women's employment rights be better disseminated so all women would be informed of their legal rights?

3. Is the use of layoffs abused? Are women workers laid off unfairly when they cannot be fired for just cause?

4. Are men and women given equal access to credit in these towns? The Equal Credit Opportunity Act was passed last year, but it is not clear whether or not women are really given equal consideration when they apply for loans.

5. Why are there so few women in unionized energy jobs, while the nonunion, lower paying, energy positions are often filled by women? Are women recruited for union positions? Are they receiving information about job openings? Or, are women as interested in the higher paying, union jobs in male-dominated fields and therefore not applying for those jobs?

6. Why aren't there more women in apprenticeship programs?

7. Within the construction industry, why is it that women end up in stereotyped female jobs, like sweeping and putting things away?

8. Who are the advocates for women and minorities? Why is the Office of Federal Contract Compliance only interested in receiving individual reports of discrimination rather than looking for it itself? Who makes sure that women and minorities know about antidiscrimination programs and helps them initiate grievance procedures? What about women and minorities who are too intimidated to even apply for a job, such as the women we met who wanted mining jobs but felt they would be harassed on the job?

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Women "Working" for Energy

By Gail Martinez*

More and more women are entering the work force. This is due to economic need and need for self-satisfaction through full careers. The reasons for women entering the paid work force might be the high cost of living or the high divorce rate. Three-fifths of the increase in the labor force is due to entrance of more women. Nine out of 10 women will work at some time in their lives. With the emerging energy industries in this area, quality employment opportunities need to be made available. Following, I would like to present women's needs for quality employment and present statistical background, special needs of women in the work force, such as education, child care, and recruitment of women, and their mobility to outlying areas. Employment possibilities in private industry and Boulder's Women in Nontraditional Energy Fields Program will be looked at. In summary, possible solutions will be discussed.

As background information when discussing the needs and problems of women in the work force, specifically dealing with the job market the energy field will create, I would like to present relevant statistics that will be helpful. In 1975, 46 percent of all women (16 years of age and over) were in the labor force. The greatest gain in the labor force since 1950 has been women between 20 to 54 years of age. About 58 percent of all women workers are married and living with their husbands, 23 percent have never been married, and 19 percent are widowed, divorced, or separated from their husbands. Approximately 14.5 million (1975) mothers participated in the labor force. One out of eight families was headed by a woman. About 5.4 million of these working mothers had children under the age of 6. Five million had mothers who were heads of households. Fifty-five percent of the working widows, divorcees, and women separated from their husbands had preschool children.

Twelve and one-half years of schooling is what the average woman in the labor force has completed (about the same is true for males). Seven out of 10 working women have a high school education. One out of 4 working women has completed 1 or more years of college and one out of 8 is a college graduate. Eighty-five percent of women workers, 20 to 30 years of age, are high school graduates, whereas only 68 percent of women over 35 are high school graduates. Generally, the more education a woman has the more likely she is to be in the labor force.[1] Approximately 43.1 percent of all degrees awarded in 1975 went to women; however, the actual number of degrees going to women more than doubled within a 10-year span (664,000 in 1965 to 1,305,000 in 1975). The greatest growth was at the doctorate level.

A very positive trend is that more women are entering the technical areas. In computer and information sciences, the proportion of women rose from 4.6 percent in 1965 to 18.9 percent in 1975. Approximately 41.8 percent of the bachelor's degrees in mathematics were received by women; in the architecture and environmental design areas, the percentage went from 4.6 (1965) to 17.4 (1975). At the

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[1] U.S., Department of Labor, Employment Standards Administration, Women's Bureau, *Women Workers Today* (1976).

master's level in architecture, environmental design, and mathematics, the proportion of women rose 12.5 percent. The following percentages of doctoral degrees were earned by women (1975): 15.9 percent in architecture and environmental design, 11.3 percent in mathematics, 8.3 percent in physical sciences, 6.6 percent in mathematics, 8.3 percent in physical sciences, 6.6 percent in computer and information sciences, 4.1 percent in business and management, and 2.1 percent in engineering. The engineering field at all levels had the lowest percentage of degrees earned by women. In 1975 women received 2.2 percent of bachelor's degrees in engineering and 2.4 percent of all master's degrees in engineering.[2] There is a significantly relevant rise in the educational level of women.

Women comprise 42 percent of the Nation's labor force, but receive only 25 percent of the total earned wages (1977). The mean income of women (over 16) in the work force in 1977 was about $8,000, compared to $13,000 for men. More women are entering the work force, but 80 percent or 32 million are entering in the low-paying areas, service jobs (waitresses, cleaning workers, switchboard operators). Forty-six percent of the families below poverty level (1974) were headed by women. About 65 percent of minority families below poverty level were headed by women. A married woman will most likely be working if her husband's income is between $7,000 and $10,000. Lack of training and awareness of new job options may contribute to this lack of quality employment.[3]

The labor force participation rate of minority women has remained steady, while the rate of white women has risen (although still below that of minorities). Among minority women 50 percent were workers, compared to 47 percent of all white women. Between the ages of 25 and 34 the highest number of minority women participated in the labor force, whereas for white women it was between 20 and 24 years of age.[4] Minority women are more likely to be in service work (37 percent minority, 20 percent white) or blue-collar work (18 percent minority, 14 percent white). The proportion of minority women employed in clerical work has continued to increase (reaching 25 percent in 1975), and the proportion of private household workers has declined (30 percent previously, 11 percent in 1975).[5]

Most minority workers are high school graduates, the median years of schooling being 12.4. Both men and women minorities are narrowing the education gap between themselves and whites. By narrowing the educational gap, more quality employment opportunities will become available.

Women generally outnumber men in central cities, partially because of employment opportunities in the service industries and clerical fields. The mobility difference for men and women is only slight, being higher for women in their late teens and lower from ages 20 to 50. The probability of women migrating is greatest at 22 years of age; for men this peak is extended for about one year. Married women under 45 are more mobile than single women of this age because of moves associated with husbands' job transfers, setting up a new household, or the birth of a child. After age 30, divorced, widowed, and separated women are more likely than married or single persons of the same age to change their place of residence.[6]

Hopefully this overview will help in understanding the specific needs of women that will be necessary for preparing them to enter the energy-related job market.

Some of the jobs Colorado will be looking at will be in the areas related to coal, power generation, oil shale, oil, gas, and uranium. Mining will be a big area in Colorado, and 85 percent of all persons in the mining industry are blue collar. Mining jobs range from apprentice miners to experienced miners who operate equipment worth several hundred thousand dollars. Also included are administrative, professional, clerical, and technical occupations. Employment in the electric powerplant may be occupations related to the generation, transmission, and distribution of electricity, or workers in engineering, scientific, administrative, sales, clerical, and maintenance occupations. Workers with a wide range of skills and education will be needed to find oil and gas and to drill, operate, and maintain wells and process natural gas. In this area most nonprofessional workers start as helpers and advance into one of the specialized jobs; this can take several months or several years depending on the job. For example, members of a

[2] "Trends in Female Degree Recipients," *American Education*, vol. 12 (November 1976), no. 9.
[3] Department of Labor, *Women Workers Today*.
[4] U.S. Department of Labor, Employment Standards Administration, Women's Bureau, *Minority Women Workers: A Statistical Overview* (1977).
[5] Ibid.
[6] U.S. Department of Commerce, Bureau of the Census. *A Statistical Portrait of Women in the U.S.*, Special Studies Series P-23, no. 58 (April 1976).

drilling crew may start as roughnecks, which requires mechanical ability and adequate physical strength and stamina.[7] The availability of jobs, both in the blue-collar and white-collar areas, seems plentiful. Table 1 shows the communities and types of energy-producing industry according to location.

Women who will be entering jobs in the energy fields will have special needs. Taking into consideration the employment statistics we reviewed, let's now integrate them with special needs to be considered for the working woman in the energy field. Many of the needs will be an overlap of needs today in the work force. One area of concern should be the recruitment of women into the energy field and letting job options in both blue-collar and white-collar areas be known. One method already being utilized in three colleges is the offering of courses related to job preparation for energy industries.

These are the colleges and the programs that are being offered: Colorado Mine Career Education Center in Steamboat Springs (vocational training for mine occupation); Colorado Mountain College, west campus in Glenwood Springs (electrical-electronics technology program to train mine electricians); and Mesa College in Grand Junction (preparation for jobs in the oil shale industry). Colorado Mountain College in Breckenridge in the summer of 1977 offered an all-day "Women's Day Fair," and some of the workshops were relevant to energy fields. Better Jobs for Women, a program funded by the Department of Labor to place women into skilled trades, was present, introducing women to blue-collar work. A woman working in the mines at Climax was present to express her feelings about working in the mines. A workshop on the loneliness of women in mountain towns was offered. This is one way to introduce options and offer support to women interested in being employed with an energy industry. Rockwell International offered a 1-day workshop on opportunities and upward mobility possibilities for women already employed in the plant.

Opening women's eyes to their own potential for either the skilled trades or the more technical areas and to seeing it as a true possibility is essential. Education should begin as early as possible to acquire mechanical and technical background to make specialization in the technical energy fields easier. Incentives to pursue higher education might be a possibility, incentives such as a guaranteed job when leaving school, possible part-time work, part-time school, reimbursement programs, inhouse training, and industry-sponsored tuition programs, with the industry then getting a competent employee. High educational ideas are unlimited, the most important aspect being the awareness of these possibilities. The most important factor in recruitment is making known to women their options for better job security and upward mobility.

Relocation to a small town or a town just created could be a "possible" deterrent to a woman entering the energy field. This might be remedied by job security, a good salary, and potential to learn a marketable skill. One such experience I have encountered as recruiter/counselor for Better Jobs for Women was while recruiting women for the job of air traffic controller. This recruitment was successful because of the $12,000 starting salary with potential of $30,000 a year and job security, even though the training required relocation to attend school in a different State for 17 weeks. Both single women and women with children were interested. Relocation was not a problem in that they would be stationary for a couple of years.

Once women reach the job site, there will be other special needs. One need is quality child care. There are only 1 million spaces available in licensed child-care programs for about 6 million preschool children whose mothers work. Another need is accessibility to schools from boomtowns and housing. Isolation of the woman in a mining town could be a problem; so one possible solution might be placement of many women in one area. In the coal-related work force in North Dakota, Montana, and Wyoming, 95 percent of the workers were males. Mutual support of several entry-level women is important. Within the three States mentioned, the average employee had been with the company 65 months.[8] Inhouse orientation of present workers to the fact that more women will now be entering the mining field might soften attitudes. This orientation might show the positive side of why women choose to work in the mines, and myths of women in mines might be discussed. Women in blue-collar and white-collar areas might encounter negative attitudes. Support groups can be helpful in this area, for example, afterwork organizations, like Women in

[7] "Energy-Producing Industries," *Occupational Outlook Handbook* (reprint, 1978-79 ed.), pp. 2-20.

[8] U.S., Department of Labor, Employment and Training Administration, Region VIII, *Regional Energy/Jobs Newsletter*, vol. 2 (October 1977), no. 5, 1-2.

TABLE 1

Energy Industries by Location and Type

Community	County	Nature of Impact
Craig	Moffat	Coal, power generation
Hayden	Routt	Coal, power generation
Carbondale	Garfield	Coal
Paonia	Delta	Coal
Hotchkill	Delta	Coal
Somerset	Gunnison	Coal
Rifle	Garfield	Oil shale
Rangely	Rio Blanco	Oil shale, oil gas, coal
Meeker	Rio Blanco	Oil shale, coal
Oak Creek	Routt	Coal, power generation
Brush	Morgan	Power generation
Fort Morgan	Morgan	Power generation
Glenwood Springs	Garfield	Coal, oil shale
New Castle	Garfield	Oil shale
Silt	Garfield	Oil shale
Grand Valley	Garfield	Oil shale
DeBeque	Mesa	Coal, oil shale
Cedaredge	Delta	Coal
Orchard City	Delta	Coal
Delta	Delta	Coal
Walden	Jackson	Coal
Yampa	Routt	Coal, power generation
Steamboat Springs	Routt	Coal, power generation
Nucla	Montrose	Uranium, power generation
Naturita	Montrose	Uranium, power generation
Dove Creek	Dolores	Uranium, CO^2
Gunnison	Gunnison	Uranium
Salida	Chaffee	Uranium
Collbran	Mesa	Oil shale, coal
Palisade	Mesa	Oil shale, coal
Fruita	Mesa	Oil shale, coal, oil
Dinosaur	Moffat	Oil shale, coal, oil
Trinidad	Las Animas	Coal
Walsenburg	Huerfano	Coal, coal slurry and transport
LaVeta	Huerfano	Coal
Aguilar	Las Animas	Coal, coal transport
Durango	La Plata	Coal
Crawford	Delta	Coal
Bennett	Adams	Coal gasification
Somerset	Gunnison	Coal
Cokedale	Las Animas	Coal
Redstone	Pitkin	Coal
Phippsburg	Routt	Coal, power generation & coal transport
Watkins	Adams	Coal gasification
Maybell	Moffat	Coal, power generation
Gateway	Mesa	Uranium
Cortez	Montezuma	Coal, power generation
Pagosa Springs	Archuleta	Coal

Source: Department of Labor 1977 impact-study, untitled.

Mining. This organization not only gives women an opportunity to interact, but it gives them a better awareness of their industry. Problems the working women will encounter in the energy field will be very much the same as she is experiencing today in entering the work force. Lack of higher education, skill training, and child care forces her to be caught in low-paying jobs.

When I was speaking with Denver-area employers, they indicated their need would be in highly technical areas, most likely with degrees. Rocky Mountain Energy's entry-level position requires a B.S. in one of the sciences and, for a few jobs, experience of 2 years or more. Solar Energy Research Institute (SERI) performs research, development, and related activities for the Department of Energy in all the solar technologies, needing employees highly skilled in research and development of programs to manufacture, design, install, and maintain solar systems. Three divisions of SERI—Analysis and Assessment, Technology Commercialization, Education and International Program—are involved in examining the employment and training implications of solar energy. SERI also conducted an afternoon session for community service programs in the Denver area, tapping into minority and women's programs, introducing us to SERI availability of employment, employment procedures, and kinds of job openings SERI had and projected openings. This was beneficial to agencies and a good recruitment procedure.

With the many oil companies now in Denver, many jobs will be available but not in the Denver area. Relocation might be necessary. Rockwell's participation in the energy field is developing the liquid metal fast breeder reactor as a major source of electrical energy and management of Rocky Flats nuclear components plant. Rockwell, inhouse, offers tuition reimbursement programs for persons interested and inhouse training for apprenticeships in blue-collar areas. Persons must first enter at entry level, then bid into skilled trade apprenticeship positions, where they can learn the trade within 3 to 4 years. Public Service Company in Denver also indicated to me that any energy-related jobs within their industry would be an inhouse training situation. This seems to be the basic outlook within the Denver area for a few private companies. This indicates that there will be only a few jobs open in blue-collar areas for persons in the open labor market. People with technical degrees will have a much better opportunity for jobs.

Boulder Women's Resource Center was awarded Skill Training Improvement Program (STIP) funding of $165,407 to provide 36 women with skill training and job placement in energy-related fields. This was to be implemented between January 1, 1978, and March 31, 1979. Employer involvement was a primary focus at every stage. Emphasis was on female heads of household, AFDC (Aid to Families with Dependent Children) recipients, rural minority women, and underemployed women. A participant had to meet STIP eligibility guidelines: economically disadvantaged or with family incomes at or less than 70 percent of the Lower Living Standard Income Level, unemployed 15 out of 20 weeks, AFDC recipients, transfers from other CETA programs, or veterans with 150 days or more of service or released for service-connected disability.

The emphasis was to prepare women for entrance into traditionally male-oriented occupations (blue-collar, nontraditional areas in energy-related fields). Boulder Women's Resource Center felt that by offering preparatory workshops, classroom instruction, on-the-job training, and individualized, ongoing counseling these women could attain economic independence and familial self-sufficiency. Placement would occur in carpentry, bricklaying, plumbing and welding, electrical work, drafting, surveying, solar technology, and concrete work. All these skills are directly applicable to energy-related occupations. Participants would specifically be placed in one of the following 10 categories: carpentry, plumbing/appliance repair, painter/general maintenance, draftsperson, solar energy research technical assistant, electrical parts person, machine operator, foreperson (machine operation), construction worker, metal molder, welder, electrical technician, solar installer, and utility worker. Private industry would be the primary providers of training.

After intensive recruitment and screening, the selected participant would be involved in a career exploration day. After selection of the area of interest, the participant would receive classroom training when necessary and then be placed at a training site geographically located in the local community. Boulder's STIP contract will not be completed until March 1979; therefore, final findings are not available.

Boulder STIP is asking for a contract modification. Two major factors that impeded the progress

of the STIP were recruitment, affecting enrollment, and job development. Presently nine women (25 percent of the total goal) have been placed in on-the-job-training positions. Recruitment did not begin until April, causing underenrollment and reducing success potential. Blue-collar skilled trades require physical ability, motivation, and manual skills to perform the work of the trades. Highly motivated women who seriously desired nontraditional careers and were self-confident enough to enter a traditionally male job had to be turned away because of STIP eligibility guidelines. No ongoing vocational training was available; therefore, ongoing intake was prohibited. Only two enrollment periods were allowed.

In the area of job development, some of the limitations were: availability of energy-related occupations, 6-month minimum training requirement, skill level of eligible positions, nonunion employer requirement, and no existing training programs.[9] The STIP contract will be completed in March 1979. Boulder's STIP ventured into two new areas: employment in the energy field and women in nontraditional jobs. Boulder's STIP may have been implemented too early for employment in the energy fields, since they are presently lacking in a need for skilled trade workers. Negative attitudes toward women in skilled trades is a problem in all areas of employment, not just the energy fields.

For aiding in the recruitment of women in the Colorado area, employers could contact the Women's Resource Network or the Advocates for Women in Construction and Skilled Trades through Better Jobs for Women. The Women's Resource Network consists of staff from most of the women's resource centers throughout the Colorado area. Advocates for Women in Construction and Skilled Trades is a statewide organization of women's groups formed to increase the access of women in Colorado to employment in construction and apprenticeships. The advocate organization is cosponsored by Better Jobs for Women and and the Women's Bureau, Region VIII.

Also helpful to the employment outlook is the regional industry occupational model developed by the University of Utah for the U.S. Department of Labor, Employment and Training Administration, Region VIII. Employment impact from energy development can be assessed by this model. Unfortunately, the model deals with labor market areas defined as a concentration of economic activity or labor demand and areas in which workers can change jobs without relocation. This model involves an investigation of actual local labor market situations. This model is designed to produce current and projected employment estimates for 76 industries and 420 occupations.[10] This model became operational in April 1978, with the first report final in October 1978. Perhaps this model will be helpful in planning training programs for employment in energy fields.

Women are 98 percent of all secretaries, 94 percent of all typists, 78 percent of all clerical workers, 95 percent of all private household workers, 64 percent of all service workers, less than 10 percent of skilled workers, and less than 5 percent of top management jobs. Of 441 occupations listed in the Census Occupation Classification System, the majority of working women are found in only 20. The salary gap still remains, and women comprise two-thirds of all discouraged workers—those who want a job but are not looking because they believe they cannot find one. The unemployment rate for minority women is 13.6 percent, higher than among any other category.

Women do want "better" jobs. They are enrolled in federally-funded vocational education; unfortunately, the concentration is in the lower paying jobs. Some 11.6 million students are enrolled in these programs, and 6.4 million are women. The concentration still remains, with 45 percent in home economics, 28 percent in office training, and 12 percent in trade industrial occupations such as cosmetology, textile production and fabrication, commercial and graphic arts, and public services. Less than 10 percent are in technical occupations. In a Gallup Poll conducted among teenage girls and boys in April 1977, the top 10 career choices were: girls—secretary, teacher, nurse, other medical, veterinarian, fashion design/modeling, doctor, social worker, business, cosmetology; boys—skilled worker, engineer, lawyer, teacher, professional athlete, musician, architect, farmer, doctor, and military. Are women aware of their occupational options? Twelve million more women are projected to be in the labor force by 1990, representing more than one out of every two women over 16 years of age.

[9] Grant "Proposal to Implement Skills Training Improvement Program for Women," submitted by Boulder County Women's Resource Center, Claire Largesse, Project Coordinator, 1978

[10] U.S., Department of Labor, Employment and Training Administration, Region VIII. *Regional Energy/Jobs Newsletter*. vol 3 (August 1978), no. 4, pp. 1-3).

Women need training in the higher paying jobs to enable them to get off of AFDC and out of food stamp lines. Women do not work to "earn a little extra money"; many are the heads of households or, with the present economic situation, many are significant contributors to the family earnings.[11]

Women are seeking quality employment. Following are a few possible ways to approach the problem. Colorado currently has the largest number of women's resource centers in this region for referral of women who suffer from isolation in the work experience. The gap in wage discrimination can be closed by existing employment legislation being enforced at all levels. If a woman chooses to be a secretary, one stresses the necessity for fast typing and shorthand to make her skills marketable at a fair salary. Quality child care must be accessible and seen as an integral part of women's work role (also men's work role, with more divorced fathers gaining custody of children). Occupational mobility in both white-collar and skilled trades must be made available. Upward mobility of the career structure must be made available. The advantages of skilled trades, job security in skilled crafts mastery, increased chances for promotions, variety of work settings, physical activity, and better benefits should be available through awareness programs. Sex role stereotyping continuously limits opportunities for women (myths of mother nature being jealous of other women in the mines). Protection of women workers must be increased. Sexism in communications should be monitored. Equal employment opportunity is necessary for women increasing their job options.

With the emerging energy fields, now is the ideal time to start preparation through training programs for women. This region now needs employees with highly technical skills, and there is a shortage of women in these areas. When energy industries have fully moved in, there will be a need for skilled trade employees. So it is essential that training begin now, so quality employees can be made available to industries.

[11] Statistical information is from: Department of Labor, Bureau of Labor Statistics and Women's Bureau; National Institute of Education; Department of Commerce, Census Bureau; National Commission on the Observance of International Women's Year; HEW Bureau of Occupational and Adult Education; Center for Vocational Education. Working Women's Working Conference Brochure, June 3, 1978.

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Effects of Energy Development on Rural Women

By Gay Holliday*

Oil, natural gas, and coal—three fuels that account for 95 percent of the energy produced in the United States. They provide more energy today than man or woman has ever had at their service before. The demand for energy grows at a steady pace because people like and need energy. It makes life easier and it works for us.

Progress and change require enormous amounts of energy, but what are the consequences? Can there be a balance between growth and stability? If there could be a balance between growth and development, plus social and economic change, then there might be a fair degree of success. But it rarely if ever happens; no one can say, "We will have a boom," and then lay it all out neat and pretty.

Planning and implementing take money, and you don't have the tax base until the major industry and the spinoff businesses and all the rest of it have become established. As things work out, there is usually at least a 3-year lag between the need for a program and the tax revenue that could have implemented it. In boom situations, the cart invariably arrives before the horse. The time duration of this lag period depends on the timing of production, the responsiveness of local government, and the availability of new tax revenues.

Major choices must be made. Specific plans and manageable programs of energy conservation and production are underway, geared to energy needs and environmental needs. What must always be the heart of any such plan are the really important issues: human needs, individual lifestyles, and basic values.

Managed and controlled resource development doesn't mean that the economy must squeal to a painful halt or that our comfort and convenience must decrease, but it does mean that in the process we must make a better attempt to correct the injustices and exploitation of those involved.

Seventy-five percent of the United States energy today comes from petroleum and natural gas. But 1970 was the peak year for domestic oil and gas production. From here on out, domestic production will be declining at the same time that our energy needs will be increasing. Hence, to more than double energy consumption while using only domestic resources would require us to at least quadruple the present coal production in the United States. This is where the problems lie, those problems that affect the people, whether they be social, economic, or psychological. We must demand that a serious commitment be made to remove the problems incurred by resource development or solve them.

For those women who are long-time residents, they first experience the so-called "people pollution" and spend time trying to protect individual and collective interests that appear to be threatened by developmental interventions. In any boom situation, you have the competition between the "ins" and the "outsiders," which often becomes absolute bitterness. This sociological cost includes the risk taken involuntarily by the women who find themselves becoming estranged in what had been their own

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community. These women tend to see themselves as a species that is endangered because their habitat is threatened by industrialization of a magnitude that is incompatible with maintaining their cultural heritage and lifestyle. Changes include shifts in the selection of friends, strains in communicating with friends and neighbors of long standing, and a shift in the power structure from the "establishment" to the new mining industrialists.

Every community affected by rapid expansion, the "yo-yo" changes or boom characteristics associated with resource development, undergoes its own unique social and emotional stresses, but the results tend to be similar—the cost of human wastage. There are always more incidences of social chaos than there are examples of proper community planning.

One should never discuss industrial resources apart from human resources, which are often relegated to a secondary status of energy production. Wife and mother and her potential is one of our greatest resources, yet it is subjected to great abuse in the name of technological growth. This is brought out in a report by ElDean V. Kohrs, called the "Gillette syndrome," which pertains to the Gillette area.

In the impacted area, the woman is the first to experience the breakdown of church, school, and family. This threat causes a selection of priorities. The lifestyles change and because of increased high-paying employment, 7-day weeks, and 16-hour shifts, attendance drops, civic and social involvement decrease, and the faithful wife and mother tries desperately to hold it all together.

Invariably, the outside pressures result in increased family problems. Before industrial impact, the mother had probably demanded and received a certain amount of conformity to existing norms. The older child starts to rebel because those demands do not conform to what he is experiencing in the changes he now finds in his school and his town. Consequently, there comes a breakdown in communication and appreciation of opposing goals, as Dr. Kohrs states. Delinquency results as the young person is introduced to drinking and drugs, maybe for the first time. The entire social well-being is affected by change that reflects the community's values, its goals, and everyday activities. Child abuse, juvenile delinquency, and alcohol and drug abuse can be expected to increase.

In some communities where energy resources are being developed, one of the greatest impacts will come to the schools. Enrollment increases as much as 500 percent in a school system. Here again, the effect is felt more strongly by both the mothers and the women who are teaching. They realize and are aware of the effects of the turmoil brought on by development.

Classes are split, some are dropped, and teachers who have taught certain subjects for years find themselves forced to fill in elsewhere or entirely out of their realm of expertise. Their classrooms could be an unsatisfactory mobile unit, or, in some cases, they are teaching classes in the showers and locker rooms. Instability and all the other hardships imposed by serious overcrowding and excessive demands cause them to uproot their lives and go elsewhere.

In a recent household survey (Bechtel) concerning construction workers in one impact area, there was very little difference in the marital status of local workers and nonlocal. It did show that of 100 nonlocals, 41 married workers had their families with them while 24 did not. We view the conditions of women at the job site, but what is done to reveal the situations of those who are left at home? The survey does not show where they are, but it does bring out that most are in nonadjacent States, meaning they are a great distance away. They, too, suffer the hardships imposed because the husband is gone and undoubtedly are more susceptible to the three "Ds"—depression, divorce, and delinquency. There again is the human wastage caused by development that leads to alcoholism, absenteeism, and loneliness, in places far removed from the actual industrial area.

Any adverse condition that we apply to those women living in the impacted area can also be related to the wives and mothers who do not accompany their husbands to the place of employment, yet these women tend to be forgotten. Are some of them also forgotten by the husbands? I would be inclined to think so.

Another area that is often overlooked is the widow and/or the older person on a fixed income. They are confronted with a situation that is a severe burden caused by "artificial" inflation and increased taxation. They find themselves trapped in what appears to them to be an exceptionally high-cost town that they have lost nearly all contact with. Also, for maybe the first time in their lives, their

lifestyles have changed because now they fear for their safety; they must lock their homes and be continually on their guard.

A significant psychological effect is the type of influx associated with a boom growth. The labor demands draw heavily on the marginal unemployed worker from other localities. The result, according to Kohrs, is a high concentration of psychopathic personalities prone to illegal behavior. This naturally causes an increase in the crime rate. That means [redacted]creased law enforcement costs.

The widow or the retired person finds it harder to enhance the security of both life and health. We do not know of all the unnecessary health risks involved with industrialization, but why should anyone become an involuntary "test case"?

We have those women directly associated with the extraction or the resource development, referred to as either "newcomers" or "outsiders."

Because she's acutely aware of her infringement upon the established community, possibly the wife of the construction worker is more adversely affected. She now subscribes to a foreign lifestyle, value systems, and loss of a sense of community. Her social well-being is jeopardized out of intrusion. No matter what effort she exemplifies, she rarely ever fits in.

This breakdown of social organization interferes with the process of individuals meeting growth needs. The decrease in a sense of worth and meaning and the interference with personal growth is manifest in the syndrome. This syndrome refers to the increasing incidence of drunkenness, divorce, delinquency, depression, and even suicide in boomtowns. It may not be indicative, but the trend is developing.

Most newcomers would tend to be at least temporarily isolated from the existing community. There are limited social, cultural, and educational opportunities for the wives of construction workers. Professional help might be available, but services would be severely strained because of increased demands for these services.

This housewife has tried to cope with all of the inadequacies encountered during the day and finds it hard to be receptive to a husband who returns home after a 16-hour shift. He responds by going out the door to spend the evening with friends at the local bar, exchanging stories with those in similar circumstances. The results are loneliness, divorce, tension, emotional damage, and alcoholism—in short, more additions to the list of human casualties in life's battles as portrayed in Dr. Kohrs' "syndrome."

These conditions seem to accelerate in "boomtown" conditions. The feeling of dislike and growing resentment is made evident towards the "outsider." It doesn't take too long for severe depression to set in and excessive drinking to take place. The isolation, real or unreal, is compounded by the fact that she, and she alone, has no contact with the alien community. She, too, is losing touch with not only her spouse, but her entire family. They have their outlets, whether it be work, play, or school.

Even though it might be most difficult for her children who are experiencing the hardships of overcrowded classrooms, instability, and nonacceptance, it will be the mother who shares those heartaches and suffers both with them and for them. This type of condition is very detrimental to her children, and some will show the effects for years to come.

The frustration she must face in knowing her children are not receiving the social and educational advantages that they should be getting only adds to the deplorable situation. She is then torn with the longing to return to her family and friends back home and the obligation to remain with her husband, who oftentimes is unsympathetic to her emotions and does not relate to a bad situation as she does. It is not surprising that both suicides and homicides tend to be high in a boomtown.

Everything focuses on the quality of life, and until the needs are adequately met, and there is a willingness to assure everyone of "better living," then the problems will persist. The pattern that a community sets most often becomes the way the community will exist. There will be price tags, but will they be monetary or will they continue to be placed on human lives?

What effects are experienced by the businesswoman in the community and also those who represent the agriculture industry in the rural areas? The economic gains are profitable and employment could be greatly increased, but what is down the road for the woman who might have to expand and hire in her shop or store to meet the needs of the people?

When the boom cycle ends and construction is complete, leaving relatively few where there were once hundreds, can she retrieve and continue as she once did? Or, because of tremendous population growth, will it lure big business with shopping centers that might threaten her very existence? The

anxiety of local businesses faced with chain store competition is real and has to be considered.

We must also realize that the life of the farm and ranch wife changes drastically in many cases. Some have had taxes triple in 2 years, because of energy development, and have had actual costs mount steadily because of destruction to personal property and vandalism. Water in springs for livestock has dried up completely as a direct result of mining. Due to uncertainty, it is often difficult to obtain loans for improvements, which before was never a problem. Therefore, along with the social changes experienced by her counterparts in town, the rural woman also feels the impact in many ways.

Some will always walk away scot free with no scars and, hopefully, that number will increase, but there will be those who carry the scars for a lifetime. Some will benefit from financial growth and economic gain, but the end results are not beneficial to all. Neither group will be immune to the effects of emotional stress. The general social and psychological well-being of the area can be expected to decline without creative and responsive planning.

Services, too, will always have a price tag attached. These costs are measurable and can be calculated, but who will pick up the tab when industrial growth does not include plans for associated social changes? Does the development enterprise have the responsibility to forego all costs? Possibly. Should we expect this from our Federal Government? I don't think so. Why should those in the community shoulder the cost burden, plus all of the other implications involved in the development situation? Is it right to expect the taxpayer to subsidize industrialization? There are many unanswered questions.

The cost incurred, if supplied by the company, might be justification in curing the community ills and also establish better relations for themselves, their employees, and their families. The funding necessary for services to meet the needs should never have to come from the area and its people. The situation alone will prove itself detrimental, and many feel it is devastating to everything and everyone concerned.

As Mr. Wally McRae, rancher near one impact area, has said:

> If justice is not done and our land, air and water, lifestyles, history, and heritage are condemned, it is going to immediately affect a relatively small number of people, but the implications of this unjust condemnation will be long lasting and everexpanding and could eventually destroy all justice, all fairness, and all property and human rights.

Rarely is an area equipped to respond within the time available to the demands it is facing. We must have the capability to properly collect data, evaluate problems, and recommend effective programs in all sectors where action is needed. Very few have faced rapid growth problems and can react quickly enough to decisionmaking pressures before the problems become overwhelming and out of control.

If resource development were to be placed near a larger town, the effects would be felt, but not to the extent felt by the small town, where few services are available to begin with. That seldom happens. Instead, we have areas where towns spring up nearly overnight.

Will the established local government officials continue to stay on and formulate and enforce a policy for the betterment of all, or will they too give up because they can no longer face the pressures and demands imposed upon them? The viability and stability of the community will depend largely on them. It is no enviable undertaking, yet their future and the future of their towns are at stake.

We must all strive to correct the injustice. We cannot continue on with the deterioration of property, values, self, and unity. Fossil fuels will continue to furnish the great bulk of the Nation's energy in the coming years. One fact seems fairly certain, however: it will be a long time before any of us takes energy development for granted again.

ENERGY DEVELOPMENT AND THE DISADVANTAGED

Energy Development in the Rocky Mountain West: Its Effect on Women, Blacks, Hispanics, and the Disadvantaged

By Ellis Cose*

Few regions in the world have been blessed like the Rocky Mountain West. It has beautiful land, vast mineral stores, and few of the big-city headaches so common in the East. With only 3 percent of the Nation's population, the region contains over 50 percent of its coal reserves (including 88 percent of its low sulfur coal) and nearly 50 percent of its uranium.[1] As a former Senator from Colorado noted: "Oil shale deposits in Colorado's Western slope and deposits in Utah and Wyoming contain as much oil as the entire known world reserves."[2]

Yet there are clouds on the western horizon. The fact that the area has vast resources does not necessarily mean that those resources will be used to its advantage. The exploitation of those resources may, indeed, bring a host of problems.

This paper will examine the likely impacts of increased energy production and rising energy costs in the western region on minorities, women, and those on fixed incomes. Before proceeding with that analysis, however, it is necessary to examine some of the impacts generally of energy development in the West.

What, first of all, is the West? I am referring primarily to Standard Federal Administration Region VIII: Colorado, Wyoming, Utah, Montana, North Dakota, and South Dakota.

As reported by the U.S. Census, Region VIII contained some 5.58 million people when the last census was taken. Of those, 1.5 percent (or 83,685) were black—concentrated largely in Denver, Colorado. Some 16.2 percent (345,000) were Hispanic—and 81 percent of those were concentrated in Colorado. The area also has a substantial Native American population, though their problems (which are infinitely more complicated than those of blacks and Hispanics) will not be considered in this paper.

The area's average per capita income in 1974 was $4,575—3 dollars above the national average. Some 10.3 percent of its families were living in poverty. Some 2.1 million persons were in the labor force.[3]

The region, with some 16 percent of the Nation's land mass, produced a relatively small proportion of total U.S. energy supplies. (See table 1.) The potential production, however, is huge. Unfortunately, the potential problems are also huge.

As one observer noted: "The social benefits of burning low sulfur coal are enjoyed mainly by the citizens of certain Midwestern cities, while the social costs are felt in the northern Rocky Mountains."[4] The problems have been well documented. One analyst claimed energy resource development in Alaska, Colorado, and Wyoming threatened the social viability of local governments and drove up

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[1] U.S., Department of Interior, *Energy Perspectives* (February 1975).

[2] Senator Peter Dominick, *Transcript of Project Independence Public Hearing*, August 6, Denver, Colorado, 1974 (Washington, D.C.: GPO, 1975), p. 72.

[3] U.S., Department of Commerce, Bureau of the Census, *County and City Data Book* (1977).

[4] Earl Cook, *Man, Energy, Society* (San Francisco: W.H. Freeman and Co., 1976), p. 275.

TABLE 1

Rocky Mountain Region, Energy Production

NATURAL GAS

State	Cubic feet x 10^6	Percentage of national production
Texas	8,550,705	38.0
Louisiana	8,081,907	35.9
Oklahoma	1,684,260	7.5
New Mexico	1,167,577	5.2
Kansas	885,144	3.9
California	612,629	2.7
Wyoming	380,105	1.7
West Virginia	234,027	1.0
Arkansas	172,154	0.76
Alaska	121,618	0.54
Mississippi	118,805	0.53
Colorado	108,537	
U.S.	22,493,012	

CRUDE OIL

State	Barrels x 10^3	Percentage of national production
Texas	1,222,926	35.4
Louisiana	935,243	27.1
California	358,484	10.4
Oklahoma	213,323	6.2
Wyoming	148,114	4.3
New Mexico	118,412	3.4
Alaska	79,494	2.3
Kansas	78,532	2.3
Mississippi	64,066	1.9
Montana	34,599	1.0
U.S.	3,453,914	

COAL

State	Tons x 10^3	Percentage of national production
Kentucky	119,389	21.3
West Virginia	118,258	21.4
Pennsylvania	81,562	14.5
Illinois	58,402	10.4
Ohio	51,431	9.2
Virginia	30,628	5.5
Indiana	21,396	3.8
Alabama	17,945	3.2
Wyoming	8,052	1.4
Montana	7,064	1.3
U.S.	560,919	

URANIUM

State	Pounds of uranium oxide	Percentage of national production
New Mexico	10,567,000	43.1
Wyoming	6,986,000	28.5
Colorado	2,536,000	10.3
Utah	1,445,000	5.9
U.S.	24,520,000	

Source: Earl Cook, *Man, Energy, Society* (San Francisco: Walt Freeman and Co., 1976), as derived from U.S. Department of the Interior, *United States Energy Fact Sheets 1971* (1973).

land and housing costs: "A boom inevitably drives up costs for everyone."[5] One sociologist, indeed, compared the exploitation of regional energy resources to the colonization of a nation.[6]

Such "externally conceived, induced, and controlled industrial intervention," sociologist Raymond Gold added, "set into motion sociocultural and other forces which may intrude upon, disrupt, change and tend to supersede the rural way of life. . .[in] small Western towns."[7]

Indeed, the citizens of Wyoming were so skeptical of such exploitation that the building of a coal slurry pipeline became a key election issue and, by one analysis, led directly to the defeat of a Governor.[8]

Exactly what are we talking about when we talk about exploitation of western energy sources? We are talking, in the short term, primarily about coal. Coal accounts for some 90 percent of domestic energy reserves and yet accounts for only about 18 percent of domestic consumption.

President Carter's target of doubled coal production by 1985 is well known. Much of that coal will have to come from the West. The former Governor of Wyoming noted that the exploitation of coal reserves in his State could translate into a State of somewhat over 300,000 persons increasing its population by a third in only a few years.[9]

One Federal study noted:

> The largest increases in surface production and employment will occur [in]. . .Wyoming, North and South Dakota and Montana. Coal production in this region is expected to increase from the 1973 level of 32 million tons to over 193 million tons by 1990. . . .Total coal employment in this region is expected to increase. . .from about 1,300 in 1973 to over 9,600 in 1990.[10]

What will that mean for women and minorities? It is important to note again that this region contains relatively few blacks. It is also important to note that the employment of minorities and women in the energy industries generally has been very low. To quote Melvin Humphrey, director of research for the Equal Employment Opportunity Commission: "The high risk, high paying world of energy development, processing and distribution is a white male bastion."[11]

According to his figures, 79 percent of the workers in oil and gas extraction are white males, as are 79 percent in electric services, 72 percent in gas production and distribution, and a whopping 94 percent in coal production.[12] What that means is that only 4 percent of the workers in the coal industry are minority-group members and somewhat less than that are female. The statistics in the other energy industries are nearly as bleak. Because of the racial makeup in the area, the number of minorities involved in energy production in the West is even lower.

What that means, first of all, is that the employment effects on minorities as a group are likely to be minimal. By one analysis, the proportion of minority employment in coal mining and petroleum and natural gas production is expected to decline slightly in upcoming years, even as total employment increases somewhat.[13] And unless the Western States make a concerted effort to bring blacks into the area or to hire the Hispanics who are there now, there is little likelihood that the projections will be proved wrong.

In addition to the absolute numbers of women and minorities being small, the percentage in higher level positions is practically infinitesimal. In 1977, for instance, females made up approximately 8 percent of those in mining. Of those, 4.4 percent were managers or administrators, compared to 9.3 percent for males. (See table 2.) For minorities, the percentages were also low.

Humphrey, of the EEOC, argued that such statistics cannot be expected to improve on their own. Their improvement, he said, will depend largely on the dedication of industry leaders to equal employment.[14]

In addition to recruiting, however, there is the matter of training. It is true, as Humphrey notes, that a number of the jobs in the energy field require very

[5] John S. Gilmore, *Transcript of Project Independence Public Hearing*, p. 40.
[6] Raymond L. Gold, "Toward Social Policy on Regionalizing Energy Production and Consumption" (paper delivered at Social and Behavorial Implications of the Energy Crisis, sponsored by the University of Houston, 1977).
[7] Ibid.
[8] Michael Barone et al. *The Almanac of American Politics 1978* (New York: Dutton, 1978), p. 936.
[9] Governor Stanley Hathaway, *Transcript of Project Independence Public Hearing*, p. 40.
[10] U.S., Federal Energy Administration, *Project Independence Blueprint: Labor Report* (1975), p. 47.
[11] Melvin Humphrey, "Minorities in the Energy Industries," *Energy and Equity: Some Social Concerns* (Washington, D.C.: Joint Center for Political Studies, forthcoming, 1978).
[12] Ibid.
[13] Bernard Anderson, "The Black Labor Force in a New Energy Environment," *Energy and Equity: Some Social Concerns*.
[14] Humphrey, "Minorities in the Energy Industries."

TABLE 2
Employed Persons, Mining, by Occupation and Sex

Industry and sex	TOTAL EMPLOYED		WHITE-COLLAR WORKERS				BLUE-COLLAR WORKERS				SERVICE WORKERS		
	No. (in thousands)	%	Professional and technical workers	Managers and administrators except farm	Sales workers	Clerical workers	Craft and kindred workers	Operatives, except transport	Transport equipment operatives	Nonfarm laborers	Private household workers	Other service workers	Farm workers
Total Mining	814	100.0	12.5	8.8	0.4	9.7	27.4	32.3	5.7	2.0	—	1.	—
Males	745	100.0	12.6	9.3	0.4	3.8	29.8	34.9	6.0	2.1	—	1.1	—
Females	69	100.0	11.8	4.4	—	75.0	—	4.4	1.5	—	—	2.9	—

Source: U.S., Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, vol. 25 (January 1978), no. 1.

little education, and that many women and minorities could train on the job. It is also true, however, that many of the jobs—especially the higher level jobs—are in fields that women and minorities tend to steer away from.

The Federal Energy Administration concluded that, because of increasing resource development, there would be increasing demands for engineers (mechanical, electrical, nuclear, and mining) and "certain earth and physical scientists, specialized technicians, and highly skilled mining and drilling personnel."[15]

A monograph by Domingo Nick and Conchita Reyes, entitled *A Salute to Hispanic-Americans in Science and Engineering* (Department of Energy, 1978), noted that there were only 9,000 Hispanic students enrolled in full-time undergraduate engineering programs (a little over 3 percent of the total)—and that 3,000 of those were in one institution: the University of Puerto Rico. Nick and Reyes noted as well that the percentage of science and engineering doctorates awarded to Hispanics was under 1 percent. For women and blacks the figures were also low.

Economist Bernard Anderson suggested that much could be accomplished through counseling and career guidance for minorities. He also suggested that the emphasis be shifted away from job creation programs to "skill enrichment" programs.[16] Much the same would apply for improving the percentage of women in the energy industries.

The Effects of Price

As already noted, however, relatively few minorities or females are expected to be hired as a direct result of the energy boom. The effects of rising energy prices will be felt largely in other ways. Consumers will certainly feel it in their personal budgets. In addition, as numerous others have pointed out, the price of energy can affect the composition of industry.

The poor spend a larger proportion of their income for energy supplies than do the nonpoor, the poorest decile spending perhaps nearly 30 percent of their income for energy and the richest decile spending something over 4 percent.[17] Energy expenditures are also a function of region. In short words, those who live in the East pay more for energy supplies than those who live in the West.

According to Lester Thurow, the average American household spent 7.4 percent of its income on direct energy supplies. The average household in the West, however, spent 6.0 percent—a smaller amount than any other region.[18]

Costs are lower for several reasons, partially because of the abundant hydroelectric power in the area, partially because of the relatively low number of heating days, and largely because of the west coast energy surplus.

Theoretically, therefore, energy price increases in the West should be less crushing than increases in most other regions. Computing from Thurow's data, for instance, a 57 percent increase in gasoline prices and a 40 percent increase in home energy prices translated into a 3.7 percent cut in real income in the Northeast, a 3.4 percent cut in the North Central region, a 3.9 percent cut in the South, and a 3.0 percent cut in the West.[19]

Such aggregate projections, however, are of little use in determining how the aged (who live largely on fixed incomes) or the poor would fare as energy prices continue to rise. Those who are poor, as researcher Eunice Grier has pointed out, typically use much less energy than those who are well off.[20] Nevertheless, as noted above, they spend a much larger proportion of their income for energy.

In the western region of the Nation that, in this instance, includes the west coast, Grier found that poor households[21] consumed 70 percent as much electricity as did average households in the area and 64 percent as much electricity as did average households in the Nation. They consumed 76 percent as much natural gas as others in the region and 68 percent as much as the average across the Nation. (See tables 3 and 4.) We can assume also that low-income families consumed less gasoline, since they typically own fewer cars and drive fewer miles. One study, for instance, noted that poor households averaged 8,000 driving miles per year while middle-class households averaged roughly 15,000.[22]

[15] *Project Independence Blueprint: Labor Report*, p. 71.
[16] Anderson, "The Black Labor Force."
[17] See Lester Thurow, testimony before the Joint Economic Committee of the Congress of the United States, in *The Economics of the President's Proposed Energy Policies* (1978).
[18] Ibid.
[19] Ellis Cose, *Energy and the Urban Crisis* (Washington, D.C.: Joint Center for Political Studies, 1978), appendix E.
[20] Eunice Grier, "Energy Pricing Policies and the Poor," *Energy and Equity: Some Social Concerns.*
[21] Those families up to 25 percent above the poverty level.
[22] Dorothy Newman and Dawn Day, *The American Energy Consumer* (Cambridge, Mass: Ballinger, 1975), p. 107.

TABLE 3

Average Consumption and Cost of Electricity in 1975 for Low-Income Households Compared to All Households, U.S. and Regions

	LOW-INCOME HOUSEHOLDS		ALL HOUSEHOLDS		PERCENT DIFFERENCE LOW-INCOME VS. ALL HOUSEHOLDS	
	Average annual BTUs (millions)	Average price per million BTUs	Average annual BTUs (millions)	Average price per million BTUs	Average annual BTUs (millions)	Average price per million BTUs
United States	60.6	$3.10	94.2	$2.95	−35.7%	+5.1%
Northeast	52.3	4.10	69.0	4.21	−24.2%	−2.6%
North Central	49.5	3.46	79.7	3.13	−37.9%	+10.5%
South Atlantic	68.5	3.18	121.3	3.01	−43.5%	+5.6%
South Central	75.0	2.51	137.2	2.21	−45.3%	+13.6%
West	60.6	2.26	86.1	2.29	−29.6%	−1.3%

Source: Eunice Grier, *Energy Pricing Policies and the Poor;* statistics drawn from Washington Center for Metropolitan Studies, *National Survey of Household Energy Use in 1975,* presented at "Energy and Equity; Some Social Concerns," a conference sponsored by the Joint Center for Political Studies, 1978, Washington, D.C.

TABLE 4

Average Consumption of Natural Gas in 1975 for Low-Income Households Compared to All Households, U.S. and Regions

	LOW-INCOME HOUSEHOLDS		ALL HOUSEHOLDS		PERCENT DIFFERENCE LOW-INCOME VS. ALL HOUSEHOLDS	
	Average annual BTUs (millions)	Average price per million BTUs	Average annual BTUs (millions)	Average price per million BTUs	Average annual BTUs (millions)	Average price per million BTUs
United States	110.1	$1.66	136.3	$1.65	−19.2%	+0.6%
Northeast	110.6	2.18	131.2	2.14	−15.7%	+1.9%
North Central	131.1	1.45	161.6	1.46	−18.9%	−0.7%
South Atlantic	87.9	2.07	118.2	1.98	−25.6%	+4.5%
South Central	90.6	1.54	98.5	1.48	−8.0%	+4.1%
West	92.7	1.44	121.5	1.41	−23.7%	−2.1%

Source: Eunice Grier, *Energy Pricing Policies and the Poor;* statistics drawn from Washington Center for Metropolitan Studies, *National Survey of Household Energy Use in 1975,* presented at "Energy and Equity; Some Social Concerns," a conference sponsored by the Joint Center for Political Studies, 1978, Washington, D.C.

Some simple extrapolations can give an idea of what those numbers can translate into. In June of this year gasoline averaged 63.4 cents a gallon in Region VIII. (See table 5.) Let's assume an average of 14 miles per gallon for automobiles. We could therefore surmise that an average poor family would spend roughly $362 a year for gasoline and that a middle-income family would spend roughly $679, or $30 and $57 a month, respectively.

For January of 1978, the average monthly electric bill for a 500 kilowatt hour home in Colorado was $18.14.[23] If we assume that rates are uniform (a somewhat unrealistic assumption) and that the poor consumed 70 percent as much electricity, we can surmise that their average bill was $21.70.

For just those two forms of energy, then, a poor family could spend $42.70 a month and an average family $75.14. When we recall, however, that the average income in Colorado was well over 100 percent above the poverty threshold, meaning that the median family income was several times greater than the typical poor family's, it becomes clear what we mean by disproportionate effects.

The disparity increases even more if costs for natural gas or heating oil are added. What that means also is that those families headed by minorities and by women, as well as those consisting of the elderly, are hit hardest. For these are the groups that make up a disproportionate number of the poor.

In 1974, for instance, the black median family income (nationally) was $7,808. The median for female-headed households was $7,363. The median for Hispanic households was slightly higher. The median for all white families was $13,356.[24]

It is worth keeping in mind, however, Grier's warning that "not all poor people are the same." Consequently, policies designed to deal with the typical poor household "may benefit some, have no effect on others, and leave some worse off than before."[25]

Just as poor people differ, so do States in the same region. They differ on the average distance residents travel to work, on the average share of income spent on energy. The home, for instance, that incurred $18.14 in electricity costs in Colorado would have incurred only $15.39 in Montana, $13.89 in Wyoming, and $21.31 and $21.26 in North Dakota and South Dakota, respectively.

[23] U.S. Department of Energy, *Typical Electric Bills* (August 1978), p. viii.
[24] U.S. Department of Commerce, Bureau of the Census, *The Social and Economic Status of the Black Population in the United States, 1974* (1975).

A number of plans have been proposed for alleviating the impacts of energy costs on the poor: peak-load pricing, life-line rate, energy stamps, flat-rate pricing, etc. There is not room to go into a examination of those alternatives in a paper as broadly gauged as this.

Clearly, however, what the complex of variables argues for is flexibility in energy policy. Because there is no such thing as the "average" poor person, and because it is unrealistic to talk of an average cost of energy, it is also unrealistic to talk of a single perfect policy.

Some Indirect Impacts

As already noted, it seems less than likely that increased production of coal in the Rocky Mountain region will have tremendous impacts overall on the employment of minorities and women. It is likely that, as energy development increases, both of these groups will benefit—at least to the extent of acquiring entry-level positions.

Nevertheless, in specific areas the impacts of development on employment (and on lifestyles in general) will be huge. As a spokesman for the Sierra Club noted, "A single large power plant and associated coal mine might bring an additional 15,000 people to an area with a few thousand persons now and even modest oil shale development proposals project a population increase of 100,000 or more."[26] The communities that will be affected most by the development are largely rural, though development will inevitably lead to greater urbanization.

The most significant impacts of energy development, and of ever-rising energy costs, however, are likely to be indirect. As numerous economists have noted, as the costs of energy rise relative to the costs for labor, it is likely that many industries will shift from energy-intensive to relatively labor-intensive processes. It is also likely that the service sector of the economy, which is notably labor intensive, will grow at a faster rate than any other sector. According to one analysis, that will result in increased growth of hospitals, health-care facilities, auto-repair shops, and similar business. On the other hand, prospects for air and truck transport and chemical product companies are expected to worsen.[27] Such shifts are likely to improve the employment prospects for minorities and women—for such groups

[25] Grier, "Energy Pricing Policies."
[26] John McComb, *Transcript of Project Independence Public Hearing.*
[27] Anderson, "The Black Labor Force."

TABLE 5

Average Gasoline Retail Dealer Selling Prices for June 1978 (cents per gallon)

Grade, type of service, and brand type	Department of Energy Regions										National average
	1	2	3	4	5	6	7	8	9	10	
Leaded regular—full serve											
Major brand	63.7	63.2	63.7	65.1	64.9	63.6	64.8	67.4	69.2	67.2	65.0
Nonmajor brand	60.4	58.8	60.4	59.5	61.4	58.9	61.3	63.4	65.2	63.8	60.6
Average	63.0	61.7	63.2	63.4	62.9	61.7	62.6	65.8	68.6	66.4	63.4
Leaded regular—self serve											
Major brand	60.8	61.7	59.8	59.9	59.7	57.7	60.1	60.8	63.6	64.9	60.4
Nonmajor brand	57.5	*	56.6	56.6	58.5	54.8	57.9	58.5	61.7	62.6	57.8
Average	59.2	61.7	58.8	58.6	59.0	56.2	58.6	59.1	63.2	64.0	59.1
Leaded premium—full serve											
Major brand	68.7	69.0	70.2	70.8	70.9	68.3	70.4	71.5	75.0	72.9	71.2
Nonmajor brand	68.0	65.4	66.2	65.3	65.6	63.8	65.1	66.3	70.7	69.0	66.7
Average	68.6	68.2	69.8	69.6	67.5	66.8	66.9	70.0	74.5	72.1	69.9
Leaded premium—self serve											
Major brand	68.8	70.6	69.8	67.2	67.8	63.6	66.0	66.2	70.8	70.6	68.6
Nonmajor brand	63.1	*	63.5	62.2	62.1	61.2	61.1	62.3	67.4	67.0	63.4
Average	65.7	70.6	67.3	64.9	63.9	62.2	62.4	63.5	70.4	69.7	66.4
Unleaded regular—full serve											
Major brand	67.6	67.4	67.5	69.3	69.2	66.9	68.6	70.2	73.1	71.2	69.1
Nonmajor brand	64.5	62.8	63.5	64.0	65.1	62.2	64.8	66.8	69.4	65.9	64.4
Average	67.2	66.5	67.0	68.2	67.1	65.6	66.6	69.2	72.8	70.4	67.9
Unleaded regular—self serve											
Major brand	66.3	67.2	65.8	65.0	65.5	61.9	64.6	64.4	68.6	68.2	65.6
Nonmajor brand	60.6	*	60.5	60.4	61.8	59.0	61.1	61.3	65.6	66.4	61.4
Average	64.0	67.2	64.4	63.3	63.5	60.6	62.6	62.3	68.2	67.9	63.9
Unleaded premium—full serve											
Major brand	*	*	*	*	*	*	*	*	*	*	*
Nonmajor brand	*	*	*	*	*	*	*	*	*	*	*
Average	*	*	*	*	*	*	*	*	*	*	*
Unleaded premium—self serve											
Major brand	*	*	*	*	*	*	*	*	*	*	*
Nonmajor brand	*	*	*	*	*	*	*	*	*	*	*
Average	*	*	*	*	*	*	*	*	*	*	*

*Insufficient data.

Note: The major brand category includes those stations using the primary brand of a major refiner. The nonmajor brand category includes all the other stations in the survey. Stations using secondary brands of major refiners are included in the nonmajor brand category as these stations typically price their gasoline to compete with independent refiner and marketer brand stations.

have traditionally had easier access to the service industries.

The impact on the West, however, is likely to be at least somewhat different than elsewhere. Many observers have already detailed the industrial movement from the energy-poor to the energy-rich States. Even though energy prices will continue to rise across the board, it is likely that energy costs will remain lower in the West than in other areas of the country. What that could very easily mean is that energy-intensive industries, especially those using large amounts of electricity, will find themselves drawn more and more to the western region. That will place a burden on land-use planners and policymakers to assure that western development takes place in a more rational fashion than did eastern development.[28]

Social Questions

The planning required as a result of energy exploitation will have to also take community attitudes into account. Gold noted, for instance, that a sudden influx of workers and businesses during an energy boom can "unwittingly intrude upon" the values of the affected community.[29]

One result could be congestion and overcrowding, inflation, breakdown in interpersonal relationships, and an increase in alcoholism and drug abuse.[30] There is no serious labor surplus problem in the western Rocky Mountain region. As a consequence, many of the jobs that open up will go to workers who migrate in from other communities and other regions of the country.

It should be kept in mind that most of the area targeted for resource development is rural and overwhelmingly white in character. In order for the energy boom to have any real direct effect on the nonwhite unemployment problem, a substantial number of nonwhite unemployed persons would have to begin to move into such areas. And if indeed significant numbers did begin to move into such areas, an unpredictable racial variable would be added to the numerous problems that the newly "booming" community faces.

Blacks and Hispanics live in urban areas more so than whites. I suspect that is at least partially because many feel they would not be welcome in predominantly white rural areas. If that is the case, minorities cannot be expected to flock suddenly to such areas on their own. They would have to be recruited. Private enterprises have been notably unenthusiastic about social experimentation. A review of some of the employment statistics noted earlier clearly indicates that the energy industries especially have not been in the vanguard of the affirmative action movement. Nor is it reasonable to assume that the affected communities will, in and of themselves, decide to recruit minorities actively. And even if they did, though such an effort would undoubtedly help alleviate the unemployment problem locally, it would do very little to help alleviate the problem on a national basis—as energy-producing sectors directly account for only about 0.58 percent of employment nationally.[31]

Oil Shale Development

This paper has concentrated principally on the problems of coal development, since coal is the major Rocky Mountain resource that will be developed in the short term. In the long run, however, oil shale may become extremely important. The major domestic oil shale deposits are in western Colorado. Some analysts believe that in the not-too-distant future oil shale will account for about a million barrels per day of oil production.[32]

The labor needs for oil shale development could be considerable, especially when one recalls that much of the development would be concentrated in a relatively small area. One estimate contends that the construction of oil shale facilities could require the opening up of thousands of new jobs by 1990.[33] The labor, however, would be "highly concentrated in the skilled trades."[34] There would be needs for pipefitters, engineers, and draftsmen.

In short, one of the same problems women and minorities have with conventional energy employment would also exist with oil shale production: most women, blacks, and Hispanics have not been concentrating in technical and craft work. In order for those groups to be most successful in gaining entry and promotion in such fields, there would have to be a commitment to training.

[28] See Discussion in Gold, "Toward Social Policy."
[29] Ibid.
[30] U.S. General Accounting Office, *U.S. Coal Development: Promises, Uncertainties* (1977).
[31] Anderson, "The Black Labor Force."
[32] William D. Metz, "Oil Shale: A Huge Resource of Low Grade Fuel," *Energy: Use Conservation and Supply*, ed. Philip Abelson (Washington, D.C.: AAAS, 1974).
[33] *Project Independence Blueprint: Labor Report*, p. 101.
[34] Ibid.

TABLE 6

Department of Energy, Employment Profile by Race and Sex, June 1978

Pay plans and grade levels	Total	Black			Hispanic			Indian			Asian			Total Minority			
		M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	%
Total	18,740	12,791	5,949	599	1,054	1,653	458	195	653	105	39	144	170	88	258	1,332	1,376	2,708	14.5
GS-1	131	24	107	11	38	49	1	11	12	—	—	—	—	3	3	12	52	64	48.9
GS-2	119	33	86	11	27	38	2	9	11	2	1	3	—	1	1	15	38	53	44.5
GS-3	327	71	256	16	46	62	3	6	9	5	3	8	1	8	9	25	63	88	27.0
GS-4	756	147	609	26	105	131	17	25	42	1	8	9	4	4	8	48	142	190	25.1
GS-5	1,271	314	957	36	165	201	65	48	113	9	9	18	5	12	17	115	234	349	27.5
GS-6	1,295	304	991	20	220	240	106	44	150	5	6	11	2	14	16	133	284	417	32.2
GS-7	1,496	555	941	47	184	231	55	18	73	5	3	8	11	13	24	118	218	336	22.5
GS-8	428	130	298	6	52	58	2	4	6	—	1	1	2	1	3	10	58	68	15.9
GS-9	1,263	734	529	48	80	128	21	8	29	4	3	7	15	12	27	88	103	191	15.1
GS-10	120	73	47	2	7	9	3	—	3	—	—	—	2	—	2	7	7	14	11.7
GS-11	1,605	1,195	410	47	44	91	33	12	45	6	3	9	24	10	34	110	69	179	11.2
GS-12	1,872	1,602	270	71	27	98	29	4	33	8	1	9	31	3	34	139	35	174	9.3
GS-13	2,234	1,999	235	63	30	93	38	4	42	5	—	5	40	4	44	146	38	184	8.2
GS-14	1,906	1,799	107	60	8	68	25	1	26	6	—	6	18	1	19	109	10	119	6.2
GS-15	1,584	1,530	54	36	4	40	16	—	16	2	—	2	11	1	12	65	5	70	4.4
GS-16	108	107	1	6	—	6	2	—	2	—	—	—	—	—	—	8	—	8	7.4
GS-17	42	41	1	3	1	4	—	—	—	—	—	—	1	—	1	4	1	5	11.9
GS-18	21	21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total GS	16,578	10,679	5,899	509	1,038	1,547	418	194	612	58	38	96	167	87	254	1,152	1,357	2,509	15.13
AD (EES)	465	456	9	6	—	6	1	—	1	3	—	3	1	—	1	11	—	11	2.4
EX	29	27	2	1	1	3	—	—	—	—	—	—	—	—	—	1	1	2	7.0
WAGE	1,561	1,549	12	75	1	76	37	—	37	44	1	45	2	—	2	158	2	160	10.2
Other	107	80	27	8	14	21	2	1	3	—	—	—	—	1	1	10	16	26	24.3

Source: PARIS OUTPUT 6/17/78, BPA OUTPUT 6/30/78

Women, Minorities, and the Poor

There are essentially two ways rising energy costs can affect consumers. Such costs can obviously make it harder to pay bills. Such costs can also, in encouraging investment in energy resources, create new employment opportunities. It has been argued that there is an offsetting effect, that the benefits of increased employment more than compensate for the problem of higher prices.[35]

In general macroeconomic terms, that may very well be true. It is undeniably true, however, that those who lose and those who benefit are usually not the same. The opening up of opportunities for mining engineers and pipefitters will do little to alleviate the economic woes of minorities and women—and practically nothing to alleviate the problems of the elderly who may no longer be in the work force. It is for that reason that the question of energy costs cannot simply be wrapped up in a theoretical cost-benefit analysis and disposed of on the grounds that the benefits outweigh the costs.

Grier and others have argued forcefully for a reexamination of utility rate schedules that generally penalize small (typically poorer) consumers. That need exists in all areas of this nation—including the Rocky Mountain West.

There is also a need for a stronger commitment by government, Federal and local, to affirmative action. A glance at table 6 indicates how poorly the Department of Energy is doing on a national level. For the Rocky Mountain region, the statistics for Department of Energy employment are also poor. As of June 1978 there was no black, Hispanic, or Asian above the GS–13 level. There was no female above the GS–14 level. Of some 100 employees, there were 27 women, 4 blacks, and 12 Hispanics.

There is a need as well for local communities to become full partners in the development of exploitation plans, as well as for manpower planners (in the public sector and private industry) to develop strategies for training minorities and women and channeling them into energy-industry jobs. What that requires, among other things, is an attitude among the energy developers that the development of human potential is at least as important as the development of bountiful energy resources. Hopefully the Office of Minority Economic Impacts (for which provision is made in the recently passed national energy legislation) can play an important role in helping to create such a concern.

[35] See David Behling, "U.S. Energy Consumption and Economic Growth," *Energy and Equity Some Social Concerns*.

Employment Opportunities in the Energy Field for Blacks in Federal Region VIII

By Clarke R. Watson*

Summary

For a rational discussion to occur as regards "employment opportunities in the energy field for women and minorities in Federal Region VIII," it is important to look first at the national picture. From this national picture we can then make certain assumptions and apply them on a regional basis.

I would like also to caution that this study—and all American Association of Blacks in Energy (AABE) studies to date—as the name implies, deals from a black perspective. We do not, for example, conduct studies covering the status of women, since we have found that white women, under the guise of minority status, have been used to fill positions that would otherwise go to black men and women. Nowhere is this situation more evident than in the senior structure of the Department of Energy.

Of the some 20 Assistant Secretaries who administer the Department, not one is a black person. The Schlesinger group made it clear as far back as January 1977 that blacks need not apply for any significant posts that dealt with energy. But to avoid the discrimination accusation, 3 white women are among the 20 Assistant Secretaries.

Therefore, it should be understandable that the American Association of Blacks in Energy would not be devoting its efforts researching how women are faring in the job market. Please understand that I am not attacking women; I am merely pointing out that those who are determined to keep blacks in a second-class economic status and thwart the Constitution, the Congress, and the courts have seized upon white women as a handy tool for such purpose.

To return to my original point, in order to reflect upon how blacks may fare regionally, we need first to examine the record nationally. On April 20, 1977, the President announced his national energy plan to the Nation. The plan's goals are to reduce the Nation's dependence on foreign oil by reducing the rate of growth of energy demand and increasing the reliance on coal and nuclear power for energy supply. The primary stategy is to use taxes, prices, and regulations to promote conservation of energy, especially oil and gas. On the supply side, the plan calls for a doubling of the production of coal by 1985. Other measures to augment supply include controlled increases in the price of oil and gas, the establishment of a new pricing tier for new-new oil whose price would rise over a 3-year period to the current 1977 world price, and a speedup of the regulatory process for nuclear powerplants.

While the President may have accurately defined energy as the number one problem facing the Nation, most black Americans and others of minority groups view high rates of unemployment as their number one problem. Recent developments suggest that the gains made in the sixties in narrowing the historical differential between nonwhite and white rates of unemployment have been eroded. The differential between nonwhite and white rates of unemployment, which had declined steadily throughout the sixties to a low of 3.3 percent, attained a record high of 6.9 percentage points in

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1977. The historical evidence also indicates that the closer the economy is to operating at full capacity the lower is the unemployment rate for blacks and the smaller is the differential between nonwhite and white unemployment rates. Therefore, it is not surprising that black Americans have recently become concerned about the implications of U.S. energy policy for the maintenance of sustained economic growth and its consequent effects on black employment. This study examines these issues. The major conclusions are:

- A narrowing of the gap between potential GNP (the level of GNP that would be produced if the economy were operating at full employment) and actual GNP has a significant impact on reducing the unemployment rate among black Americans. A reduction of the GNP gap of only 1 percentage point would reduce the nonwhite unemployment rate by 0.5 percentage points. Alternatively, given that the nonwhite labor force grows by 3.0 percent in 1978, employment for black Americans would increase by 192,000. (The GNP gap relative to potential GNP was 5.3 percentage points in 1977.)
- A narrowing of the gap between potential GNP and actual GNP has the effect of producing a more equitable distribution of employment opportunities. A reduction of the GNP gap of 1 percentage point would reduce the differential between nonwhite and white unemployment rates by 0.19 percentage points.
- An energy policy that promotes economic efficiency also would move the Nation closer to producing at the potential GNP rate and would thereby reduce both white and nonwhite unemployment.
- Price controls have not been designed to favor black Americans. Almost invariably they have generated more problems than they have solved. On February 4, 1977, the number of nonwhites unemployed as a direct result of natural gas shortages alone exceeded 240,000. (Estimated from AGA numbers.)
- To the extent that there are poverty problems, these can be attacked more efficiently by direct means rather than through ad hoc interferences with the pricing mechanism. For example, to the extent that crude oil price controls have held down petroleum product prices, the largest part of the benefit accrues to higher income families that own more cars, drive more miles, live in larger homes, and, therefore, use more energy.
- By affecting relative prices, the controls have produced a misallocation of resources that has resulted in lower real economic activity and higher rates of unemployment with no significant reduction in the rate of inflation.
- Profits are required to attract investment capital. Profits in the petroleum industry are in line with the average for all U.S. manufacturing (approximately 14 percent annual return on investment). The petroleum industry is a rising-cost industry. To continue to meet its challenge of providing fuel for sustained economic growth, it must be provided the necessary incentives that permit higher rates of investment expenditures.
- Price control policies in this country have resulted in the U.S. paying less to domestic oil producers to find and develop domestic oil than we are willing to pay to foreign nations to find and produce their oil. By subsidizing the oil production of foreign nations, we have increased the size of our trade deficit, decreased aggregate demand for goods and services at home, and increased the export of U.S. jobs.
- On a regional and national basis, projections beyond 1983 become pure conjecture and ignore collateral lawsuits filed by environmentalists and other advocates of no or slow growth that devastate the planning process and accompanying statistical analyses. (The nuclear industry is a classic example of this syndrome.)
- Oil and natural gas production is more significant in the secondary job market. Exploration for and production of crude oil and natural gas are not particularly labor intensive except in the case of major fields with exceedingly long production cycles. Therefore, this activity, though vitally important to overall economic stability and the secondary job market, has not been included in the *regional* assessment.

Introduction

U.S. energy policies have inhibited domestic production and have retarded the development of new supply technologies. These actions have helped to reduce economic growth and by raising unemployment rates for black Americans have contributed toward eroding a substantial portion of the gains of the 1960s. Because of the strong direct correlation between economic growth and energy availability and consumption, policies that encour-

age vigorous expansion of energy supplies are in the best interest of black Americans.

The findings of this paper are fully supportive of these conclusions. The paper demonstrates that the closer the economy functions to maximum potential, the lower the rates of unemployment for black Americans and the more equal is the distribution of employment opportunities between nonwhites and whites. The second section shows that the U.S. energy policy has generated economic efficiencies that have retarded economic growth and employment opportunities for black Americans. In this section, we show that a market solution generates output and substitution effects that have the effect of raising the demand for labor. The third section provides data and comment from a regional perspective and summarization; it is followed by the conclusion and acknowledgments.

Economic Growth and Employment Opportunities for Black Americans

While an expansion of the U.S. economy will not by itself solve the black unemployment problem, the evidence shows that an expanding economy does significantly reduce the problem of unemployment for minorities. During the sixties the economy showed steady rates of economic growth that averaged 4.2 percent per annum and nonwhite unemployment rates that averaged 9 percent. By contrast, growth from 1970 to 1977 has been unsteady and has dropped sharply to an average of 2.8 percent per annum while nonwhite unemployment rates have increased to an average 10.9 percent per annum. (See figure 1 and table 1.)

The difference between potential GNP (i.e., the level of GNP that would result if the economy is operating at full employment) and actual GNP is the GNP gap and is shown in figure 2. With the exception of 2 years, 1972 and 1973, actual GNP levels for the 1970s have been far below potential. The GNP gap relative to potential GNP (i.e., the difference between the potential GNP of a fully employed economy and actual GNP, all divided by potential GNP) declined steadily throughout the period of the sixties, reaching a low of -1.0 in 1969 (table 1). By contrast, during the period of the 1970s, the GNP gap relative to potential GNP reached a record high of 8.7 percent in 1975 and has declined only modestly to 5.3 percent in 1977. Thus, it may be argued that GNP can rise rapidly for several years, thus increasing employment commensurately. Black Americans suffer disproportionately whenever the U.S. economy falls short of its potential. In attempting to explain the relationship between the GNP gap and black unemployment rates, we estimated the relationship between nonwhite unemployment rates and the GNP gap using data from 1954: I to 1977. The results show that a narrowing of the GNP gap significantly reduces the unemployment rate for nonwhites (figure 3). On the average, a reduction of the GNP gap of 1 percentage point reduces the nonwhite unemployment rate by 0.49 percentage points.

Moreover, a reduction in the GNP gap has the effect of reducing the differential between nonwhite and white unemployment rates. The nonwhite-white unemployment rate differential that averaged 4.7 percentage points during the sixties increased to an average of 5.2 percentage points with the weaker economic conditions that have existed so far in the seventies (table 2 and figures 4 and 5). In 1977 the nonwhite unemployment rate was 6.9 percentage points higher than the white rate.

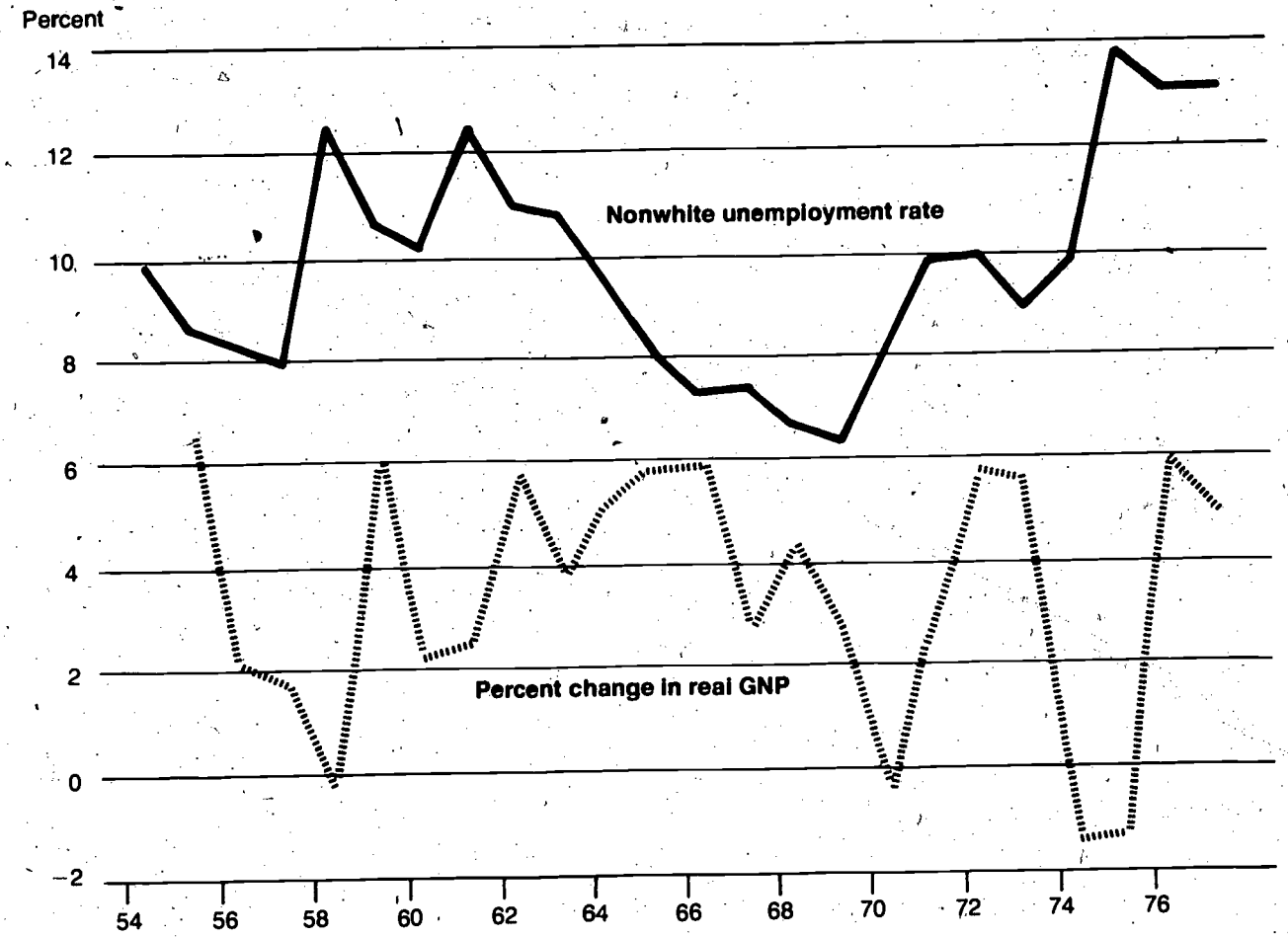
U.S. Energy Policy, Economic Efficiency, and Economic Growth

What role can U.S. energy policy play in sustaining high levels of economic growth that create jobs for black Americans? Wellhead prices of natural gas sold in interstate markets have been controlled since 1954, while crude oil prices have been controlled since 1971. In addition, refined products are also subject to price controls. These controls have the effect of disrupting the normal rationing function of the marketplace by allowing users to consume larger quantities of refined products and natural gas than they would otherwise, while, at the same time, they have inhibited production by offering less than adequate pricing incentives. The net effect has been a decrease in production of crude oil and natural gas, a worsening energy shortage, and a consequent rise in oil imports.

In the natural gas area, the Federal Power Commission (FPC)—now the Federal Energy Regulatory Commission (FERC)—has been charged with the responsibility of (1) ensuring adequate supplies of natural gas and (2) holding down prices to the interstate consumer. Many economists argue that these two objectives are incompatible, and over the last 2 decades, adherence to the second has prevented the first goal from being achieved. In

FIGURE 1

Nonwhite Unemployment Rates and Economic Growth



Source: American Association of Blacks in Energy.

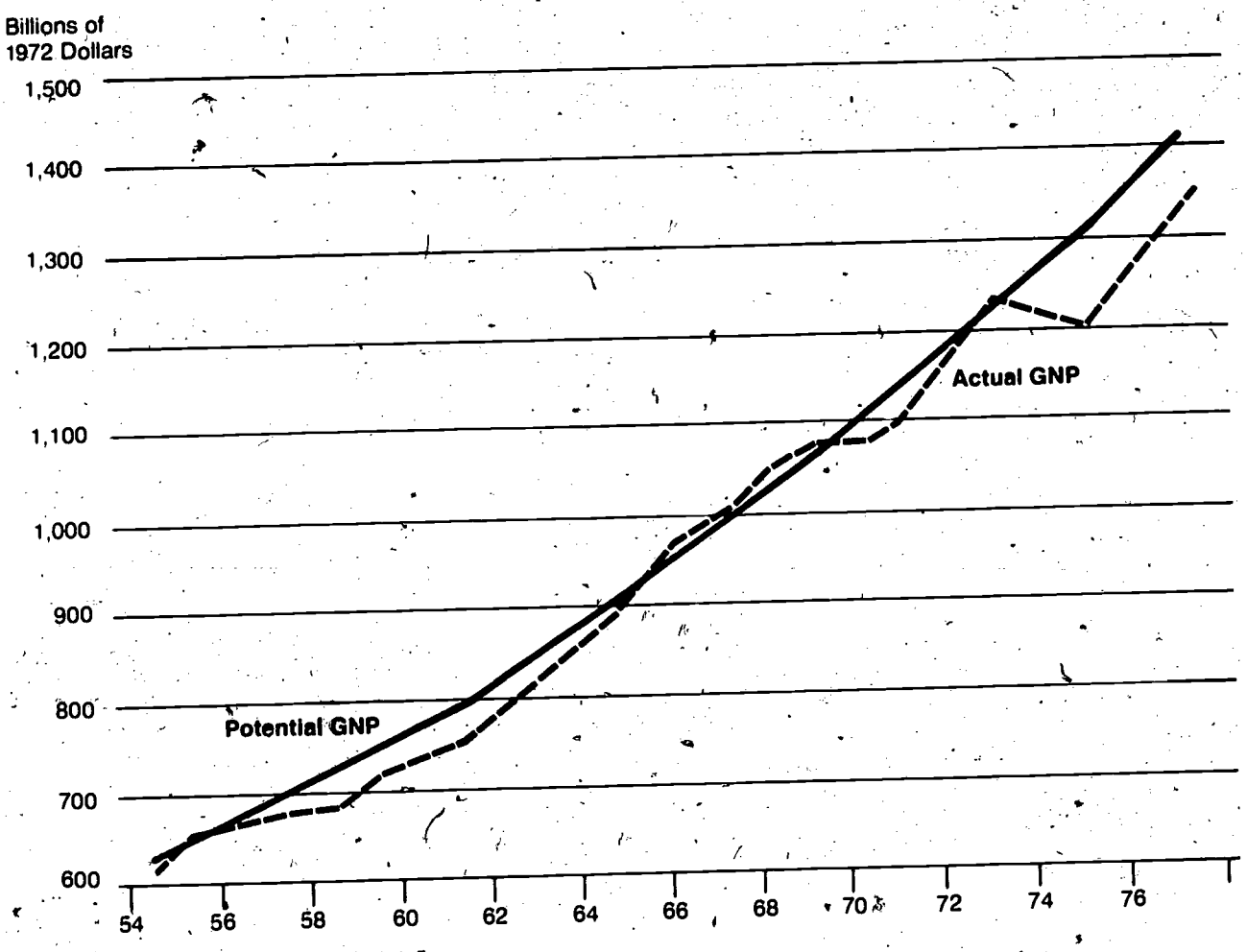
TABLE 1

Potential and Actual GNP (1972 dollars) (percent changes in parentheses)

	Potential[a]	Actual	%GNP Gap[b]
1954	629.7 (3.5)	613.7 (−1.3)	2.5
1955	651.4 (3.5)	654.8 (6.7)	−0.5
1956	673.9 (3.5)	668.8 (2.1)	0.8
1957	697.2 (3.5)	680.9 (1.8)	2.3
1958	721.3 (3.5)	679.5 (−0.2)	5.8
1959	746.2 (3.5)	720.4 (6.0)	3.5
1960	771.9 (3.5)	736.8 (2.3)	4.6
1961	798.6 (3.5)	755.3 (2.5)	5.4
1962	826.4 (3.5)	799.1 (5.8)	3.3
1963	857.1 (3.7)	830.7 (4.0)	3.1
1964	890.3 (3.9)	874.4 (5.3)	1.8
1965	925.0 (3.9)	925.9 (5.9)	−0.1
1966	960.8 (3.9)	981.0 (6.0)	−2.1
1967	996.3 (3.7)	1,007.7 (2.7)	−1.1
1968	1,031.7 (3.6)	1,051.8 (4.4)	−1.9
1969	1,068.3 (3.5)	1,078.8 (2.6)	−1.0
1970	1,106.2 (3.5)	1,075.3 (−0.3)	2.8
1971	1,145.5 (3.5)	1,107.5 (3.0)	3.3
1972	1,186.1 (3.5)	1,171.1 (5.7)	1.3
1973	1,228.2 (3.6)	1,235.0 (5.5)	−0.6
1974	1,271.8 (3.5)	1,217.8 (−1.4)	4.2
1975	1,316.9 (3.5)	1,202.1 (−1.3)	8.7
1976	1,363.6 (3.5)	1,274.7 (6.0)	6.5
1977	1,412.0 (3.5)	1,337.5 (4.9)	5.3

[a]Potential level of real gross national product, billions of 1972 dollars, annual rate, Council of Economic Advisers.
[b]% (GNP Gap) = ((Potential—Actual)/Potential)100
Source: American Association of Blacks in Energy.

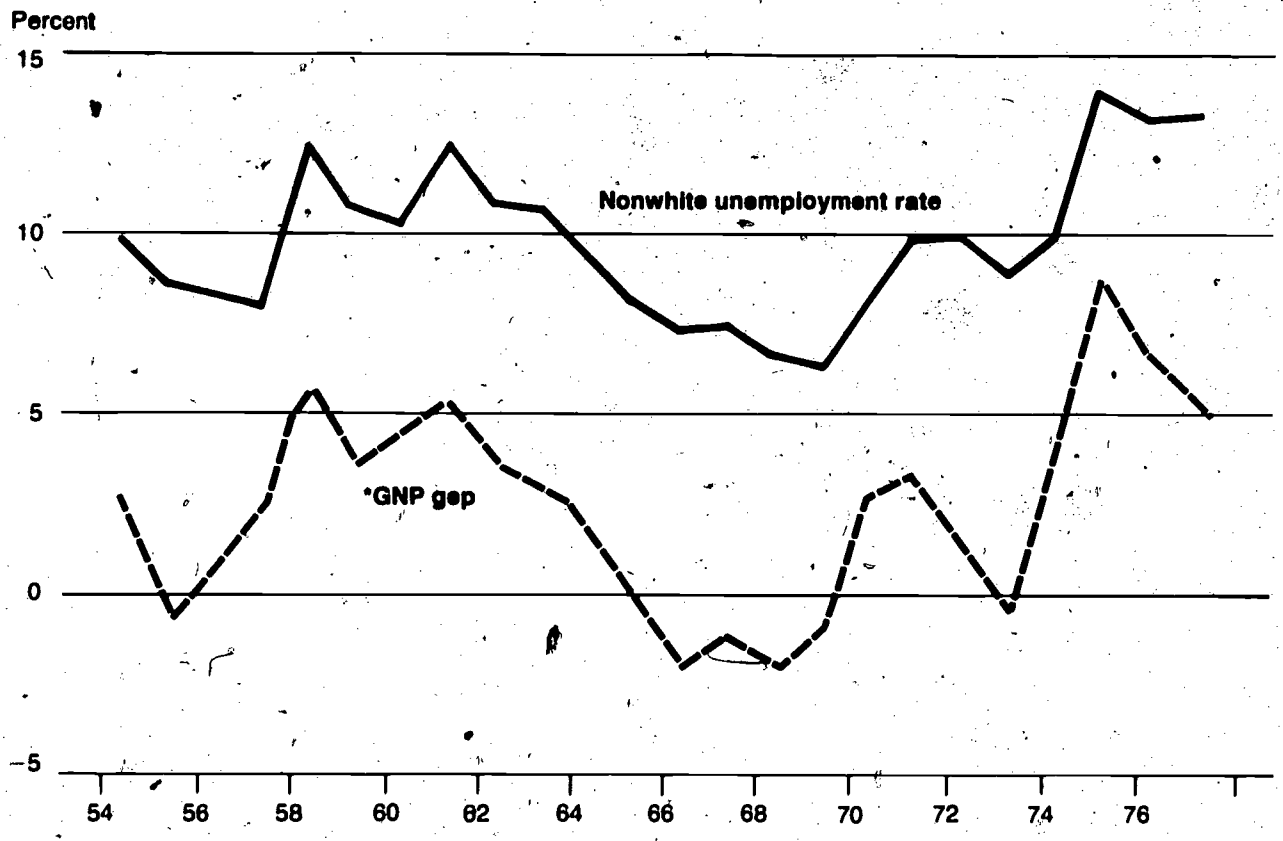
FIGURE 2
Potential and Real GNP



Source: American Association of Blacks in Energy

FIGURE 3

Nonwhite Unemployment Rates and GNP Gap*



Source: American Association of Blacks in Energy.

*Potential GNP — Actual GNP as a percentage of potential GNP

TABLE 2

Major Unemployment Rates, Whites vs. Blacks and Other Races (Nonwhites) (adjusted for seasonal variation)

	Nonwhites	Whites	Nonwhites-Whites
1960	10.2	5.0	5.2
1961	12.4	6.0	6.4
1962	10.4	4.9	6.0
1963	10.8	5.0	5.8
1964	9.6	4.6	5.0
1965	8.1	4.1	4.0
1966	7.3	3.3	4.0
1967	7.4	3.4	4.0
1968	6.7	3.2	3.5
1969	6.4	3.1	3.3
1970	8.2	4.0	3.0
1971	9.9	5.4	4.5
1972	10.0	5.0	5.0
1973	8.9	4.3	4.6
1974	9.9	5.1	4.8
1975	13.9	7.8	6.1
1976	13.1	7.0	6.1
1977	13.1	6.2	6.9

Source: U.S. Department of Labor, Bureau of Labor Statistics.

evaluating the effects of controlled prices on inducing shortages, Professor Milton Friedman has said:

> Economists may not know much. But we do know one thing very well: how to produce shortages and surpluses. Do you want to produce a shortage of any product? Simply have government fix and enforce a legal maximum price on the product which is less than the price that would otherwise prevail. . . .Do you want to produce a surplus of any product? Simply have government fix and enforce a legal minimum price above the price that would otherwise prevail.[1]

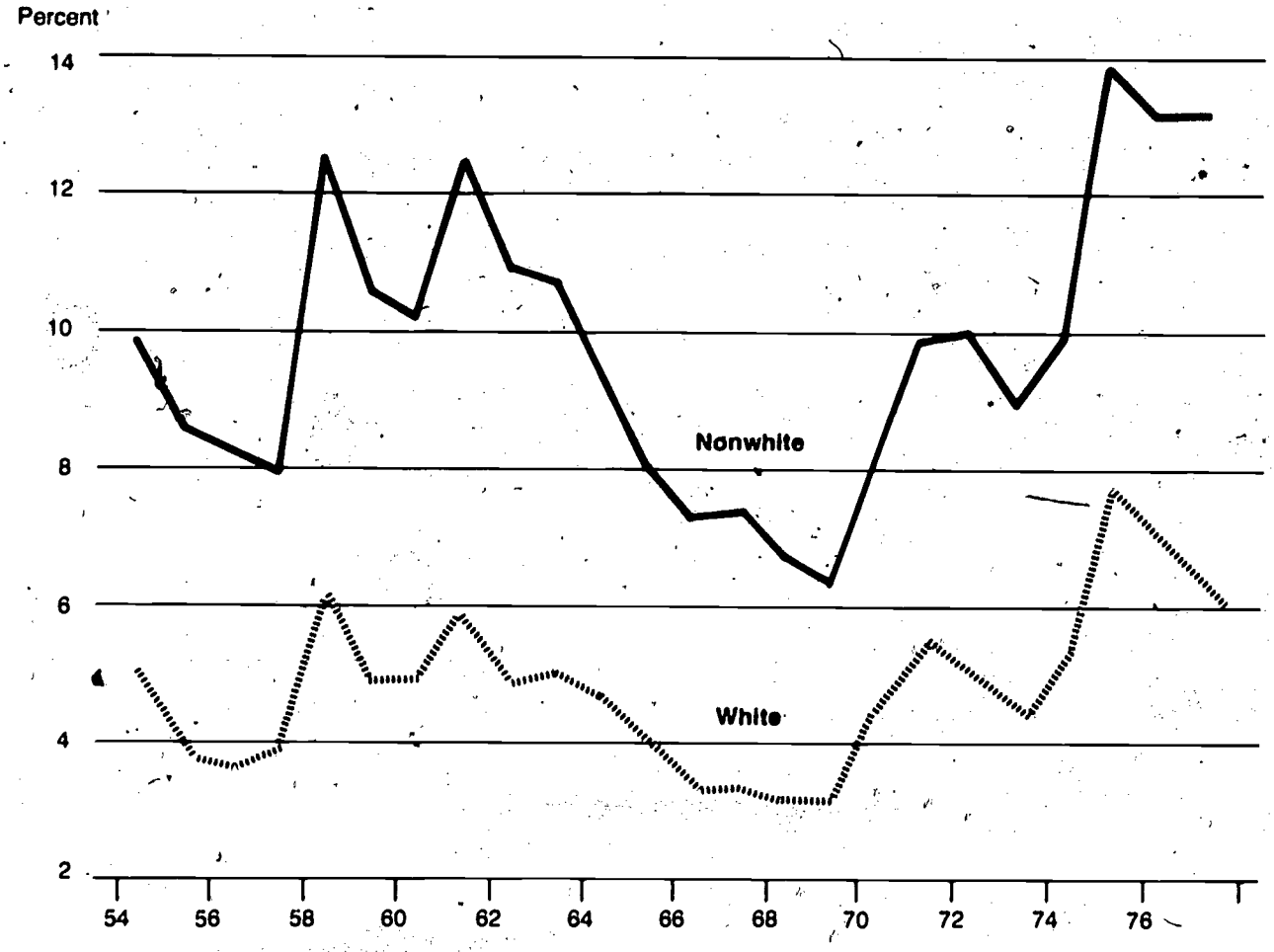
Thus, under controlled natural gas prices, consumers were able to purchase natural gas at prices that were below the marginal cost of increments to supply so that producers were discouraged from developing new supplies. Following World War II, natural gas was often regarded as an unwanted byproduct of crude oil production. However, as new uses were found, the demand for natural gas at the controlled price exceeded the supply at that price. These regulation-induced shortages first appeared during the early 1970s and have become progressively more intense. The cutoff in Arab oil in October 1973 and the severe winter of 1976–77 especially highlighted the growing problem.

Crude oil pricing policies of the U.S. have yielded essentially the same results as did the natural gas pricing policies. The composite pricing plan now in effect ensures that the average price of crude oil in the U.S. remains well below world market levels. Historically, this has encouraged domestic consumption, discouraged domestic production, and, through the entitlements program, has subsidized the importation of foreign crude oil. Now, because of actions in the Congress and by the administration, there is some hope for better pricing, particularly after 1985. However, as referenced in the introduction, the gains predicted by better pricing may well be negated by increasingly strident activities by environmentalists and their continued filing of "nuisance" lawsuits.

A market solution has great appeal. Unlike the "regulation-price control" approach, it is simple and generates the kinds of economic efficiencies that are necessary for sustained economic growth and high levels of employment. The price system induces

[1] Milton Friedman and Robert V. Roosa, *The Balance of Payments: Free Versus Fixed Exchange Rates* (Washington, D.C.: American Enterprise Institute, 1967), p. 1.

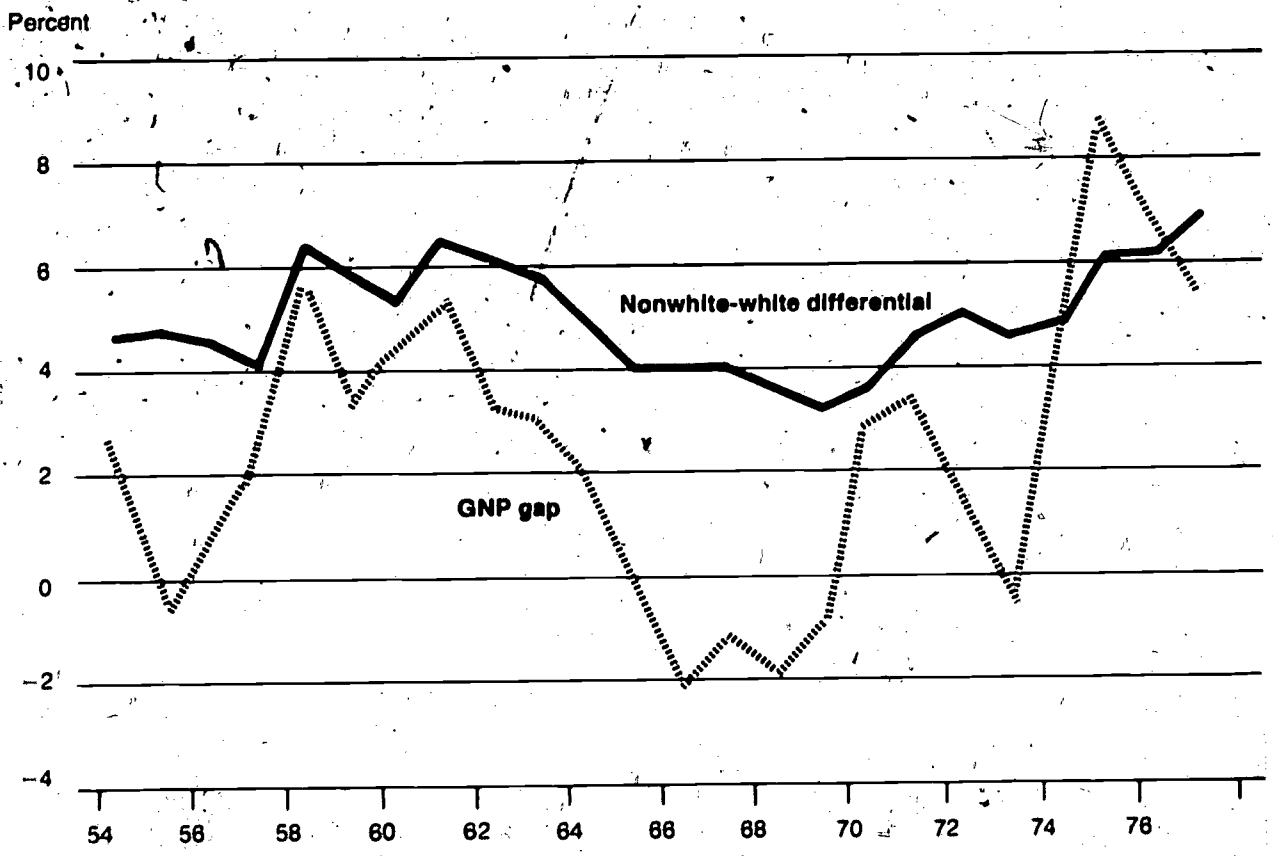
FIGURE 4
Major Unemployment Rates



Source: American Association of Blacks in Energy.

FIGURE 5

Nonwhite-White Unemployment Rate Differential and GNP Gap*



Source: American Association of Blacks in Energy.

*Potential GNP — Actual GNP as a percentage of potential GNP

users of resources to put available supplies to their most efficient use. Higher prices encourage conservation in the use of energy and provide incentives for increased exploration and drilling activity. Higher prices for petroleum also encourage the development of shale oil recovery techniques and provide an added impetus for the development of substitutes such as nuclear power, coal gasification, and coal liquefaction, as well as such alternative sources as wind and solar energy.

Changing market prices induce transfer of goods from less valuable to more valuable uses, and these transfers are accomplished in a very impersonal manner and without coercion. Adopting a market pricing approach relieves government of the burden of making a judgmental decision as to what might be the "just" price. But, more important, the surge in domestic energy-related activity that would result from deregulation in energy and relief from environmental assaults is in the best interests of black Americans. It creates jobs at home within the energy industries and increases the availability of domestically produced energy. It is an efficient process which raises the level of productivity that is required to provide a basis for higher wages in the private sector.

One very important study that highlights the substitution effects of nonenergy-intensive for energy-intensive techniques and the resultant impact on employment was recently completed by the International Institute for Economic Research. The argument is made that both "scale" and "substitution" effects contribute to a rise in the demand for labor as energy prices rise. The authors suggest that:

> those industries which use relatively little energy will experience a relative decline in the price of their output, and hence, as consumers shift toward these relatively cheaper commodities the outputs of these industries will tend to expand. Scale effects would tend to lead to an increased demand for inputs—including labor—within the nonenergy-intensive industries. . . .With an increase in energy prices, firms will eventually substitute away from high energy-using methods of production toward labor-using methods or production, and this shift will lead to an increase in the demand for labor. This is the substitution effect.[2]

[2] John Cogan, M Bruce Johnson, and Michael P Ward, "Energy and Jobs A Long-Run Analysis" (Original Paper 3, International Institute for Economic Research), pp 20-21

Using the Hudson-Jorgensen macroeconomic energy model, the authors show that the efficiencies created by the market solution yield the following results:

> [E]nergy policies designed to reduce U.S. import dependence via higher energy prices also raise the demand for labor.
>
> With the exception of decontrol and a tax on crude oil, energy policies that reduce imports also reduce real per capita GNP.
>
> Subsidization of coal production has a negligible effect on reducing oil imports or stimulating aggregate output or employment.
>
> Decontrol of the domestic crude industry is the least costly way to reduce energy imports: a one-third reduction of oil imports by 1980 is associated with an additional three-quarters of a million jobs and a real GNP increase of $980 million.[3]

Our estimates seem to confirm the observations of Cogan et al. Although the results are only marginally significant, they suggest that the recent pattern of the seventies in which the price of energy outpaced the price of labor has initiated some substitution away from energy-intensive processes to nonenergy-intensive processes. Should this trend continue, we would expect that an increasing number of firms would find it advantageous to incorporate nonenergy-intensive modes of production in new plant designs. Our results suggest that this new trend has a dampening effect on increases in the nonwhite unemployment rate.

Thus, it may be concluded that a U.S. energy policy that promotes economic efficiency raises the level of productivity of the U.S. economy and thereby increases output and employment.

The Region

Turning to the region, it is gratifying to note the data reflect a threefold increase in new energy jobs from 19,813 in 1978 to 64,847 in 1983. (See tables 3 and 4 and figures 6–12.) Wyoming will experience the largest increase from today's 7,908 to 19,937 in 1983. Colorado is second, going from 7,593 new energy jobs created this year to 16,064 in 1983. Utah will more than double from 5,922 to 12,000. North Dakota and Montana also show impressive gains.

[3] Ibid., pp. 3-4

TABLE 3
Changes in Employment, Region VIII* (1977 base)

Year	New energy jobs	New secondary jobs	Total new jobs created by energy development
1978	9,278	10,535	19,813
1979	14,223	15,221	29,444
1980	20,043	20,826	40,869
1981	27,221	26,552	53,773
1982	29,979	30,748	60,727
1983	31,138	33,709	64,847

*Based on Energy Project Data 1977-83 used in conjunction with Department of Labor Region VIII Labor Demand Model.

TABLE 4
Changes in Employment, 1977-83, Region VIII, by State

Area	New energy jobs	New secondary jobs	Total new jobs created by energy development
Colorado	7,593	8,471	16,064
Montana	2,722	3,631	6,353
North Dakota	5,847	2,676	8,523
Wyoming	7,908	12,029	19,937
Utah	5,922	6,078	12,000
South Dakota	1,146	824	1,970
Region VIII Total	31,138	33,709	64,847

Source: American Association of Blacks in Energy.

FIGURE 6

Region VIII Energy Employment Changes (1977 base)

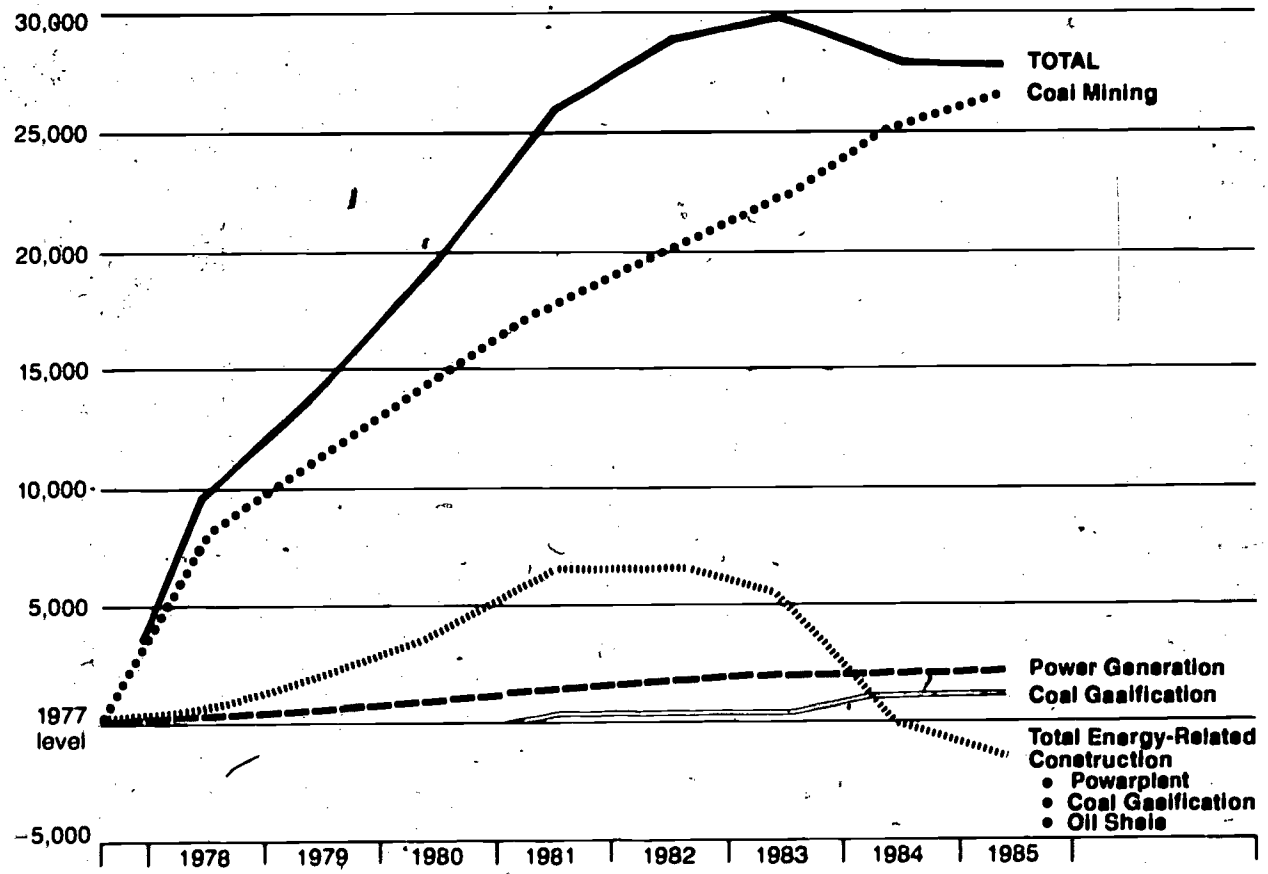


FIGURE 7

Energy Employment Changes, Colorado (1977 base)

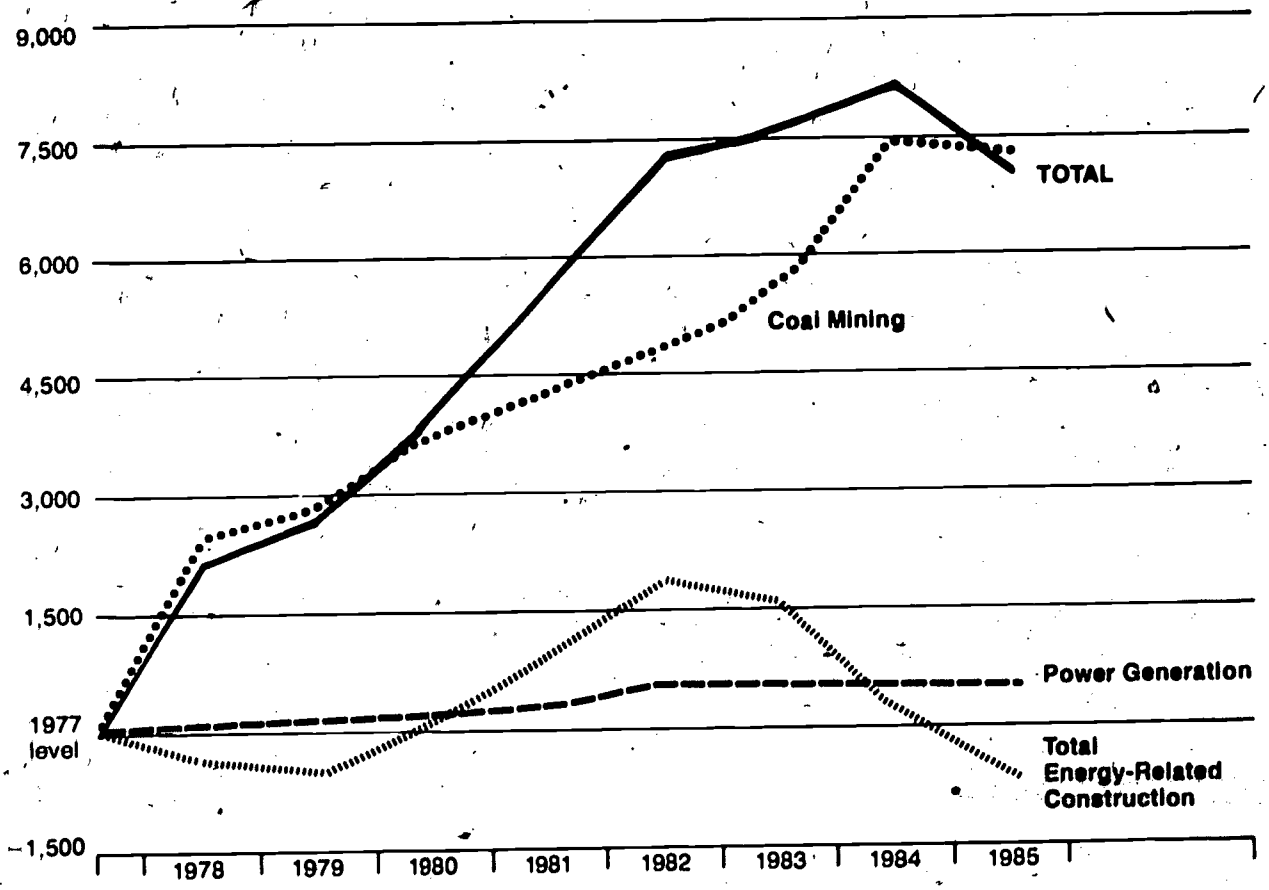


FIGURE 8

Energy Employment Changes, Montana (1977 base)

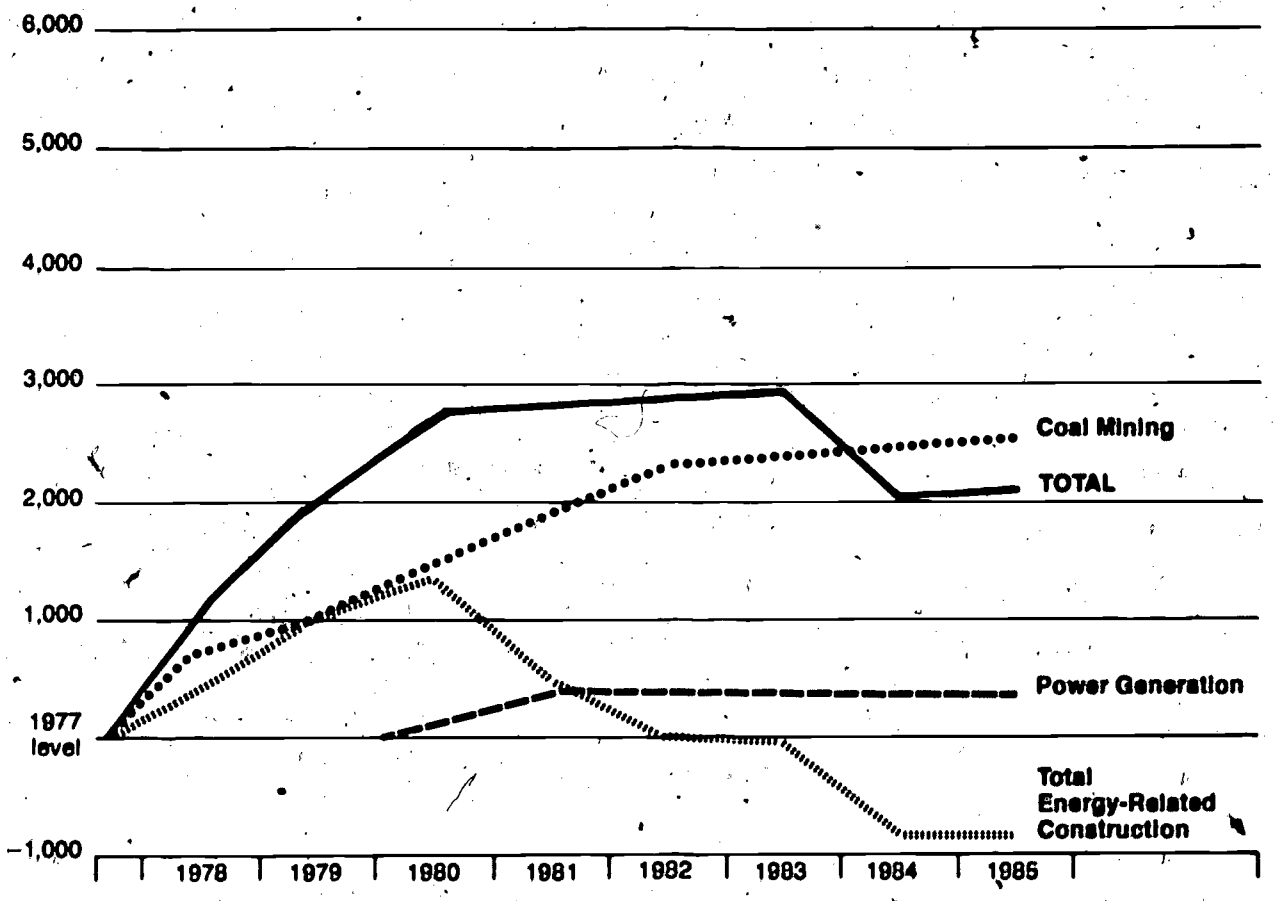


FIGURE 9

Energy Employment Changes, North Dakota (1977 base)

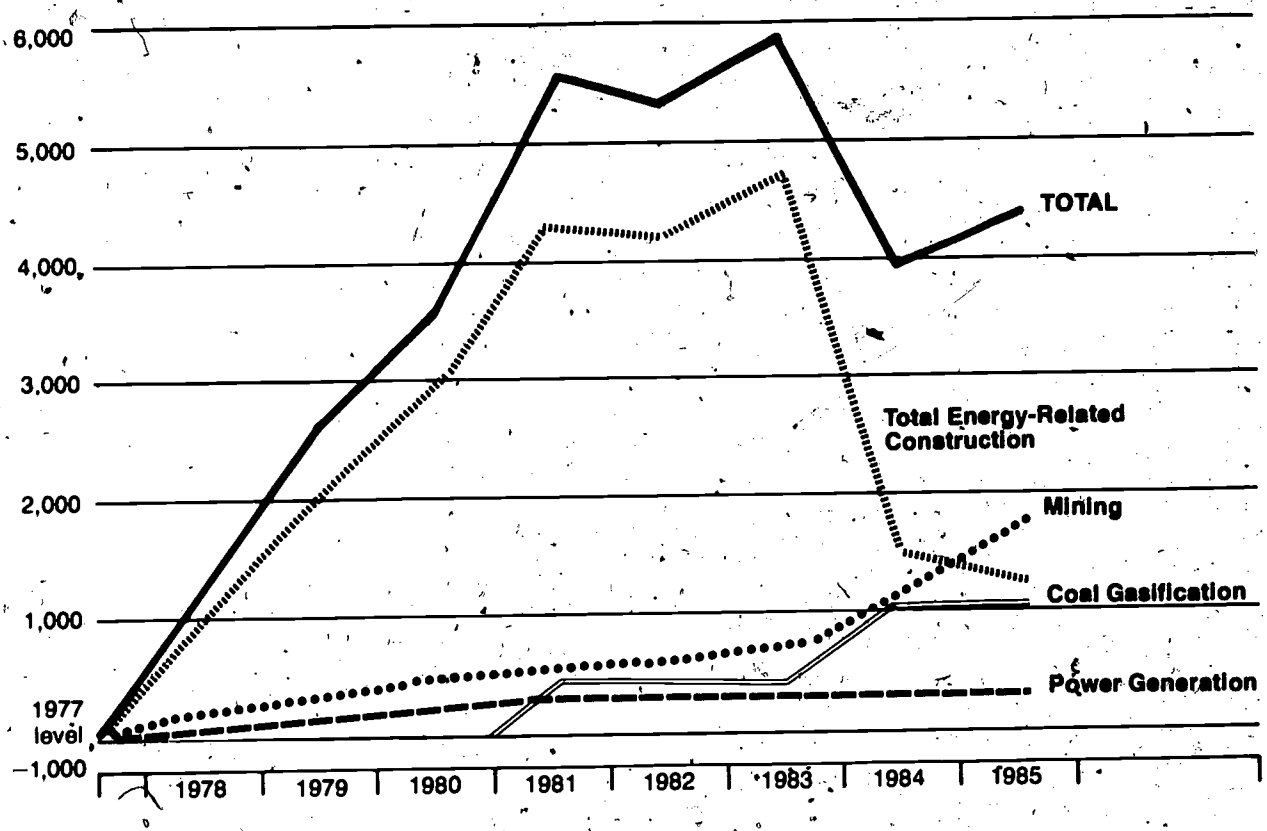


FIGURE 10

Energy Employment Changes, Wyoming (1977 base)

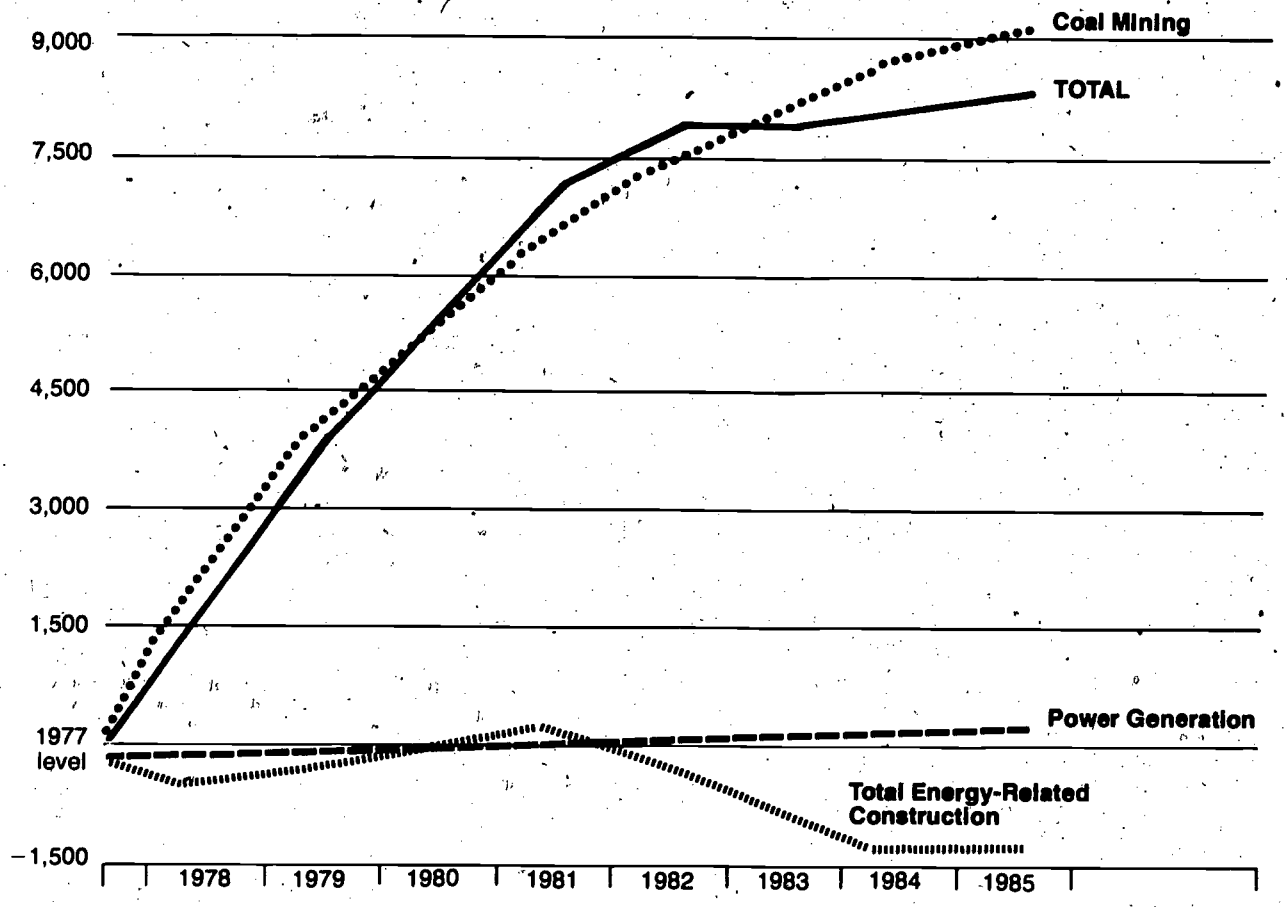


FIGURE 11

Energy Employment Changes, Utah (1977 base)

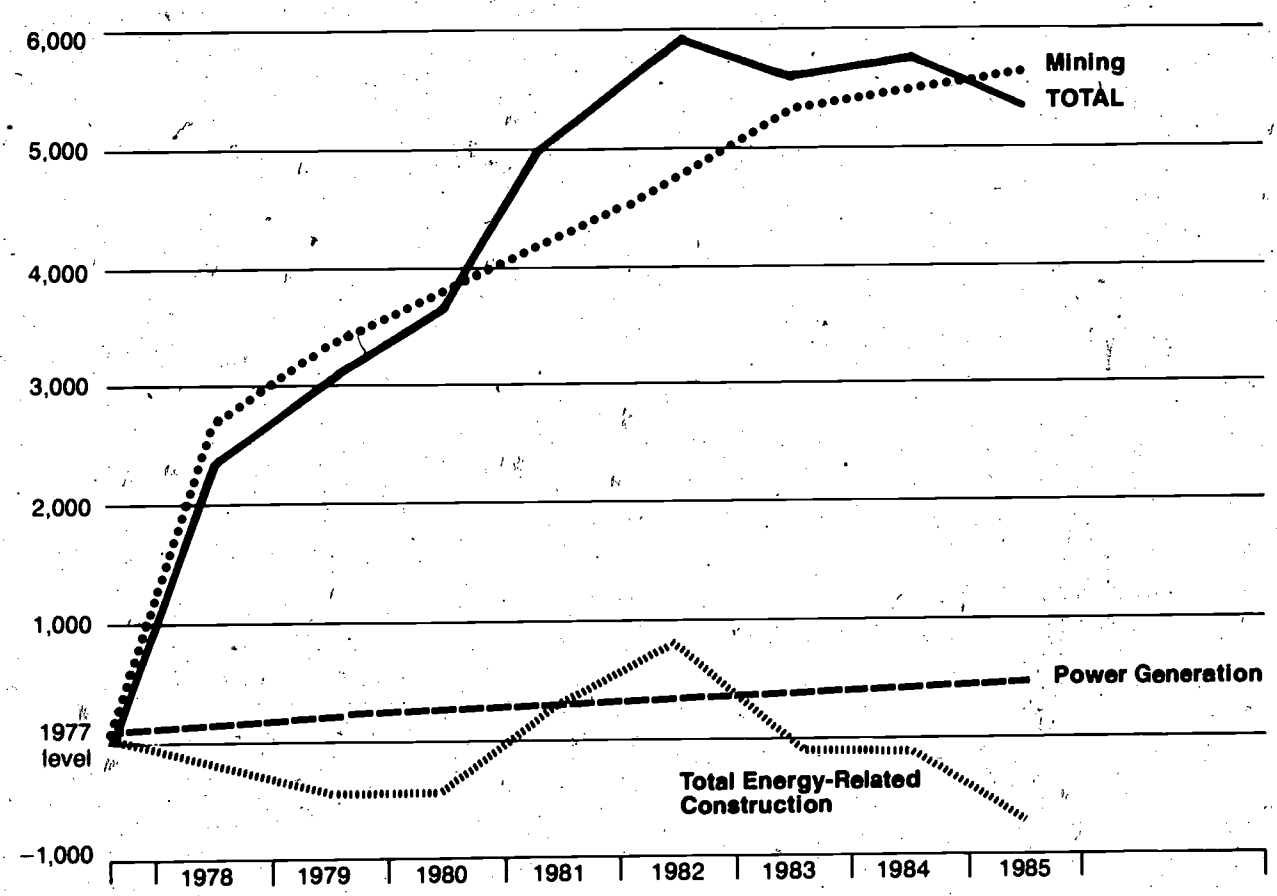
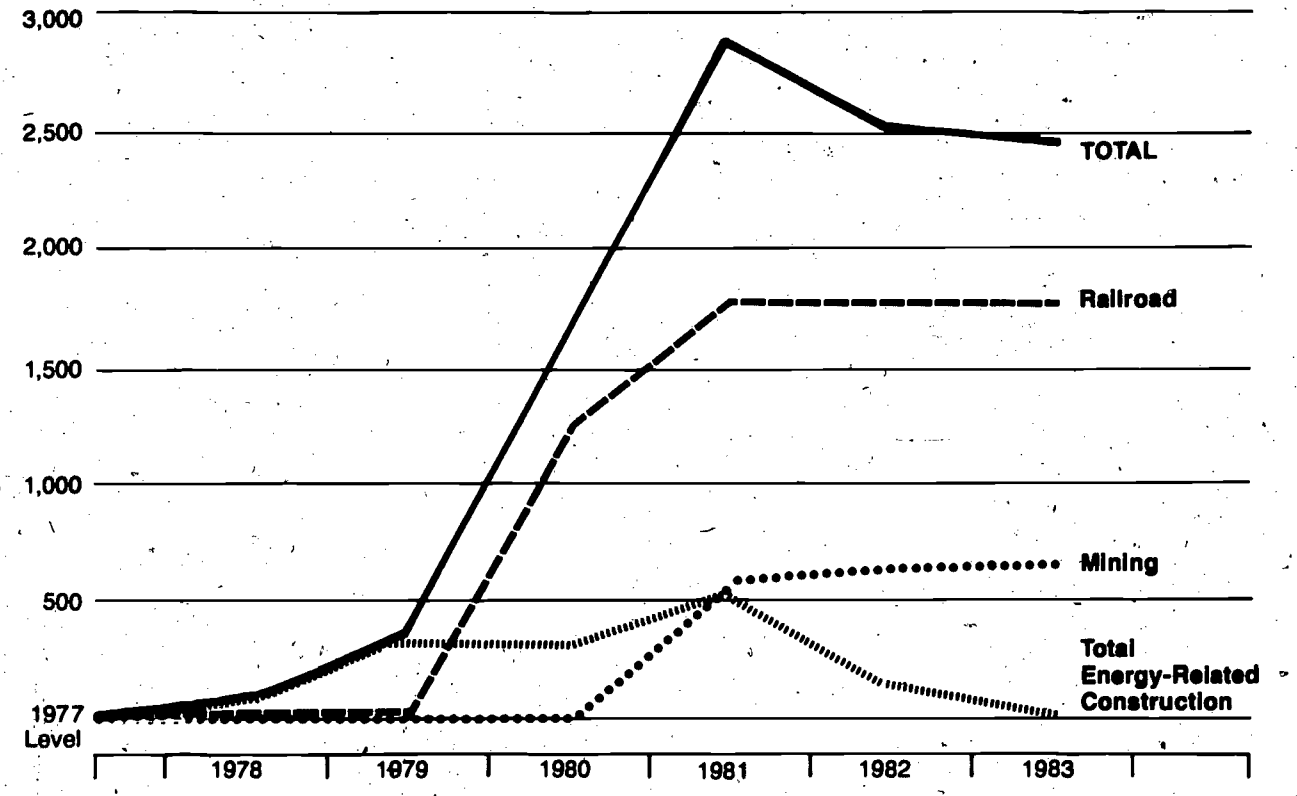


FIGURE 12

Energy Employment Changes, South Dakota (1977 base)



South Dakota's situation will remain relatively constant.

Now, the caveat: based on these data, minorities may only experience marginal success over the long term in reducing unemployment. Though not a desirable circumstance, many of the significant opportunities for minorities lie in the construction field. But, referencing these data, one can see that construction levels off around 1982 and bottoms out by 1985.

Appendix A lists the most significant job categories likely to experience dramatic changes. At the top of the list are the "professional/technical" occupations dominated by engineers, chemists, and geologists. Few minorities are trained in these professions. This observation is merely a caveat. It is a word of caution that, unless minorities themselves broaden their career horizons as the world advances, they shall continue to fall behind.

Educationally, to paraphrase Mr. Thoreau, minorities have marched to a "different drummer." Given the past, the cadence was valid. Job opportunities were severely limited to the ministry, teaching, medicine, law, and the social sciences. Whites were convinced and blacks failed to challenge the notion that science and technology were beyond their intellectual range. Time has proven that such was not the case. In August 1978, *Ebony* magazine asserted:

> The emergence of a New Generation with new perceptions and values marks a fundamental turning point in America's racial dialogue. The future of Black and White America will be shaped by the responses of a New Generation created by a strange new world of monolithic technologies and shifting racial boundaries.

Yet, all too many minorities still track the so-called "traditional careers." It will take great effort on the part of many diverse interests to reverse this trend.

The process should begin now so that, come 1985 and beyond, adequate numbers of blacks and other minorities are sufficiently prepared to take advantage of these new careers. Some work has already begun in this area. The Westland Companies, AABE, Denver Public Schools, and the Colorado School of Mines have engaged in a series of planning sessions with an ultimate goal of heightening the interest of minorities in the earth sciences.

Industry, surprisingly enough, is way ahead of the Federal Government in recognizing the resources minorities can bring to energy development. Minorities' ability to advance in the Federal energy establishment is quite another matter. Here, minorities continue to be victimized by the Schlesinger syndrome. The U.S. Commission on Civil Rights needs to focus more of its attention on why these obstacles continue to exist.

Organizations such as the American Association of Blacks in Energy (AABE) must continue to be diligent in bringing these problems to the attention of the public. Finally, it should be recognized that unless concerted efforts are made to prevent obstructionism (the new mantle of environmentalism) the question will not be lack of opportunity for some, but the absence of opportunity for all.

Acknowledgments

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Appendix A

Occupations in Demand, 1977 to 1983, Federal Region VIII

Professional, Technical
Mining engineers
Civil engineers
Chemists
Geologists
Registered nurses
Engineering, service tech.
Teachers
Accountants
Personnel, labor relations
Lawyers
Physicians
Managers, Officials, Proprietors
Bank, financial managers
Purchasing agents, buyers
Sales managers, retail
Officials, admin. public
Office managers, adm.
Sales Workers
Sales workers
Insurance agents, brokers
Clerical Workers
Secretaries, general
Bookkeepers
Cashiers
Estimators, investigators
Mail carriers
Receptionists
Stock clerks, storekeepers
Teachers' aides
Services
Janitors and sextons
Cooks
Waiters
Food workers
Nurses' aides
Practical nurses
Child care workers
Hairdressers
Firefighters
Guards
Police and detectives
Crafts
Construction operations
- Carpenters
- Electricians
- Bulldozer operators
- Excavating, grading, mach.
- Crane, derrick, and hoist
- Laborers
- Inspectors, others
- Plumbers, pipefitters
- Boilermakers
- Machinists

Mechanics, repairers
- Auto mechanics and apprentices
- Heavy equipment mechanics, inc. diesel
- Other mechanics

Power station operators
Stationary engineers
Operatives
Welders
Asbestos, insulation workers
Garage workers, gas station
Mine operatives
Oilers, greasers
Truckdrivers
Packers, wrappers, exc. meat
Blasters
Cutting operatives
Drywallers
Drillers
Misc. machine operators
Furnace vendors, stockers
Delivery and route workers
Brakers
Switchers

Appendix B

Energy Employment Changes, Region VIII, by States*
(A Summary of Project-Specific Developments)

		Coal mining	Powerplant construction	Noncraft construction (professional/clerical)	Coal-gasification construction	Oil shale construction	Total change construction	Electric generation	Coal gasification	Total change
Region VIII										
	1978	8,300	– 227	76	524	200	573	385		9,258
	1979	11,476	867	22	1,397	300	2,086	561		14,123
	1980	14,639	670	150	2,629	400	3,849	870		19,358
	1981	17,690	1,504	150	4,217	600	6,471	1,400	414	25,975
	1982	20,017	1,435	122	4,200	905	6,662	1,700	414	28,793
	1983	22,083	31	– 35	4,354	944	5,294	1,871	414	29,662
	1984	25,283	– 1,852	– 147	1,366	321	– 312	1,966	1,026	27,903
	1985	26,509	– 3,074	– 280	1,206	305	– 1,843	1,944	1,026	27,636
North Dakota										
	1978	227	375	51	524		950	55		1,232
	1979	311	591	62	1,397		2,050	135		2,496
	1980	432	231	84	2,629		2,944	185		3,561
	1981	578	60	28	4,217		4,305	281	414	5,578
	1982	616	– 181	– 34	4,200		3,985	281	414	5,296
	1983	681	171	– 54	4,354		4,471	281	414	5,847
	1984	1,123	171	– 54	1,366		1,483	281	1,026	3,913
	1985	1,945	171	– 69	1,206		1,308	281	1,026	4,560
Colorado										
	1978	2,425	– 529	1		200	– 328	68		2,165
	1979	2,828	– 749	– 48		300	– 497	164		2,495
	1980	3,710	– 299	– 31		400	70	164		3,944
	1981	4,268	376	– 14		600	962	310		5,540
	1982	4,818	953	7		905	1,865	510		7,193
	1983	5,543	596			944	1,540	510		7,593
	1984	7,417	– 114	1		321	208	510		8,135
	1985	7,285	– 827	– 48		305	– 570	510		7,225
Montana										
	1978	770	370	24			394			1,164
	1979	990	982	63			1,045			2,035
	1980	1,443	1,072	68			1,140	126		2,709
	1981	1,925	462	29			491	378		2,794
	1982	2,300	– 1				– 1	378		2,677
	1983	2,380	– 34	– 2			– 36	378		2,722
	1984	2,460	– 778	– 51			– 829	378		2,009
	1985	2,535	– 778	– 51			– 829	378		2,084

Appendix B (continued)

Energy Employment Changes, Region VIII, by States*
(A Summary of Project-Specific Developments)

		Coal mining	Power-plant construction	Noncraft construction (professional/clerical)	Coal-gasification construction	Oil shale construction	Total change construction	Electric generation	Coal gasification	Total change
Wyoming										
	1978	2,248	−236	−13			−394	96		2,095
	1979	4,042	−42	−28			−70	96		4,068
	1980	5,289	111	2			113	156		5,558
	1981	6,624	368	40			408	156		7,188
	1982	7,598	−10	46			36	221		7,855
	1983	8,169	−588	−27			−561	354		7,962
	1984	8,841	−975	−77			−1,052	354		8,143
	1985	9,129	−983	−83			−1,066	354		8,417
Utah										
	1978	2,630	−207	13			−194	166		2,332
	1979	3,305	−415	−27			−442	166		3,029
	1980	3,765	−445	27			−418	239		3,586
	1981	4,295	238	67			305	275		4,875
	1982	4,685	674	103			777	310		5,772
	1983	5,310	−114	48			−66	348		5,922
	1984	5,442	−156	34			−122	383		5,703
	1985	5,615	−657	−29			−686	421		5,350

*Expressed as *changes* from 1977 employment levels.
Source: American Association of Blacks in Energy.

Energy Policies: Development in the Intermountain West and Its Impact on Women and Minorities

By Roger Kahn*

During the sixties, my work in large eastern cities focused primarily on the issues of poverty and the civil rights of minorities—especially blacks and Puerto Ricans. My awareness of women's concerns was heightened through that experience because a great number of civil rights and poverty-related issues disproportionately affect poor and minority women, and also because a significant portion of female civil rights and antipoverty workers were among the earliest of the new feminists.

As the seventies began, I migrated west and choose to move to a small mountain town in Colorado's majestically beautiful western slope. There were then only about 350 residents (fewer than in the apartment building in which I had been raised). Most of them were older people, and an unhurried, fun-loving lifestyle prevailed amidst a bunch of boarded-up buildings and the most magnificent mountains I had ever seen. Like most newcomers to the area, it took the admonition of an oldtime rancher who said, "Son, you can't eat the scenery," and the depletion of my savings to make me realize that if I was going to remain a resident of this small town, I was going to have to figure out a way to make a living. Typically, like many of the other new immigrants in this overall region, I found work servicing other people—the tourists—who came to the area to enjoy the environment, and thereby demonstrated that, although the scenery couldn't be eaten directly, it was possible to make a living and participate in an active, viable, tourist-based economy by providing services to people who came to recreate themselves by playing in and appreciating the pristine environment.

After spending the first half of the decade living in this small town, I decided to move back to a city and resume my full-time work in the area of human rights. This time, however, probably because of my intimate involvement with the clear, natural surroundings, my definition of fundamental human rights was broadened to include the right of everyone to reside, work, and play in a clean environment. Fortunately, I was able to find work eventually with an organization that interpreted the quest for human dignity in much the same way as I.

For approximately the past 2 years, I have been working with a tax-exempt, nonprofit, community education organization called the Colorado Coalition for Full Employment. Our primary goal is to create a society in rural and urban Colorado in which everyone who wants to work is able to do so at a job that has meaning for that individual as well as for the community in which he or she lives. Additionally, because of the incredibly magnificent beauty of the Colorado landscape—and that is clearly what attracted the majority of our present residents—we are particularly concerned that jobs which are created keep the integrity of our very delicately balanced environment intact.

The twin concerns of employment and environment and the ways in which they intersect have caused us to think about the Colorado economy and what's happening to it, and particularly to think about what effect the increased national demand for production will have on us. Clearly, employment

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and environmental issues come together most poignantly in this region around the whole question of energy production. Although our analysis has focused on Colorado, I believe most of it is directly transferable to other Rocky Mountain region States because the projected massive energy development in the Intermountain West ultimately is based upon what is determined to be national—and perhaps even international—energy needs. And the major energy reserves are not confined solely to Colorado's borders. I'd like to share some of our thinking with you today, particularly focusing on the social, economic, and political impacts of that national demand on women and minorities.

To begin with, when we think about the Colorado economy and the industries that form its basis, we think of agriculture, tourism and recreation, and mineral production. Neither agriculture nor tourism requires large residential populations and, in a semiarid area where water is all too scarce, that is a major asset. Agriculture, as well as tourism and recreation, moreover, is economically dependent on a pure environment. Agriculture needs good water for irrigation and good land for food production; tourism and recreation need good water for fishing, camping, kayaking, and skiing, and unspoiled vistas to attract visitors.

It is worth noting that these two components of the economy are integral parts of the national interest. Clearly, food production is in the national interest: we all have to eat. Less obviously but equally certain, tourism and recreation are part of the national interest today. All one has to do, even for a single season, is service the needs of the tourists from New York City, Chicago, Atlanta, Houston, and Los Angeles who come to Colorado's mountain communities to understand that, in our pressurized, industrial society where people lead lives of *not* such quiet desperation, there must be places where people can go to regenerate their worn souls and re-create themselves so they can once again return to their home communities and fight their daily battles.

Seemingly then, it is important that new industry demands which are placed on this region do not destroy the existing economy, lifestyles, or the environment on which both are based for the people who live and work in this region. The massive energy production activities that are projected must complement and supplement already viable economic activities. Energy policies must recognize the needs of rural producing areas as well as those urban areas where the great proportion of energy is consumed.

Prior to focusing specifically on the impact of energy development in this region on women and minorities, it is important to discuss energy policies in general as they relate both to production (which we think of in terms of both conventional and alternative technologies) and consumption. These policies must focus on both short- and long-term needs, and they must distinguish between conventional energy production—oil, gas, and coal—and alternative energy production—solar, wind, water, geothermal, biomass conversion, and the like.

Moreover, there are some fundamental principles that must guide our quest for sane energy policies. Energy policies must provide energy as cheaply as possible to the consumer; they must be aimed toward employing as many people as possible; they must favor environmental integrity; they must stress physical safety; and finally, energy policies must encourage the full utilization of whatever available human and environmental resources exist at a local level. Significantly, if these criteria are adhered to strictly, people with low or fixed incomes, a disproportionate number of whom are minorities, women, older, and handicapped people, will benefit the most.

Oil, gas, and coal, those forms of conventional energy production most likely to supply our energy demands in the short range, must conform to these principles. This means, for example, that underground coal mining, which is much more labor intensive than surface or strip mining, must respect environmental considerations inside the mine, where worker environmental and safety issues are paramount, as well as outside the mine. Coal companies must employ additional people to supress coal dust (helping to minimize black lung), to drain water from the mines, and to install, check, and maintain roof bolts and support beams (to prevent cave-ins). All mines, but surface mines in particular, must reclaim, revegetate, and reforest the land after the coal has been taken from the earth.

On the consuming side of the equation, because coal is so dirty, industrial air and water pollution abatement requirements must be followed strictly, and this also creates more jobs and employs more people. Incidentally, because coal extraction—and other forms of energy production as well—use so much water, it is important for that water to be

recycled so it can be used for the other industries that are based in our rural areas.

Undoubtedly, there are additional costs attached to these requirements, so it must be pointed out that this does not conflict with the principle of providing needed energy to the consumer as cheaply as possible. Corporate profits are so large in conventional forms of energy production that it can be reasonably argued that the energy-producing corporations should absorb the additional cost of these programs out of profit and still be able to attract investors.

To minimize the negative impacts of energy production in those communities and surrounding areas where most of the energy needed for the short term is produced, large amounts of public and private monies must be provided up front—that is, before they are inundated by development—to help those rural communities provide the services necessary to support rapidly increased work forces. These include monies for housing, schools, roads, social services, and so on. Additional programs need to be funded to provide job training for local citizens so they can work in the mineral-producing occupations and, thereby, further minimize the boomtown population explosion syndrome that so disrupts a community's way of life. It might be added here that, although I am speaking about rural areas primarily, the City and County of Denver—because it is the administrative center for most of the Rocky Mountain region's mineral development—is also suffering from this syndrome and needs to be treated as an energy-impacted area as well.

What specifically, then, will be the effect of this energy development on women and minorities? At first blush and according to major conventional energy producers, it would appear quite good. We should expect more jobs, which women and minorities definitely need, increased opportunities, and on the consuming side, an unending supply of energy to heat and light homes, to cook and refrigerate food, to transport people between the major activities in their lives, to support job activities where people work, and to permit minorities and women to obtain a larger portion of the bounty of American society. I suggest, however, that the picture is not nearly as rosy as it at first seems or as the conventional energy corporations and their hired consulting firms claim.

Generally, social costs of energy development are not included in the cost-benefit equation, and if Alaska is any example—where unemployment skyrocketed from 6 percent before the pipeline to 16 percent after it—the long-term employment benefits associated with conventional energy development are questionable at best. It is likely also that the cost of conventional energy production to consumers will become so high (especially following the deregulation of natural gas) because fossil fuels are increasingly a scarce resource, that many older and poor women, blacks, Chicanos, and other minority people will find that they cannot afford heating, lighting, refrigeration, transportation, and other fundamental living costs.

Furthermore, virtually all conventional energy-producing corporations, including those now developing new technologies such as oil shale or coal liquefaction, are well-established and entrenched multinational corporations. Their record of employing minorities and women in the actual extraction of oil, gas, and coal has been abominable. You do not need statistics to see this; one needs only tour the actual work sites to see that Chicano and black men, or women of any color, are absent from the places where energy is extracted and processed in the Rocky Mountain region. And essentially the same observation can be made about the administration and policy positions within conventional energy-producing corporations. A luncheon visit to Denver's Petroleum Club, a favorite spot for energy company executives, reveals very few, if any, Chicanos, blacks, or women. The downtown energy building boom, which is stimulated by conventional energy-company office needs, holds little promise either of employing significant numbers of minorities or women, except in traditional, low-level, and dead-end jobs.

Jobs in conventional energy production are highly technical. They require training in engineering, natural sciences, business administration, law, international relations, construction, and heavy equipment maintenance. In addition to technical academic training in universities, most of these skills are learned on the job. The only way to learn to operate an oil rig or negotiate for oil rights is to work on a rig or sit in on the negotiating sessions. In essence, the existing corporations are the only available training grounds, and their records to date do not warrant much enthusiasm for the inclusion of significant numbers of any group of people other than the Anglo man. In fact, one could argue that because of the increased national demand for energy *now* and at virtually any cost, coupled with an industry-wide

history of shoddy affirmative action practices and the new Bakkeism that seems to be running rampant, the conventional energy-producing corporations might even regress in their hiring practices of women and minorities.

Additionally, because conventional energy has to be tapped where it is found—and in this region that is usually in remote rural areas—new "boomtowns" are created. In a great many cases, blacks and Chicanos and women wanting to work outside the home do not live in these places, are not actively recruited to go to them, are harassed when they do venture into these areas, and not surprisingly under these circumstances, are not especially interested in relocating to these areas. Consequently, the boomtown phenomenon is especially detrimental to the interests of women, blacks, and Chicanos for some relatively subtle and insidious reasons. Besides the high rates of family disintegration (in the few instances where families move to these places together), alcoholism, drug abuse, brutality of all sorts, and a general "Wild West" syndrome pervades. The dominant philosophy is that of the rugged individual he-man who sees women merely as sex objects. This philosophy tends to erode, through adult socialization and peer pressure processes, even the limited progress that women have made since the revitalization of the women's movement in the mid-sixties. Similarly, that same ethic—because virtually all of the "he-men" are white—permits the old stereotypes of blacks and Chicanos to become dominant, and this also tends to destroy whatever limited progress minorities have made. Racist and sexist attitudes run rampant in boomtowns.

One needs to question closely whether in fact dependence on the increased production of oil, gas, and coal in this region does benefit Chicanos, blacks, and women, either in this region or nationally. Seemingly, neither from the point of view of a businessperson, an employee, or from the perspective of a consumer will these groups benefit from conventional energy production in either the short or the long run. While conventional energy production may employ many people, it shows little promise of addressing either the employment or consumer needs of minorities and women.

If we examine alternative energy production—i.e., solar, wind, biomass, geothermal, and energy conservation—does the same picture exist for women, Chicanos, and blacks from the perspective of the producer, the worker, or the consumer? As with conventional energy production, although the picture is not black and white, the trends are clear.

The alternative energy industry, and the various technologies associated with it, is relatively new and very rapidly expanding. It is not entrenched presently in the established hierarchy of power in the U.S. and as such does not have a long history of excluding women, Chicanos, and blacks from decisionmaking and administrative functions. In fact, Anglo women are prominently involved in alternative energy enterprises, and Chicano and black people are increasingly becoming involved in these fields. The potential exists in alternative energy production for women and minorities to enter into all phases of activities, including high-level, policy-making positions in the private and public arenas and, by so doing, shape the directions of these emerging industries so that they are responsive to the needs of women and minority people.

Perhaps the most exciting potential of alternative energy development and conservation activities, at least from the point of view of an advocate for a full employment economy, is the huge job creation potential associated with these technologies, especially for women, Chicanos, and blacks who have generally the highest rates of unemployment and underemployment. A study conducted by Solarcal, for example, concludes that for the next 10 years solar space and water heating alone could account for the creation of over 375,000 jobs in California; proportionate numbers of jobs would be created in this region as well. Interestingly, another study, by California's Department of Labor, demonstrates that there are about seven times as many jobs created with solar energy compared to the same number of energy units produced with a major power plant.

Most importantly, the very great proportion of jobs associated with alternative energy development and energy conservation are relatively low-level technologies. They do not require a Ph.D. in chemical engineering, nuclear physics, geology, or 12 years of experience in international law. Most jobs associated with these technologies are for either unskilled, skilled, or semiprofessional workers. For blacks, Chicanos, and women who are disproportionately underskilled and underexperienced, this factor associated with alternative energy production could bring renewed hope for individual and group economic advancement within our broader society.

Moreover, because alternative energy and conservation activities are fundamentally decentralized, they can be adapted easily to different settings. The incredible sun and wind power in Region VIII, for example, can be harnessed to provide energy for our local needs. Along the coasts, tidal power—when developed further—will probably be extremely useful to those regions. Alternative energy technologies can be produced both in the highly populated areas like Denver—where most minorities and many women wanting to work outside the home reside—and they can be produced in rural areas as well. Additionally, because alternative energy is a decentralized industry, large concentrations of skilled workers and professionals do not exist in any one, two, or three geographic areas. Whereas oil rig drillers all may seem to live in Texas and coal miners in West Virginia, solar workers can be as profitably recruited and trained from indigenous populations as transferred from other areas. Localized production of energy promises to keep the energy-related jobs within the reach of women and minorities living in the cities and towns where alternative energy is produced. With a region as fragile as ours, this becomes quite important as a mitigating factor against energy-induced large population shifts and boomtowns and the concomitant environmental destruction associated with them.

Finally, from the consumer point of view, alternate energy production and energy conservation hold the promise of sharply reducing utility bills, gasoline costs, and food prices. This is particularly important when one considers that large numbers of women and minorities are either poor or working-class people and that the projected escalation of fundamental costs is beyond imagination. Consider, for example, that Colorado paid $13 million in 1977 to heat its public State office buildings and that in 1988—just 11 years later—that same bill is projected to be $118 million. That tenfold increase will be paralled by the increase in utility costs to the residential consumer. However, with alternative energy production, including energy conservation, the demand for costly conventional fuels can be reduced sharply. The American Institute of Architects, for example, has projected that by 1990, by making old and new buildings energy efficient, we could be saving the equivalent of more than 12.5 million barrels of petroleum a day, which is a little more than we are importing daily presently, and which is also about as much energy as the 1990 projected production capacity of any one of the prime energy systems: domestic oil, nuclear, coal, or gas. A serious alternative energy development program will sharply reduce costs to the consumer.

By way of summarizing, let me suggest that conventional energy production in Region VIII does not, I think, hold great promise for women and minorities. It does not offer great promise at the employer, employee, or consumer level. By contrast, alternative energy development and energy conservation appears to offer great promise to women and minorities. It is a newly emerging industry with room at the top; it can utilize relatively low-level skills and is labor intensive. Hence, there is room for expanding work forces, and it has the potential of reducing real costs of utilities, food, and transportation to the consumer.

Finally, I begin by recognizing that the economics of this region and the human activities that are dependent on them are dependent upon a relatively small population and a clean environment. Whatever additional industry is developed in this region—and conventional and alternative energy production is the most likely—must supplement what already exists. There is little doubt that conventional energy will be extracted from the earth in Region VIII. The challenge is twofold. First, we must make sure that the industry meets our human and environmental needs as it proceeds and, secondly, that we develop rapidly a massive, nationwide, alternative energy and conservation system so we in the Intermountain West don't have to relinquish our way of life to meet the energy demands of our nation.

Energy Development in Region VIII: Impact on Women and Minorities—Response to Ellis Cose and Clarke Watson

By Hester McNulty*

The League of Women Voters of the United States is a volunteer citizens' group with 131,000 members organized into over 1,300 local leagues in all 50 States, the Virgin Islands, Puerto Rico, and the District of Columbia. Almost 5,000 of those members live in the six States that comprise Federal Region VIII.

The league has been involved in both natural resources—land use, solid waste, air quality, water resources, energy—and human resources—education, employment, housing, equal rights—for a number of years. And although we have separated these program areas, it is very evident to us that there is a symbiotic relationship. This is especially true when the interrelationship of governmental decisions about energy development and use and the impact of these decisions on both low-income people and minorities is considered.

The league's human resources statement of position includes support for education and training of disadvantaged people and for Federal efforts to prevent and/or remove discrimination in education, employment, and housing.[1] We also believe that equality of opportunity in employment should include the participation of government at all levels and encourage the participation of private institutions.

Our energy position states that the United States cannot and should not maintain its historical rate of energy consumption.[2] Not only as a member of the world community but in the national interest, the United States must make a significant and progressive reduction in its energy growth rate. To achieve this goal, the Nation must develop and implement energy strategies that—while taking account of differences in the needs and resources of States and regions—give precedence to the national good. We think that in the near term—between now and the year 2000—top priority must be given to conservation, renewable resources, especially solar heating and cooling, bioconversion and wind, and the environmentally sound use of coal.

These positions—although we have many others that address specific areas—form the basis on which we have and will address the energy development impacts in Region VIII.

In responding to the papers of Mr. Cose and Mr. Watson, I would first like to speak to western coal production. The 1973 figures for four States with projections from a 1975 report quoted by Mr. Cose do not give a true picture of what is actually happening. The Department of Interior's *Annual Report on Coal* shows that western[3] coal production has risen from 47 million tons in 1972 to 121.2 million tons in 1977—from 8 percent to 18 percent of the national production.[4] Another most important factor for Region VIII is that the percentage of western coal production from Federal lands increased from 21 percent to 42 percent during the same period.

* Ms. McNulty is natural resources coordinator for the League of Women Voters of the United States.

[1] League of Women Voters of the United States, *Impact on Issues 1978–80* (1978).

[2] Ibid.

[3] New Mexico and Oklahoma included in addition to Region VIII States.

[4] U.S., Department of Interior, *Annual Report on Coal, Fiscal Year 1977* (1978).

Production from Federal lands has increased in spite of the 1971 moratorium on leasing, although short-term and preference-right leases have been granted. The settlement of *NRDC v. Hughs* [5] in February 1978 will result in even more development of Federal coal, and it is predicted that 1985 production from Federal lands will be 180 million tons.[6]

This acceleration of Federal leasing will soon affect the employment of women in underground mines. Although a large portion of Federal coal will be surface mined, there are significant underground deposits. The 1920 Mineral Leasing Act, section 30, provides that each lease shall contain provisions prohibiting the employment of any girl or woman, without regard to age, in any mine below the surface. In Region VIII, women are working in underground mines, some adjacent to Federal lease tracts. If private mines are extended to Federal lands, these women would have to stop working, and no woman could be employed underground in a new mine under a Federal lease.

While this provision may not be constitutional, and may have to be tested, passage of the Equal Rights Amendment would unquestionably give women the right to work underground on Federal as well as private land. The League of Women Voters Education Fund has had a litigation project directed at the women in mining issues, but because the project was oriented to eastern mining, it did not address this topic.

All of the Region VIII States will be affected by the secondary impact of the stepped-up development of both Federal and private coal. Primary impacts are—and will be—affecting all of the States, with the possible exception of South Dakota. Although the largest amounts will be mined in Wyoming and Montana, mines, coal-fired generating plants, and probably conversion facilities will be dispersed across the region. I personally do not think oil shale will be developed in the near future beyond the prototype stage, but just the expectation has created a miniboom in the area of Colorado.

The States vary in their receptiveness to development, but they are all concerned with the conflict between agriculture and energy production—and in the West the critical factor is water. The political effect in Wyoming of the proposed slurry pipeline referred to by Mr. Cose was not due to a reaction to exploitation of energy resources per se, but to the use of water for coal transport out of the State. The Balkanization of the Western States can be modified if Federal energy policy is sensitive to the balance between agriculture and energy development and the balance of water for both sectors. Energy development must be staged so as not to overwhelm agriculture.

Most of the coal will be mined in rural areas; most of the coal-fired generating plants and conversion facilities will be in similar locations. Gilmore has documented the impact on Sweetwater County, Wyoming, where both a coal-fired generating plant was under construction and mining was occurring.[7] Total employment rose from around 3,000 in 1970 to over 15,000 in 1974. The population increased from 18,391 to 38,300 in the same period.

The major problem areas were housing, health services, recreational and cultural opportunities, and domestic considerations. The last directly affected women. Not only were housing and local services insufficient, but employment opportunities for women were limited. In addition, the social fabric of a small western community was not open to the new women who arrived. The suicide and alcoholism rate for women soared.

In 1977 the League of Women Voters Education Fund sponsored two conferences funded by Resources for the Future on the impact of western coal development. One of these was held in Farmington, New Mexico, which had undergone its first boom in the 1950s because of oil and gas exploration development. When coal and powerplant construction created a second boom in the 1970s, the social impacts were less severe. The infrastructure was in place and the persons who were the newcomers in the fifties, remembering the hostility of a small agrarian community, were more receptive to newcomers. Women had opportunities for employment, there were recreational programs for them and their children, and social and health services were in place.

This brings up the question of whether every community has to learn from experience or whether experience can be transferred. Both the States and Region VIII are attempting to answer this question with technical assistance for planning in communities that are undergoing rapid growth due to energy

[5] NRDC v. Hughs, filed by the Natural Resources Defense Council in U.S. District Court for the District of Columbia against the Department of Interior, Oct. 21, 1975.

[6] *Annual Report on Coal.*

[7] John Gilmore, *Analysis of Financing Problems in Coal and Oil Shale Boom Towns* (Washington, D.C.: Federal Energy Administration, July 1976).

development. Women will be directly affected by the success of these programs.

Some energy companies are creating new towns or planned communities near mines and powerplant construction—Colstrip, Montana, and Wright, Wyoming, are prime examples. The new residents will create their own social structure, so the impact on the women living there should be alleviated. Construction of new towns also offers employment opportunities for both minority and nonminority construction workers from urban areas due to manpower scarcity in rural regions. However, the president of the Denver construction firm that built the shopping center, community center, and warehouses in Wright said, "It's hard to get workers. At first we started bringing them up from Denver, but it's hard to keep them in Wright."[8]

It would appear, however, that a new town would be more socially open to permanent minority residents than the traditional closed society of small western communities. Affirmative action for minority employment could first be directed toward new towns or other areas not overwhelmed with inadequate institutions and methods of handling growth. Larger, existing cities in the boom regions such as Grand Junction, Casper, or Billings could also be targeted.

An additional point that needs to be made is the difference between the employment ramifications of mining and powerplant or conversion facility construction. Mining is long term—20 years or more—while construction is short term—3 to 4 years. It takes very few employees to run a powerplant once it is built. As mining offers long-term, stable employment, minority training and affirmative action programs could emphasize placement in the mining industry.

It is surprising that neither Mr. Cose nor Mr. Watson addressed two large minority groups in Region VIII—Hispanics and Indians. Indians not only live near coal development areas, they own the rights to large deposits. Although the tribes can realize monetary gain from coal development, they fear their traditional way of life, water rights, and air quality are in jeopardy. The Northern Cheyenne have recently declared their reservation a class I air quality region, which has implications for powerplant construction in Montana.

When the League of Women Voters conference in Farmington toured the Navajo Reservation, the conflicts were apparent. In 1962 Congress finally honored an 1868 treaty agreement and authorized an irrigation project for 110,630 acres of dry but fertile reservation land. This project, when completed, will employ 3,000 people with an additional estimated 15,000 jobs in associated services. In 1976 the reservation had an unemployment rate of 65 percent and median annual income of $900.[9]

If proposed coal gasification plants are built, there would not be enough water for both irrigation and energy, and during construction the plants would employ a large influx of mostly non-Indians. The Navajo Nation has recently been more aggressive in demanding jobs for Navajos in the mining operations on the reservation. But the question remains: is the irrigation project, which is related to the traditional agrarian society and offers long-term employment opportunities, the best use of the water from a national perspective? At the moment irrigation has won over coal gasification, but what will happen if in the future there are massive energy shortages?

The 26 tribes that occupy the northern Great Plains in the States of Montana, North Dakota, South Dakota, Wyoming, and Nebraska stated in their *Declaration of Indian Rights to the Natural Resources in the Northern Great Plains States* that the development of coal and the concomitant use of water, air, and other natural resources threatens the viability of our environment and the continued existence of the 26 tribes that occupy the northern Great Plains.[10] Again, the Northern Cheyenne have won the right to clean air for the moment, but who will win in the future? At the end of this declaration, Sitting Bull is quoted as appropriate to today's situation. He said, in part, in 1875:

> But now we have to deal with another breed of people. They were few and weak when our forefathers first met them and now they are many and greedy. . . .Love of possessions is a disease with them. They make rules to suit themselves. . . .They claim this Mother Earth of ours for their own and fence their neighbors away from them. They degrade the landscape with their buildings and they waste. They compel the natural earth to produce excessively and when it fails they force it to take medicine

[8] Steven Grogan, quoted on p. 66, *Rocky Mountain News*, Oct. 22, 1978.

[9] *The Impacts on Western Coal Development, League of Women Voters Education Fund* (Washington, D.C.: Publication No. 165, 1978).

[10] *Declaration of Indian Rights to the Natural Resources in the Northern Great Plains States* (Northern Great Plains Resources Program, 1974).

to produce more. This is an evil. . . .We cannot live the way these people live and we cannot live beside them. They have little respect for Nature and they offend our ideals.[11]

While Hispanics live throughout the region, the largest concentration is in Colorado, both along the Front Range and in rural areas, especially in the southern part of the State. Many live at, near, or below the poverty level. The increased cost of energy has a direct impact on their lives. In rural areas, wood for heating is becoming scarce and the price of propane is soaring even more than urban energy rates.

The Rocky Mountain Center on the Environment (ROMCOE) conducted a project in the small, low-income town of San Luis located in a cold mountain valley in southern Colorado.[12] The community, 95 percent Hispanic, was acutely aware of its own energy crisis.

The project emphasized alternative energy sources and devices without substantial investment in elaborate systems. Solar construction and winterization techniques were taught at community workshops, and the interest in this project has spread to other parts of Colorado's San Luis Valley. The development of small-scale and community solar systems in southern Colorado could both provide job opportunities in a depressed region for Hispanics and also lessen the impact of rising fuel prices.

Neither Mr. Cose nor Mr. Watson delineated that one of the greatest impacts of energy development is on Denver itself, the hub of the energy boom and where most of the minority population lives. The jobs created are not only directly related to energy companies, but to the associated services an increasing population requires.

It is true, as Mr. Cose maintains, that the energy companies are a largely white male bastion. In the last several years some women, blacks, and Hispanics have been employed in a professional capacity. But women in these positions tell me that while they have cracked the outer barrier, the inner barrier is still there—the decisionmaking process is dominated by white males. And until more women and minorities are encouraged to choose a degree in engineering or geology instead of the more traditional fields, it will probably remain this way.

However, both women and minorities either have the background and skills or can be trained for the jobs that are a result of the energy boom. Denver serves not only the population of the metropolitan area, but is the service and distribution center for most of the Rocky Mountain region. Affirmative action and training programs can help ensure that both women and minorities will not be relegated to low-paid, entry-level jobs.

Grand Junction, Billings, Casper, and Rapid City have become the regional centers in the energy areas and a variety of employment opportunities are and will be available. These population centers provide a range of services not available in the rural areas where energy development is occurring—from hospitals and other medical services to a range of places to shop. Jobs associated with the energy boom are myriad and not limited to direct employment by the industry.

Mr. Cose has referred to the benefits of low-sulfur coal as being enjoyed by only the residents of midwestern cities. However, the 1977 amendments to the Clean Air Act to a large extent negate the low-sulfur advantage of western coal over high-sulfur eastern coal. Best-available control technology—scrubbers—will be required for all new or substantially modified large coal-fired plants whether they burn low- or high-sulfur coal. This provision may slow down the rate at which western coal is developed but will not stop it.

Mr. Watson gives evidence that the closer the economy is to operating at full capacity, the lower the unemployment rate is for minority groups. It should be pointed out, however, that although fuels and electricity are the most energy-intensive goods in the economy, the fuel industries and electrical companies provide very little employment per dollar of goods produced. Thus, the case for conservation rather than increased production can be made, as stated by Dennis Hayes in *Energy: The Case for Conservation:*

to the extent that a consumer conserves fuel and spends money on anything else, he will provide more employment as well as use less energy. Capital diverted from nuclear reactors, coal gasification facilities and petroleum facilities will produce more long-term employment if invested in any other enterprise.[13]

[11] Ibid.
[12] ROMCOE, *San Luis, Future Power* (Denver, Colo.: 1978).
[13] Dennis Hayes, *Energy: The Case for Conservation* (Washington, D.C.: Worldwatch Institute, 1976).

In *A Time to Choose: America's Energy Future,* the Ford Foundation's energy policy project, when the shares of energy, capital, and labor of energy-intensive industries were compared, it was found that they consume one-third of the total U.S. energy, they account for 45 percent of U.S. industrial production, but they provide only 10 percent of the total employment.[14]

In summary, Region VIII because of the energy boom will have employment opportunities for both women and minorities. However, there has been little affirmative action to date. The Federal Government, the States, local governments, and energy companies have been so involved in addressing the problems of large population increases in rural areas that almost no attention has been given to equal employment opportunities.

In response to the impact of energy development on small communities, the Region VIII Federal Regional Council established an Energy Impact Office to facilitate delivery of Federal assistance. Could not affirmative action be tied into this already existing structure?

At the two Impacts of Western Coal Development conferences sponsored by the league, the participants concluded that to meet these impacts there must be a true partnership among all levels of government and that the energy companies must also be involved. The same can be said of the creation of equal opportunity for women and minorities.

This is in line with the league's position that equality of opportunity in employment should include the participation of government at all levels and encourage the participation of private institutions.

[14] *A Time to Choose* (Cambridge, Mass.: Ballinger Publishing Co., 1974).

The Chicano: America's Forgotten Resource

By Omar Barbarossa*

The largest ethnic group in the Rocky Mountain region area, ironically, may be here because of an earlier effort by Spanish conquerors to find and mine precious minerals such as gold, silver, and copper in the 16th and 17th centuries. The Spaniards' greed for gold and conquest led to the colonizing and early settlement of the great Southwest.

The Indians were subjugated by the conquistadors, and, except for a brief period of Indian uprisings, the area has been continuously settled by Spanish people since 1598. Huge *mercedes* or land grants were awarded to families or groups of families as an incentive to settling.

Geographic and cultural isolation strengthened the communal bonds and perpetuated the only values and mores—those of 16th century Spain. The early settlers intermarried with the native Pueblo Indians. The resulting mestizo offspring make up what has been called the "new breed" and some anthropologists identify as "a distinct racial group." There was little change in this part of the country when it twice changed hands in the 19th century—first as a part of Mexico in 1821 and again as ceded territory when the United States took it from Mexico in the war of 1847 against Mexico.

However, when Indian reservations were established and the price of beef skyrocketed and the railroads came through, the people began to feel the changes. The land supposedly protected by the Treaty of Guadalupe-Hidalgo slipped away. Settlers were evicted for nonpayment of taxes by unscrupulous politicians and defrauded by unprincipled lawyers. Almost all of the best land was eventually owned or controlled by the invading Anglos. Thus began a struggle for dominance and survival that continues to this day.

When Mexico lost the Southwest to the United States (which included most of the Rocky Mountain region), the Treaty of Guadalupe-Hidalgo specifically guaranteed the property and political rights of the conquered native population. The treaty, executed on February 2, 1848, also attempted to safeguard the Mexican culture and language. It is quite clear that the spirit of that treaty has been systematically violated or ignored. Though the Chicano has persisted in retaining the Spanish language, he has had to do so at the price of obtaining a second-rate education because bilingualism has been suppressed and has never been seen as an asset. The struggle to keep or maintain cultural pride and identity has only brought ridicule and overt discrimination. Nowhere is this discrimination more evident than in the jobs Chicanos have traditionally held.

Carey McWilliams, noted writer and sociologist, once wrote, "The basic factor retarding the assimilation of the Mexican-American, at all levels, has been the pattern of his employment."

With few exceptions only a particular group of employers have employed Chicano labor: large-scale industrial enterprises, railroads, smelters, copper and salt mines, sugar beet refineries, and of course, the agricultural fields. Insensitivity and menial wages were to become an occupational hazard. It is important to stress the importance of the

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job issue because in this country a job is the ticket to the "good life."

For the Chicano, the pattern of employment dictated the type and location of residence. Segregated residential areas resulted in segregated schools; segregated schools reinforced the stereotype and limited opportunities for access. In setting this vicious merry-go-round in motion, the pattern of employment has been of crucial importance, for it has stamped the Chicano as "inferior" and given the stereotype an appearance of reality.

As the country's second largest minority, the Chicano had been virtually ignored by public and private reformers. With the advent of social programs and legislation meant to redress and/or eradicate discrimination, largely as a result of the "black revolution," some gains were made. But, largely because attention was focused on black demands, the needs of the Chicano never mustered the necessary political clout or visibility to gain the same accords given to blacks.

Thus, the Chicano once again finds a formidable barrier on the road to his destiny with fate. The barier is one that consists of a technology and terminology that is alien and not easily understood.

Energy—New Era

We find ourselves once again, as Ruben Salazar, the former reporter for the *Los Angeles Times*, wrote, "A people who are indigenous to the Southwest and yet strangers in their own land."

But it need not be so.

The National Dilemma†

As of this writing, Congress and the President are laboring to finalize what has been referred to as the President's "energy package." Unless some miraculous and drastic measures are built into the bill, it is highly doubtful that this legislation, while sorely needed, will realign or alter significantly the current energy picture in the United States. It is hard to pinpoint or to put blame on any one individual or institution for the current dilemma that confronts this nation with regard to energy.

Part of this crisis is the result of lack of coherent, comprehensible, and contradictory aspects between economic, political, and technological realities. The crisis is exacerbated by inappropriate responses by policymakers in both the public and private sectors.

Another problem that must somehow be overcome is in the area of policymaking itself. Too often, especially in government, those who view or assess policy are limited, for whatever reasons, in their ability to carry out or enforce decisions.

The magnitude and plethora of issues relating to energy policy is mindboggling. There are 6 major departments and 42 agencies within the Federal Government directly involved in energy coordination. There is the question of domestic and foreign energy production. There are 27 major corporations engaged in energy production and countless independent operators. There are 16 regional compacts and then all of the agencies within State, county, and city government. For purposes of planning and coordination, it would appear an impossible task.

Energy is inextricably entwined with the economic and political lifeblood of America and, to a great extent, with the stability of much of the world. Because of these two factors, the government must play a major role in the determination and implementation of energy decisions.

Many in the private sector, and with some justification, view with distrust the role of government in energy production. The issues are too varied, the problems too complex, and the consequences to society too grave, however, to leave to the discretion of the private (for profit) corporations the authority to make policy regarding energy in a laissez faire environment.

With regard to energy consumption and production in the United States, here are a few facts:

- Present United States consumption of total energy will double by 1985 (the requirements today in BTUs are over 75 trillion).
- Capital requirements for the period 1971–85 for development, processing, and primary distribution of all fuels are projected at $300 billion.
- An additional $235 billion will be needed for powerplant construction and transmission facilities.

In conclusion, with regard to the national dilemma, it should be stated that the energy shortage will cause a further slowdown of our economy and could, tragically, lead to its collapse. Cold homes, a gasoline shortage, increase in unemployment, and continuing troubles with foreign exchange are some of the possible consequences. It is imperative that the United States take immediate steps to resolve the

† Information and facts in this section were provided through CERI (Colorado Energy Research Institute).

interrelated problems of energy, ecology, economics, and world stability.

Why have we dealt with the question of energy at the national level? First, because the national scene mirrors to a great extent the problems confronting us in the Rocky Mountain region and, secondly, because many of the issues and policies decided at the national level will certainly affect policy and planning within the Rocky Mountain region.

Energy in the Rocky Mountain States: The West's Second Gold Rush

The rush for gold and the ensuing problems that occurred in the "Old West" were minute and pale in comparison to the current headlong race to capture the earth's and sun's riches.

Energy sources in Colorado are plentiful; the State is blessed with variety and vast amounts of this "new" wealth—particularly in coal, solar, and gas. Energy information about Colorado, while extensive, is widely dispersed. But even when it is available, as was stated earlier, such information may often be technical and difficult to understand.

With this in mind, we have attempted to outline in brief some information that may be useful in understanding the problems with regard to major energy development or policymaking in the State.

Oil and Gas

What is it? Oil and natural gas—fossil fuels—provide about 84 percent of Colorado's home heating and transportation needs.

Where is it? Locked in geological formations called "tight ponds," oil and natural gas are found in 39 of the State's 63 counties. Rio Blanco County in northwestern Colorado accounts for about half the production of oil and gas.

How much is there? Colorado ranks 11th among oil-producing States, producing about 39 million barrels of crude oil and 182.5 billion cubic feet of natural gas on an annual basis. It is estimated that the State's "recoverable" reserves will be exhausted by the year 2050.

How do we get it? Most natural gas is captured during the initial drilling. Oil either flows or is pumped to the surface from underground reservoirs.

What are the issues? It is argued that further exploration for development of domestic reserves is influenced by the course of the government's policy (or policies). One of the biggest concerns is the regulating or limiting of prices at wellhead. Price controls, it is argued, discourage industry from exploring and drilling new wells.

Coal

What is it? Coal is any combustible rock containing more than 50 percent by weight (or more than 70 percent by volume) of carbon. While it may be ranked by any one of its physical aspects—namely, moisture, sulfur, or ash content—it is usually valued by the amount of carbon, and the amount of heat, it contains. There are four basic types of coal: anthracite, bituminous, subbituminous, and lignite. Most of Colorado's coal is bituminous, low in sulfur, moisture, and ash content. It is high in heat volume and therefore important as an energy source.

Where is it? Coal deposits underlie about 30,000 square miles or about 28 percent of Colorado. The major producing regions are located in northwestern Colorado, which has roughly 84 percent of the total production.

How much is there? It is estimated, by the United States Geological Survey, that Colorado has more than 454 billion tons of coal within its borders, or about 10 percent of the Nation's total resources.

How do we get it? Depending on geological, engineering, and economic considerations, coal can be mined using underground or surface methods.

What are the issues? As the national emphasis shifts from imported oil to domestic coal, the State will be challenged to meet that need and concomitant problems.

Oil Shale

What is it? So-called oil shale ("the rock that burns") is neither oil nor shale. It is, in fact, a sedimentary rock containing a substance called kerogen. When kerogen is heated, through a method called retorting, it generates oil and gas. A rich deposit will hold up to 25 gallons of shale oil per ton.

Where is it? The largest and richest deposits of oil shale in the Nation lie beneath the three intersections of Colorado, Utah, and Wyoming in vast underground deposits. Of Colorado's oil shale deposits, about 75 percent are on public lands managed by the Bureau of Land Management, placing the Federal Government in a key position for stimulating oil shale development.

How much is there? Oil shale deposits for the three-State area could potentially yield more than 2 trillion barrels of shale oil. This is more potential

crude oil than exists in the Middle East and is about 100 years of oil supply at its present rate of consumption.

How do we get it? Before oil shale can be refined, it must be minced and crushed. Recently, oil shale developers have begun experimenting with shale oil extraction using an *in-siter* or "in place" process, to reduce costs and environmental problems.

What are the issues? The major capital investment necessary and air pollution and water pollution seem to be the major concerns.

Uranium

What is it? Uranium is the heaviest naturally occurring radioactive element found in nature. It occurs in two forms. The lighter form, uranium 235, is fissionable and is used in all nuclear powerplants. The heavier form, uranium 238, is used as fuel for breeder reactors.

Where is it? Colorado's uranium deposits lie mainly in the western part of the State, along the Utah border.

How much is there? Of the six States producing uranium, Colorado ranks fourth, producing nearly 1.7 million pounds in 1976.

How do we get it? New methods, including conventional and solution mining (a leaching technique), are being used to recover both newly discovered uranium and deposits as well as lower grade deposits in older mines.

What are the issues? The development of uranium mines is an extensive and expensive process. The continued growth of this industry will depend on the government and public attitude toward the further development of nuclear plants. Resolving the problems of the disposal of uranium mine tailings and the storage of spent nuclear-reactive fuel are additional issues.

Solar Energy

What is it? The sun is like a continuous reactor; the energy it produces is transmitted to earth in the form of radiant light waves. The light waves are absorbed and transformed into heat or thermal energy when they strike objects. When this heat is collected or trapped, solar energy is made available. Solar "power," on the other hand, is produced when the sun's radiant energy is converted directly into electricity or chemical power.

How much is there? The amount of heat that reaches the earth's surface is enormous. The technology to convert this energy for broad use has not yet been developed to make it competitive with oil and natural gas energy.

How do we get it? A solar energy collector is used to gather or concentrate radiant energy. Once solar energy is collected and converted to heat, a "working" medium of water, air, or some other substance can be used to transport the heat for storage.

What are the issues? Presently, the major constraint preventing the wide use of solar power is the high initial construction costs. However, as the price of fossil fuels continues to rise, solar energy will become more attractive.

Electricity

What is it? While electricity is not a "natural" energy source (part of nature), it nonetheless plays an important role in meeting society's energy wants. Commercial electric power is produced by utility firms that convert the energy stored in natural sources such as coal, natural gas, oil, nuclear fuels, and water.

What is it? It is generated by hydroelectric dams, coal-fired generating plants, and nuclear plants; in all there are 36 plants in the State.

How do we get it? Electric utilities cooperate through a distribution system made up of a number of firms with interconnected transmission lines.

What are the issues? The increase in the number of "brownouts" and "blackouts" is a major concern. The water requirements are another issue of major proportions. In Colorado where the competition for water is already under a strain, cooperation between power developers and water users is essential.

Implications of Energy Development

What are the implications for the citizens of Colorado as the result of the foregoing information, particularly for women and minorities? Will the new "gold rush" bring with it a host of problems and ills that a price must be paid for in the future? Or will those in charge, the policymakers, both in the public and private sector, have the courage and intellect to confront the issues now, to make rational decisions, decisions based on ethics, prudent concern, and commitment to reach equality?

Traditionally, the government and private enterprise have ignored and been insensitive to the needs or views of women and the minorities. Both government and the private sector, until recently, have

denied women and minorities access to the higher echelons of management, thereby effectively eliminating the opportunity for them to have a voice in the policy or planning process. Though some progress has been made, parity for either women or minorities is still too far away.

The issue of energy development and its impact on the Rocky Mountain region will create problems in the following areas:

- Housing
- "Boomtown" effect
- Rise in alcoholism and drug abuse
- Burden on local municipalities
- Inequities in the tax structure
- Schools
- Transportation
- Planning
- Environment

How, then, do the Chicanos, or a people, contend with these complex and important issues? The issues of energy development, energy policy, energy utilization, and energy sources are baffling and yet must be understood if Chicanos are to participate in the "American dream."

We offer the following recommendations:

1. The creation of a regional council on energy development with representation for the following:
   - Women
   - Each ethnic minority (i.e., Native American, black, Chicano)
   - Leaders in private industry
   - State and Federal energy officials

The purpose of the council would be:

1. To advise, monitor, and make appropriate recommendations to the respective agencies or industry regarding concerns of the council's constituents.
2. In cooperation with and with assistance from the United States Department of Labor, the State division of employment, the manpower program (CETA), and private energy companies, identify occupational areas of needed skills and set up appropriate training programs to match.
3. Creation of a centralized data and information system containing information on programs, regulations, changes, and contracts in the area of energy, whether in the public or private sectors.
4. Newsletter with bulletins on jobs, issues, programs, regulation changes, etc.
5. A "set-aside" program for women and minority vendors/contractors on all jobs utilizing public monies.
6. Better coordination for sharing and distribution of materials on energy conservation to the local community—e.g., community organizations, media, etc.
7. A strong recruiting program for management-level positions in both the government and private sectors.
8. Staff development—to develop awareness and sensitivity for the needs of women and minorities.
9. Periodic conferences to review and make necessary recommendations.

In conclusion, it is no easy task to address the question of "energy and its impact on women and minorities." To attempt to address the question of energy as an issue of its own, more specifically here in Colorado, calls for an examination of the current situation, which we attempted to do.

History, attitudes, and conditions sometimes prevail or dictate what is and not what ought to be. We have here, however, a unique opportunity to correct and redress past injustices or mistakes. Because the question or issue of energy resources and development is recent in its occurrence, the opportunity exists for involvement and real participation by those who have heretofore been left out of the mainstream.

Recognize it or not, this nation will be put to the test on the matter of energy and its implications. To overcome the challenge will necessitate the support, ingenuity, and efforts of *all* its citizens.

One last thing. Mexico is purported to have, and by some very solid experts, what may be the world's greatest oil and gas reserves. The significance to this country of these findings should be apparent. What could be better than to send on a exchange basis, or for trade or development, representatives from this country who understand and can relate to the Mexican businessman or official?

Operation Grubstake

By Lawrence H. Borom*

Introduction

The middle of the 1970s has been marked by two converging forces that have impacted our nation dramatically: the energy crisis, which in part was exacerbated and highlighted by the decision of OPEC (Organization of Petroleum Exporting Countries) to artificially raise the world price of petroleum, and the resulting and simultaneous economic crisis during which unemployment of black workers[1] reached its highest level since the Great Depression of the 1930s.

Several major policies have been put forward by successive national governmental administrations to solve these problems, to decrease the dependence of the United States on foreign petroleum through an intensive development of resources in this country ("Project Energy Independence"), and recently, to switch, for the short term, to less environmentally desirable energy sources, e.g., coal.

On the problem of continuing high levels of black unemployment, the CETA (Comprehensive Employment and Training Act of 1973) was developed to provide manpower training and services to the chronically unemployed and underemployed.

In the Intermountain West where significant supplies of the Nation's fuel reserves are found, U.S. Region VIII[2] produced 9 percent of the Nation's crude petroleum in 1976 (262,431,000 of 2,976,180,000 barrels) and accounted for 6 percent of the Nation's known reserves as of December 31, 1977.[3] The challenge is to join these two solutions to produce a valuable contribution to the economy, by both increasing energy supplies and at the same time developing the skills and utilization of black and other minority workers, who are currently the most unemployed sector of the region's manpower resources. (See table 1 for further projections of new energy facilities in Federal Region VIII.[4])

Operation Grubstake: Origin of a Concept

The Urban League is a 68-year-old social service agency that seeks to equalize social, economic, and spiritual "life changes" for black people and other minorities and the poor. The 31-year-old Urban League of Metropolitan Denver, Inc., has had creating employment opportunities for black and brown workers as its top priority for the last 2 years. This priority was derived from the perpetually higher unemployment rates for minority workers in the State and region, as shown in table 2.

At the same time, Denver has become the "energy capital" of the Intermountain States. The Denver Chamber of Commerce has reported that over 300 energy-related firms have opened offices in Denver since 1975. It can easily be extrapolated that this accounts in a significant fashion, directly and indirectly, for the current shortage in office space in downtown Denver, the current favorable vacancy rate in Denver apartments, the commercial building

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[1] Note: "black workers" will be used interchangeably with "minority workers" or "black and minority workers." Our experience is that all visible minorities encounter much of the same type of response in the labor market and in rural areas of Federal Region VIII, to varying degrees. Certainly, they all face classic minority-majority social conflicts.

[2] U.S. Federal Region VIII is comprised of the States of Colorado, Utah, Wyoming, Montana, North Dakota, and South Dakota.

[3] U.S., Department of Labor, Employment and Training Administration, Region VIII, *Regional Energy/Jobs Newsletter*, vol. 3 (August 1978), no. 4.

[4] U.S., Department of the Interior, Bureau of Mines, "Projects to Expand Fuel Sources in Western States," Circular IC, 8719.

TABLE 1

Planned or Proposed Energy Facilities in Federal Region VIII

	Coal mines	Electric power-plants	Coal conver-sion	Bio-conver-sion	Oil shale	Geo-thermal site	Coal slurry	Uranium facili-ties	Oil-gas facili-ties
Colorado	45	18	1	4	7	11	2	1	—
Montana	9	21	9	—	—	—	1	—	—
North Dakota	9	10	12	—	—	—	—	—	—
South Dakota	—	8	2	—	—	—	—	—	1
Utah	30	22	1	1	3	2	1	3	—
Wyoming	33	11	7	—	—	—	2	11	2
Region	126	90	32	5	10	13	6	15	3
TOTAL	300								

Source: U.S., Department of the Interior, Bureau of Mines, *Projects to Expand Fuel Sources in Western States*, Circular I C 8719.

TABLE 2

Unemployment by Ethnicity in Region VIII and Selected Locations in June 1977 (annual averages)

State/city	Total work force	% unemployed	Black WF	% unemployed
Colorado	1,238,084	5.6	32,832	8.9
Denver	732,183	5.6	27,536	9.2
Utah	551,900	5.3	2,560	10.0
Salt Lake City	254,400	5.1	1,390	10.1
Wyoming	193,000	3.6	941	10.3
				*(nonwhite)
Montana	331,000	6.1	7,000	11.1
North Dakota	272,600	4.6	250	20.0
South Dakota	312,000	3.5	538	10.2
TOTAL	2,898,584	5.6	44,121	9.0

*Black specific statistics not available.

Source: Information from State Affirmative Action Packets, received from Robert Murphy, U.S. Department of Labor, Employment and Training Administration, Region VIII, Oct. 10, 1978.

upswing in Denver, the increase in total employment, and the reduction of unemployment in Denver.

This highly publicized "boom" in opportunities for employment (see *Denver Post* series, "The Energy People," Sept. 18, 1978, eight installments), along with several experiences in attempting to place minority workers in energy-related employment, resulted in the Urban League's development of a proposal, "Equal Opportunity in Energy Resource Expansion Project" (Grubstake), in July of 1977.

In 1976 the Urban League placed 12 minority workers as miners at the Henderson Molybdenum Mine, near Georgetown, Colorado. While this experience was not tied to production of energy, it did require that urban minority workers (10 black, 1 Chicano, and 1 Native American) relocate at least temporarily (in some cases they commuted to Denver on weekends and off days). In the process we learned the following realities of such placements:

1. Each worker was eager to take up the challenge of such a geographical and occupational change (they recruited their friends to join the company in some cases).
2. We were required to loan five of these unemployed workers funds for living costs until payday (Grubstake) for such items as rent, transportation costs, and food.
3. We were unable because of our limited resources to provide the types of social services, community relations, and followup that would have ensured maximum success and retention for these workers.
4. For the most part these workers were successful on the job and to our knowledge encountered little overt hostility and intergroup conflict on the job. (We have inadequate knowledge of the quality of their community experiences in Georgetown.)

During 1977 we had occasion to place several black workers with railroad companies in Wyoming, with similar results.

We proposed in Grubstake to engage in the following activities to facilitate such "nonurban" placements of minority workers in energy-related jobs:

We would conduct a pilot program on a 3-year basis that will seek to:

1. Identify potential opportunities in skilled and unskilled occupations in the coal, solar energy, electric utility, and synthetic fuel industries in metropolitan and "out-State Colorado."
2. Initiate contacts with private energy-producing firms and assist them in developing meaningful affirmative action, EEO programs that will integrate minorities into both their administration and research facilities (Metro-Denver) and their rural or out-State production facilities.

The proposed methodology would be one examining the firm's existing work force and the number of minorities in the various occupations, their geographic locations, and other important variables.

Where the data suggest nonemployment or a low level of minority employment, the project staff would assist the firm in arriving at realistic figures for minority hires in capacities that the Urban League could successfully recruit for. These would be mutually agreed to along with a date certain.

3. Engage in extensive education of Colorado's nonwhite communities regarding job opportunities in Colorado's energy research, production, and processing industries.
4. In the first year of the project, to: *recruit and make 50 direct and indirect placements* (at all levels) from Colorado's nonwhite communities. Some of these workers will relocate to concentrated development areas for semipermanent or permanent residence and employment in the energy industries. Additional placement goals in subsequent years will be on the experience in "Year One." But present projections are for *70 in Year II and 100 in Year III.*

At this time we cannot estimate what percentage of the clients would be placed in "out-State" work sites and what percentage in Metro-Denver offices. However, we do propose to direct placement efforts to both locales. This will be in conjunction with recruiting of professional, skilled, and unskilled applicants.

5. Engage in extensive community relations efforts to assure successful and satisfying working and living experiences for nonwhite workers and their families in Colorado's energy development areas.
6. Engage in extensive, sensitive, public information programs regarding project efforts.
7. Conduct a followup and family relocation assistance program to aid successful family functioning of relocated workers in new communities,

including the administration of a family "Grubstake" or "Energy Opportunity Grant Fund" affording a $500.00 grant to unemployed workers who qualify. Criteria will be:

a. Residents 60 days or more in State
b. Head of household with one or more dependents
c. Unemployed/underemployed
d. Commitment to 6 months on the new job
e. Nonwhite status of family head

Benefits

8. Reduce minority unemployment and reduce the social costs of urban unemployment.
9. Increase and make more equitable the distribution of employment opportunity in the State.
10. Create healthy population mixtures in expanding communities.

Specific Program Description/Linkages

Under the proposed solution, the Urban League of Metropolitan Denver, Inc., through various sources involved in manpower programs[5] would provide: recruitment, intake, counseling, job development, job placement (direct/indirect—OJT), supportive services (referral), residential support, post-placement services, followup, and public/community relations.[6]

The Urban League of Metropolitan Denver through its project Grubstake (GSP) would recruit professionals and nonprofessionals for direct and indirect placement slots. Recruitment would include involved agencies, as well as walk-ins. The Urban League of Metropolitan Denver, Inc., through NUL-stated programs would receive technical assistance through NUL Office of Manpower Development and Training (OPDT) under its Title III DOL contract (U.S. Department of Labor).

Projected Employment Opportunities in U.S. Federal Region VIII in Energy Industries, 1976 to 1985

According to U.S. Department of Labor statistics, from 1976 to 1985, 7,654 construction jobs and 7,251 operation jobs will be created in Colorado alone in electric powerplants, coal conversion/gasification plants, and coal mining (surface and underground), for a total of 14,905 jobs. For Region VIII, in these three industries, 70,412 jobs will be created (see tables 3–8).[7] (Projections in the region for crude oil and natural gas production, uranium mining, and solar energy through 1983 are too inconclusive to include, but certainly produce additional jobs.)

If the formulation often used by economic planners of three jobs indirectly created for every new job directly created prevails, we are looking at direct and indirect jobs created in Region VIII by energy development totaling 281,648 between 1976 and 1985.

When counterposed against total reported unemployed in Region VIII, June 1978, of 155,200,[8] and even taking into consideration continued growth (over the 9-year period) in the labor force, it is obvious that the job opportunities in energy-related industries and supportive services could be a major factor in reducing unemployment for all the region's unemployed and are especially critical for the urban minority unemployed (see table 2 for the total minority labor force unemployed in the region in June 1978).

Dr. Bernard Anderson of the Wharton School, University of Pennsylvania, postulates that black workers improve their status in occupational fields based on factors of "level and rate of growth of employment in the field."[9] These growth fields discussed above could represent significant opportunities for black and minority workers if efforts of the public and private sectors combine to increase job awareness, training opportunities, and resources among their primary job services agents to secure careers for such workers in occupations directly and indirectly expanded through new energy production.

Barriers to the Employment of Minorities in Energy-Related Industries in the Intermountain West

"If the company would stand behind its black workers, we wouldn't have to take all the insults we get out in small towns" (statement of a black oilfield worker in an interview, October 1978).

While many public policy questions will affect the final reality of employment projections such as those

[5] Federal Register, Part III, Department of Labor, June 25, 1976.
[6] Ibid., p. 26355 (95.33)(2)(i) & (6).
[7] Robert J. Brown, Regional Administrator, Employment and Training Administration, U.S. Department of Labor, Region VIII, "Energy-Employment: The Critical Dependency in the U.S. Economy" (paper delivered to the National Commission for Manpower Policy, San Francisco, Calif., Oct. 14, 1976), tables 1 though 6.
[8] *Regional Energy/Jobs Newsletter.*
[9] Bernard E. Anderson, "Energy Policy and Black Employment: A Preliminary Analysis" (paper prepared for presentation to the Allied Social Sciences Annual Meeting, Chicago, Ill., Aug. 29, 1978), p. 12.

TABLE 3

Underground Coal Mining, Employment Requirements/Operation,[1] Federal Region VIII, 1976-85

Occupation	Wyoming	Utah	Colorado	Region
Continuous miner operator	106	473	240	819
Loading machine operator	106	473	240	819
Machine operator helper	106	473	240	819
Shuttle car operator	210	955	589	1,754
Roof bolter	210	955	589	1,754
Bratticeman	106	473	240	819
Utility man	106	473	240	819
Mechanic (section)	106	473	240	819
Electrician	41	183	100	324
Supply motorman	23	109	57	189
Beltman	70	301	149	520
Trackman	36	170	81	287
Wireman	36	170	81	287
Mason (precision)	39	179	89	307
Pumper	11	58	36	105
Utility crew	64	294	130	488
Roving mechanic	34	169	84	287
Fireboss (union)	11	59	40	110
Lampman	11	60	35	106
Front-end loader operator	10	48	26	84
Shop mechanic	31	153	69	253
Superintendent	4	12	14	30
General mine foreman	4	11	15	30
Assistant mine foreman	11	47	32	90
Section foreman	106	473	241	820
Maintenance superintendent	5	13	18	36
General shop foreman	5	15	14	34
Mine maintenance foreman	11	50	32	93
Chief mine engineer	5	13	17	35
Draftsman	5	16	15	26
Survey crew	11	45	35	91
Safety director	5	15	15	35
Safety inspector	11	53	36	100
Dust sampler	11	51	35	97
Office manager	5	12	15	32
Timekeeper & bookkeeper	5	16	15	36
Purchasing supervisor	5	14	16	35
Warehouseman	16	76	50	142
TOTAL	1,698	7,633	4,210	[illegible]

[1]Direct employment requirements

Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

TABLE 4

Surface Coal Mining, Employment Requirements/Operation,[1] Federal Region VIII, 1976-85

Occupation	Colo.	Mont.	N.D.	Utah	Wyo.	Region
Dragline or shovel op. (O)*	54	45	27	19	132	277
Dragline or shovel oiler (O)	53	45	27	19	132	276
Bulldozer op. (O)	54	53	35	27	150	319
Driller (O)	63	68	32	18	185	366
Driller helper (O)	63	68	32	18	184	365
Bulldozer op. (w/drills)	48	49	31	23	142	293
Shooter (O)	18	15	9	7	44	93
Explosive truck op.	17	15	9	7	48	96
Driller (C)	4	8	8	8	21	49
Driller helper (C)	4	8	8	8	20	48
Shovel op. (C)	34	22	18	13	76	163
Shovel op. oiler (C)	33	22	18	13	76	162
Front-end loader op.	34	22	18	13	76	163
Shooter (C)	4	8	8	8	20	48
Pitman (C)	33	19	18	13	76	159
Truckdriver (C)	117	96	86	69	332	700
Road grader op.	33	29	18	13	88	181
Water truckdriver	17	14	9	7	44	91
Lubrication truckdriver	50	42	27	19	122	260
Supply truckdriver	50	42	27	19	132	270
Mechanic	142	126	81	55	428	827
Electrician	74	62	40	28	200	404
Welder	69	62	40	28	200	399
Machinist	13	18	18	18	36	103
Wheel tractor scraper	66	62	36	25	200	389
Bulldozer op. (reclam.)	66	62	36	25	200	389
Utilityman	101	78	54	37	264	534
Superintendent	10	3	2	3	14	32
Gen. pit foreman	16	13	8	6	44	87
Pit foreman	50	35	27	19	132	263
Maintenance supt.	10	12	4	3	24	53
Maintenance foreman	23	14	14	10	62	123
Mining engineer	9	6	4	4	26	49
Safety inspector	22	13	14	10	62	121
Office manager	11	3	4	3	24	45
Purchasing agent	10	4	4	3	24	45
Timekeeper	10	4	3	3	24	44
Bookkeeper	10	4	3	3	25	45
Warehouseman	23	17	15	10	62	127
TOTAL	1,518	1,288	872	634	4,146	8,458

*(O) is overburden; (C) is coal.

[1]Direct employment requirements.

Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

TABLE 5

Electric Powerplants, Employment Requirements/Construction,[1] Federal Region VIII, 1976–85

Occupation	Colo.	Mont.	N.D.	S.D.	Utah	Wyo.	Region
Boilermaker	1,287	765	745	200	1,550	673	5,220
Carpenter	309	184	179	48	372	173	1,265
Cement finisher	52	31	30	8	62	24	207
Electrician	824	490	477	128	992	663	3,574
Iron worker	258	152	149	40	310	156	1,065
Laborer	410	245	238	64	496	302	1,755
Millwright	258	152	149	40	310	241	1,150
Oper. engineer	412	245	238	64	496	215	1,670
Painter	52	31	30	8	62	59	242
Pipefitter	927	551	536	144	1,116	738	4,012
Teamster	103	61	60	16	124	81	445
Other	258	153	149	40	310	271	1,181
TOTAL	5,150	3,060	2,980	800	6,200	3,596	21,786

[1]Direct employment requirements.
Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

TABLE 6

Electric Powerplants, Employment Requirements/Operation,[1] Federal Region VIII, 1976–85

Occupation	Colo.	Mont.	N.D.	S.D.	Utah	Wyo.	Region
Plant mgr.	4		3	1	4	3	15
Plant supt.	3	1	2		3	2	11
Results engr.	4		3	1	4	4	16
Operations spvr.	4		3	1	4	4	16
Shift spvr.	19	1	14	4	19	18	75
Mnt. spvr.	4		3	1	4	4	16
Elec. & mnt. spvr.	4		3	1	4	4	16
Plant eng.	4		3	1	4	4	16
Chem. pro. eng.	4		3	1	4	4	16
Office spvr.	4		3	1	4	4	16
Warehouseman	11	1	8	2	11	11	44
Clerical	11	1	9	2	10	11	44
Custodian	4		2	1	4	4	15
Control rm.	32	12	20	4	36	40	144
Asst. cont.	20	4	12	4	24	28	92
Equip. op.	32	12	20	4	36	40	144
Boiler att.	76	22	48	12	86	96	340
Lab. tech.	20	2	15	5	20	20	82
Yard op.	15	12	11	3	15	15	71
Coal op.	32	4	20	4	36	40	136
Coal yard men	18	9	13	3	18	18	79
Laborers	28	5	18	4	31	34	120
Relief op.	14		8	2	17	20	61
Welder	13	4	8	2	15	17	59
Mach.	4		3	1	4	4	16
Lead mech.	4		3	1	4	4	16
Mech. I	41	16	25	5	47	53	187
Mech. hlpr.	49	18	31	7	55	61	221
Lead elec.	3	2	2		3	3	13
Elec. I	13	4	8	2	15	17	59
Elec. II	27	8	18	4	29	31	117
Lead inst.	4	2	4	2	3	3	18
Inst. I	13	3	10	4	13	14	57
Inst. II	19	4	11	1	23	25	83
Appr. inst.	6		2		4	4	16
Paint & mtlsm.	26	7	19	5	28	29	114
TOTAL	589	154	388	96	641	693	2,561

[1]Direct employment requirements.

Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

TABLE 7

Coal Conversion-Gasification Plants, Employment Requirements/Construction,[1] Federal Region VIII, 1976–85

Occupation	Colo.	Mont.	N. Dakota	Wyoming	Region
Carpenter	166	332	332	332	1,162
Cement cons.	37	74	74	74	259
Iron worker	143	286	286	286	1,001
Laborer	197	394	394	394	1,379
Millwright	14	28	28	28	98
Exc. equip. op.	153	306	306	306	1,071
Pipefitter	723	1,446	1,446	1,446	5,061
Electrician	257	514	514	514	1,799
Asbestos worker	114	228	228	228	798
Painter	50	100	100	100	350
Sheet metal worker	9	18	18	18	63
Mason	3	6	6	6	21
Teamster	48	96	96	96	336
Drafting	50	100	100	100	350
Surveying	15	30	30	30	105
Boilermaker	155	310	310	310	1,085
Welder	120	240	240	240	840
Engineer	250	500	500	500	1,750
TOTAL	2,504	5,008	5,008	5,008	17,528

[1] Direct employment requirements.

Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

TABLE 8

Coal Conversion-Gasification Plants, Employment Requirements/Operation,[1] Federal Region VIII, 1976–85

Occupation	Colo.	Mont.	N. Dakota	Wyoming	Region
Operator	50	100	100	100	350
Helper	38	76	76	76	266
Controlman	15	30	30	30	105
Pumper	13	26	26	26	91
Utilityman	7	14	14	14	49
Fireman	7	14	14	14	49
Foreman	20	40	40	40	140
Instrument tech.	35	70	70	70	245
Mechanic	28	56	56	56	196
Equip. op.	32	64	64	64	224
Welder	38	76	76	76	266
Bricklayer	24	48	48	48	168
Bricklayer helper	24	48	48	48	168
Electrician	35	70	70	70	245
Electrician helper	35	70	70	70	245
Carpenter	25	50	50	50	175
Painter	24	48	48	48	168
Pipefitter	38	76	76	76	266
Pipefitter helper	38	76	76	76	266
Mechanic	38	76	76	76	266
Mechanic helper	38	76	76	76	266
Master machinist	32	64	64	64	224
Gen. maintenance	76	152	152	152	532
Foreman	60	120	120	120	420
Management	18	36	36	36	126
Sales	7	14	14	14	49
Personnel dept.	6	12	12	12	42
Accounting	9	18	18	18	63
Safety	3	6	6	6	21
Medical	3	6	6	6	21
Maintenance	13	26	26	26	91
Security	18	36	36	36	126
Secretarial	13	26	26	26	91
Warehouse	13	26	26	26	91
Office service	6	12	12	12	42
Engineering & technical	55	110	110	110	385
TOTAL	934	1,868	1,868	1,868	6,538

[1]Direct employment requirements.

Source: U.S. Department of Labor, Employment and Training Administration, Region VIII.

above, *jobs there will be!* As is the case historically in this country, the extent to which black and other minority workers participate in the process of energy production will surely boil down to determined public intervention in the hiring and training process, and the resultant changes in labor market behavior by the private sector. There are formidable barriers that currently exist to the disadvantage of black workers who choose to gain employment in energy jobs.

1. Energy producers have, in my educated observation, been "undermonitored" by governmental "affirmative action" compliance agencies, from the U.S. Atomic Energy Commission to the Energy Research and Development Administration (ERDA), to the Department of the Interior. As such, the black and brown work force employed by such industries is among the smallest percentage-wise in any industry in the country. In 1970 blacks made up only 2.9 percent of workers in coal mining and 2.5 percent of workers in natural gas production.[10] Our observation of affirmative action programs in such industries is that they are wholly lacking in impact. Racial discrimination and exclusion seem to be the order of the day.

2. Energy production takes place, in most cases in the region, in locations remote from the metropolitan areas where most black workers live. Seventy-two percent of Colorado's black population lives in the Denver metropolitan area. Only one of the energy-impacted counties of Colorado's western slope had a significant minority population in 1975 according to the U.S. census (Mesa County with 421).[11] While there is an indication of the historic presence of black and brown workers in nearly all of Region VIII's towns and locales, with the exception of Native Americans and Hispanics in some specific locations, the present demography shows that energy-impacted sites in Region VIII are for the most part white or Anglo populated. There are reports of significant public accommodation and institutional discrimination against minorities in these locales. A major community relocation effort would seem to be needed if these energy-impacted towns are to be made hospitable to black and brown workers and their families.

3. *Lack of Information on Jobs in Energy:* To our knowledge at the Urban League of Metropolitan Denver, no agency or organization, public or private, provides minority workers or their families with information on jobs available in the energy industries as a major function of that agency. Certainly there are no social service agencies in Denver, besides the Urban League, that have this emphasis. Our resources are so strained, however, that at this time our ability to provide adequate counseling on such occupations is limited. We have proposed "Grubstake" as a partial answer to the problem of providing a central agency that can serve as a clearinghouse on job information for Colorado and, with proper funding, for the whole region.

Further, we have observed that while the energy production boom is much publicized, neither public nor private agencies, including schools and institutions of higher education in Colorado and the rest of Region VIII, make an "affirmative action" effort to give special counseling and information to minority-group students and workers relating to jobs in energy industries. An energy job information and service center such as we have proposed could link with other institutions to remedy this paucity of information in minority communities. Lastly, as in other occupations, since insignificant numbers of minority workers live near, or have relatives or friends working in energy production, the minority worker has only vague ideas of the job opportunities that exist in energy-producing industries.

4. *Lack of seed money funds for minority workers to relocate:* Unless "grubstake" funds are available to the unemployed, urban minority workers to relocate, there will be no likelihood that significant numbers will migrate to towns and counties where production exists. We have proposed a grant and loan fund of up to $500 per individual family. Perhaps a revolving loan fund is the most optimum solution to workers' "front-end needs." A demonstration of several alternatives would be useful to achieve an understanding of workers' needs, costs involved, motivational factors, etc.

5. *Job Training Needs:* Half of the jobs discussed above (tables 3–8) are construction jobs; the other occupations range from operatives to technicians to professionals. It is obvious that extensive job training programs will be needed to adequately move employed and underemployed minority workers into the upper categories of unemployment created by expanded energy production. However, a good number of these occupations involve "on-the-job"

[10] Ibid., table 4.
[11] U.S., Department of Commerce, Bureau of the Census. *Colorado Counties with Significant Minority Populations* (1975).

training and/or involve skills or experience already possessed by the urban minority unemployed—e.g., warehousemen, office managers, purchasing supervisors, bulldozer operations, truckdrivers, bookkeepers, laborers, (construction), clerical workers, laborers (operation), painters, general maintenance, sales, security, etc.

CETA funds should be extensively used by prime sponsors to prepare workers for jobs that indicate growth of demand in energy industries. The current opportunities for minority apprentice and preapprentice training should be gradually increased to meet the projected demand level, with emphasis on those minority workers who are willing to relocate, at least for significant periods, in energy-impacted areas.

Basic skills and education programs such as Opportunities Industrialization Centers (OIC) should be expanded for pretraining needs of disadvantaged, urban minority workers, thus broadening the pool of "trainable" minority workers who could be recruitable for energy occupations. Pre-high school, career, and vocational education programs should be instituted in urban school systems in the region, which would adequately orient minority youngsters to the occupational choices that are projected to be available through expanding energy production.

6. *Social Barriers:* The energy "boomtowns" of the Intermountain West, and projected "boomtowns," can be characterized as localities that have major shortages of social and environmental assets that are desirable for all families—housing shortages, medical services gaps, school and recreational shortages, public services, etc. Black and minority workers will likely have short shrift in competing for these resources unless public policy intervenes to assure equal opportunity in these heretofore all-white communities.

Along with the community relations programs mentioned above, current efforts to provide aid to such communities by Federal and State agencies must be accelerated to produce "livable" environments for all workers.

Anticipated Minority Worker Response to Opportunities in Energy Production Employment in Rural Areas in Region VIII

Black workers have been highly mobile throughout this country's history and especially since the early 1900s. The mass exodus from the rural South to the industrial Northeast and Midwest at the beginning of this century was in fact the impetus for the creation for the National Urban League and was what social scientists describe as one of the major population migrations of this country's history. Two obvious factors motivating black workers' mobility have been and continue to be poverty and discrimination in their current community and the prospects for greater economic opportunity in another locale. Areas with job opportunities and anticipated social access to the "good life" draw black and minority workers as they do others, and the Western States, at least the large cities in Colorado and Utah, have had significant attraction to black workers.

Denver's black population has grown from 15,055 in 1950[12] to an estimated 80,000 in 1978,[13] with a 70 percent growth from 47,011 in 1970 to 80,000 in 1978.[14] Colorado Springs' black population has grown to 18,000 in 1978.[15] An unofficial estimate of black population in Utah is 14,000 in 1978, largely residing in Salt Lake City and Ogden.

Craig, Colorado, and Douglas, Wyoming, are no more remote to Intermountain West blacks than Salt Lake City was to Mobile, Alabama, black people 10 years ago; and, again, if there is the promise of better social and economic conditions in Craig and Douglas, some black workers will respond.

The Urban League of Metropolitan Denver has received approximately 30 inquiries per month (estimate) from black workers who are interested in energy jobs over the last year. We feel that the growing number of inquiries relates to an increasing awareness by black workers of the potential energy employment opportunities, our publicization of the Urban League's interest in these jobs for blacks and minorities, and the interest of black workers in improving their job status by entering an emerging field of work. Put simply, if public policy on affirmative action, expanded energy employment, and assurances of reasonable social justice converge, there is reason to believe black workers will venture

[12] Ibid
[13] Denver City Planning Office, unofficial estimate, 1978.
[14] Ibid
[15] Estimate, Charles Guy, executive director, Urban League of the Pikes Peak Region, 1978.

into these rural and semirural places for temporary and permanent jobs and living opportunities.

As one young black worker told me, "I believe the Urban League should continue to push for jobs in energy production for black people because I have two younger brothers in the slums of Atlanta whom I want to have the choice of coming out here [Colorado and Wyoming] to make $7.00 an hour just like these white boys." (Conversation with a client, October 1978.)

Social Acceptance for Black Workers in Rural Intermountain Western Towns

In 1962, IBM opened a major fabrication and manufacturing plant in Rochester, Minnesota. The plant was to hire approximately 3,000 employees. IBM officials began to work with St. Paul Urban League officials in 1964 to begin a major effort to integrate that facility's work force.

Rochester had been a nearly all-white, affluent town, heavily influenced by the Mayo Clinic, which was the major employer. The tiny population of black residents was ghettoized and confined to service jobs. IBM, with the Urban League's assistance, began to recruit and hire black workers at all employment levels in their facility. At the same time, IBM officials began an intensive effort with community leaders, service clubs, Mayo Hospital officials, and city government to get support and endorsement for integrating Rochester as a community.

Significant success was made in creating a climate of official acceptance of minority workers in Rochester, and, even though racial incidents and intergroup conflict flared in a number of situations over the ensuing years, some of the black families that relocated in Rochester from throughout the upper Midwest have remained.

This anecdote is offered to indicate that penetration of currently all-white communities in Region VIII by black workers will be more or less successful based on the degree of planning, community relations, followup, and involvement by private, public, and civic institutions that have responsibility to ensure good community reaction and relations and equal opportunity.

There will assuredly be racist reactions as well as positive reactions. On the other hand, Denver (and New York City) are not absent such negative responses. Some black workers will find ways of penetrating such communities with or without public intervention. Individual communities and their citizens will react in a variety of ways based on any number of unpredictable factors, including community leadership attitudes, economic base, the status and role of black workers, age and cultural background of black and white workers, the posture of city or town officials, the number of black workers immigrating, and the sex and marital status of the black and white workers.

Summary

Federal Region VIII contains "about one-half of the Nation's coal reserves, all of the commercially interesting oil shale, about 93 percent of the uranium reserves, extensive geothermal resources, hydroelectric, gas and oil reserves."[16] Whatever Federal policies regarding energy production and uses are finally hammered out in Congress, the immediate future and long-term expectation is for an expanded production of Region VIII's energy reserves. The current work force is not adequate to exploit fully Region VIII's energy reserves, either numerically or in terms of skills required. Unemployed and underemployed minority workers in the region's metropolitan areas should be recruited and trained to assure their receipt of equal opportunity to fill the region's energy manpower needs. An extensive educational and community relations effort will be required to assure social justice and acceptable social environmental conditions for minority workers in rural areas of the region, where much of the energy production will take place.

Due to the many public, Federal, and State funds and resources involved in energy production in Region VIII, and the Federal contractor status of most energy producers involved, aggressive affirmative action equal employment programs are necessary and required by the Civil Rights Act of 1964 and Federal Executive Order 11246, as amended.

The Urban League of Metropolitan Denver's Grubstake proposal represents the only current proposal for a comprehensive approach to managing the entry of significant numbers of black and other minority workers into energy production. Appropriate public intervention is required, including enabling funding to the Urban League and other minority manpower and social services agencies in

[16] Brown, "Energy-Employment," pp 1 and 2

the region, if minority workers are to receive a reasonable share of the benefits that will accrue to workers in the region due to increased energy production.

Concluding Notes

This paper is intended as a discussion of the issue of black and minority workers' role in the production of energy resources in Federal Region VIII. It is certainly not exhaustive, and much more research, planning, and development of appropriate manpower systems and policy decisions will be required if equal opportunity is to occur in energy production in Region VIII. It is hoped that this report will stimulate necessary action in the public and private sectors of the region to bring equal employment opportunity about.

Energy Development in the Intermountain West—Its Impact on Women and Minorities

By Patricia Schroeder*

To confront and resolve our national energy problems, programs to conserve energy are being developed, and new energy sources and projects are being discovered and constructed. In the Rocky Mountain area and the northern Great Plains, coal and oil shale are the most promising sources of energy. However, construction of new energy projects in these areas and other areas throughout the country has resulted in a traumatic transformation in the small, rural communities where the projects are located. The small, relaxed community where everyone knows his or her neighbor is transformed, almost overnight, into a community of unfamiliar faces, noise, congestion, and confusion—an energy "boomtown."

Construction of new energy projects can provide benefits to the communities in which they are located by expanding the economic base of those communities, thus providing greater employment opportunities. But local communities may suffer immediate negative impacts while the region as a whole will enjoy long-range economic benefits.

An immediate problem in the boomtown is that of housing. All available housing is taken and mobile homes appear, spread, and scatter across the land, creating "aluminum ghettos." It is not the mobile home itself that is the problem, but inadequate planning, lack of control over siting, and few amenities.[1]

While housing is an immediate concern in the boomtown, other problems follow. Overcrowded schools, traffic congestion, need for additional tax money to provide for services to the expanded community, sewage problems, alcoholism, lawlessness, and failure of the settled community to assimilate its newcomers are characteristics of the boomtown. Life in the community undergoes an immediate change as symptoms of urbanization occur. Particularly significant are possible tensions between long-time residents and newcomers, and the lack of activities for wives of project workers.[2]

Typical energy projects are shown in table 1, which provides some insight into the rapid population increase in the boomtown and into the risk of a subsequent "bust" after a relatively short period of time when those who come in to develop the area leave after the project becomes operational. Construction workers and their families are the source of the first population boom. Recent experience discloses that between 50 and 75 percent of the construction workers bring their families with them, adding to the population increase and school needs.[3] Following the construction workers are the secondary workers—the support staff or employees needed as a result of the upsurge in employment in the community.

Although several studies of rapid growth brought about by energy development have been made by agencies of the Federal Government and regional, State, and local agencies and organizations, these studies have focused on the physical plant and financing of boomtowns. Although the studies have merit, not one of them is directed to an analysis of the impact of boomtowns and energy policies on

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[1] U.S., Department of Housing and Urban Development, *Rapid Growth from Energy Projects: Ideas for State and Local Action* (March 1976), p. 2.

[2] Ibid.

[3] Ibid., p. 5.

TABLE 1
Typical Energy Projects

Project	Size	Construction time (yrs.)	Peak force (construction)	Operating force
Coal export mine	9M tons/yr.	2-3	175-200	325-475
Electric generating plant (including coal mine)	700 MW 2,250 MW	4-6 6-8	750-950 2,000-3,000	75-100 1,050-1,250
Substitute gasification plant (includes coal mine)	250 mcf/day	2.5-3	3,000-3,500	1,050-1,250
Oil shale processing facility (includes mining)	50,000 bbl/day	3-4	2,400	1,050-1,450
Nuclear powerplant	1,600 MW	5-9	2,500	150
Offshore oil and gas support	Per rig	3-4	175	90
Platform fabrication facility	2 platforms/yr.	5	400	1,000-1,500
Deepwater port	2 mooring spaces	3-4	1,250	75-90
Liquified natural gas (LNG) conversion plant	1,000 mcf/day	2-3	300-400	50-100
Oil refinery	250,000 bbl/day	2.5-3	3,500-4,500	450-900

Source: U.S. Department of Housing and Urban Development, *Rapid Growth from Energy Projects: Ideas for State and Local Action* (March 1976), p. 2.

women, minorities, the elderly who must live on fixed incomes, or on Native Americans. For this reasons, I think the papers prepared for this conference will provide a major contribution to the knowledge of the impact of energy development on women and minorities.

There are some studies, however, of rural economic development that may give us some clues to the impact of boomtowns on these groups. In a 1975 study of the impact of large industry in a rural area where a steel plant was located that created 1,000 new jobs over a 6-year period in an area with 1,700 existing jobs, the following was found:

> that the plant has contributed to raising the level of income and reducing income inequality. However, four groups have not fared as well as the community as a whole—women, those over 65, those with less than a high school education, and those not in the labor force. The industrialization did not prevent the income gap between these groups and the stronger economic competitors from increasing between 1966 and 1971.
>
> Educational attainment increased for males but not for females, in relation to the control area.[4]

While the situation described above is not completely analogous to the boomtown phenomenon, certain comparisons stand out. The only thing mentioned in an earlier study on the impact of the boomtown on women was:

> Boomtowns are often not good places for wives. The wives of construction workers are mostly living in "aluminum ghettos" on the fringe of urban settlements. There are few jobs for women in construction work, and support jobs don't increase as fast as the population. Activities—educational, social, and cultural—are limited, and there may be "culture shock" for those who moved from large urban centers.

[4] U.S. Department of Commerce, *Large Industry in a Rural Area: Demographic, Economic, and Social Impact*, by Gene F. Summers (1975).

Schools may be crowded and recreation limited for children.

In larger, more balanced communities there are job opportunities for women. Boomtowns don't have those opportunities. Little attention has been given to creating jobs for women.[8]

The elderly, 58 percent of whom are women according to the 1970 census, also experience especially severe impacts from the boomtown phenomenon. Moreover, the number of elderly women living alone increased 43 percent during the 1960–70 decade.

Most of the elderly have been in the community for a long time and counted on a quiet retirement in a community they knew. With the rapid growth, the community is no longer quiet and may not be recognizable. Many elderly are on fixed incomes, so the inflation in rents and prices hits them especially hard. If they are renting, it may no longer be possible for them to remain in their communities.[8]

Because the construction jobs resulting from the new energy projects are filled by outsiders, minorities and women already living in the communities are not likely to benefit from the increase in construction jobs.

Energy policy and resource development also have an impact on the Native Americans who own land on which anywhere from 12 to 30 percent of our energy resources are located. Because of the unique fiduciary relationship between the U.S. Government and the American Indians, the Government acts as a legal trustee for the land and water rights of the American Indians. Indian tribes have alleged that the Government is approving leases for non-Indian development of tribal-owned mineral, oil, and gas resources at prices far below competitive market value. The Indian tribes are trying to take the initiative in this matter and renegotiate many leases to give themselves a competitive advantage. In addition, the Indian tribes want to manage and develop these resources.

In an effort to achieve these goals, 25 Indian tribes formed an organization called the Council of Energy Resource Tribes (CERT), which opened an office in Washington, D.C., in 1977 after a 2-year planning period. On October 17 of this year, the Department of the Interior's Office of Surface Mining signed a formal agreement with CERT for a comprehensive $700,000 study of surface mining of coal on Indian lands. According to a CERT magazine, CERT membership claims ownership of 15 percent of total coal reserves in the United States.

Policy Initiatives

While studies have explored the financial aspects of the boomtown phenomenon, they have, for the most part, neglected the problems of women, minorities, and the elderly. Additional studies should be conducted by the Federal Government and by State and local governments to determine the special needs of these groups so that social planning to help meet these needs can be implemented. Also, greater efforts should be made to coordinate Federal energy planning with State and local planning efforts.

In those few studies where the impact of energy policies and boomtowns on women has been addressed, women have been viewed in traditional roles, despite the fact that women now comprise 5 percent of all craft and kindred workers. The studies reveal no attempts to recruit more women for construction jobs, even though more and more women wish to enter the job market in nontraditional professions such as the construction industry. Secondary or support positions, which appear to be reserved for women, pay less than construction positions. To reverse the negative impact of boomtowns on women, efforts should be made to implement affirmative action plans for the recruitment of women into nontraditional jobs, such as those required by the Department of Labor's Office of Federal Contract Compliance Programs (DOL/OFCCP) regulations on goals and timetables for the participation of women and minorities in the construction industry.

There should be greater Federal efforts to provide money in the form of grants or loans to the impacted areas so that social services such as hospital care, alcohol abuse programs, schools, and transportation can be improved. This would help to alleviate the negative impact of the boomtowns on women and minorities. Moreover, low-interest loans could be made available for women and minorities who wish to start businesses in the rapid growth areas.

In the 95th Congress, Senator Gary Hart introduced S. 1493, a bill that would have provided up to $1 billion in loans and guarantees over the next 10

[8] HUD, *Rapid Growth from Energy Projects*, pp. 25–26.

[8] Ibid., p. 25.

years to help defray the costs of new facilities and public programs needed in areas where new energy facilities have resulted in the doubling or tripling of the local population. I support such legislation aimed at alleviating the special problems faced by women, minorities, and the elderly in boomtowns. Congress, in its oversight function, should monitor compliance by the construction industry of the DOL/OFCCP affirmative action regulations.

In its Management Information Service Report of March 1977, the International City Management Association recommended 11 key action steps to assure that critical needs are met in areas experiencing rapid growth caused by energy development. I recommend that these steps be followed as a minimum effort in coping with the boomtown phenomenon.

1. Organize to manage rapid growth—involve citizens, cooperate with other affected governments, and assign responsibility for planning and action.

2. Estimate impacts at a rough level, updating and intensifying review as more information becomes available.

3. Develop a "rapid growth plan," setting up a program and schedule for responding to projected impacts.

4. Adopt industrial zoning and performance standards to control impacts from the energy facility.

5. Adopt mobile home park controls to minimize impacts from population growth.

6. Negotiate with industry to get the best possible offer before approving construction.

7. Encourage industry to hire locally, especially women, and to offer necessary training opportunities.

8. Upgrade salaries, pensions, and training programs to retain present local government employees.

9. Create an operating budget for the life of the project, if possible, and provide for a six-month update.

10. Adopt a Capital Improvement Program:

   a) determining magnitude of capital needs,

   b) setting priorities for construction, and

   c) determining available financing.

11. Plan for temporary services and facilities to cover the population boom/bust phenomenon during construction.

Although these are only the first steps, they are much-needed steps in the right direction. With proper planning and coordination, we can help both the old and new residents of boomtowns cope with the problems of rapid energy development and ensure that there are adequate public facilities and job opportunities for all groups, including women and minorities.

RESERVATION RESOURCES AND THE COUNTRY'S NEED FOR POWER

Coal Development on the Northern Cheyenne Reservation

By Steven H. Chestnut*

Profile of the Northern Cheyenne

Legal History

The Northern Cheyenne—a remarkably proud, courageous, and skilled tribe of warriors—fiercely resisted the white man's march into the Great Plains. The Northern Cheyenne, with the Sioux, defeated Custer at Little Bighorn in 1876 and responded to their subsequent banishment to Oklahoma with a defiant trek back to Montana in 1878 to reclaim their homeland, which is now the reservation. Indeed, it is believed that no other tribe, with the possible exception of the Sioux, played a greater part in resisting the settlement of the Plains.[1]

Unlike most tribes, the Northern Cheyenne were not placed on a reservation until 1884. An Executive order established a reservation of 371,200 acres (immediately to the east of the 3,504,000-acre reservation of the traditional enemy of the Northern Cheyenne, the Crow—who had served as Custer's scouts at Little Bighorn).[2]

Throughout the next 14 years, Congress took no legislative action whatsoever with respect to the Northern Cheyennes. In 1898, to alleviate friction and bloodshed between the Northern Cheyenne and whites on the reservation, Congress directed that an inspector be sent to the reservation to determine the feasibility of transferring the Northern Cheyennes to the Crow Reservation.[3] James McLaughlin—a man with a unique and vast experience in the Indian Service[4]—was appointed by the Secretary of the Interior to conduct this inspection. The following year, 1899, McLaughlin reported his findings.[5] He reported that the Northern Cheyennes were "among the least civilized of the Indian Tribes," and were regarded by the Crows as "uncivilized and aggressive."[6] In his memoirs, McLaughlin noted that he found the Northern Cheyennes to be exceptionally proud and accomplished warriors, whose "advance in the arts of civilization was handicapped by their warlike attributes. . .and they were not curbed for many years after the other warlike tribes had accepted the conditions imposed by the whiteman."[7] McLaughlin concluded that the removal of the Northern Cheyennes to the Crow Reservation was not feasible. He endorsed, instead, the buying-out of the white interests on the reservation and the enlargement of the reservation by expanding its eastern boundary to the Tongue River. These recommendations were adopted.[8]

Congressional activity with respect to the tribe from 1903 until the Northern Cheyenne Allotment Act of 1926 (discussed below) was but nominal and limited. While other reservations in Montana and

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[1] R. Andrist, *The Long Death—The Last Days of the Plains Indians* (1964), p. 70; U.S., Department of the Interior, *Annual Report for 1920*, vol. II, *Report of the Board of Indian Commissioners*, pp. 30-31.

[2] Exec. Order of Nov. 26, 1884, I. C. Kappler, *Indian Affairs—Laws and Treaties* (1904), p. 860.

[3] Act of July 1, 1898, 30 Stat. 571, 596.

[4] *See* J. McLaughlin, *My Friend the Indian* (1963 ed.).

[5] H.R. Rep. No. 153, 55th Cong., 3d Sess. (1899).

[6] Ibid., p. 5.

[7] McLaughlin, *My Friend the Indian*, p. 81.

[8] Exec. Order of Mar. 19, 1903, 32 Stat. 982, 1000.

throughout the country were the objects of individualized allotment acts and other tailored legislation, Congress neglected the Northern Cheyenne.

This congressional neglect was documented in the course of the *Senate Survey of Conditions of the Indians in the United States,* [9] a survey that reexamined Government Indian policies. The Senate investigator sent to the Northern Cheyenne Reservation in 1928 made the following observation:

> The Northern Cheyenne Indians probably are the most primitive among the tribes in the northern part of the United States. With the Sioux, their allies, they were the last Indians to become "pacified" after the Custer battle in 1876. The reservation is isolated, and the fact that it has not been allotted has kept whites away. Consequently these Indians are probably more backward and closer to savagery than any other Montana Indians. They are not well organized and have not importuned Congressmen or Senators for special favors. As a result they seem to have been neglected by the Indian Bureau, and the sanitary and economic conditions existing on the Tongue River [i.e., Northern Cheyenne] Reservation is a damning indictment of bureaucratic indifference. This reservation is literally a plague spot, and the entire Northern Cheyenne Tribe is rotten with disease. . . .The inevitable result is that the health situation on the Tongue River Reservation is steadily growing worse and now has reached a stage so unbelievably bad that it constitutes a black blot on the American flag. We have established sanitary zones in the Philippines and the Caribbean, but the Cheyenne Indians are allowed to slowly perish amid almost indescribable dirt, disease, and general degradation. It is almost incredible that responsible officials of any civilized government should permit such disgraceful conditions in this day and age. . . .[10]

Interestingly, the Senate investigator prophetically noted:

> The entire Tongue River [i.e., Northern Cheyenne] Reservation is underlaid with a thick vein of coal. There are frequent outcroppings. This coal seems to be a cross between lignite and bituminous coal and is of fairly high quality. . . .The coal on the Tongue River Reservation cannot be developed commercially at this time, owing to lack of rail facilities. There is no doubt, however, that some time the coal will prove a valuable asset.[11]

Meanwhile, in 1887 the fate of America's Indian reservations was significantly affected by Congress' enactment of the General Allotment Act of 1887.[12] While many reservations were allotted shortly thereafter, 39 years transpired before Congress adopted an allotment plan for the Northern Cheyenne Reservation in 1926.[13] In fact, the Northern Cheyenne Tribe was the last American Indian tribe to receive allotment. Actual allotment did not commence until 1932, and less than 2 years thereafter—in 1934—Congress chose to terminate the practice of allotment by its enactment of the Indian Reorganization Act.[14]

The Northern Cheyenne Allotment Act of 1926 declares the entire reservation to be the property on the tribe. This was the first explicit congressional confirmation of the tribe's title to the reservation. It endowed the tribe with "recognized" title to the land, a vested property interest.[15]

The 1926 act's allotment provisions authorized limited, 160-acre allotments of agricultural and grazing land to living tribal members. However, the act specifically excluded all minerals from allotment. Initially, this exclusion was to remain in effect for 50 years until 1976, whereupon each allottee was to acquire ownership of the minerals beneath his allotment. However, a 1968 amendment to the act extended in perpetuity tribal ownership of all minerals on the reservation.[16] The constitutionality of this amendment was upheld in *The Northern Cheyenne Tribe v. Hollowbreast.* [17]

Finally, the 1926 Allotment Act, both in its original and amended forms, provides that the Northern Cheyenne Tribal Council may lease reservation minerals for mining purposes, with the consent of the Secretary of the Interior, under the generally applicable regulations and statutes governing leasing of tribal minerals.[18]

[9] Initiated by Sen. Res. 79, 70th Cong., 1st Sess. (1928).
[10] *Hearing on Indian Affairs Before a Subcommittee of the Senate Committee on Indian Affairs,* 72nd Cong., 1st Sess., pt. 23, "Montana," pp. 12841–42.
[11] Ibid., p. 12848.
[12] Act of Feb. 8, 1887, 24 Stat. 388, 25 Stat. U.S.C. §331 *et seq.* (1970).
[13] Act of June 3, 1926, 44 Stat. 690.
[14] Act of June 18, 1934, 48 Stat. 984, 25 U.S.C. §§461–79 (1970).
[15] *See generally* Sioux Tribe of Indians v. United States, 316 U.S. 317 (1942); Confederated Bands of Ute Indians v. United States, 330 U.S. 169 (1947); Hynes v. Grimes Packing Co., 337 U.S. 86 (1949) (dictum).
[16] Act of July 24, 1968, 82 Stat. 424.
[17] 425 U.S. 649 (1976).
[18] 25 U.S.C. §§396g–396f; 25 C.F.R. Parts 171 and 177.

TABLE 1
Affected Acreages (1976)

Land Use	Trust lands	Fee lands	Total	%
Rangeland	290,100	6,000	296,100	66
Forest land	129,800	2,100	131,900	30
Cropland	13,500	1,200	14,700	3
Right-of-way	2,680	—	2,680	<1
Urban or residential	750	—	750	<1
Parks and recreation	470	40	510	<1
Water resources	240	—	240	<1

The Land Today

The Northern Cheyenne Reservation is located in southeastern Montana. It spans 36 miles from east to west and 23 miles from north to south and encompasses an area of 447,000 acres. Two hundred and seventy-two thousand acres (61 percent) are trust lands owned by the tribe; 165,000 acres (37 percent) are trust lands owned by individual Indians; and the remaining 10,000 acres (2 percent) are owned in fee. The subsurface beneath the entire reservation is in the trust ownership of the tribe, except for Burlington-Northern's ownership of coal and iron beneath 5,400 acres (1 percent of the reservation).

The reservation lies within the northern Great Plains region. It consists of grassy, high plains capped by sandstone ridges. There is a thin and fragile covering of topsoil. About one-third of the reservation consists of low hills covered by irregular stands of pine, while the streams are bordered by cottonwood. The reservation landscape is a composite of ridges, plains, hillsides, valley bottoms, and stream courses resulting from thousands of years of natural weathering erosion, without interference by man. The result is a balanced natural landscape, sufficient to provide life-support to its human and animal populations. Reservation land uses are summarized in table 1.

Water is precious on the reservation. For example, long-term records show a reservation-wide average annual precipitation of 15.8 inches approximately. And much of the interior reservation surface water system is essentially no more than adequate to support stock watering, very limited irrigation, and the needs of wildlife. Only the Tongue River, constituting the eastern border of the reservation, promises significant additional water resources. However, the extent of the tribe's claim to this resource remains to be determined in a water rights adjudication currently pending in the Federal district court in Billings, Montana.[19]

Livestock production, particularly cattle ranching, is the primary business activity on the reservation. This consists simply of the grazing of cattle, with an average of 32 acres of land being needed to support the basic unit of production, a cow and her calf. There are no feedlots on or near the reservation. The rancher trucks his fattened cattle to Billings or Miles City for sale. There is much room for improvement in the economics of reservation ranching. However, it is vital to note that reservation ranching is virtually the exclusive province of *Indian* ranchers—in sharp distinction to the situation obtaining on other Indian reservations in Montana and elsewhere, where ranching tends to be dominated by non-Indians. There is no question that ranching is the backbone of the Northern Cheyenne economy and will remain so in years to come.

On the other hand, farming has traditionally been, and remains at present, of minimal significance to the reservation economy. However, to the extent it does exist, it is dominated by *Indian* enterprise. A recent significant development has been the establishment under the aegis of the tribe of a demonstration farm covering approximately 700 irrigated acres.

[19] Northern Cheyenne Tribe v. Adsit, et al., No. CV-75-20-BLG (D. Mont.).

The reservation timber resource currently provides an economic return to the tribe and its members, under a contract providing for the sale of timber to a nearby off-reservation sawmill. While the economic return to the tribe under this contract is significant, it cannot be properly characterized as a major contributor to the general reservation economy.

There is no question that the reservation is underlain by a massive coal reserve. In addition, it is speculated that there may be economically significant oil and gas and uranium deposits; however, no reliable data regarding these deposits exist. Nevertheless, the tribe has received interesting exploration proposals from several independent oil and gas companies and has received a significant exploration proposal from at least one major uranium mining company. None of these proposals have been deemed acceptable by the tribe. Finally, there is some indication of the possibility of a geothermal energy source on the reservation.

A recent report estimates that a total of 23 billion tons of coal, in seven coal beds, lies beneath the reservation. Of these, perhaps 5 to 10 billion tons are suitable for stripping. This deposit constitutes a portion of the Fort Union formation. The value of the Northern Cheyenne coal reserve is reckoned in terms of billions of dollars. This is principally a result of two factors. In powerplants, the coal would burn relatively cleanly and, therefore, in conformity with current air-quality regulations in distinction to the more highly polluting eastern coals. Additionally, vast portions of the deposit are located relatively close to the surface and can therefore be mined by strip mining, a technique substantially more efficient and economic than traditional deep mining.

Substantial direct exploration work to determine the nature and extent of the Northern Cheyenne coal reserve was performed during the period 1966 to 1972 under the series of permits and leases that are described below. However, there has been no commercially significant coal mining on the reservation. There is presently in existence a very small surface mine that operates simply for the purpose of providing coal to tribal members for home-heating purposes.

The People Today

A 1976 census revealed a total reservation population of 3,227. Of these, approximately 78 percent were Northern Cheyennes. An additional 10 percent were other Indians. The remaining 12 percent were non-Indians. An additional 167 Northern Cheyennes lived in the immediate vicinity of the reservation. (Furthermore, it is estimated that approximately 700 Northern Cheyennes live elsewhere.)

It is estimated that there are approximately 600 Northern Cheyenne households on the reservation. The median age is 18 years.

The Northern Cheyenne unemployment rate varies from season to season and from year to year. Generally, unemployment is extremely high. A 1975 study indicated an unemployment rate of 57 percent, which ranged up to 70 percent during the winter months. Another 1975 study yielded an average unemployment rate of 59 percent.

A 1970 report showed the average per capita income for the Northern Cheyennes as $1,152. At the same time, the average per capita income in the county and State were around $3,500. A 1973 study shows the average Northern Cheyenne per capita income as $1,700.

The Northern Cheyenne Coal Permits and Leases

The First Coal Sale

In December 1965 the first serious expression of outside interest in the Northern Cheyenne coal reserve occurred. A consulting geologist submitted a proposal for the issuance of an exclusive prospecting permit, which would include a right to negotiate a mining lease during the term of the permit. The Bureau of Indian Affairs (BIA) recommended that it would be better to sell by public advertisement for bids. In early 1966 the tribe authorized the BIA to draft the necessary documents for such a public sale.

The BIA prepared a form of mining permit to be offered for bid by adapting an official form long in use under Department of the Interior regulations. The official form provided for an exclusive prospecting permit, with an option to lease only a portion of the acreage covered by the permit. However, on Northern Cheyenne this option language was expanded substantially and then maintained in that form throughout the initial public sale and the two subsequent Northern Cheyenne public coal sales, which occurred in 1969 and 1971, respectively. This option provision has since been used by the successful bidders to lay claim to vast portions of the reservation land area.

The Cheyenne coal was being offered for strip mining. During the previous year, 1965, the devastation wrought by strip mining throughout the United States had become such a serious matter that it was the subject of an act of Congress (Public Law 89–4, the Appalachian Regional Development Act), which directed the Secretary of the Interior to study strip mining for the purpose of taking effective steps to control it. However, the permit drafted for the first Northern Cheyenne coal sale contained no effective environmental or restoration provisions, and the attached lease contained only a solitary provision binding the lessee "to cooperate fully with the lessor and the Secretary" in reseeding strip-mined areas.

A successful bidder would acquire a strip-mining permit and an option to enter into a strip-mining lease. The permit covered the exploration phase; actual mining would be performed under the lease. Regrettably, the terms and conditions of the mining lease were established at the time of the offering of the permit, when both the tribe and BIA were essentially ignorant of the nature and value of the coal reserve covered by the lease. This format was followed in the second and third Northern Cheyenne coal sales as well. The primary financial term of the lease, the royalty on production, was set in 1966, at 17.5 cents per ton for coal delivered off the reservation and 15 cents per ton for coal consumed on the reservation for the first 10 years of the lease, increasing to 20 cents and 17.5 cents, respectively, during the second 10 years of the lease. These royalty rates remained unchanged through the second and third coal sales.

The first sale took place in July 1966 and offered approximately 94,000 acres of reservation land. Competitive bidding was limited to the "bonus" to be paid per acre for the privilege of prospecting and the accompanying lease option. Only two bids were received, both from Sentry Royalty Company, a wholly owned subsidiary of Peabody Coal Company. Sentry made a bonus bid of 12 cents per acre, covering the entire 94,000 acres, for a total bid of $11,296.80. BIA officials quickly expressed their satisfaction, and the tribe granted a permit. Thus, the first foothold on the Northern Cheyenne coal reserve was established. And the BIA had set the pattern to be followed in the two subsequent coal sales.

The Second and Third Coal Sales

By 1968 the tribe had received indications of further interest in its coal and requested the BIA to package a second coal sale. This led to the offering for bid of yet another 128,316 acres in the summer of 1969. In that second coal sale Peabody Coal Company acquired three more tracts of reservation mineral lands containing 6,000 acres, 21,860 acres, and 27,530 acres, for per-acre bonuses of $2.52, 12 cents, and 11.9 cents, respectively.

Later, a third coal sale was scheduled for April 1971. Approximately 367,000 acres of reservation land were offered. Twelve bidders participated in the sale, including representatives of large coal and energy corporations, as well as individuals. Although Federal regulations and the conditions of the sale prohibited issuance of permits to anyone not a bona fide coal-mining operator, capable and qualified by experience and resources to conduct actual mining operations, no effort was made by the BIA to inquire into the qualifications of the bidders. As a result, substantial tracts were acquired by speculators.

The successful bidders paid per-acre bonuses ranging from $1.02 to $32.31. The permits acquired are shown in table 2.

Violation of the Acreage Limitation

As indicated earlier, the first and second coal sales resulted in the acquisition by Peabody Coal Company (through its subsidiary Sentry Royalty Company) of permits covering 94,000, 6,000, 21,860, and 27,530 acres. However, the regulations set an acreage limitation of 2,560 acres on leases and on permits incorporating options to lease.[20] Under the regulation, the acreage limitation may be exceeded *only* if two conditions are met: the larger acreage must be necessary for the establishment of thermal electric powerplants or other industrial facilities and the excessive acreage must be in the interests of the tribe. But, throughout the first, second, and third coal sales, the acreage limitation was essentially disregarded. In fact, the *entire* reservation, subdivided into immense tracts, was offered during the course of the three coal sales. From their vast permit acreages, the permittees have since purported to exercise the "right" to obtain mining leases covering the acreages shown in table 3.

[20] 25 C F R §171.9

TABLE 2
Results of Sale 3

Permittee	Tract acreage
Bruce Ennis*	16,220
Norsworthy & Reger**	14,000
Norsworthy & Reger**	19,420
Meadowlark Farms, Inc.***	23,040
Meadowlark Farms, Inc.***	20,960
Bruce Ennis*	27,790
Consolidation Coal Company	23,400
Meadowlark Farms, Inc.***	27,550

* A Billings, Montana, attorney
** Billings, Montana, land speculators
*** Land acquisition arm of AMAX, INC.

TABLE 3
Mining Acreage Sought

	Total lease acreage sought
Peabody Coal Company	41,680
AMAX, INC.	71,550
Consolidation Coal Company	15,300
Chevron Oil Company (through assignment from Bruce Ennis)	27,390
Northern States Power Company (through assignment from Norsworthy & Reger)	33,420
Norsworthy & Reger	16,220
TOTAL	205,560

Failure to Perform Technical Examinations

Meanwhile, in January 1969—prior to the second and third coal sales—a critical legal development had occurred: the Secretary of the Interior promulgated environmental protection regulations governing surface mining on Indian lands. The regulations[21] were the product of 2 years of study by the Department. They established a comprehensive scheme of controls designed to ensure that any surface mining on an Indian reservation would take place only *after* Federal studies had established standards to be written into any permit or lease protecting a broad array of ecological, social, and cultural values.

The heart of the scheme was section 177.4—the "technical examination" of the prospective surface exploration and mining operations. The regulation required that, *before* secretarial approval of any

[21] 25 C.F.R. Part 177

permit or lease, the technical examination investigate the prospective effects of exploration and mining on the broad array of values protected by the regulation. The data generated from these investigations would provide information to the Indian landowner from which he might make an informed decision regarding development, would aid the Secretary in determining whether or not to approve a permit or lease, and would provide the foundation for the formulation of "general requirements" for the protection of nonmineral resources—provisions that would in fact become contractual terms of the permit or lease.

However, the BIA proved itself either unable or unwilling to implement the admirable intent of this regulation. No procedures were established by the BIA for implementation of the regulations. And no steps were taken to establish, either in the BIA or its technical support agency, the United States Geological Survey, staff capable or willing to perform the required technical examination. Therefore, although the regulation was in force, the second coal sale was formulated with, at best, token compliance. The required technical examination was not performed. As a result, no provisions meaningfully protective of ecological, social, and cultural values were incorporated in the permit or attached lease.

Approximately one year later (in mid-1970), Peabody Coal Company sought to obtain the issuance of six leases arising from the 94,000-acre tract it had acquired in the first coal sale. Though clearly Part 177 applied to Peabody's lease applications, the BIA failed, just as it had in the second coal sale, to implement the terms of Part 177. The identical pattern was repeated in 1971, during the formulation of the third Northern Cheyenne coal sale.

In May of 1973—4 years and 5 months after the effective date of Part 177, 3 years and 9 months after the issuance of the permits arising from the second coal sale, 2 years and 6 months after the issuance of the six Peabody leases, and 1 year and 11 months after the issuance of the permits arising from the third coal sale—the BIA issued two documents entitled, respectively: "Technical Assessment, Coal Leases, Northern Cheyenne Reservation," and "Technical Assessment, Coal Permits, Northern Cheyenne Reservation." The documents expressly admit that they are after-the-fact technical examinations. The permit technical examination had the temerity to recommend that the Sale 2 and 3 permits "be issued" though in fact they had been issued several years before. The lease technical examination reeled off a parade of horrible potential consequences of strip mining, including "Destruction of Cheyenne culture—the life-style of the people," "Cheyenne become a minority in their own homeland," "pollution of all sorts, i.e., human, cultural, air, sound, noise, etc." It also recognized, as to the recommendations it made for protection against those adverse consequences, that "the listing under this post-technical examination does not make them binding upon the lessee."

Statutory Violations

Prior to the time of the third coal sale, several other significant developments had occurred. On January 1, 1970, the National Environmental Policy Act of 1969[22] had become effective. The act required an environmental impact statement in connection with every recommendation on major Federal actions significantly affecting the quality of the human environment. Also, in 1970 Congress had enacted the Water Quality Improvement Act.[23] This required that any applicant for a Federal license or permit to conduct any activity that might result in discharge into the navigable waters of the United States shall provide certification that the activity will not violate applicable water-quality standards. And in February 1971, the United States Geological Survey recommended changing the royalty basis for coal leases on Federal lands from a fixed tonnage royalty to a percentage of gross sales. Specifically, it was recommended that 5 percent of gross sales be the standard provision for coal leases on Federal lands.

Notwithstanding these developments, the BIA went ahead with the third coal sale, oblivious to the requirements of the two new acts and using the same royalty formulas that were used in the 1966 and 1969 sales.

The Petition for Cancellation

Finally, beginning in late 1972, the Northern Cheyenne tribal leadership began to comprehend the enormous threat these transactions posed to the reservation and its people. It soon became apparent that the involved BIA personnel—on whose advice and counsel the tribe relied in entering into these

[22] 42 U.S.C. §§4321 *et seq.*

[23] 33 U.S.C. §1171

transactions—had been inept, uninformed, and sadly overmatched. In March of 1973 the tribe enacted a resolution calling upon the Secretary of the Interior to withdraw his approval of all existing permits and leases. The resolution was based principally on the ground that the Part 177 regulation[24] had not been complied with.

Shortly thereafter, the tribe retained legal counsel to prepare a written petition to be submitted to the Secretary of the Interior in support of the tribe's request for cancellation. This resulted in the preparation and submission of the massive two-volume *Petition of the Northern Cheyenne Indian Tribe to Rogers C.B. Morton, Secretary of the Interior, Concerning Coal Leases and Permits on Their Reservation* (January 7, 1974). The petition detailed a staggering array of law violations—principally by the BIA—incident to the first, second, and third Northern Cheyenne coal sales. A summary of these law violations is attached hereto as appendix A.

The Secretarial Decision

On June 4, 1974, Secretary of the Interior Rogers C.B. Morton issued a written decision on the Northern Cheyenne petition. The text of that decision is attached hereto as appendix B.

Principal consideration in the formulation of the decision was the concern of the Secretary's legal advisor, the Solicitor of the Department of the Interior, about the possibility of very substantial monetary liability on the part of the United States to the coal companies and the tribe. It was felt that explicit findings of wrongdoing and illegality on the part of the BIA would constitute admissions of liability, which could be used by the coal companies and the tribe to establish monetary claims against the United States. In addition, the Secretary was subjected to intense lobbying on the part of the Billings area office personnel and central office personnel responsible for the formulation and approval of the Northern Cheyenne coal sales, who considered the tribe's attack to be a challenge to their personal reputation, professional standing, and job security.

Accordingly, the decision contains no clear-cut findings of BIA wrongdoing. Indeed, the Secretary elected to confront only a handful of the tribe's legal claims.

At the same time, there is no question that the Solicitor was impressed by the strength of the tribe's legal case. In addition, it was apparent that the Secretary concluded that the state of affairs then existing on the Northern Cheyenne Reservation could not be defended. Clearly, he decided that if he were to confirm the claims of the coal companies to unfettered rights to strip mine massive portions of the Northern Cheyenne Reservation, he would be subjected to fierce criticism and public outrage.

Thus, a decision was crafted for the purpose of restoring the balance of power to the tribe. This was achieved by relying fundamentally on the Secretary's strongest suit—his statutorily based discretionary authority over Indian land transactions. No permits or leases were declared invalid. Instead, the Secretary in effect held that on several different grounds the coal companies had not yet obtained fully matured rights to mine.

A principal ground was the acreage limitation in the regulation[25] that limits mining leases to 2,560 acres and provides for a waiver of this limitation on specifically stated grounds. The Secretary held:

a. the administrative record contained "no clear evidence that there was an explicit waiver of the limitation provided in 25 C.F.R. §171.9"; and

b. the coal companies and the tribe must either reduce the leases and lease applications to 2,560 acres, or *jointly* demonstrate that the acreage limitation should be waived.

In addition, the Secretary held that appropriate environmental impact statements would have to be prepared before he would consider approving any mining plans, permit renewals, or leases.

Finally, he made the following statements of policy:

> "As Trustee I take cognizance of my responsibility to preserve the environment and culture of the Northern Cheyenne Tribe and will not subordinate these interests to anyone's desires to develop the natural resources on that reservation.
>
> Furthermore, the Tribe and the coal companies may be assured that the terms and conditions upon which mineral development may proceed on the Northern Cheyenne Reservation will require their *joint agreement and support* prior to any further approval by me. [emphasis added]

Thus, through the acreage limitation, the Secretary dramatically reduced the scope of the coal

[24] 25 C.F.R. Part 177

[25] 25 C.F.R. §171.9

companies' claims. Leases and lease applications totaling 205,560 acres (see table 3) suffered a cumulative reduction of approximately 85 percent. It has become apparent that as a practical matter such a reduction may well render the coal companies' "rights" on the reservation economically infeasible.

Furthermore, since the issuance of the decision, no environmental impact statements regarding coal development on Northern Cheyenne have been performed. This has resulted principally from the tribe's vehement opposition to the conducting of such studies. The tribe maintains that so long as no lawful, tribally supported proposals for reservation coal development exist, no environmental impact studies will be tolerated.

Finally, the tribe has manifested to the coal companies their unwillingness to provide them with "joint agreement and support" of reservation coal development, an indispensable condition imposed by the Morton decision.

Conclusion

This decision has remained intact and has served the tribe well for 4-1/2 years. It has provided the tribe with a quasi-judicial basis for wresting control of the reservation from the coal companies.

In fact, however, the tribe's greatest strength in this struggle derives from another, more important, and lasting source—the credibility and character of the Northern Cheyenne people. During the initial stages of the tribe's struggle, and indeed for several years thereafter, many governmental and industry people believed that the real purpose of the tribe's effort was to extract larger monetary payments from the coal companies through a forced renegotiation. However, that cynical view no longer prevails. It is now recognized that the tribe acted pursuant to its own sense of duty and honor: the duty to protect and preserve the Northern Cheyenne Reservation as a homeland for the Northern Cheyenne people and the traditional obligation to resist with all available resources the dishonoring attempts of outsiders to defeat the will of the Northern Cheyenne people.

As a result, the coal companies now realize that any coal development project on the Northern Cheyenne Reservation would be futile unless enthusiastically supported by the people as a whole. No such consensus of support exists on the reservation. This has been the case consistently since late 1972, and all indications are that this state of mind will continue into the indefinite future.

APPENDIX A

Summary of Points of Law Affecting the Validity of Coal Permits and Leases on the Northern Cheyenne Reservation

By: Alvin J. Ziontz and Steven H. Chestnut, Ziontz, Pirtle, Morisset & Ernstoff

A Memorandum to the Solicitor, Department of Interior, Submitted on Behalf of the Northern Cheyenne Tribe by Ziontz, Pirtle, Morisset & Ernstoff, their Attorneys

I. *Background:*

This memorandum is submitted pursuant to the agreement of July 31, 1973, between counsel for the Northern Cheyenne Tribe, Alvin J. Ziontz, and representatives of the Solicitor, United States Department of Interior, concerning procedures to be followed with respect to the conflict over the coal leases and permits on the Northern Cheyenne Reservation.

On March 5, 1973, the Northern Cheyenne Tribe passed Resolution No. 132 (73) directing that all existing permits and leases for coal exploration and mining on the Reservation be cancelled by the Secretary. In March, 1973, the Tribe submitted a petition to the Secretary demanding that the Secretary declare the leases and permits void. On June 6, 1973, Alvin J. Ziontz, of the firm of Ziontz, Pirtle, Morisset & Ernstoff, wrote to the Secretary and requested that no final action be taken on the Tribe's petition until the firm had had an opportunity to complete its factual and legal investigation of the matter. On July 23, 1973, Alvin J. Ziontz met with Kent Frizzell, Charles Soller, William Moses and David Lundgren to discuss the procedural framework for reaching a decision on the Tribe's petition. It was agreed that counsel for the Northern Cheyenne Tribe would prepare a memorandum to the Solicitor summarizing the points of law which they regarded as affecting the validity of the permits and leases; that the memorandum would not attempt to set forth in full the legal grounds and authorities, but would be in summary form only; that the memorandum would indicate with respect to each point of law whether counsel viewed it as rendering the permit or lease void *ab initio*, or voidable; and finally, indicating which permits and leases were affected by each legal infirmity. This memorandum is submitted pursuant to that agreement.

This memorandum is not intended to constitute a final summary of the Tribe's position. The right is reserved to bring to the attention of the Secretary any additional grounds which may be discovered in the course of further investigation or analysis.

The points of law are listed, briefly described, and specified as to legal effect in Part II. Their applicability to the particular leases and permits is set out in tabular form in Part IV.

II. *Points of law affecting the validity of the leases and permits.*

A. Pre-issuance grounds: Violations which rendered the permit or lease void *ab initio.*

1. *Failure to perform technical examination:* The cornerstone of 25 C.F.R. Part 177 is the technical examination. §177.4(a). No technical examination was made, and therefore the mandate of Part 177 was ignored. The required pre-issuance careful consideration of the broad panoply of tribal cultural, historic, social and environmental interests did not occur. The data required for the performance of every essential Departmental function under the regulation were never developed.

2. *Failure to formulate general requirements:* The technical examination data provides the exclusive basis for the formulation of the general requirements required by §177.4. Under Part 177, the general requirements are the most vital provisions of a permit or lease. Yet none were formulated. As a result, the exploration plan and mining plan mechanisms were emasculated, since those mechanisms rely fundamentally on the existence of general requirements.

3. *Maladministration of Part 177 violated NEPA:* The National Environmental Policy Act of 1969 made it unlawful for the federal government to approve or engage in policies or programs of economic expansion or development of resources without first carefully considering and designing against environmental degradation. Section 102 of the Act directs that "to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies" of the Act. This mandate covered the Department of the Interior's administration of Part 177, but was defied.

4. *Failure to perform pre-issuance studies required by NEPA:* Section 102 of the National Environmental Policy Act of 1969 required the performance, prior to issuance of a permit or lease, of a documented assessment of environmental impact. No such impact studies were made.

5. *Violation of tribal charter provision limiting lease term to 5 years:* The tribal charter (Section 5(b)(3)) limits coal leases to a term of 5 years. The instant leases, in violation of that limitation, provide for a term of 10 years and as long thereafter as coal is produced in paying quantities.

6. *Violation of tribal charter provision protecting natural resources:* The tribal charter (Section 5(b)(4)) disallows action by or on behalf of the Tribe which in any way operates to destroy or injure the tribal grazing lands, timber, or other natural resources on the Reservation. Leases providing for strip mining are, therefore, not permitted.

7. *Breach of trust invalidates departmental and tribal approvals:* Aside from the enumerated statutory and regulatory violations, the trustee, in several ways, breached its trust responsibilities. Among those defaults were the following: (1) The trustee failed to advise the Tribe that the proposed strip mining would have devastating effects on its most vital interests, that the proposed activities would wreak cultural, social, and ecological havoc; (2) The trustee failed to inform the Tribe about the nature and extent of the coal deposits; (3) No advice was given as to the great economic significance of coal with respect to the Nation's future energy needs; and (4) The Tribe was advised to accept unconscionably low economic terms. Under such circumstances, all tribal and Departmental approvals of permits and leases were defective and void.

The breach of trust is seen clearly when the Department's administration, under NEPA and 43 C.F.R. 23, of public lands is compared to its administration, under NEPA and 25 C.F.R. 177, of Indian lands; there has been a more careful administration of the trustee's lands than the ward's lands.

8. *U.S.G.S. defaulted its obligation to provide technical advice:* Part 177 contemplates that the U.S.G.S. will provide the required scientific and technical expertise in the performance of the technical examination, formulation of the general requirements, formulation and evaluation of exploration plans and mining plans, the setting of performance bonds, and the monitoring of activities under a permit or lease. Part 171 similarly relies on U.S.G.S. to furnish all necessary scientific and technical information. These and related duties are more particularly described in 30 C.F.R. 211 and 30 C.F.R. 231. The U.S.G.S. did not perform these duties, leaving the Tribe technically and scientifically uninformed. Any tribal approval of a permit or lease was therefore defective and void.

9. *Lease option not authorized by regulations:* The regulation authorizing prospecting permits allows only the creation of a preference right to lease. §171.27(a). There is no authority for the issuance of a permit which includes a right to compel a lease, yet every permit includes a provision purporting to grant such a right.

10. *Lease option effects an unlawful circumvention of Part 177:* Section 177.4 requires the performance of a technical examination and formulation of general requirements both before issuance of a permit and before issuance of a lease. Assuming that a pre-permit technical examination had occurred under 177, it could have served only as a basis for the granting of permit rights. Yet all the permits purport to grant unqualified lease rights as well. This violates the formulation and intent of Part 177.

11. *Permits cover excessive acreages:* Section 171.27(a) requires all permits granting a preference right to a lease to comply with all laws and regulations applicable to leases. Therefore, the acreage limitation in §171.9(b) applies to the

permits. The permit acreages were far in excess of that limitation, without lawful basis.

12. *Acreage limitation was violated by provision of permit:* Section 171.9(b) limits coal lease acreage to 2,560 acres. That limitation may be exceeded only if the interests [of] the Tribe will be served thereby; this precondition for exceeding the 2,560 limitation was unlawfully eliminated from paragraph 2(a) of the permit.

13. *Improper administration of the acreage limitation:* In administering the acreage limitation, the Department, in violation of §171.9(b), did not consider whether allowing excessive acreages would be in the Tribe's best interests, and considered only whether the coal companies deemed large acreages necessary to their purposes.

14. *Tract configuration improper:* Sections 171.8 and 171.9(b) set out restrictions as to the configurations of permit and lease tracts. These restrictions were violated.

15. *Inadequate permit bonds were posted:* By virtue of §171.27a, the bond schedule set out in §171.6(a) applied to permits. The bonds posted fell far short of that standard. Under §171.7, the permits should have been disapproved by the Department.

16. *Inadequate lease bonds were posted:* The posted lease bonds were wholly inadequate in amount to protect the interests of the Tribe. Adequate bonds should have been required under the provisions of §171.6(a) and §171.6(c).

17. *Bond regulation violated by provisions of permit and lease:* Under §177.8, it is required that a bond in an amount sufficient to cover the costs of reclamation be posted prior to exploration or mining. The mandatory nature of this requirement was unlawfully changed in permit paragraph 2(r) and lease paragraph III(10).

18. *Superintendent failed to consult with the Tribe:* Under §177.12, a superintendent must consult with the Tribe in connection with the performance of the technical examination and formulation of the general requirements. This was not done. Therefore, any tribal and Departmental approvals were defective and void.

19. *Surrender regulation violated by lease provision:* Section 171.27(b) sets out the mechanism for surrender of a lease. Surrender is formulated not as a right, but as a privilege subject to Secretarial approval. The lease, however, in Paragraph III(24)(b) unlawfully converts surrender into a matter of right for the lessee. It also unlawfully deletes other conditions enumerated in §171.27(b).

20. *Surrender mechanism renders lease illusory:* Lease paragraph III(24)(b) purports to endow the lessee with a discretionary right to surrender the lease or any part thereof at any time at no penalty. This renders the lease illusory and void.

21. *The permits and leases are unconscionable:* The financial provisions of the permits and leases are so grossly inadequate that they are unconscionable. The provisions purporting to grant the coal companies rights to strip mine massive portions of the Reservation's total area place in the hands of the coal companies the power to extinguish the Northern Cheyenne culture. That is unconscionable. A lack of positive preservation and reclamation provisions is unconscionable. The permits and leases are, therefore, void.

22. *Permits and leases held by unlawful trust:* Federal law and policy (as contained, for example, in 30 U.S.C. §184(k)) provide that mineral permits and leases held by an unlawful trust shall be forfeited. The merger of Peabody Coal with Kennecott Copper Corporation was declared unlawful in *Kennecott Copper Corporation v. FTC*, 467 F.2d 67 (10th Cir. 1972). Accordingly, all Peabody permits and leases are void.

23. *Permits acquired and held for speculative purposes:* Permit paragraph 2(b) prohibits the acquisition of a permit for speculative purposes. Nevertheless, permits were acquired for such purposes.

B. Post-issuance grounds: Violations which render the permit or lease voidable.

24. *Exploration without an approved exploration plan:* Section 177.6(a) requires the submission and approval of an exploration plan prior to any exploration activities. Nevertheless, exploration was engaged in without any such approved plan.

25. *Exploration without an adequate exploration plan:* Part 177 requires that an exploration plan include detailed provisions describing the contemplated exploration, and the surface preservation, conservation and reclamation methods to be followed. See §§177.6, 177.8(a), 177.9(b), 177.10(a). No such plans were submitted.

26. *Exploration with a defectively approved exploration plan:* Sections 177.6(b) and 177.6(c) provide for the evaluation and formulation of the exploration plan on the basis of the data from technical examination and the general requirements. Since a

technical examination was not performed and general requirements were not formulated, there could be no valid approval of an exploration plan. Section 177.12 requires that the Tribe be consulted in connection with the approval of an exploration plan. No such consultation occurred; therefore, there could be no valid approval.

27. *Failure to perform required NEPA study prior to approval of exploration plan:* Section 102 of the National Environmental Policy Act of 1969 required the performance, prior to the approval of an exploration plan, of a documented assessment of environmental impact. No such impact studies were made.

28. *Operations commenced before receiving written permission from U.S.G.S.:* Section 171.20(b) requires written permission from U.S.G.S. before commencement of operations. Operations commenced without receiving such permission.

29. *Exploration activities caused unlawful damage to land, improvements and stock:* Permit paragraph 2(e) sets out the permittee's obligation to prevent unnecessary damage. This provision was violated.

30. *Operations reports not filed:* Sections 177.9(a), 177.9(b), 177.9(d)(1), 30 C.F.R. 211.6(a), 30 C.F.R. 231.8 and permit paragraph 2(p) require the submission of detailed reports on operations under permit or lease. These reports were not submitted.

31. *Expenditure reports not filed:* Section 171.14(b), permit paragraph 2(b) and lease paragraph III(6) require regular reporting of expenditures. These reports were either not filed or not timely filed.

32. *Required inspections not made:* Sections 177.9(c)(2), 177.9(d)(2), 177.10(a), 30 C.F.R. 211.4, and 30 C.F.R. 231.3 require inspections of operations. These inspections were not performed.

33. *Exploration bonds were not posted:* Under §177.8, it is required that a bond in an amount sufficient to cover the cost of reclamation be posted prior to exploration. No such bond was posted.

34. *Insufficient development expenditures:* Permit paragraph 2(b) specified mandatory development expenditures. The required expenditures were not made.

35. *Illegal assignments:* Sections 171.26(a), 171.26(b), permit paragraph 2(n) and lease paragraph III(9) prohibit assignment and creation of override agreements unless prior Secretarial approval is obtained. Assignments were made and override agreements entered into in violation of these provisions.

36. *Condition on assignments unsatisfied:* The tribal approval of the assignments from Sentry Royalty to Peabody was expressly conditioned on Kennecott's guarantee of all permit and lease obligations. The decision in *Kennecott v. FTC* would appear to render that condition unsatisfied. Peabody, therefore, can claim no rights arising from those assignments.

APPENDIX B

[Facsimile]

Department of the Interior

News Release

OFFICE OF THE SECRETARY

For Release June 4, 1974

Morton Announces Decision on Northern Cheyenne Coal Lands

Secretary of the Interior Rogers C. B. Morton today announced an encompassing decision on the controversy involving leases and exploratory permits for coal development on the Northern Cheyenne Indian reservation in Montana.

The Northern Cheyenne Tribe petitioned the Secretary in January 1974 to withdraw the Department's approval of leases and exploratory permits for strip mining of coal on about 214,000 acres of the 433,740 acre reservation.

The decision announced by the Secretary today grants the petition in part; denies it in part; refers some questions to the Department's Office of Hearings and Appeals; and holds some decisions in abeyance.

As an alternative, the decision allows the Tribe to sue the coal companies involved with the support of the Secretary on any and all issues, or with the support of the Secretary to request the Justice Department to bring suit in the name of the Northern Cheyenne against the coal companies on the issues.

Secretary Morton said the decision was a necessarily complex resolution of the issues presented in the Tribe's petition.

"Although many of the allegations of invalidity were similar, each of three coal sales and each of the leases and permits involved different circumstances and issues," he said.

"My decision, therefore, does not grant or deny the petition as a whole, nor can it be the final disposition of all the issues raised by the Tribe. Rather, I believe it establishes the essential framework for an eventual determination which will be equitable."

Various requests by companies holding coal exploratory permits on the reservation to go to lease on some of these permits and to renew some permits are also pending before the Department. The decision announced today also deals with these requests.

The text of the decision is attached.

Text of Decision on Northern Cheyenne Petition

I have before me a petition by the Northern Cheyenne Tribe to rescind this Department's approval of various leases and permits for coal mining on the Northern Cheyenne Reservation. Also pending before officials of the Department are various requests by the permittees to go to lease on certain of these permits and to renew certain other permits. This decision announces the Department's disposition of the Tribe's petition and the permittees' requests.

After careful research and consideration it has been determined that:

First Sale

Bids were opened on July 13, 1966. On August 19, 1966, a two-year exploration permit was granted to the sole bidder, Peabody Coal Company, for 96,829.95 acres. On August 13, 1968, a two-year extension was approved for that permit. On December 30, 1970, I approved six leases consisting of 16,035.05 acres, or 17 percent of the total permitted acreage. The remaining acreage reverted to its original status prior to the exploration permit.

With respect to lease number 14-20-2057-897 for 12,946.07 acres, there is no clear evidence that there was an explicit waiver of the limitation provided in 25 C.F.R. §171.9. Therefore, I direct Peabody Coal Company and the Northern Cheyenne Tribe to conform this lease to 2,560 acres or less, or clearly to demonstrate the need to waive this limitation.

As to this lease, as well as the other five leases, I have determined that the required approval of the

Peabody Mining Plan is a significant Federal action which would substantially affect the environment; therefore, no further administrative action will be taken until the Department has completed an Environmental Impact Statement and I have made a determination that further action should be taken.

All other requests in the petition pertaining to the first sale are hereby denied.

My decision as to this first sale thus grants the Tribe's petition in part and denies it in part, and holds in abeyance all further approvals required by this Department.

Second Sale

On December 15, 1969, a two-year exploration permit was granted to the sole bidder, Peabody Coal Company, for 55,398.99 acres. On December 13, 1971, a two-year extension was approved, to become effective on December 15, 1971. On December 3, 1973, Peabody Coal Company requested to go to lease on 25,160 acres, approximately 45 percent of the permitted acreage. The remaining acreage reverted to its original status prior to the exploration permit. No administrative action will be taken until (1) Peabody Coal and the Tribe modify this request to conform to the acreage limitation of 25 C.F.R. §171.9, or clearly to demonstrate the need to waive this limitation; and (2) until an Environmental Impact Statement has been completed by the Department.

Since there is some question as to whether or not a technical examination has been done as provided in 25 C.F.R. §177.4, I am reserving my decision on this question and as an aid to any continuing investigation of this issue, I am asking the BIA Area Director in Billings to submit to me within 60 days a full written report summarizing his findings as to each of the separate matters required to be explored by the regulations.

All other requests in the petition pertaining to the second sale are hereby denied.

My decision as to the second sale thus grants the Tribe's petition in part, denies it in part, and holds one issue in abeyance for further decision. It denies Peabody's request to go to lease without prejudice to that request being modified by Peabody and the Tribe, but provides that final Department action on any such request will be held in abeyance until completion of an Environmental Impact Statement.

Third Sale

On May 21, 1971, four bidders were granted two-year exploration permits on eight tracts consisting of 172,291.89 acres. There was a total of 12 bidders. Leases have been requested on three tracts by one bidder, but as with the second sale leases requested by Peabody, no administrative action will be taken on this request until it is modified by the permittee and the Tribe to conform to the acreage limitation provided in 25 C.F.R. §171.9 or a clear demonstration of the need to waive this limitation is made. Permits renewals have been requested for an additional two years on the five remaining tracts. No action will be taken concerning the request to go to lease or renewals of the permits until an Environmental Impact Statement is completed.

It has been alleged that two of the successful bidders involving four tracts violated 25 U.S.C. 396a and 25 C.F.R. 171.2, §171.3(a), §171.5, §171.7 and §171.26 (bidding for speculative purposes by unqualified persons) and 25 C.F.R. §171.26 (unlawful assignment). I am herewith referring these two issues to the Office of Hearings and Appeals for findings of fact and conclusions of law, with instructions to determine these issues in an expeditious manner. The Solicitor's Office will participate in this hearing to represent the trust responsibilities of the Department. The Northern Cheyenne Tribe may, if it wishes, be a party to this proceeding.

Since there is also some question as to whether or not a technical examination has been done as provided in 25 C.F.R. §177.4 as to these permits, I am reserving my decision on this question and—as with the second sale permits—I am asking the BIA Area Director in Billings to submit to me within 60 days a full written report summarizing his findings as to each of the separate matters required to be explored by the regulations.

The Tribe has also claimed that the permits and leases are invalid because there is no adequate bond provided as required by 25 C.F.R. §171.6 and §171.8. While I do not believe that this deficiency merits cancelling my approval of these permits, I will ensure that prior to any further operations, the permittees and lessees shall post a bond that is fully adequate to cover the maximum anticipated costs of reclamation after exploration or mining.

All other requests in the petition pertaining to the third sale are hereby denied.

My decision as to this third sale thus grants the Tribe's petition in part, denies it in part, and holds

portions of the petition for further decision. My decision denies the request of one permittee to go to lease without prejudice to that request being modified by the permittee and the Tribe, and provides that any further action by the Department, including permit renewals, will be held in abeyance until completion of an Environmental Impact Statement.

My decisions herein set out do not preclude the Northern Cheyenne Tribe from bringing their own lawsuit against the coal companies to test the validity of these permits and leases. Alternatively, the Tribe may request the Justice Department under 25 U.S.C. §175 to bring a suit in the name of the Northern Cheyenne Tribe. I will support them in either request.

As trustee I take cognizance of my responsibility to preserve the environment and culture of the Northern Cheyenne Tribe and will not subvert these interests to anyone's desires to develop the natural resources on that Reservation.

The Tribe's petition presents extraordinary circumstances. Among other things, the Tribe has expended substantial sums of money in preparing and presenting the petition to me. The petition charges that officials of the Department have violated Departmental regulations in approving these permits and leases. Because of many of the unresolved allegations by the Tribe of Departmental laxity, I have decided that, to the fullest extent possible, outside sources will be used to prepare the Environmental Impact Statement or Statements. Furthermore, the Tribe and the coal companies may be assured that the terms and conditions upon which mineral development may proceed on the Northern Cheyenne Reservation will require their joint agreement and support prior to any further approval by me. Also, to the fullest extent permitted by my statutory authority, I will defray the expenses to be subsequently borne by the Tribe for attorney's fees and other costs in the administrative proceeding I have directed to take place and in any litigation it now wishes to commence against the companies.

Finally, to better fulfill my future trust responsibility to assure the protection of Indian culture and environmental interests as well as to allow maximum development of Indian natural resources, I have asked the Solicitor to rewrite (within 90 days) the present Parts 171 and 177 to Title 25, C.F.R. to correct their present ambiguities. I have directed the BIA to adhere strictly to the implementation of its regulations.

The Northern Cheyenne Coal Sales, 1966 to 1973

By James P. Boggs*

Introduction

My aim in this paper will be to put the Northern Cheyenne coal sales debacle of 1966–73 into a perspective that highlights its anomalous character, and then to make this anomaly somewhat intelligible by revealing it as an expression of a much more general pattern. The details of this incident were reviewed for you by Steven Chestnut, the tribe's very able attorney for the presentation of its claims to the Department of the Interior.

First, a brief review of events. In the middle and late 1960s the energy crisis of the early seventies was already looming on the horizon. Government and industry developed increasing interest in the coal resources of the Fort Union basin. By 1971 a task force of Government and industry representatives had come out with the *North-Central Power Study*, a blueprint for a network of huge powerplants in the northern Plains that would utilize Fort Union coal to produce electricity. Publication of the *North-Central Power Study* in 1971 was the first event to alert the public to the possibility of widespread industrialization of the intensely rural northern Plains region.

Considerably earlier than the publication date of the *North-Central Power Study*, however, the Bureau of Indian Affairs (BIA) had begun to engineer coal sales on the Northern Cheyenne Reservation, which is located in southeastern Montana in the heart of the Fort Union coalfields. These sales began in 1966 and extended to 1973, and ultimately involved over 50 percent of the reservation's land area.

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There were provisions in those contracts for electrification or gasification coal-conversion facilities to be located *on* the reservation. At one point, at least one new town of around 30,000 population was contemplated to house incoming workers. The total population of the reservation in 1976, including non-Indians, was about 3,227 people. One such town, then, for one of the industrial complexes being contemplated on the reservation a decade earlier, would have housed more than 10 times the total population of the reservation at that time. This was one such plan; there could have been others and, of course, a number of coal strip-mining operations as well.

To put the situation even more into perspective, let's recall that we are talking about a small Indian tribe of around 3,000 people, speaking a unique language, bearing a unique cultural and historical tradition, and inhabiting a small, hitherto isolated, rural reservation of some 20 times 30 miles—a little over 400,000 acres. This tribe's trustee and some energy companies and speculators had not only contemplated but had actually gone a long way towards implementing plans to transform this isolated rural Indian reservation into an industrial park on a scale that is massive even in relation to already industrialized and urban areas. And this project was actually being implemented *before* the *North-Central Power Study*, published in 1971, made public Government and industry plans for general industrial activity in the Fort Union basin.

The effects on tribal life and culture of such massive industrial activity concentrated on a small rural reservation are not hard to anticipate. It would not take an expert to foresee the disastrous consequences to tribal life and culture. Industry's early interest in the reservation was apparently predicated on advantages the reservation offered; the absence of effective environmental standards, more favorable tax structures, and the possibility of easy access to Indian water have been suggested. These are not hard to understand—some are explicit in the terms and conditions of the leases themselves (see figure 1).

What is hard to understand is that the Bureau of Indian Affairs, as the tribe's trustee, not only acceded to but actually helped to engineer such a disastrous situation, in patent violation not only of its own moral responsibilities, but of its own laws (Ziontz et al., 1974). This is the real anomaly. What I want to do here is not to explain this anomaly in historical terms, but to provide a more partial explanation by putting it in context as part of a larger pattern of Indian-white relations.

Institutional Domination

The Concept

Let me begin by defining the concept by which I believe the situation may be made intelligible as part of a larger pattern. The concept I want to introduce here is that of the *domination* of one ethnic group by another becoming *institutionalized* in the social forms that mediate interaction between the two groups. The basic premise of this concept is one on which much of social science is based: namely, that the outward forms of human institutions often reflect underlying patterns. Such a pattern is identifiable when different specific organizations or customs appear as varying expressions of the same institutionalized or formal structural relationships. Institutionalized domination, as defined here, is one of the clearest examples of underlying social patterning. It is a structural relationship that manifests itself in many guises in many different situations.

In speaking of institutionalized domination of one ethnic group by another, I want to make it clear that I am not talking just about racism. Racism, even institutionalized racism, conjures up such associations as stereotyping, prejudice, and the like. Now, also, racism has become disreputable, if not downright illegal. Institutionalized domination as defined here, on the other hand, may involve racism, but it also may take many other forms with none of the pejorative associations of racism. It may be administered in the complete absence of stereotyping or prejudice and, indeed, with real respect for the dominated group. It may take forms that are highly respectable and highly legal. And yet as with the Northern Cheyenne and many other examples shown, it usually results in massive violations of a people's civil rights, however defined.

Institutionalized domination may manifest itself as colonialism, racism, exploitation, expansionism, manifest destiny, trust obligation, resource management, education, etc. It is the *form* of a relationship between two identifiable groups of people, two systems, two ways of life and livelihood. As the interethnic domination form or motif becomes embedded in specific institutions, it moves away from being a matter of personal domination or exploitation, or of personal morality. This is its institutional aspect. It seemingly, for the people involved, then falls outside the domain of personal responsibility. It becomes almost a part of the environment, like a force of nature, to which everyone is equally subject and for which no one personally is to blame.

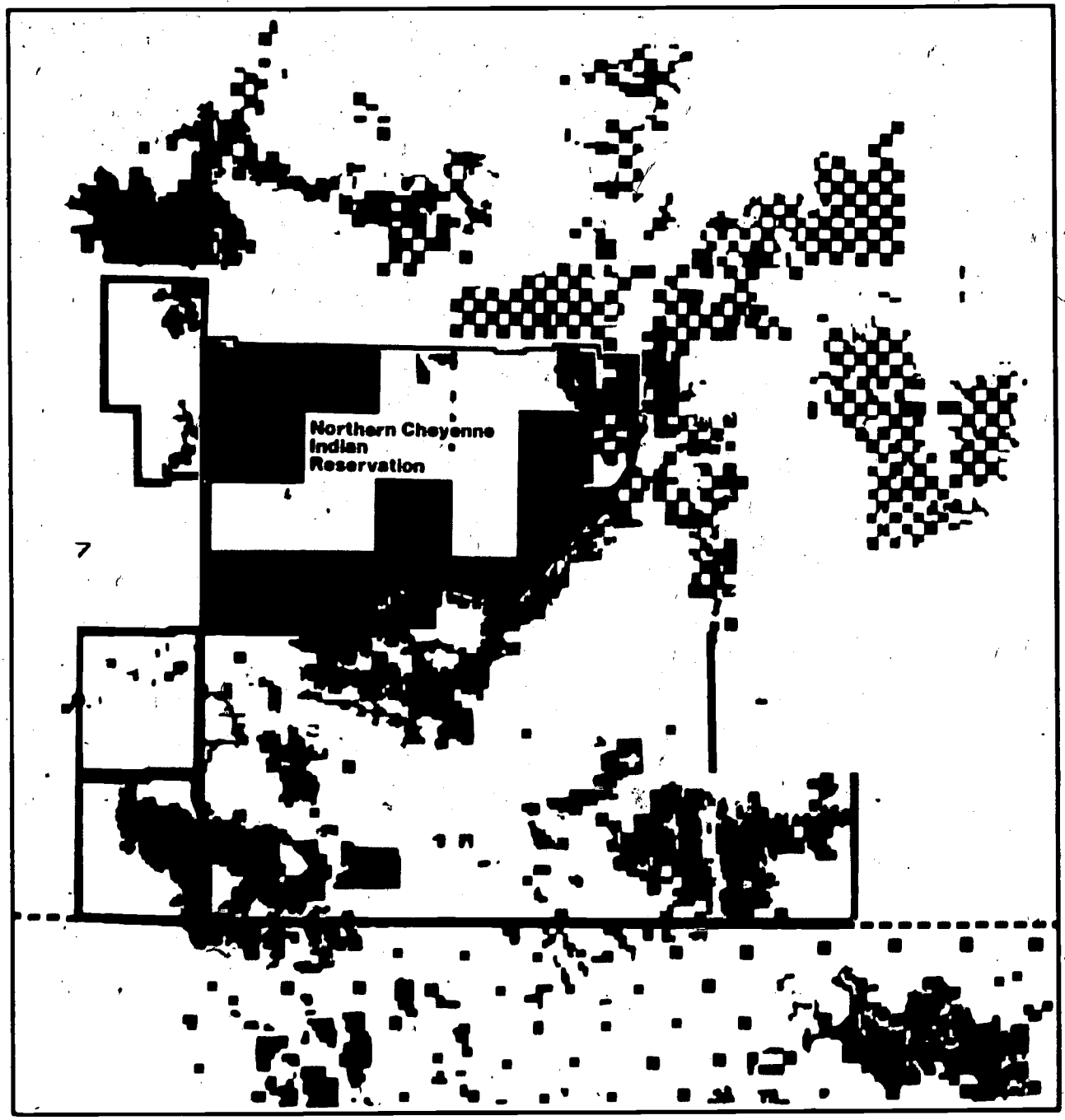
Once the domination pattern is established, all of the specific institutions through which the relationships between the two groups are mediated and expressed begin to take on similar features. Plato's famous metaphor is apt—at least for some aspects of human society: the concrete and real-seeming institutions of daily life are transient and ephemeral, while the pattern that they in various ways and contexts come to express, although it is formulated and understood by the human mind as an abstraction, a "shadow," is the one enduring and universal constant. As a social pattern that transcends the lives of individuals and of institutions, the dominating group is as much subjected and perhaps victimized by it as is the dominated.

How Institutionalized Domination Works

Contemporary Indian reservations in the continental United States offer clear examples of institutionalized domination in their schools, their governing institutions, their economic institutions, their services, employment patterns, communication systems, and in their informational systems and media. Virtually any aspect of life on the reservation, or any event or project, could be selected as a case study to exemplify the pattern.

FIGURE 1

Map Showing Large Size of Coal Lease and Permit Tracts on Northern Cheyenne Reservation in Relation to Those in Surrounding Areas; Shaded Areas Were Encumbered by Coal Lease or Permit in 1973.



Source: From an Original Prepared by Wesco Resources, Billings, Montana

The essential feature of institutional domination is control. The more pervasive the domination, the more pervasive is the control of all of the aspects of life of the dominated group by the institutions and personnel of the dominating group. It is basically very simple and commonplace. My wife and I have lived on the Northern Cheyenne Reservation as research sociologists for the Northern Cheyenne Tribe for the last 2 years, and the pattern of institutional domination here is as ubiquitous, frequently as little noticed, and yet as undeniably real as the air we breathe and the ground we walk on. The purpose of this section will be to exemplify this pattern in a variety of concrete instances.

Many independent oral accounts of earlier reservation history record examples of Northern Cheyenne children being whipped at school for speaking their native tongue. The Indian agent also witheld rations from families who did not send their children to school. These are examples of the institutionalized domination of one group by another. Any reservation school anywhere in the country now probably has a Government-funded bilingual program. Have things changed? Not really. These schools are still, no less than in earlier days, preeminently Anglo-American institutions teaching Native American children. There is a nontribally controlled public school on the Northern Cheyenne Reservation. It is administered and professionally staffed by whites. English is the medium of instruction. It teaches U.S. and "world" history to Cheyenne children, but not the history of the Northern Cheyenne Nation, nor of their land, nor the greatness of their leaders who lived and died by their traditional values.[1] Nor are Cheyenne children systematically taught in school about, nor prepared in a practical way to deal with, the many pressing and real problems facing their homeland today.

The present Northern Cheyenne government was instituted under the Indian Reorganization Act (IRA) of 1934. Although successful in many ways, it was designed by the Bureau of Indian Affairs and patterned after Anglo-European models. As with most IRA governments, its constitution requires approval of the Secretary of the Interior for all major actions (see Berkey, 1976, pp. 4–5; Jorgensen, 1972, p. 139). Tribal government is controlled by an Anglo-American political structure and directly dominated by the BIA and the bureaucracy of the Department of the Interior.

These situations initially were brought about apparently quite consciously by the BIA in early reservation days. One historian of the Northern Cheyenne Tribe, for example, reports that:

> changes brought about by the reservation system struck at the heart of the traditional Cheyenne way of life. With the coming of the Indian agent, the Council of Forty-four lost all major decisionmaking powers. Although the chiefs were the wisest men of the tribe, the ones most aware of the needs of their people, the agent and the Indian Bureau made all important decisions affecting the lives and future of the Cheyennes. (Weist, 1977, p. 123)

And again,

> In 1886 the Bureau established a Cheyenne police force while a system of courts and judges was set up in 1889. Both were accountable to the agent, not the people, nor were they enforcing traditional Cheyenne law but rather the laws of white society. (Weist, 1977, p. 124)

Many other examples could be cited to show that in general the Bureau clearly tried to destroy the powers of the chiefs as leaders and policymakers, of the military societies as police force and executive branch, of Cheyenne religious leaders as counselors and final authority, and of the family as the educational institution by which Cheyenne values and knowledge were transmitted—all of which were, and to differing degrees still are, highly developed and effective native Cheyenne institutions. The reason for this Bureau policy quite clearly was that tribal self-determination by traditional law interfered with the BIA's desire to impose its own rule by bureaucratic decree. The means used to accomplish interethnic domination today are less obvious and crass than in the past, but then the domination pattern now is much more securely institutionalized and in place than it was then.

[1] It should be noted here that there is no shortage of Cheyenne material for educational purposes. The anthropological studies of Hoebel and Grinnel, historical accounts of the Cheyennes' trek north to their Montana homeland as in the *Last Frontier* by Howard Fast or *Cheyenne Autumn* by Mari Sandoz, including most importantly *Cheyenne Memories* by a Northern Cheyenne tribal historian, John Stands In Timber, and Margot Liberty are all available. There are also a number of Northern Cheyenne Elders who are extremely well versed (but not formally credentialled by non Indian institutions) in the lore and history of their tribe and are well able to communicate it. One "well-educated" Northern Cheyenne, recently returned to the reservation, reported "A lot not having left [the reservation] don't appreciate what we have here. A Cheyenne Elder knows language, stories, religion more knowledge than any professor anywhere" (see Briggs and Scudder, 1977, p. 112).

The pattern today is clearly revealed in many ways. It shows up, for example, in statistics. I will cite some employment figures briefly as one example. Tribal government is the largest employer on the reservation, with a total of 376 employees in 1976. Business employment (including construction) is next, with a total of 251 employees. Schools are third, with a total of 240 employees. Down the line are Federal and State programs, including the BIA and Indian Health Service, with a combined total of only 79 employees (7 percent of reservation employment; less than half of that 7 percent is Northern Cheyenne).

The schools serving the reservation today are either nontribally controlled or are subject to all the certification and other requirements of the Anglo-American educational establishment. Fully 51 percent of the school employees are non-Indian, 40 percent are Northern Cheyenne, and 9 percent are other Indian. Even more telling, the managerial and professional staff of the schools is comprised almost entirely of non-Indians. Clearly, control of education is securely in non-Indian hands. Tribal government, in contrast, is largely Cheyenne controlled and employs 80 percent Northern Cheyennes, 11 percent other Indians, and only 9 percent non-Indians. Furthermore, in tribal government, although precise figures are not at hand, a much larger percentage of the managerial and professional positions are staffed by Cheyennes than in the schools.

On the reservation in general Cheyennes are clustered in laborer and service jobs: 54 percent of all positions held by Cheyennes. Only 12 percent of the population is non-Indian, yet they hold 60 percent of all professional and managerial jobs. As a group, only 19 percent of non-Indians on the reservation hold laborer or service jobs, while 81 percent hold managerial and professional jobs.

A really excellent contemporary example of institutionalized domination is found in the preparation of environmental impact statements (EISs) that for coal development projects near the reservation are required by law to address impacts to the reservation. These are policy documents to aid government agency decisionmaking, so they are more than academic studies but are intended to influence actual events. I have dealt with this problem at length in two previous papers [Boggs, 1978(a); Boggs, 1978(b)] and here will only summarize my conclusions.

The way that EISs are prepared prevents effective input or representation from tribes. Consequently, the social impact sections of such documents are usually scientifically indefensible and fail to meet their stated legal intent. It is striking that the one thing that the institutional arrangements under which EIS documents are produced do accomplish well, consistently, and at the expense of failing to accomplish either their legal mandates or scientific credibility, is *to prevent local communities and Indian tribes from controlling the analyses of impacts to themselves* from the projects being reviewed. This is not too strongly put. Outsiders, through a number of EISs currently prepared or underway, are telling the Northern Cheyenne people what they value, what their baseline living conditions consist of, and how these values and conditions will be affected by the decisions being made by these same outsiders. The Cheyenne Tribe is forced into the role of *subject* for what minimal analysis is done, rather than allowed the role of active *spokesman* for its own concerns. In other words, from the point of view of an Indian tribe, this is one more case in which control over their lives and livelihood is institutionalized in nonnative, nonlocal institutions.

One sees the same basic pattern repeated in other short-term projects. A television program conceived and initiated by Northern Cheyenne tribal members to develop the meaning of their history in relation to their own experiences was taken over by the funding agency and the white producer—but not without much wrangling. The Cheyennes knew what they wanted and how to do it in their own way to express what they wanted to express, whereas the non-Indian agencies were trying to cater to their idea of what the non-Indian television public wanted to see.

In a similar example, white consultants brought in to talk about the feasibility of an on-reservation, small-scale coal mine to provide fuel for local use were unable to consider the project in light of the goals and values of the people who conceived it (nonprofit, serving the needs of a broad range of tribal members), and instead were concerned only with its profitmaking potential on open markets, which would have resulted in cash benefits to relatively few people and loss of basic control over the tribal resource. The resource would have ended up serving Anglo-American values and needs instead of tribal values and needs, and the return to the tribe would have been a relatively small amount of cash.

These examples are all expressions of institutionalized domination as it is defined here because in each instance control over Northern Cheyenne lives and livelihoods is vested on a day-by-day basis in non-Indian institutions. Furthermore, control over these institutions is maintained tightly in non-Indian hands. Many other examples of this same pattern in the area of water rights have been effectively presented in the paper by William Veeder and in other areas by other papers in this conference.

I will return to the coal-leasing debacle at Northern Cheyenne as one instructive expression of the problem of sovereignty and institutionalized domination, but first I want to return to consider in more general terms some implications of the pattern that has just been identified in concrete examples.

Control is sovereignty. Sovereignty on the Northern Cheyenne Reservation is not an abstract or philosophical problem alone, but as Lerner (1978) pointed out in a recent article in *Akwesasne Notes*, it is a nuts and bolts everyday problem. It is fought for in dozens of arenas in dozens of ways, day by day and year by year. In the context of the current drive for massive coal development on and around the Northern Cheyenne Reservation (see NCRP, 1977, Nordstrom et al., 1977, Ziontz et al., 1974, Boggs and Owens, 1977), it is part of a continuing struggle for cultural and group survival.

It is for this reason that recognizing and dealing with the pattern of institutional domination has acquired a real urgency. Currently, the locus of control over various aspects of the lives of most tribal people — the education of their children, their government, ultimate management and control of their resources, media programs, and professional expertise — does not rest with their own institutions. Instead, in one way or another, in different times and contexts, control over Indian lives has been invested in non-Indian institutions, which are themselves controlled predominantly or ultimately by non-Indians. As a result, *control is exercised on a daily basis by people of one distinct historical identity, race, and culture over people of a different historical identity, race, and culture.* Even where tribal members are in nominal control, this control is exercised within Anglo-American institutional frameworks and in most areas is subject to the ultimate authority of the BIA or the Department of the Interior. The very pervasiveness of the domination of Indian life by non-Indian institutions is one of its most notable features. Under the current pressure for massive coal development, and its requirements for water, land, air, and human resources, the situation is readymade for disastrous and almost automatic exploitation of the affected tribes.

Some Implications of Institutionalized Domination in the Area of Natural Resources

The situation described in the preceding section sounds difficult and grim and it is. But the possibilities for change, for increased Indian self-determination, are greater than they may appear. For one thing, tribes are much more aware of their situation and potentials now than they have been in the past reservation periods. They are more alert, both to potential "grabs" for Indian resources, like those represented by the suspended Northern Cheyenne coal leases reviewed here, and they are also more alert to the very real legal power they have in their relationship with the U.S. Government as quasi-sovereign entities.

In fact, another one of the interesting paradoxes in the situation today is the disparity between tribal legal status as sovereigns and the actual control over tribal affairs by non-Indian institutions described above. I sometimes wonder, strictly as a layman, if tribal sovereignty and self-determination in many areas were not taken away every bit as illegally as Indian resources and lands were taken. If so, perhaps tribes could enter equally successful lawsuits against the United States for effectively but illegally taking away their civil rights as they have entered against the U.S. for effectively but illegally taking away lands that were similarly guaranteed by treaty.

In any event, the disparity between tribal legal status and the realities of institutional domination, including the almost total domination of non-Indian economic institutions, is a most important part of the picture. One important ramification of this situation is that tribes have not retained or developed their own sovereign institutional capabilities. This has extremely important implications for natural resource development on reservations. Most tribal governments are not only very young as governments go, dating back less than 50 years to the period immediately following the Indian Reorganization Act of 1934, but also since then, as part of the general pattern of institutional domination reviewed above, they have not been allowed to function as free to develop the institutional capabilities of most governments.

County and State governmental institutions, although counties and even States are by legal definition less sovereign in many ways than are tribes, have developed their present capabilities over long periods by the effective exercise of those sovereign powers they do possess. Not only are tribal governments in their present form recently formed governments, but they have been effectively denied until the last decade the normal exercise of sovereignty. Original tribal institutions were destroyed, quite consciously and systematically in the early reservation period, and some version of the functions of these original tribal institutions was subsequently administered through one or another branch of the BIA bureaucracy. Tribes literally for decades have been ruled almost entirely by bureaucratic decree rather than by law—either their own or non-Indian law. This has had some bizarre consequences. It has also prevented tribes from adapting their own original forms of self-government to new circumstances or from developing new workable institutions of their own.

One well-known example of the bizarre consequences that can follow the effective bureaucratic control of Indian resources by the BIA lies in the area of land ownership and use. The typical pattern on many reservations is that farmland owned by tribal members is packaged in productive units that are not necessarily related to its actual ownership by tribal members. These management units are leased to and farmed by local non-Indian operators.[8] The BIA manages this leasing program. Meanwhile, ownership of these lands, which has been divorced now from their control or use, has gone its own merry way. The original allotments or interest in them has been divided and subdivided many times by heirship, independently of any practical considerations of ownership and use.

The upshot is that under BIA management the productive units being used by non-Indians remain intact, while the pattern of Indian ownership of these units has become hopelessly tangled. This itself has now become a major deterrent to the Indian owners ever regaining effective control over and use of their own lands. It seems safe to assume that if ownership had not been so divorced from control and use through Bureau management, the situation would be very different. Indian owners and users would have institutionalized some means of their own to keep ownership patterns consonant with productive use; as has been accomplished in various ways by all peoples throughout the world when left to their own devices.[9] Institutionalized domination aborts development of self-government and self-management capabilities in the area of natural resources, as in other areas. It then becomes justified by the very lack it has created.

Conclusion

This paper began by pointing out an anomaly or paradox: that involvement in the Bureau of Indian Affairs' management of coal sales would have had disastrous consequences on some 56 percent of the Northern Cheyenne Reservation lands. It then defined and exemplified the general pattern of the institutional domination of Indian life by non-Indian institutions. It showed that in many areas, including that of natural resource development, the general pattern of institutional domination has had similarly anomalous and disastrous consequences, although these take a variety of forms.

That the sale of the Northern Cheyenne coal is an example and consequence of institutionalized domination, as identified above, is by now too obvious to require much elaboration. The coal sale represents both the actual control and management of tribal resources by a nontribal, non-Indian institution and the consequent lack of development of requisite tribal institutional capabilities. These features were also prominent aspects of institutional domination in the areas of government and of resource management in previously cited examples.

The sale also, through the tribe's success in halting the seemingly inevitable consequences of the signed contracts and the suspension of the leases and permits, illustrates the gap between the *actual* domination of Indian affairs by non-Indian institutions and the *potential* legal and sovereign powers of tribes. The Northern Cheyennes exercised their real legal power.

The coal sales incident further illustrates the anomalous or paradoxical nature that various expressions of institutional domination seem to take, also evidenced in previous examples. Finally, it illustrates another typical feature of such domination—one that was exemplified but not specifically identified

[8] This particular example illustrates my general point but does not apply fully to the Northern Cheyenne Reservation, where more agricultural land is used for grazing rather than being farmed and in addition allotted entirely to Northern Cheyenne operators.

[9] For a more detailed discussion of agricultural land use and ownership on Indian reservations, see Briggs (1969).

above. It often happens in association with some mechanism related to the institutionalized domination pattern that tribal resources, through sale, lease, "management," use, fraud, or simple expropriation, slip into non-Indian hands. This is apparent in Veeder's discussion of water rights, as well as in examples presented above. As Frank Ryan of Harvard, a prominent Indian scholar, put it during an orientation session for the newly elected Northern Cheyenne Tribal Council, "When they do it *for* us, they do it *to* us."

The lesson to be learned from recognizing that the Northern Cheyenne coal sale debacle is part of the much more general pattern of institutionalized domination is equally clear. It is not an isolated instance, to be casually dismissed as a lone example of miscarried justice, a narrowly averted disaster, or an inexplicable anomaly. It is not simply another example of BIA incompetence and mismanagement of resources. The sheer magnitude of the folly involved, if it were viewed merely as an isolated and regrettable mistake, staggers the imagination.

The coal sale is, rather, one specific expression of a pattern that is pervasive in the relationships between Indian and non-Indian institutional structures and can be fully understood only in this light. As such it highlights certain problems that are common to the general pattern, in all its diverse and myriad expressions. The pattern itself is one of injustice and exploitation and the steady loss of vital resources. It needs to be attacked at its source rather than merely corrected on an ad hoc basis, usually after expensive court or legal action, in this and that specific instance.

The best way I can see to make this correction is honestly and, without the usual "strings" and broken promises, to provide tribes with the time, the resources, and the opportunity to develop the means to govern themselves. This solution was advanced by Sol Tax in 1956, by Tax and Stanley in 1969 (see Tax and Stanley, 1969), and by tribal leaders since the treaty period. It is even more pertinent and urgent advice today.

Until this is accomplished, probably the best strategy for tribes is simply to fight holding actions to delay or prevent further incremental losses of their increasingly valuable natural resources, while they much more slowly and painfully and expensively fight their way to the same end. Perhaps we have finally reached the turning point, at which it is to the practical advantage of the United States to treat its Indian minority with the respect, fairness, and justice that are long overdue on moral grounds.[4]

[4] I am particularly indebted to the following individuals for specific understandings that went into the present article: Herman and Mike Bear Comes Out, Eva Metcalf, Dick Morrison, Nancy J. Owens, Jo Ann Sooktis, Pearl Youngbear. Other friends in the Northern Cheyenne Tribe and the Northern Cheyenne Research Project also helped. Nancy J. Owens read an earlier draft and contributed helpful editorial suggestions. The conclusions and interpretations, and any errors, are my own and do not necessarily reflect those of the above individuals, the Northern Cheyenne Tribe or the Northern Cheyenne Research Project.

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Indian Water Rights and the Energy Crisis

By William H. Veeder*

Before "energy crisis" became a household term, the *Civil Rights Digest* published a commentary of the then forthcoming Indian water rights controversy in the coalfields of the western United States.[1] In that analysis, it was emphasized that water rights constitute a matter of life and death for the Indian nations, tribes, and people in the arid and semiarid West. These are the words of the Supreme Court relative to the imperative necessity of preserving and protecting Indian rights to the use of water if the tribes are to survive:

> Most of the land in these reservations is and always has been arid. . . .It is impossible to believe that when Congress created the great Colorado River Indian Reservation and when the Executive Department of this Nation created the other reservations they were unaware that most of the lands were of the desert kind—hot, scorching sands—and that water from the river would be essential to the life of the Indian people. . .and the crops they raised.[2]

Taking cognizance of that need for water by the western Indians, the *Civil Rights Digest*, in the article in question, emphasized that the report of the National Water Commission, published in 1973, presaged disaster for the Indian people. As pointed out in the article in question, if the National Water Commission report became "the policy of the Federal Government," the western Indians would be deprived of their water resources, with the attendant destruction of the western reservations as we know them today and the throttling of reservation economic development.[3] From the same source, this statement is taken:

> The National Water Commission's report is an attempt to justify and apologize for past, present, and contemplated seizures of Indian water rights for non-Indian projects and purposes. Past violations are excused on the grounds of the violators' alleged ignorance of the law; projected seizures are justified by expediency.

Formulation of the National Water Commission report coincided with the drive to obtain Indian rights to the use of water for the planned coal development, both as to thermal units and gasification. Prescience was not required to foretell in preparing the publication for the *Civil Rights Digest* that the future of Indian rights to the use of water was gravely imperiled. At the time of the publication, issues had been sharply drawn between those who insisted that the Indian rights should not be confiscated and those who had undertaken the seizure of the Indian rights. As the disastrous economic consequences of reliance upon foreign oil became manifest, even to those who profited greatly by those imports, alternative methods were being formulated.

One of the alternatives was the exploitation of the vast coalfields in the upper Missouri River basin. Because coal and water are inseparable in the development of the resources to reduce reliance upon foreign oil, plans were formulated to utilize to

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[1] "Indian Water Rights and the National Water Commission," *Civil Rights Digest*, vol. 6, no. 1 (Fall 1973), pp. 28-33 (hereafter cited as "Indian Water Rights")

[2] Arizona v. California, 373 U.S. 546, 598-99 (1963)

[3] "Indian Water Rights," p. 30

the fullest extent the water resources in the Yellowstone River basin of Montana and Wyoming.

In the formulation of those plans, the representatives of the Department of Interior, working closely with the politically and financially powerful multinational energy cartels, presented plans that were grandiose in character. Thus it was that the water resources of the Big Horn River would be diverted and delivered to Shell, Gulf, and other oil companies that held leasing arrangments in the coalfields in and around Gillette, Wyoming. In that high and dry plateau area of the northern Great Plains, coal is there in abundance, but the water resources are drastically short.[4] In complete disregard of the rights to the use of water of the Wind River Indians in Wyoming and the Crow Indians of Montana, contracts were entered into by the Bureau of Reclamation, Department of Interior, to sell 700,000 acre-feet of water annually from that source.[5]

At this point, it is essential to emphasize this indisputable and fully documented fact: since the creation of the Bureau of Reclamation in 1902, it has had a well-developed program for the seizure of Indian rights to the use of water. Its historic violations of the Indian rights have been reviewed in detail. That Bureau's presence in the Department of Interior, the Secretary of which is the principal agent of the Trustee United States of America, is a commentary upon the general amorality in the administration of Indian affairs. Because of the powerful constituency of the Bureau of Reclamation and its virtual control of Interior's policies, the consequences, which have befallen the Indians in the western United States, partake of a national scandal.[6] As emphasized in the congressional report last mentioned, the efforts of the Bureau of Reclamation to sell 700,000 acre-feet of water, to which the Indians were legally entitled, were without a scintilla of authority. As pointed out to Congress:

> Basically the Industrial Water Marketing Program is without legal authority. . . .That it clearly violates the obligation of the Secretary of the Interior to preserve, protect, utilize and conserve the Indian rights is a conclusion that cannot be successfully challenged.[7]

The clash that transpired within the Interior Department can best be described as brutal. Though the marketing program of the Interior Department has never been effectuated nor have the Indian rights to the use of water been delivered to the coal companies, the struggle is ongoing and is daily becoming increasingly intense. A thousand miles to the south, identically the same struggle was ongoing in regard to the Indian rights to the use of water in the San Juan River basin. There the coal development within the Navajo, Southern Ute, and Ute Mountain Indian Reservations was sought after by the El Paso Natural Gas Company and other powerful energy interests. Because of the known shortage of water in the San Juan River basin, Congress had imposed upon the Secretary of Interior the obligation of making hydrological determinations as to the availability of water antecedent to entering into contracts to supply the energy companies.[8]

Indepth hydrological studies have been made. They disclose that the supply of water is drastically short in that area. The Bureau of Reclamation, Department of the Interior, is the principal advocate of contracts for the sale of water to the energy cartels that are functioning in the San Juan River basin. The Indian communities, to which reference has been made, are equally adamant that the Bureau of Reclamation cannot sell the water, so vital to their existence. The issues in the San Juan River basin, relative to the coal developers utilizing Indian rights to the use of water, were the subject of an intensive investigation by the Congress of the United States.[9] Only the Bureau of Reclamation and its constituent energy cartels fail to recognize the indisputable fact that there is insufficient water for the Indian developments now ongoing and for the coal proposals that have now been formulated.[10]

Pertinent here is the fact that the Congressional Library made an intensive study as to the availability of water in the San Juan River basin. That report is

[4] "Water Rights in the Coal Fields of the Yellowstone River Basin," *Law and Contemporary Problems* (Duke University School of Law), vol. XL, no. 1 (Winter 1976), pp. 77 *et seq.*

[5] "Missouri River Basin Industrial Water Marketing," *Hearing Before the Subcommittee on Energy Research and Water Resources of the Committee on Interior and Insular Affairs*, U.S. Senate, 94th Cong., 1st Sess., "On the Sale of Water from the Upper Missouri River Basin by the Federal Government for the Development of Energy," July 18, 1975, Part 1, pp. 115 *et seq.*

[6] Ibid., pp. 117 *et seq.*

[7] Ibid., p. 130

[8] Pub. Law 90-272, enacted Mar. 22, 1968

[9] "San Juan-Chama Project," *Hearing Before the Subcommittee on Energy Research and Water Resources of the Committee on Interior and Insular Affairs*, U.S. Senate, 94th Cong., 1st Sess., on "The Existing San Juan-Chama Conversion Project in Colorado and the State of New Mexico, and the Effects of the Project on the Fish and Wildlife Inhabitants of the San Juan River Basin," June 12, 1975

[10] Ibid., pp. 75 *et seq.*

entitled "Water Supply Contracts from Navajo Reservoir for Proposed Coal Gasification Plants."[11] Itemized there are the contracts now in force for the sale of water to the energy corporations. Under the heading "Critique," the Congressional Library summarizes the studies of the Secretary of Interior, stating that the conclusions reached by the Secretary were, among other things, "tenuous."[12] In regard to the Indian water rights in the San Juan River basin, it was emphasized that, because those rights are:

> separate from and prior to those under state laws, they should probably be subtracted from the total Upper Basin supply before allocation among the states, rather than being taken from the individual states' allocations.

By that statement, the Congressional Library, in its report, defined with great clarity the problems confronting this nation relative to the proposed utilization of coal for energy development. It must at this point be emphasized that the Indian communities are most amenable to utilizing their resources for energy development. Quite naturally, however, they resist the violation of their invaluable rights to the use of water for the benefit of the energy cartels that have been and are now benefiting financially from the energy crisis.

Having announced that the President had formulated his intention to issue a national management policy, the Water Resources Council was directed to effectuate the President's plan.[13] Secretary of Interior Cecil D. Andrus, as Chairman of the Water Resources Council, was directed to lead a study that would develop a "comprehensive reform of water resources policy, with water conservation as its cornerstone."[14] Acting in accordance with that direction, the Secretary of Interior, at the National Conference on Water, held May 24, 1977, announced a nine-point program, which would be directed "toward a comprehensive and realistic national water policy."[15]

Point six of the Secretary's program categorized as a single unit "quantification of Indian rights and federal water rights."[16] The issue of whether Indian rights are Federal rights is a controversy that will continue. The current administration vacillates between adhering to the concept that Indian water rights are Federal rights and denying that they can be categorized as Federal rights.

To perform the task outlined by the Secretary of the Interior, a Policy Committee was established within the Department of the Interior.[17] The Assistant Secretary for Land and Water Resources, within the Interior Department, has been designated the Chairman of the Policy Committee. The implications of that appointment are of overriding importance. It turns largely upon the conflict of interest that exists within the Interior Department between the newly created Assistant Secretary for Indian Affairs and the Assistant Secretary for Land and Water Resources. Those interests are antipodal. Those interests cannot be reconciled. If the Indian rights to the use of water are to be protected,[18] the Bureau of Reclamation, the Bureau of Land Management, and other non-Indian agencies must be barred from violating Indian rights. These Interior Department agencies have consistently seized Indian water rights for the benefit of non-Indian purposes and projects.[19]

When the Indian community became aware of the content of the proposed Presidential policy, they immediately mobilized for the purpose of demanding that their rights be protected in any policy that might ultimately be issued. At a meeting on July 12, 1977, of Indian leaders with the Chairman of the Policy Committee, the Water Resources Council, and members of his staff, an indepth review of the conflicts was consummated. The Chairman readily admitted that the Indian rights are not Federal rights and that the Indian leadership had not been consulted respecting the policy. At the meeting, moreover, there was brought forth a most salient point: the

[11] Ibid., pp. 116 *et seq.*
[12] Ibid., pp. 118 and 140.
[13] Water Resources Policy Study, Study Plan and Timetable, 42 Fed Reg 14,561 (1977).
[14] *Id.* at 14,564. See also 42 U.S.C. 1962 to 1962d-14 (Supp. 1974).
[15] 42 Fed. Reg. at 14,564. The following points were announced: (1) revision of WRC principles and standards, (2) deauthorization of old projects, (3) increased cost sharing by non-Federal entities, (4) reforms of laws, regulations, and practices governing allocation of water, (5) wise use of water, (6) quantification of Indian water rights and Federal reserved water rights, (7) evaluation of water quality with conventional water resources allocation and development, (8) improved dam safety, and (9) increased water conservation.
[16] *Id.*
[17] 42 Fed. Reg. at 14,563. "[A] Policy Committee [is] composed of the Assistant Secretary of the Interior—Land and Water Resources, Associate Director of OMB for Natural Resources, Energy and Science, and Member, Council on Environmental Quality."
[18] See hearings on *Federal Protection of Indian Resources, Hearings on Administrative Practices and Procedures Relating to Protection of Indian Natural Resources* before the Subcommittee on Administrative Practices and Procedures of the Senate Committee on the Judiciary, Part 1, 92d Cong., 1st Sess., 173 app. (1971) (Veeder, "Federal Encroachment on Indian Water Rights and the Impairment of Reservation Development," pp. 191-92.
[19] Ibid.

Secretary of the Interior had designated and announced the appointment of the first Assistant Secretary of the Department of Interior for Indian Affairs. That designated official was placed in an impossible position by the conduct of the Water Resources Council, which, as stated, had totally ignored the rights of the Indians. A most important Indian policy in regard to water rights had been announced, but the designated Assistant Secretary had no voice in the formulation of that policy and would, moreover, be bound by it if it were accepted as official in character. Both the Indian leadership and the then Assistant Secretary for Indian Affairs designate, Forrest Gerard, demanded that the President's water policy, then being formulated, preserve and protect the Indian rights against seizure.

In an effort to placate the concerns of the Indian people and taking cognizance of the fundamental laws protecting Indian rights to the use of water, the Water Resources Council, on July 26, 1977, published this pronouncement in the *Federal Register:*

> Indian water rights are not the same as "Federal rights" and, therefore, cannot be included in a policy statement involving "Federal rights". . .and no separate option paper on Indian rights to the use of water will be published.[20]

Events, which would subsequently transpire, disclose that the recanting of the Water Resources Council, acting through the Secretary of Interior, in regard to Indian rights was purely cosmetic. The President's policy that was ultimately issued, rather than declaring that Indian rights are not Federal rights, states this:

> Indian water rights are an important component of the long term resolution of water problems in the West. There have been several important court decisions— *Winters v. United States* and *Cappaert v. United States* in particular—which have established that there were water rights attached to Indian reservations upon their creation.[21]

Let this fact be emphasized: *Cappaert* is a case involving Federal rights to the use of water as distinguished from Indian rights. Those who formulated the President's message clearly violated the language that had been adopted to separate and distinguish Indian rights to the use of water from Federal rights.

Great damage has already been experienced by the failure of the Interior and Justice Departments to distinguish Indian and Federal rights to the use of water. It was the refusal of the Solicitor General of the Department of Justice to distinguish between Indian rights and Federal rights that resulted in the McCarran Act being extended to Indian rights. That concept—in total error—brought about the disastrous *Akin* decision, which subjected Indian rights to the jurisdiction of State courts.[22]

Adding to the great concern of the western Indians is the fact that the President's policy not only fails to distinguish the Indian rights from Federal rights, it likewise outlines strategies for accomplishing the Presidential purposes that gravely threaten the Indian rights. Reference in that connection is made to this phase of the President's policy:

> The priority and quantity of these [Indian] rights present a question, however, because the quantification of the rights must be determined by examining the documents establishing each reservation. These issues can, of course, be resolved through judicial proceedings. This is a time consuming and costly process. *The President strongly favors a negotiation process instead.* [emphasis supplied][23]

Forrest Gerard, now Assistant Secretary for Indian Affairs, in a communication dated August 24, 1978, to "All Tribal Chairmen," relative to the "Presidential Directives Regarding National Water Policy," said this among other things:

> All of the directed actions are to:
>
> —Facilitate the negotiation process regarding Indian claims to the use of water.
>
> —Be taken in close consultation with Indian tribes.
>
> —Be under this Department's lead responsibility.
>
> —Result in products which are to be submitted to the Secretary by June 6, 1979.

Once again, the Indian communities, fully aware of the value of their rights to the use of water and the

[20] Indian Water Rights Statement, 42 Fed. Reg. 38,463 (1977).
[21] Water Policy Message: Detailed Background, June 6, 1978, p. 15.
[22] Colorado River Water Cons. Dist. [Akin] v. United States, 424 U.S. 800 (1976).
[23] See note 21, *supra.*

demands that those rights be seized for the purpose of meeting the energy crisis, recoil at the idea that the negotiations recommended by the President are to be undertaken pursuant to the Department of Interior's "lead responsibility." The Indian tribes have already experienced, as pointed out above, the consequences of permitting the officials of the Department of Interior to propose policies that directly effectuate the Indian rights to the use of water. As emphasized in the *Civil Rights Digest* of 1973, the conflicts of interest within the Department of Interior are transcendent and wherever the Indian interests within that Department conflict with the non-Indian projects, purposes, and plans, the Indians are invariably the losers.[24]

To implement the Presidential policy relative to negotiations—which, as stated, strikes at the very basic principles of the law protecting Indian rights—it has been proposed that the Indians negotiate with the States in regard to the measure, character, and extent of their rights. Relative to that proposal, the budget for the Bureau of Indian Affairs, 1979–80, among other things, provides, under the heading:

> RIGHTS PROTECTION ACTIVITY DECISION PACKAGE FOR THE FISCAL YEAR 1980 BUDGET:
>
> The States of Arizona, South Dakota and North Dakota, however, have indicated a willingness to undertake negotiations on the water rights issues in those States rather than to litigate the water rights associated with the two dozen reservations in those three States alone. Absent impetus for negotiations, many of the major stream systems in the western half of the country will very likely be tied up in litigation well into the twenty-first Century. The States of Wyoming, Nevada, Colorado, New Mexico and Washington have already instituted judicial proceedings to expedite this process.

Continuing from the same source, this statement is also taken:

> Two major initiatives are contemplated in this area. One in Arizona involving two of the principal streams in that State and one in South Dakota involving the waters of the Missouri system in that State.

It is further stated:

> The costs of protracted litigation, which might not be necessary, are simply unnecessary transaction costs visited upon every user of water and purchaser of goods derived from the primary industries of mining and agriculture.

Overlooked entirely in those statements are the Indian interests, which the Trustee United States is required to protect. As will be emphasized, the Indians should not, under any circumstances, proceed with negotiations with the States. It would not be harmful, of course, to consult with the States strictly from the standpoint of public relations. However, firm negotiations with the States to resolve Indian rights to the use of water should never be undertaken by the Indian people. Reference in that connection is made to the fact that it was a conflict between the Indians and the States that resulted in the constitutional provisos vesting plenary and exclusive jurisdiction over Indian affairs in the national government. As will be reviewed, it was also the conflicts between the United States and the State of Georgia, which had challenged the authority of the United States over Indian affairs, which brought about the hallmark decision of *Worcester v. Georgia.*[25]

Quite aside, however, from the ongoing threats of the States in regard to Indian rights to the use of water are equally basic principles of law. In that regard, reference is made to these concepts which, respecting Indian interests, are not subject to successful challenge. The States have neither the power, the authority, nor the financial capacity to negotiate binding contracts with the Indians. The States have no rights to the use of water about which they are empowered to negotiate. Any arrangement with the Indians relative to their rights to the use of water as they relate to the States would be null and void and of no force and effect—a vacuous undertaking.

There is no question that the States are most anxious to enter into negotiations in some manner to limit the rights to the use of water of the Indian people for the benefit of the other citizens within their jurisdictions. Reference in that connection is made to a headline in a recent news story, which reads as follows: "Missouri Tribal Control Questioned."[26] Continuing, the article declared, among other things, that: "A special legislative panel is

[24] "Indian Water Rights."
[25] 31 U.S. 515 (1832).
[26] "Talks Viewed on S.D. Water Rights," *Bismarck Tribune*, Aug. 23, 1978, p. 16.

likely to ask next year's lawmakers to designate a body which can conduct water rights negotiations. . . ."

Indian Winters Rights Immune from State Jurisdiction

Perhaps the most fatal flaw in the President's policy, relative to rights to the use of water, stems from the constitutional aspects underlying the national-State relationship. There can be no doubt that the "water controversies" will ultimately be resolved in the courts. The outcome of those judicial proceedings will very markedly establish the prospects for the survival of the Indian people in the western United States.

Unprecedented demands for water, not only in connection with the energy crisis, but from municipal, agricultural, and recreational uses, have resulted in sharp and ever-accentuated struggles between the Indians, the States, and those who are claiming under the States. Equally unprecedented have been the efforts to deprive the Indians of their rights to the use of water by the energy cartels which, due to their vast financial and political power, have precipitated an unrelenting program to seize or sharply delimit the Indian rights.

Inherent Indian-State hostility from the inceptive moments of this nation continues today. Long prior to the Revolutionary War, the policy of the Commonwealth of Virginia toward the Indians presaged the ongoing struggle between the Indians and the States. That hostility, evidenced by a genocidal policy adopted by Virginia in regard to Indians, is reflected in a 1623 act of the General Assembly. It provides, in part, as follows: "that at the beginning of July the inhabitants of every corporation shall fall upon adjoining salvages [sic] as we did last year. . . ."[27]

Elimination of the Indian population in the State of Virginia was carried out, in part, in that manner. Indeed, it was a most effective method of obtaining the Indian land and was reflective of the basic policies adopted by Virginia throughout its history. It is, of course, another historical fact that Virginia was not alone in its war to exterminate the Indians in eastern United States.

The historian Bancroft described the consequences of the growing colonies upon the "red men": "The seizure of Indian land, the Indians' desperate struggle to survive and the inevitable consequences of the conflict"[28] must necessarily constitute one of the blackest moments of this country's history.

A brief respite from the attacks by the States upon the Indians occurred during the colonial war for independence. Among the rebelling colonies, there was an extreme apprehension that the Indian tribes would add their arms to Britain's, with disastrous consequences to the colonies.[29] Thus confronted, the then-aborning States, under the Articles of Confederation, far from advancing any claims to Indian lands or asserting dominion over the Indians, resolved to foster and preserve Indian friendship. The desire of the 13 original colonies to maintain peace with the remaining powerful Indian nations is exemplified by the September 1778 Treaty between the Confederated States and the Delaware Indian Nation.[30] Examination of that historic treaty between the United States and the Delaware Nation is warranted. It reflects the fact that the rebelling colonies, under great pressure from Great Britain, negotiated with the Delaware Nation on the basis of "equality."

When success against the British Empire had been achieved by the rebelling colonies, they had no desire to wage war with the Indians. As a consequence, numerous treaties were entered into with the Indian people. Those treaties are still in existence and, as will be emphasized, constitute the supreme law of the land.

Failure of the Articles of Confederation respecting Indians and Indian tribes was a prime example of the overall inadequacies of the Confederation. Hamilton, Jay, and Madison, in *The Federalist* essays, expressed the imperative need to have Indian affairs conducted pursuant to the Constitution within the plenary jurisdiction of the central government they were proposing.[31] It was readily recognized that the States were then, as they are now, unwilling or unable to restrain the aggressions of their citizens against Indians with the attendant, frequent, and dreadful Indian wars.[32] Moreover, as the writers of *The Federalist* pointed out, the Indian nations on

[27] Henning's Statutes at Large 128 (1619–1660).
[28] *Bancroft's History of the United States* (Cent. Ed.), vol. 1, p. 451.
[29] Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 549 (1832).
[30] Treaty with the Delaware Nation, Act of Sept. 17, 1778, 7 Stat. 13.
[31] *The Federalist* (J. Hamilton ed. 1885) (A. Hamilton, J. Jay, & J. Madison).
[32] Ibid., No. 3, p. 63 (J. Hamilton ed. 1885) (J. Jay).

their border were a threat to the Union not only by reason of their own capacity to wage successful war, but likewise as to the possibility of allies for the European powers who were desirous of seizing, if possible, the newly acquired lands of the United States.[33]

As a consequence of the historic conflicts among the Indian tribes and the States, there was delegated to the central government the exclusive and plenary control over Indian affairs. These are the words from the commerce clause of the Constitution, which created the historic and legal relationship between the national government and the Indian nations: " *The Congress shall have Power.* . . .To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes. . . ."[34]

Unquestionably, that constitutional proviso is the basis of the Federal-Indian relationship—to the exclusion of the States. Nevertheless, other historic events resulted in the application of other basic provisions in the Constitution to Indian affairs. In the 1823 Supreme Court decision, *Johnson v. McIntosh,* Chief Justice Marshall referred to the dilemma confronting Great Britain, Spain, France, and other European powers when they undertook to seize and to take from the Indians the lands that were "newly discovered" when Cabot stumbled upon the North American continent.[35] Because the Indians confronting the European potentates who desired to exploit the Indian properties were fierce and warlike, these European leaders entered into numerous treaties with the tribes. Marshall points out that the Europeans had no alternative because the Indian nations were "too powerful and brave not to be dreaded enemies," requiring the maintenance of peace with them "by quieting their alarm for their properties," which the European powers so avidly sought. (It is observed in passing that the parallel between the adamant demands for Indian lands during the colonial period and the avidity to seize Indian rights to the use of water in the year 1978 cannot be overlooked.)

It was, indeed, to quiet the alarms of the Indian nations that Great Britain entered into numerous treaties with the Indians prior to the Revolutionary War. In keeping with that historic precedent and by reason of the practicalities of the administration of the central authority, the treatymaking power, like Indian affairs, was placed exclusively within the purview of the authority of the national government under the Constitution.[36]

Respecting Indian treaties, Justice Marshall declared:

> The words "treaty" and "nation," are words of our own language. . .having each a definite and well-understood meaning. We have applied them to Indians and, as we have applied them to other nations of the earth; they are applied to all in the same sense.[37]

Hence it is that the treaties among the Indian nations and tribes with the United States come within the purview of another constitutional proviso, which is as follows:

> Clause 2. This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land. . . .[38]

Lest there be any mistake as to the dignity of treaties entered into between the United States of America and the Indian nations and tribes, the last-cited clause continues as follows:

> the Judges in every State shall be bound thereby [treaties]; any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

To those who desire to challenge the Indian rights to the use of water, it behooves them to take into consideration that the treaty rights of the Indians partake of the supreme law of the land. Moreover, the entire power and authority of the central government must, in good conscience, come to the support of the Indians in their present ongoing struggle against the States and the powerful constituents of the States, which include, as stated above, the multinational energy cartels.

In the formative years of this country, the Supreme Court was solicitous to prevent the extinction of the Indian tribes by the States and their citizens through the seizure of Indian rights, land, and properties. When Georgia violated a treaty entered into between the United States and the Cherokee Indians, then residing in the State of Georgia, the

[33] Ibid., No. 25, p. 207 (J. Hamilton ed. 1885) (A. Hamilton).
[34] U.S. Const., Art. I, Sec. 8, Cl. 3.
[35] Johnson v. McIntosh, 21 U.S. 543, 596–97 (1823).
[36] U.S. Const., Art. II, Sec. 2.
[37] Worcester v. Georgia, 31 U.S. 515, 559–60 (1832).
[38] U.S. Const., Art. VI, Cl. 2.

full power of the Constitution was exercised in sustaining the Indian claims. Marshall said:

> The treaties and laws of the United States contemplate *the Indian territory as completely separate from that of the states; and provide that all intercourse with them shall be carried on exclusively by the government of the Union.* [39]

Having analyzed the laws of the State of Georgia, the Supreme Court determined them to be a clear violation of the constitutional guarantees accorded to the Indians under the organic law. In these unequivocal terms, the Nation's Constitution was applied to protect the Indians:

> *[T]he acts of Georgia are repugnant to the constitution, laws and treaties of the United States. They interfere forcibly with the relations established between the United States and the Cherokee nation, the regulation of which, according to the settled principles of our constitution, are committed exclusively to the government of the Union.*

Accordingly, the laws of Georgia, which violated the jurisdiction of both the United States and the Indian tribes, were declared void, and judgment of a Georgia court based upon them was determined to be a nullity.

Reference is warranted to the fact that not only does *Worcester v. Georgia* declare that the Constitution prohibits State violation of Indian properties under the commerce, treaty, and supremacy clauses of this nation's basic laws, the Congress has exercised much broader power in protecting the Indians against State invasion. As referred to above, the legislative branch of the Federal Government has the exclusive control of Indian affairs, Federal property, and the admittance of States into the Union. Thus it is that the Congress has repeatedly exercised throughout the western United States its power to condition the admission of States into the Union upon a covenant by the States that they will refrain from seizing or extending their jurisdiction over Indian property.

Admittance of the States of Washington, Montana, and North and South Dakota into the Union, subject to such conditions imposed by Congress, demonstrates with clarity the impossibility of the negotiations and settlement of Indian rights by arrangements with the States.[40] Pursuant to that congressional authorization for admittance into the Union of the States last mentioned, the States were required to agree as follows:

> That the people inhabiting said proposed States do agree and declare that they *forever disclaim all right and title. . . .to all lands lying within said limits owned or held by any Indian or Indian tribes. . . .*

Additionally, the Congress provided, with regard to the States in question:

> [until] the title thereto shall have been extinguished by the United States, the same shall be and remain subject to the disposition of the United States, and said Indian lands shall remain *under the absolute jurisdiction and control* of the Congress of the United States. . . .[41]

Eliminating any doubt as to the immunity of Indian property from State control, each of the mentioned States adopted provisos similar to that of the State of South Dakota, which specifies in its constitution the following exemption clause:

> ARTICLE XXII
>
> COMPACT WITH THE UNITED STATES
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> The following article shall be irrevocable without the consent of the United States and the people of the state of South Dakota expressed by their legislative assembly:
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> * * *
>
> Second. That we, the people inhabiting the state of South Dakota, do agree and declare that we forever disclaim all right and title to. . .all lands lying within said limits owned or held by an Indian or Indian tribes; and that until the title thereto shall have been extinguished by the United States, the same shall be and remain subject to the disposition of the United States. . . .[42]

Virtually identical provisos, as those set forth above from the enabling acts and constitutional provisions exempting Indian property, are part of the organic laws of the States of Idaho, Arizona, New Mexico, Oklahoma, and other Western States. It is on that background of the supremacy of the

[39] Worcester v. Georgia, 31 U.S. 515, 557 (1832).
[40] Act of Feb. 22, 1889, Ch. 180, Sec. 4(2), 25 Stat. 676.
[41] Ibid. (emphasis added) (reproduced in vol. 13 of the N.D. Cent. Code at 87, vol. 1 of the S.D. Compiled Laws Ann. at 183, and vol. 1 of the Mont. Rev. Codes Ann. at 67).
[42] South Dakota Codified Laws, 1978 Revision, vol. 1, at 188-89, "The Enabling Act," §4, Second; Constitution of South Dakota, "ARTICLE XXII COMPACT WITH THE UNITED STATES," Second.

national government in Indian affairs that specific reference will now be made to those concepts of constitutional law as they relate to Indian rights to the use of water.

In the early years of the 20th century, there was to be tested before the Supreme Court the validity of the provisions within an Indian treaty as they pertain to both Federal and State actions in violation of the treaty.[43] There the fishing rights of the Indians, as guaranteed by the Yakima Indian Treaty of 1855, were the subject matter of the case. In specific terms, the Yakimas had been guaranteed the right to fish for salmon in the Columbia River in their "usual and accustomed places." In disregard of those treaty rights, the Secretary of Interior issued patents to non-Indians to the lands along the Columbia River, which included the Yakima fishing sites. Reservation of the Indian rights to the use of water were not mentioned or included in the patents. Moreover, the State of Washington, claiming jurisdiction over the Columbia River salmon runs and the bed of that navigable river, licensed to non-Indians the right to maintain a fishing wheel, the operation of which excluded the Yakimas from their ancient fishing grounds. Issue was there joined in this manner: did the Yakima treaty supersede both the Federal patent to the lands and the license granted by the State of Washington?

Yes, said the Highest Court, and from the *Winans* decision would flow the basic concepts of the Indian *Winters Doctrine* establishing the prior and paramount rights of the Indians over junior State-created rights.[44] Respecting the Yakima fishing rights, the Supreme Court ruled that "they imposed a servitude upon every piece of land as though described therein."[45] The Court further declared that the treaty rights were, "[I]ntended to be continuing against the United States and its grantees as well as against the State and its grantees." The State of Washington, said the Court, by issuing its license, had violated the Yakima treaty rights: "[I]t was within the competency of the Nation to secure to the Indians such a remnant of the great rights they possessed as 'taking fish at all usual and accustomed places'." In reference to the State fishing wheel license, the exercise of which excluded the Yakimas from enjoying their treaty rights, the Court said that the Indian fishing rights were "easements" in the lands. The license did not supersede those Indian fishing easements and the State license did not limit or determine those rights.[46]

In the year following the enunciation of the *Winans* concept of the sanctity of Indian treaty rights, there arose a conflict in the State of Montana between the Fort Belknap Indians and Winters, who claimed rights under State law. Though rights to the use of water were not mentioned in the 1855 Treaty of the Fort Belknap Indians or in the subsequent agreement they entered into with the United States on May 1, 1888, the Court nevertheless upheld the Indian rights to the use of water. In adopting the rationale of *Winans*, the Court of Appeals for the Ninth Circuit, in the case of *Winters v. United States*, said this: "[t]he right so reserved [by the Indians] continues to exist against the United States and its grantees, as well as against the state and its grantees."[47] There was thus preserved against claims asserted under State law the rights to the use of water essential for the Indians to survive on the barren lands constituting the Fort Belknap Indian Reservation.

When the Supreme Court affirmed the *Winters* decision of the court of appeals, it devoted a substantial portion of its opinion to the Federal-Indian-State confrontation, which the case presented. The Supreme Court made particular reference to the previously discussed Enabling Act, pursuant to which the States of Montana, North Dakota, South Dakota, and Washington were admitted into the Union. That Enabling Act specified that Montana and the other States would be admitted "upon an equal footing with the original states."[48] In denying that the protection of the Fort Belknap rights to the use of water, reserved for them in their treaty and agreement, would violate Montana's equal footing status, the Supreme Court said this: "The power of the Government to reserve the waters and exempt them from appropriation under state law, is not denied, and could not be."

Significantly, in support of the explicit ruling of the Supreme Court in denying the applicability of State law, the Highest Court made reference to both the *Rio Grande* decision and the *Winans* decision. It is important to note that the *Rio Grande* decision set forth explicitly the limitations upon the power and

[43] United States v. Winans, 198 U.S. 371, 381 (1905).
[44] Winters v. United States, 207 U.S. 564, 577 (1908).
[45] 198 U.S. 371, 384 (1905).
[46] *Id.*
[47] Winters v. United States, 143 Fed. 740, 749 (CA 9, 1906).
[48] Winters v. United States, 207 U.S. 564, 577 (1908).

authority of the States to invade the properties of the United States.[49] That case held that, while the States had the authority to determine the kind and type of rights to the use of water their citizens could acquire, that State authority was strictly limited to the principle that the States may not interfere with the properties of the United States and, moreover, that the authority and control of the States are limited by the superior power of the United States to secure uninterrupted navigability of all navigable streams within the United States. Similarly, title and source of title of the Indian rights to the use of water, under their treaties, is a matter of extreme importance. In that regard, reference is again made to the *Winans* decision alluded to above. In that decision, the Highest Court declared that the Indian rights were those which were not granted by the tribes to the United States of America. Otherwise stated, the tribes reserved to themselves all the rights that they did not grant to the national government.

In the *Ahtanum* case, the nature and characteristics of Indian rights to the use of water and the retention of those rights by the tribes, pursuant to their treaties, establishes beyond question that the vested rights of the tribes, under their treaties, cannot be in any way violated by the States or those claiming under them.[50]

In applying the *Winans* concepts to Indian rights to the use of water, the Court of Appeals for the Ninth Circuit, in the last-mentioned *Ahtanum* case, said this:

> That the Treaty of 1855 reserved rights in and to the waters of this stream for the Indians, is plain from the decision in *Winters v. United States*, 207 U.S. 564. . . .In the *Winters* case, as here, the reservation was created by treaty; the reserved lands were a part of a much larger tract which the Indians had the right to occupy; and the lands were arid and without irrigation practically valueless. . . .This court, in its decision (143 Fed. F. 740, 746), which the Supreme Court was affirming, had said "We are of the opinion that it was the intention of the treaty to reserve sufficient waters of Milk River, as was said by the court below, 'to insure the Indians the means wherewith to irrigate their farms,' and that it was so understood by the repsective parties to the treaty at the time it was signed."[51]

Continuing, demonstrating the dignity of the Indian rights to the use of water and the fact that those rights were held by them from time immemorial and were not conveyed to them by the United States, the Court of Appeals for the Ninth Circuit said this:

> As in the *Winters* case, we must answer in the negative the questions there posed: "Did they [the Indians] give up all this? Did they [the Indians] reduce the area of their occupation and give up the waters which made it valuable or adequate?" As said in the *Winters* case, (207 U.S. 564, 576): "The reservation was a part of a very much larger tract which the Indians had the right to occupy and use and which was adequate for the habits and wants of a nomadic and uncivilized people." When the Indians agreed to change their nomadic habits and to become a pastoral and civilized people, using the smaller reservation area, it must be borne in mind, as the Supreme Court said [in *Winans*]. . ., that "the treaty was not a grant of rights to the Indians, but a grant of rights from them–a reservation of those not granted."[52]

In the same *Ahtanum* decision, the issue arose—a vital issue here—as to the amount of water that was reserved by the tribes when they entered into their treaties. On the subject, the Court of Appeals for the Ninth Circuit said this: "The reservation was not merely for the present but for the future use. Any other construction of the rule in the *Winters* case would wholly be unreasonable." Continuing, this statement was made:

> This matter was directly passed upon in *Conrad Inv. Co. v. United States*, 9 Cir. 161 F. 829, decided shortly after the *Winters* decision. This court was there undertaking to follow and apply that [*Winters*] decision. It said (p. 832): "What amount of water will be required for these purposes may not be determined with absolute accuracy at this time; but the policy of the government to reserve whatever water of Birch Creek may be reasonably necessary, not only for present uses, but for future requirements, is clearly within the terms of the treaties as construed by the Supreme Court in the *Winters* case."[53]

Of particular significance here, as it relates to the efforts to obtain Indian water for the energy crisis, the *Ahtanum* decision likewise reviewed the Indian-

[49] *See* United States v. Rio Grande Dam and Irrigation Co., 174 U.S. 690, 703 (1889)

[50] United States v. Ahtanum Irr. Dist., 236 F.2d 321, 328 (CA 9, 1956), *cert. den.*, 352 U.S. 988 (1957), *on remand*, 330 F.2d 897, *rehearing denied*, 338 F.2d 307 (1964), *cert. den.*, 381 U.S. 924 (1965)

[51] 236 F.2d 321, 325–56 (CA 9, 1956)

[52] Ibid. at 326

[53] Ibid.

State relationship. To the contention that the State of Washington, where the issues were joined in the *Ahtanum* case, had some power or jurisdiction over the Indian rights to the use of water, the court of appeals said this:

> It is too clear to require exposition that the state water right decree could have no effect upon the rights of the United States.
>
> *Rights reserved by treaties such as this are not subject to appropriation under state law, nor has the state power to dispose of them.* . . . [Emphasis added]

Significantly, the Supreme Court, in the case of *Arizona v. California.* [84] reiterated and adopted many of the precepts set forth in the *Ahtanum* decision. On the subject of the power of the States to limit or control Indian rights to the use of water, the Supreme Court said this:

> Arizona's contention that the Federal Government had no power, after Arizona became a State, to reserve waters for the use and benefit of federally reserved lands rests largely upon statements in *Pollard's Lessee v. Hogan.* ..and *Shively v. Bowlby.* . . .Those cases and others that followed them gave rise to the doctrine that lands underlying navigable waters within territory acquired by the Government are held in trust for future States. . . .But those cases involved only the shores of and lands beneath navigable waters. They do not determine the problem before us and cannot be accepted as limiting the broad powers of the United States to regulate navigable waters under the Commerce Clause and to regulate government lands under Art. IV, §3, of the Constitution. We have no doubt about the power of the United States under these clauses to reserve water rights for its reservations and its property.[85]

In regard to Executive order reservations, as distinguished from treaty reservations, the Supreme Court added this very crucial statement: "We can but give short shrift at this late date to the argument that the reservations either of land or water are invalid because they were originally set apart by the Executive."[86]

In *Arizona v. California,* moreover, the rationale of the *Winters Doctrine,* which protects the Indian rights from invasion not only by the citizens of the States, but by the States themselves, the Court reiterated and reaffirmed the concepts of *Conrad* and *Ahtanum,* cited above, in regard to the measure of the Indian rights to the use of water. On the subject, the Court said this:

> We also agree with the Master's conclusion as to the quantity of water intended to be reserved. He found that the water was intended to satisfy the future as well as the present needs of the Indian Reservations and ruled that enough water was reserved to irrigate all the practicably irrigable acreage on the reservations.[87]

Additionally, in regard to the facts which were before it, the Court pointed out that:

> We have concluded, as did the Master, that the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage. The various acreages of irrigable land which the Master found to be on the different reservations we find to be reasonable.[88]

As stated above and as reiterated here, those who would invade Indian rights for the purpose of supplying water to meet the energy crisis must first violate the Constitution of the United States, including but not limited to the Indian rights to the use of water, which are protected not only by the provisions of the Constitution, to which reference has previously been made, but likewise by the due process clause of the Constitution, which prevents the taking of property without just compensation.[89] It is, of course, elementary that the Indian rights to the use of water are interests in real property of the highest dignity. That they are protected against seizure, either by the United States, the States, or citizens acting pursuant to either the Federal or State government, has been judicially determined.[90]

It has been contended that the States, by constitutional or statutory provisos, have, in some manner,

[84] 373 U.S. 546 (1963).
[85] Ibid at 597, 98
[86] Ibid
[87] Ibid at 600
[88] Ibid at 601
[89] U.S. Const., Fifth Amendment: "No person shall be. . .deprived of life, liberty, or property without due process of law; nor shall private property be taken for public use, without just compensation."
[90] The right to the flow and use of water, being a right in a natural resource, is real property. As stated by Wiel: "This usufructuary right, or 'water-right,' is the substantial right with regard to flowing waters, is the right which is almost invariably the subject matter over which irrigation or water power or similar contracts are made and litigation arises; and is real property. It is as fundamental under the law of riparian rights as under the law of appropriation." Wiel, *Water Rights In The Western States* (3d ed.), vol. 1, sec. 18, p. 20. See U.S. v. Gerlach Livestock Co., 339 U.S. 725 (1950).

acquired rights to the use of water, which could be utilized in negotiations with the Indian tribes. Those contentions are without basis in law. It is too clear for question that the States did not acquire rights to the use of water in connection with the lands of the national government when they were admitted into the Union.[81] In that decision, the Supreme Court declared that the Desert Land Act of 1877 separated the rights to the use of water from the public lands of the United States of America and made the rights to the use of water subject to acquisition pursuant to the State law. It is important in that regard that the Supreme Court relied heavily upon the Montana case of *Howell v. Johnson.*[82] In that case, there were reviewed the rights and interests of the States to water on the public lands. In rejecting the contention that the State of Montana had rights to the use of water on the public lands of the United States of America, the Court, in *Howell v. Johnson*, said this: "It is urged that in some way the state of Montana has some right in these waters in Sage Creek or some control over the same. It never purchased them. It never owned them."[83]

Thus, it is beyond question that the Supreme Court, in the *California-Oregon Power Co.* decision, rejected the urgings that the State of Montana, in some manner, acquired rights to the use of the water under the Congressional Acts of 1866, 1870, or 1877. That it did not acquire any rights to the use of water is abundantly manifest. Similarly, the Supreme Court of Oregon adhered to the rule it announced in *Howell:*

> There, the Oregon Court—in concluding that the Congress by the Desert Land Act of 1877, as the owner of the public domain, could sever the land from the unappropriated rights to the use of water and prescribe the means pursuant to which title to each right could be acquired—compared that Act with the provisions respecting the mineral lands of the National Government.[84]

It is important here to note that both the rights to the use of water, title to which is in the United States of America on the public lands, and the mineral rights can be acquired by complying with the State law. However, the title passes from the National government to the appropriator or the miner who is exercising his rights under the congressional acts. Title does not stem from the States because they have no title.

Confusion has arisen by reason of the fact that some of the States have claimed all of the unappropriated waters within their jurisdictions to be available for appropriation by the public. Those claims by the States are contained in constitutional provisos or in acts by the State legislatures. Relative to a statutory provision respecting the claim that the waters on the public lands were held for the public to be appropriated, the State of Utah said this on the subject:

> The statutory declaration that "the water of all streams and other sources in this State. . .is hereby declared to be the property of the public" *does not vest in the state title or ownership of the water as a proprietor.* It is a community right available to all upon compliance with the law by which that which was once common to all may be brought within the domain of private and exclusive possession and ownership. [Emphasis supplied][85]

There can be little doubt that a comparable claim made by the State of South Dakota, that all the waters within the State are "the property of the people of the State," would likewise be interpreted.[86] It is essential here to emphasize the fact that, as has been determined by many States, the declaration that the unappropriated rights to the use of water are open to appropriation under State law is a police regulation and not a claim of ownership as a proprieter.

On the Flathead Indian Reservation, situated in Montana, an issue arose as to whether the disclaimers, adopted by both South Dakota and Montana, would have application to right to the use of water. The Court of Appeals for the Ninth Circuit said that the United States was a trustee and held the "legal title to the lands and waters for the benefit of the Indians."[87] Continuing, the court of appeals said this about the rights to the use of water on the Flathead Reservation: "Being reserved no title to the waters could be acquired except as specified by Congress."[88]

[81] See California-Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 144 (1935)
[82] 89 Fed. 556, 558 (C.C.D. Mont., 1898)
[83] Ibid.
[84] Hough v. Porter, 51 Ore. 318, 391, 95 Pac. 732 (1908), 98 Pac. 1083 (1909), 102 Pac. 728 (1909)
[85] Wrathall v. Jackson, 86 Utah 50, 40 P 2d 775, 777 (1935)
[86] South Dakota Compiled Laws, 1967, vol. 13, sec. 46.1-3
[87] United States v. McIntire, 101 F 2d 650, 653 (CA 9, 1939)
[88] *Id.*

Having referred specifically to the Enabling Act and the Constitution of the State of Montana, which, as has been stated, are virtually identical with those of the State of South Dakota, the court of appeals further declared: "the Montana statutes regarding water rights are not applicable, because Congress at no time has made such statutes controlling in the reservation."[69]

Soon after the *McIntire* decision, the Court of Appeals for the Ninth Circuit reviewed the issues in the case of *Montana Power v. Rochester,* which likewise arose on the Flathead Reservation.[70] Cognizance was taken by the court of appeals that the Hell Gate Treaty of 1855, between the Salish and Kootenai Indians, who occupy the Flathead Indian Reservation, and the United States established that the Salish and Kootenai Indians held title to half of the bed of Flathead Lake. The court referred to the Hell Gate Treaty, saying that it "reserved for the exclusive use and benefit of the tribes a large tract of land the northern boundary of which bisected Flathead Lake. . . ." The court of appeals further declared:

> We do not believe the question is one of state law. . . .[T]he treaty leaves no room for doubt that the government chose to hold the entire area, submerged lands no less than uplands, in trust for the Indians rather than for the future state to be carved out of the region.[71]

The court reviewed the history of the State of Montana in great detail and quoted the Enabling Act provision which provides that:

> until Indian title had been extinguished, Indian lands shall remain under the absolute jurisdiction and control of the Congress of the United States. [It then added:] So far as we are advised, the beneficial ownership of the Indians in the bed and shores of the lake has not been extinquished by the Government.[72]

In succinct terms, the court in *Rochester* declared:

> It is inadmissible to suppose that the United States having agreed to hold this area in trust for the exclusive use and benefit of the Indian tribes, intended to put the tribes at *the mercy of the future state.* . . .[73]

Again, in regard to the State of Washington, the Court of Appeals for the Ninth Circuit reviewed in depth the immunity of the Indian lands and rights to the use of water from State control. On the subject, the court said this:

> the right to the use of that quantity of water was for the reasons previously indicated originally the exclusive property of the United States as trustee for the Indian tribe. No portion of that volume of water or of the right to use thereof, was open to appropriation. . .under state law. . . .[74]

It is particularly important that the Supreme Court has denied that the State of Arizona has any jurisdiction over Indian rights to the use of water.[75] There the Supreme Court gave "short shrift" to the claims that the State of Arizona had, in some manner, acquired jurisdiction over the rights to the use of water in the Colorado River in regard to Indian reservations.[76] It is also of interest that in applying the disclaimers to Indian reservations, the Court of Appeals for the Ninth Circuit made them applicable to boundary line lands claimed for the Lummi Indian Reservation on Puget Sound.[77]

What has been said in regard to the impropriety of negotiating with the States of Montana, North and South Dakota, and Washington is equally applicable to the States of Idaho, Wyoming, Arizona, New Mexico, Oklahoma, and others. Manifestly, the term "negotiate" contemplates a "give and take." Under the proposed arrangements, the Indians are expected to do all the giving and the States to do all the taking.

Indian-Federal Resolution of Indian Rights Required

There is a pressing need for a resolution of the conflicts in regard to Indian water rights. For example, it has been estimated that there are approximately 34 billion tons of coal underlying the Yellowstone River basin coalfields.[78] Indeed, the Crow Indian Reservation and the Northern Cheyenne Reservation have vast quantities of coal that are subject to strip mining and additional millions of tons of coal that are subject to deep mining. The need of those reservations and others to have the

[69] *Id.* at 654.
[70] 127 F 2d 189 (CA 9, 1942)
[71] *Id.* at 190-91.
[72] *Id.* at 192.
[73] *Id.*
[74] United States v. Ahtanum Irr. Dist., 236 F.2d 321, 340 (1956).
[75] Arizona v. California, 373 U.S. 546 (1963).
[76] Ibid. at 599-600.
[77] United States v. Romaine, 255 Fed. 253, 260 (CA 9, 1919).
[78] See note 4, *supra.*

issue respecting water rights determined is beyond question. Confiscation of Indian rights is, of course, an impossibility at this time, for, as stated above, the Indians are well aware of the priceless character of their *Winters Doctrine* rights.

On every stream system in western United States on which an Indian reservation is situated, the United States has violated Indian rights to the use of water. Those violations are today ongoing. Hence, it partakes somewhat of frivolity to demand that the Indians negotiate with the States in regard to the water requisite for coal development while the trustee is continuing to violate those rights. These comments are particularly true in regard to rivers such as the Colorado, the Rio Grande, the Columbia, and the San Juan. The violations on the Missouri River are particularly important at the moment by reason of the great pressure for coal development in all of the States, particularly on some of the tributary streams in Montana and Wyoming. Hence, it is an imperative necessity that the Indian beneficiaries and the Trustee United States resolve their differences at the earliest possible moment. To that end, the required coal to relieve the energy crisis can be made available and, at the same time, the Indian rights to the use of water will not be sacrificed. Intrusion of the States into those negotiations would create tensions above and beyond the serious conflicts among the Indian nations and the Federal bureaucracies, which bureaucracies have, down to the present moment, violated with impunity the rights of the Indians to the use of water.

Energy Development and Conservation Policies Affecting Indian Reservations

By Carole Ann Heart*

In order to portray accurately the relationship between the Federal Government and Indian tribes' management of their tribal natural resources, it is important to begin with the first governmental actions made between Indian tribes and the United States Government. We are all too aware that Indian tribes never were guaranteed complete control over their own affairs for as long as "the rivers flow and the grass grows." We shall investigate and discuss the acts passed by Congress that had a significant impact upon Indian control over their natural resources.

The move of the dominant culture westward was a gradual one, with eastern tribes having first contact with them. This created the mood for relationships with the western and plains Indian tribes. Although Indian tribes were recognized as having a right of occupancy, the more important fee title to these lands occupied by Indians vested first in the discovering European nation and, after the War for Independence, in the original United States. Fee title could not and did not vest in the Indian tribe or in the individual Indian. The vehicle that allowed fee title to vest in Indian tribes would not come until later.

The first of these acts passed by Congress that had a significant impact on tribal control over their own resources is the Non-Intercourse Act, passed in 1790 for the explicit purpose of protection and preservation of Indian occupancy and control over Indian lands. It was this establishment of dual control over Indian lands that assured that no unjust taking of Indian lands would occur without express congressional consent. This act was also reinforcement for the existing trust relationship between the Federal Government and Indian tribes.

This fiduciary relationship was discussed at length in the case of *Worcester v. Georgia*, 31 U.S. (6 Pet.) 515 (1832). The exact wording as enunciated by Chief Justice Marshall was:

> The Indian Nations had always been considered as distinct independent, political communities, retaining their original natural rights as the undisputed possessors of the soil from time immemorial, with the single exception of that imposed by irresistible power, which excluded them from intercourse with any other European potentate than the first discoverer of the coast of the particular region claimed; and this was a restriction which those European potentates imposed on themselves, as well as on the Indians.

The United States Supreme Court in the case of *Worcester* held that the laws of Georgia could have no force and effect on the Cherokee Nation, thus setting the mood for State relationships with Indian nations and enforcing the Federal Government's trust relationship to Indian tribes.

The General Allotment Act was passed in 1887 specifically to assimilate individual Indians into the mainstream of American culture. The tribal land base was subdivided into 160-acre plots and assigned to heads of households, with the surplus lands returned to the Federal Government. This action resulted in the loss of millions of acres of precious lands that belonged to tribes. This policy of forced

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assimilation through farming was a disaster because farming was foreign and alien to the roaming bands of plains Indians, who relied upon hunting buffalo and other game for their survival. The concept of individual land ownership was also completely foreign to them. The lack of a built-in inheritance clause created a mass of problems related to heirship. Indian people have cared little about wills and beneficiaries, and we are now able to see in today's checkerboard reservations the result of this attitude.

In 1934 Congress passed the Indian Reorganization Act, 48 Stat. 987, codified at 25 U.S.C. 476 *et seq.*, which was designed for tribes to fully assert their powers of self-government and to enforce tribal sovereignty to a greater degree. In the words of the sponsor of the bill, sometimes referred to as the Wheeler-Howard Act:

> the bill seeks further to give the Indians the control of their own affairs and of their own property; to put it in the hands either of an Indian council or in the hands of a corporation to be organized by the Indians.

Although congressional intent in the passage of these acts was to strengthen tribal self-government, these congressional policies were viewed by Indian tribes as conflicting, confusing, and whimsical. The damage inflicted by the Allotment Act would be long lasting and irreversible. It created a myriad of problems associated with land ownership, heirship of trust lands, and control over these lands that were within the boundaries of Indian reservations. Now the introduction of the Indian Reorganization Act was the vehicle available for tribes to gather forces and combat the ill effects of the Allotment Act and attempt to consolidate their present communal land holdings. Reorganization of a tribal land base would be extremely difficult for many Indian tribes and a complete impossibility for some.

By now it had become clear to Indian tribes that they were the owners and possessors of a valuable resource, their land and within these tribal lands the untapped mineral and water resources and valuable farmlands were not yet realized. Expertise for utilization of the Indian Reorganization Act will enable tribes to combat the policy of eradication of a tribal land base as well as providing a method to enforce and strengthen tribal sovereignty.

The Indian Financing Act passed in 1974 created within the Bureau of Indian Affairs a revolving loan fund for tribes to promote economic development on their respective reservations. The act in part states:

> It is hereby declared to be the policy of Congress to provide capital on a reimbursable basis to help develop and utilize Indian resources, both physical and human, to a point where the Indians will fully exercise responsibility for the utilization and management of their own resources, and where they will enjoy a standard of living from their own productive efforts comparable to that enjoyed by non-Indians in neighboring communities.

Included in the act were low-interest subsidies, Indian business grants, and authorization for the Small Business Adminnistration to minister to the needs of minorities and especially to the needs of American Indians in their quest for economic self-sufficiency. Indian tribes found that the normal channels used to get started in business were extremely cumbersome and time consuming and clearly not meeting the needs of individual and tribal entrepreneurs.

The Indian Self-Determination and Education Assistance Act of January 4, 1975, 88 Stat. 2203, was passed for the purpose of promoting self-determination. The act allowed Indian tribes to contract all programs originally operated by the Bureau of Indian Affairs and operate these programs themselves, excepting those functions that fall within the scope of trust responsibilities or rights protection. The purpose as enunciated by the Congress for passage of the act was:

> to promote maximum Indian participation in the government and education of Indian people; to provide for the full participation of Indian Tribes in programs and services conducted by the Federal Government for Indians and to encourage the development of the human resources of the Indian people.

If the goal of Indian self-determination is ultimately realized, then Indian tribes can fully operate all programs presently operated and controlled by the BIA. This can be another vehicle that Indian tribes can use to gain complete control over their own affairs and have a complete voice in their own government.

In the context of the preservation of tribal natural resources, the cornerstone is the *Winters Doctrine*, which supports and reinforces Indian water rights. *Winters v. United States*, 207 U.S. 564 (1908), dealt

with the misappropriation of water from the Milk River abovestream from the Fort Belknap Indian Reservation in Montana. The Supreme Court held that Indian tribes have prior and superior water rights to streams and rivers traversing through, upon, or adjacent to their reservation, and this water can be used for present and future beneficial uses, including all the acreage that is "practicably irrigable." This case forms the legal basis for all Indian water rights.

Socioeconomic Impact of Water Development on the Rosebud Reservation

Indian tribes are unique and different from each other, each having their own language and customs and at times a different tribal way of looking at policies and their relationship to the Federal Government. The Rosebud Sioux Reservation is located in south-central South Dakota and closely related and allied with the other Sioux reservations in South Dakota, each speaking one of three dialects of Lakota. In 1889 the boundaries of the reservation encompassed all of Todd, Mellette, Tripp, and portions of Gregory and Lyman Counties, a total acreage of approximately 7,700 square miles or almost 5 million acres of land and water. With the recent decision made by the Supreme Court in the case of *Rosebud v. Kneip,* 430 U.S. 584 (1977), the reservation boundaries have been diminished to include only Todd County or approximately 680,000 acres.

Income generated from tribal ranching operations and leasing permits has increased within the last few years. In 1952 the combined tribal income from these operations was $83,652; it increased to $490,000 in 1970. Cattle ranching is the major agricultural endeavor, with feeder cattle being the main product sold. Within the study area 65 percent of the land is used for range purposes and 35 percent for agricultural. In 1972 there were 3,955 stock ponds and 35 lakes and reservoirs within the five-county area. It is evident that the Rosebud Sioux Reservation is dependent upon agriculture and the attached water uses.

Since time immemorial, native peoples have been tied to water for their survival and this is no less true for Rosebud Sioux people. The increase in economic development is directly proportionate to the amount of water needed for projects.

Preliminary reconnaisance studies have been completed that show a lack of coal deposits and other valuable mineral deposits on the reservation. There has been shown to be a large source for geothermal energy development on the northern borders of the reservation. The tribes' most valuable asset is water. Tribes have been forced to live with the interpretation of *Winters* that "if you don't use it, you lose it," in reference to their water rights.

One method of evaluating the amount of water needed for each reservation can be determined by the wording of *Winters,* which refers to all land that is "practicably irrigable." Although this is one definition, there are a vast amount of determinants that can be used to determine the amount of acreage that can be irrigated. The Rosebud Sioux Tribe has recently completed Phase III of a series of water inventory studies that propose to do a physical inventory of reservation lands and water resources and to determine the present uses of existing land and water resources and projections for these uses to the year 2020.

If the Rosebud Sioux Tribe is to develop to its full economic potential, it is of utmost importance to have an adequate supply of water for all the future uses. As far as domestic water uses are concerned, 95 percent of all homes on the reservation now have running water and electricity. The standard of living for Rosebud people has been upgraded within the last 10 years. The unemployment rate for reservation is 49 percent. It is the goal of the Rosebud Sioux Tribe to decrease this rate over a period of 10 years. Water development is closely intertwined with attempting to increase the number of jobs on the reservation while still retaining the natural beauty of the reservation and complying with environmental quality standards against pollution.

Water Rights Problems

The issue of water rights and water development has become very important in this campaign, with each candidate outlining his goals for water development within the State and how he will deal with the Indian water rights "problem." The pressure is mounting for Indian tribes to enter into the negotiation process over water rights to the Missouri River. Several meetings have been held before the State legislative research council with the Indian tribes on whether each of the individual tribes is prepared to enter into the negotiation process. Thus far, only one tribe has expressed a willingness to do so. The

majority of the other tribes have expressed their unwillingness to negotiate because they lack adequate and accurate information on water on their respective reservations.

The State of South Dakota has completed the final phase of study for the West River Aqueduct, which proposes to carry water from the Missouri River across the entire State to sell to the State of Wyoming. This is disagreeable to the Indian tribes in South Dakota and touches upon the legal issue of who owns the Missouri River water. Thus far the State is gradually promoting this project, but is reluctant to begin because of this touchy issue over water rights.

Another major problem for the South Dakota Indian tribes is their lack of a representative on the congressionally created Missouri River Basin Commission. This Commission was created to administer to the needs of the Missouri River basin, but an important ingredient is input from the tribes in Montana, Wyoming, and South Dakota, who do have water rights claims to the Missouri River.

The problem of issuance of water permits by the State of South Dakota to irrigators within the boundaries of the reservation has prompted the water resource inventories to detemine if any damage is occurring to the Oglala aquifer or to surface waters traversing through the reservation. All irrigators are required to register and apply to the State for a permit. There has been a long-standing practice for the solicitor of the Aberdeen area office to submit an objection to all permits issued by the State.

If tribes and Indian people are to receive a fair market value for their lands, it is essential that the appraisal show the true value of that land, which includes all surface impoundments and ground waters. This practice of appraising land values has not in the past included the attached water rights. The question now arises as to rights attached to ground waters. The Oglala aquifer reaches from South Dakota to Texas, and any wells and irrigation systems using the ground water affect the level of water present in the aquifer. This is one legal question that has not been decided.

On January 15, 1975, Interior Secretary Rogers Morton issued a memo stating that "no tribal ordinances, resolutions, codes or other enactments purporting to regulate use of water on reservations shall be approved." The reasoning behind such a policy was for the Interior Department to maintain and preserve uniformity and to eliminate confusion until the Department issues its own standard water code. The Rosebud Sioux Tribe has completed a water code, but is awaiting the decision from Interior before submitting it for approval.

Possible Solutions to Problems

Possible solutions to the problems plaguing Indian tribes in the management of their natrual resources are achievable. Complete and accurate inventories and surveys of all natural resources are one method to know exactly what the tribe controls. Concentration on training interested Indian individuals in the area of natural resource management and other administrative areas is essential for control of tribal natural resources. Development of adequate capital to fund projects that will eventually become self-sustaining should be the goal of tribes, rather than relying on the good graces of the Federal Government.

Becoming aware and having expertise in the area of land-use planning and management would further tribal use of natural resources. Zoning ordinances are another method for controlling the types of projects and businesses that are implemented on reservations. If tribes use the tax break that is allowed, tribes can promote their reservations to businesses and projects that do not interfere with environmental quality standards.

In South Dakota, tribes will have to take a stand on whether or not they are prepared to negotiate their water rights or, perhaps, to take the stand of litigation, which can and will be a long, drawn-out court battle with the chance that it may not be decided in their favor.

ECONOMIC OPPORTUNITIES

Impact of Energy Development on Minorities and Indian People

By Dwayne D. Ostenson*

While the students are attending United Tribes, they also are receiving instruction in areas other than the 10 career programs that we have. United Tribes is designed to assist reservation Indian people to make the transition from reservation to off-reservation living. There is a course in personal development that all of the students are required to take. We also have adult education where the students that have not graduated from high school will have the opportunity to obtain their GED. To make the transition to off-reservation living as easy as possible, United Tribes has a child-development center, day-care center, an elementary school, cafeteria, Indian clubs, and we also provide recreational activities. We have our police security as well.

United Tribes, along with the 10 career fields, also houses many special programs: the Indian offender program, prison parole program, chemical dependency unit, ACTION/VISTA, CETA, minority business enterprise program, equal employment opportunity program, and the Indian lignite manpower program. These programs use both the facilities and assistance that United Tribes has to offer.

Office and Personal History

The office that we operate our Indian lignite manpower program from also has other programs that we are responsible for. They are the equal employment program and the minority business enterprise program. In addition to the above-mentioned programs, our office is responsible for the administration of the Minority Contractors Association and the North Dakota Indian Businessmen's Association.

Prior to my employment at United Tribes I taught school for 10 years in various schools in North Dakota. I am currently on my fifth year with UTETC. When I began my employment in 1974, our office consisted of myself and one secretary, and our responsibility was only to assist minorities and the disadvantaged for training positions in the highway industry. In 1976 the EEO program was expanded and we also started assisting minority businesses in the State of North Dakota to become more actively involved in the highway industry. In 1977 we formed the Minority Contractors Association, and we also began housing the North Dakota Indian Businessmen's Association. In May of 1978 we consolidated the Indian lignite manpower program into our office. The reason for the consolidation was due to the fact that many of the goals and objectives were similar in nature. To prevent duplication of efforts and competitiveness for the same persons, it was decided that consolidation would be the logical solution.

Our office staff now consists of six persons: one person is working with the EEO program, one is working with the minority businessmen in North Dakota, one is working with the lignite manpower program, one person is working half-time with EEO and one-half with the minority business enterprise program. We also have one secretary and myself who work with all of these programs.

The lignite manpower program has been in existence since 1975 at United Tribes. It was created

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because of the increased coal mining activity due to the energy shortage we have in the United States. With the expected industrial expansion in North Dakota, we could foresee a labor shortage. With this in mind the office was formed with a funding grant from EDA to take advantage of these job possibilities for our Indian people.

Goals and Objectives

The goals and objectives of our lignite manpower program are only two. The first was to conduct a manpower survey to determine the labor force we have on various reservations in western North Dakota and also in eastern Montana. The second objective was to reduce the high rate of unemployment of the Indian people by satisfying some of the employment needs of the energy industry.

Phase one of the goals and objectives has been reached. A comprehensive, 85-page manpower survey was completed on various reservations in North Dakota and Montana. The results of this survey will be discussed in the next section of this paper.

The original estimate of our manpower needs has been reduced due to the problems that have been encountered with the coal gasification plants. We currently have energy powerplants being constructed in North Dakota, and here we have devoted most of our efforts in our attempt to accomplish phase two of our goals and objectives. Significant strides have been made in this area; however, we still have a long way to go to make phase two a reality.

Reservation Manpower Survey

At the outset it should be known that most of the information reported in this section was obtained from the *Reservation Manpower Survey.*

The survey disclosed many interesting facts about the Indian people, their rate of unemployment, and the labor force that is available in the Indian communities. The survey was a random sampling of the Indian labor force between the ages of 18 and 46. There were 735 personal interviews conducted by locally trained interviewers with reservation residents. The results reinforced our position that there is an untapped labor force in North Dakota which should be utilized for energy-related projects. The following statistics are some of the reasons for the need of a program such as the lignite manpower program that we have at United Tribes.

One of the most shocking statistics that came out of this report was the average income of the Indian people on the reservation. Of the 735 interviews that were conducted, it was found that 29 percent of the people had incomes of *under* $2,000. This means that over 210 Indian people lived under those conditions. The people surveyed whose income was *under* $10,000 amounted to over 80 percent. I do believe this statistic alone should be reason enough to have a concentrated effort to educate, train, and help secure employment for these persons.

There is another statistic that is a direct reflection about the situation we have on the reservations in our area. Of the 735 individuals interviewed, there was 55 percent either unemployed or underemployed. The breakdown on those figures are as follows: part-time jobs, 12 percent; seasonal jobs, 6 percent; and the unemployed, 37 percent. Even though those figures seem very high, they are accurate. The Aberdeen area office in May of 1976 reported 38 percent unemployment on North Dakota reservations. Also in 1976, the BIA office in Billings, Montana, reported an unemployment rate of 38 percent. These figures support the findings of the manpower survey. In this day and age, to have such poverty and unemployment in our great country is a disgrace to the principles for which we stand.

There are many more statistics in the manpower survey that graphically show the wasted manpower we have and the desperate need to utilize this resource for the Rocky Mountain region and also for the people who, in the past, have been denied employment.

Other Publications

Two other publications have been prepared with the funding received from the Economic Development Administration. The two publications are the *Career Manual* and *Retention Study of Indian Employees in Lignite-Related Industries.*

The *Career Manual* was designed to try to acquaint people with the various jobs that are available and to have interest cards attached so that they could get more information, if so desired. The *Career Manual* was to show the opportunities for Indian people in the construction industry, and when I looked through the manual I did not see one photograph of a minority working any of the jobs. When I asked about it, I was told that they didn't have a minority in one of these positions. Rather than going into the manual itself, I will enclose a copy for each participant.

The other publication, on the retention study, was conducted by a firm named IMPACT, with their office located in Minneapolis, Minnesota. The foundation surveyed 196 business and nonprofit firms in North Dakota, South Dakota, and Montana, 52 percent of which (102) had Indian employees. These 102 firms employed 570 Indian employees. The principal investigators concluded that the survey did not locate management awareness of great difficulties in hiring Indians, nor did it show gross variations in Indian employee retention compared to non-Indian employees with adequate skills. It was stated that in the immediate Bismarck area they interviewed six personnel directors of lignite industry firms. They found 14 Native Americans currently employed. In the past 4 years they did not retain eight Indian employees. Two were discharged because of abesenteeism; the other six left because of better paying jobs.

In general, the analysis of the survey could find very few problems with Indian employment in the industry. My conclusion is that a problem does exist. With the hundreds of individuals those six companies employ, having only 14 employees who are of Indian ancestry, I consider *is* a problem. If it isn't a problem to the energy companies, it certainly is a problem to the Indian people.

Problems

In this section I will attempt to identify some of the problems that we have encountered while working with the employment of minorities and women. We will also describe the procedures we have used to deal with those problems. Rather than grouping all problems into one statement and then list our procedures, I will individualize each problem by addressing it separately. The problems are not necessarily in the order of their importance. It also should be noted that every person does not have all of the problems. Some of our people have made the adjustment into the industry very well and they have few or no problems. The following are some of the major problems we have encountered.

Culture

The culture problem is one of the most difficult areas to resolve. This problem affects most of the persons we work with. The only way we have found to resolve this problem is through education. This does not mean that we intend to educate only the minority, but also the employer has to have a better understanding of the Indian ways. The education process is very slow. It could be the long-range solution, and it is the only one that we know of.

The best way that I can give you a clear understanding of the many problems we face in this area is to relate some of our experiences we have had. The first situation was with a young man who submitted his application for the apprenticeship program, and he had to go before an oral board before he was accepted. After the interview this individual was rejected. I asked why and I was told that some members on the board did not think he was truthful in his answers. I again asked why and found the reason was because our candidate would not look the board members in the eye when he answered most of the questions presented to him. The fact of the matter is that to look an elder in the eyes is a sign of disrespect in the Indian society. In the white world one thinks of a person as untrustworthy, sly, or dishonest. Today that same candidate is working for the union and doing an excellent job. We now try to talk to the board members before they have their orals and explain some of the differences that exist between the cultures, so they will not hold those aspects against them.

The second illustration is with a person who had a job with a construction company (not an energy company). He was fired. In followup, I had gone down and talked to the contractor to find out why he was released. The superintendent told me that he was being lied to and he wouldn't stand for it. Shortly after our Indian employee had started work, he asked to have some time off because his grandmother had died.

Later that year he again asked for some time off because his grandmother had died, and at that point he was fired. In the Indian world, if an elderly person takes care of you, she becomes your grandmother. The person we were talking about had five grandmothers, and the superintendent had never encountered anything like this before and he thought it was a lie when, in reality, it was the truth. This man is currently working, but not with the same company.

The last situation is one that is very difficult to deal with, one of having more Indian women actively involved in the nontraditional jobs. We had a young Indian woman working on a construction crew as an equipment operator with our highway program. This person's grandfather gave her such a bad time about pursuing that particular livelihood

that she was left with one of two choices. One, she could continue on and be disgraced and disowned in the eyes of her grandfather, or she could quit her job. She chose to quit her job.

Another cultural difference is that the Indian has very, very strong family ties. If a first cousin were to die, you would find that if an individual were forced to make a choice between a $10 per hour job or going to the funeral, 90 percent of the Indian people would go to the funeral. This is very hard for some people to understand.

The final point I would like to bring out is that the Indian people take care of their own. In the old days if a brave were to go out and shoot a deer, the only thing that belonged to that person was the hide. Any meat he would receive would be obtained through the generosity of his fellow tribal members. The sharing of the Indian people is unbelievable. If you see something that an Indian person has and if you admire it, many times it would be given to you. This, by the way, is happening less and less as the value of worldly goods becomes even more important.

Books have been written on the different Indian cultures and I am not going to attempt to go through everything, but these are some problems we can directly attribute to the cultural differences. We are trying to educate people on a one-to-one basis now, but we hope that, in the future, they will start our United States history books at the beginning and not only after the white man came.

Lack of Skills

There are many positions in the energy industry which require certain skills that our clients do not possess. This can be resolved by on-the-job training or specified training for one particular job. We have divided this problem into two sections: short term and long term.

We have had some experiences with the short term. One area we are working on is trying to get our people working on a white card. This is not a good solution, but it does give some of our people a chance to get exposure into the industry. Even though the white-card employees are the first ones laid off in the fall and the last to be called back in the spring, it is a start. With a good work record and experience, they will have a better chance to get into an apprenticeship program. If it does not help in any other way, it will give the person a good income for the time he or she is working.

Our long-range goals are what have the most potential. We are concentrating our efforts in two areas. First is trying to get the apprenticeship programs more receptive to accepting minorities and women. Our first concern is getting the apprenticeship program managers to accept our applicants. This is accomplished by many long hours of talks with various union people. It is very important that one visits with these individuals with the proper attitude and approach. We never pressure on our first meeting with anyone. We try to use the soft-sell approach. Before you can sell anything to anyone you have to establish a need; that, then, is our first step. We then convince the managers we are there to help them. This is not a front, as we are sincere about trying to help each other. After we have the acceptance of our people, the next problem is putting together the package for the application. We assist each client in obtaining all the information needed to have an acceptable package and make certain it is submitted on time.

The other long-range objective is not concentrated on the construction of the powerplants, but rather the operation of the plants. We are very excited about this objective because these are full-time jobs that could last for a lifetime. We intend to accomplish this by working now with the power companies and obtain information as to what positions will be available upon completion. After this information is obtained, we will try to get a job description and find out the qualities they demand or at least are very desirable. We will try to recruit interested persons for those jobs. We will then encourage these people to obtain training in the areas that would be of benefit. The minorities or females will be well qualified for the jobs when they become available.

Lack of Awareness

There is a problem with many of our people being unaware of the jobs that really can be had in the energy industry. As a result of this we have initiated an awareness effort to inform people of the opportunities available to them in the industry. We have developed a very good working relationship with the North Dakota employment offices, tribal employment offices, private resource people, and any other group or organization that deals with the employment of people. It is necessary to work with as many different people and organizations to do the best job possible.

We are also planning to present the job opportunities to high schools and seniors though direct presentations or through career days. We will distribute the *Career Manual* as a handout at these sessions.

Stereotypes

"Indian people are lazy drunks!!!" This is the type of statement I hear from some people or, "They will work until they get their first paycheck and then leave." I will be the first to admit that some of our people have problems. I do not think we have the corner on the market. I also have had people tell me they had a very bad experience with an Indian, and they weren't real sure if they wanted to take a chance with another one. These are some of the reactions that I have actually heard, and I have never heard anyone say they would not hire a German, Norweigian, or a Swedish person because it is easier to pick out a minority because of his or her color. Another reason is because they think something is going to happen and they are looking for it; a person can very easily fall into this rut.

I had an experience as I was driving down a main street in a small town near a reservation. I saw an Indian person sitting on the curb totally inebriated. I told the individual next to me, "Those are the types of persons that give Indian people a bad name." He responded that this was true, but asked if I noticed the three whites that were staggering down the street before we came to the Indian. He was right. I didn't think much of the whites, but I especially noticed the Indian.

I had a contractor come up to me quite angry. He just had two Indians quit on him, and he wasn't going to hire any more of those "unreliable bums." We talked and he cooled down; then I suggested that we do an analysis of his company's employment records. We compared all employed and all people that had left the company. We found that 34 percent of the Indians hired left; he also found that 32 percent of all nonminority people left. In most cases if a person looks at the complete picture, you will find that there isn't much difference. People are people, regardless of race or color.

To deal with this problem, we use basically four methods. The first thing we do is try to get the company to give an honest and fair evaluation of the situation. This is fairly effective if you can get the companies to take the time for such an evaluation. The second procedure we use is our "company breaker." When we are confronted with a company that really has a bad attitude, we try to get one person on. We have about three individuals that are great workers, or, as we call them, company breakers. After a company has one of these individuals with them for about a month, we always get a job order for more Indians. We were told by one company, "If you can give me two more like him, we will fire three of our other workers." This procedure has really helped our credibility. The third thing we do is screen and evaluate our candidates very carefully. During the off or winter season, we interview each person at least twice so that we can coordinate the person's interests with the jobs we have available. Placement is also very important. If you send out one good worker with two bad, it is quite probable when they return you will have three bad workers. If you send out two good workers with one bad, most of the time you end up with three good workers. In general, know your people and remember that the only way you are going to eliminate the stereotype is to prove it on the job.

The last thing we do to increase retention is *care*. We have a followup or on-the-job counseling program where they know that someone is concerned and that we care about him or her as a person. The biggest mistake many organizations make is they place them and then forget them. We also, while visiting with our candidates, try to resolve any problems they might have about the job. If we can't solve the problem, they at least feel better just telling someone about what was annoying them. It is also very important not to overdress or they won't even talk to you. I don't want you to think that by our using these methods that we don't have problems. We still lose some people, but our retention is much better.

There are other problems we have that we are faced with that I will not address at this time. They are housing, relocation, and other such problems that develop whenever you have a large operation such as this.

Summary

Education is the key to resolving most of the problems that exist. We have been trying to educate as many as we can on a small scale. With our small office we did manage to place 182 people in either the construction or energy industry this year. I am confident that by the end of the year we will have

placed 200 or more persons in good-paying jobs. The breakdown on these jobs is 139 through our highway program and 43 through our EDA program. The EDA placements were made from June or basically in 4 months. We did not get our program operating in time to take advantage of the apprenticeship this year. We are proud of the placements, but we are looking forward to a much better season next year.

Our office feels very strongly about having a person or company work with you because they want to, *not* because they have to. Keep in mind that many of the people have worked very hard to get where they are today, and *nobody* likes to be forced into anything. Establish a need and also give a possible solution, expand communications, and I am certain that you will increase participation. When you have to enforce the law and demand participation to the fullest, use both methods. But put them in the proper sequence. By having the proper approach, attitude, and open communications, I am confident you will find pleasing results. The bottom line is that there will be more minorities and females employed.

I would like to take credit for what our office has done, but I can't. The staff in our office is what makes our operation work. It is nice to work with a group of people who are not restricted to an 8-hour day or a 40-hour week. I have never heard the word "overtime" in our office. These people have dedicated themselves to making other people's lives more rewarding. If anyone in civil rights is in it for the money or is not totally dedicated, do everyone a favor and get out. You would not be helping yourself and certainly not the people that truly need your help.

The Minority Entrepreneur in Energy-Related Businesses

By Richard I. Gonzalez*

Introduction

A few statistics reveal the scope of the economic disparity between the minority and majority business communities:

- Minority businesses today represent less than 3 percent of all business in this country.
- Gross receipts of all minority small businesses account for less than 1 percent of the total receipts of all businesses in this country.
- Minority businesses received less than 2 percent of the Federal procurement dollar in fiscal year 1977.
- Loans through SBA to minority businesses represented 12 percent of SBA's total loan portfolio as of March 31, 1978.

It is quite obvious from the above statistics that minority Americans are not significant participants in our economy. It is clear that economic parity for a major portion of our population is now only a dream, not a reality. The issue now is, how long must minority Americans defer their dreams of economic parity? Energy-industry opportunities for entrepreneurs in all phases of energy production could provide the answer to this question. Bureau of Labor statistics estimate that there will be 7,654 construction jobs and 7,251 operation jobs in Colorado by 1985 in electric powerplants, coal-conversion plants, and coal mining. The opportunities are available. Access through preparation is the key.

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Technical Assistance Provided by CEDA to Minorities in Energy-Related Fields

Background of CEDA

The Colorado Economic Development Association (CEDA) was created by a group of Denver banks in 1968 to assist minority businesspersons to prepare loan packages, thus facilitating their ability to obtain loans. CEDA is a private, nonprofit, business development center, with its main office in Denver and a branch office in Cheyenne.

CEDA has expanded to include five departments that, as a unit, provide one-stop service for minority businesspersons. The departments are:

1. Administration—responsible for internal management, budget, Federal compliance.
2. Business Planning—prepares loan packages, business plans, financial statements, and provides referral service.
3. Marketing—obtains contracts from private or public agencies, finds markets for products and services, prepares bids for obtaining contracts.
4. CCAC—provides technical assistance such as job estimating and scheduling.
5. Business Education—conducts seminars in all areas of business to assist minority businesspersons to develop business skills.

CEDA has influenced private and public agencies to establish minority goals and has maintained followup to assure that goals are met.

Energy-related business enterprises that have or will receive CEDA assistance are:

Petroleum industry—coal extraction, oil distribution, drilling fluids supply, hauling oil lubricants, soil sampling, drilling, etc.

Solar—manufacturing solar equipment, installing solar collectors.

Winterizing—insulation, caulking.

Alternate sources of power—geothermal conversion, methane conversion, wind-generated power, coal gasification.

Technical assistance provided to minorities in setting up businesses in energy-related fields, or in contracting/subcontracting in any of the energy areas, is basically the same assistance provided to all CEDA clients. Depending on the general nature of assistance needed, one, two, or all three of CEDA's departments will address specific client needs. That is, if a client plans to go into an energy-related business, the Business Planning Department would assist in preparing the loan package, determine the best source for monies, accompany the client to the bank, and provide followup advice, as necessary. Referrals are made to bookkeepers and accountants should the client's business undertaking warrant this expertise.

The Marketing Department assists in bid preparation for contracting jobs, provides marketing and feasibility studies, procurement assistance, construction engineering expertise in bid preparation, estimating, and scheduling. The staff presently has the capability to furnish, or has access to, sophisticated technical information in any energy-related enterprise that a client may wish to consider.

The Business Education Department conducts a series of classes geared to helping the minority businessperson overcome obstacles to succeeding in business, gaining knowledge and ability in business matters, and obtaining skills needed to bid and secure contracts. Presently none of the classes has been aimed specifically to energy-related businesses, but should the demand become sufficient, such a class or classes would be offered. The Business Education Department also acts as a resource center and has available brochures, pamphlets, and books covering a wide range of business matters. The resource center includes a referral service, through which a client may be placed in contact with a professional who can address his or her specific needs.

Problems Encountered by Minority Businesspersons in Attempting to Set Up Energy-Related Enterprises

The problems encountered by minorities in attempting to set up energy-related enterprises, or to enter the energy field on a contract/subcontracting basis, are essentially the same as those traditionally encountered by minorities in seeking entrance to the general business world. New barriers have arisen that are particular to certain energy areas, such as the oil industry. A summary of problems with which CEDA staff has dealt in assisting clients follows:

Lack of Capital —minority businesspersons generally do not have sufficient capital to enter the energy field on a profitable basis.

Lack of Expertise —minority entrepreneurs are basically uninformed as to opportunities in the energy field and do not generally have the education or expertise to enter the field at a high professional or financial level.

Inability to Obtain Bonding —due to insufficient capital, many minority businesspersons are unable to obtain bonding.

Access to Marketable Products —minorities do not have adequate access to component energy-related products (such as solar panels), which would enable them to create a total product. Part of the reason for this is that many private industries, particularly those involved in oil distribution, maintain a pricing structure that disallows competitive bidding.

Buyer Resistance —energy material supply companies are not getting enough work from the oil companies. Companies have traditionally dealt with certain supplies and are unwilling to change.

External Means of Enhancing Minority Participation in Energy-Related Enterprises

All of the above-mentioned enterprises, even with their inherent problems, would lend themselves to minority participation were some of the obstacles overcome through organized effort and legislation. Such efforts would include:

1. Amend the Miller Act to lift the threshold when a Government contract requires bonding.
2. Encourage and develop bonding pools that would provide bonding capabilities for "high-risk" minority businesspersons.
3. Encourage formation of MESBICs (minority enterprise small business investment company), which would give minority firms access to a

majority firm's bonding capacity, establish equity capital financing, and possible revolving line of credit.

4. Lobby for amendments in the tax code to provide additional tax incentives to encourage joint venturing with minority entrepreneurs.

5. Allocate funding for business development or expand SBA business opportunity loans.

6. Encourage well-known manufacturers to facilitate dealerships and distributorships to minority vendors.

7. Develop alternate forms of surety, such as letters of credit and cooperative bond pools.

8. Subsidize professional training that would prepare minorities to enter energy-related fields.

Summary

Tremendous opportunities will be available in our region in the energy field. In order for minority entrepreneurs to benefit from this economic inpetus, the way must be paved for them to have equal access. Government agencies, energy-related industries, and minority organizations must provide the vehicle through which minority entrepreneurs and professionals can acquire the means of developing, manufacturing, and distributing in every phase of energy production.

Council of Energy Resource Tribes and Resource Development on Tribal Lands

By Theodore Reynolds Smith*

Background

The Council of Energy Resource Tribes (CERT) is a nonprofit organization representing 25 American Indian tribes that own a large share of energy resources in the western United States. Incorporated in September 1975, CERT is directed by a board of directors comprised of the chairmen of the CERT member tribes. The council's broad purpose is to promote the general welfare of energy-resource tribes and their people through the protection, conservation, and prudent management of their oil, natural gas, coal, and uranium.

In December 1977, with funds provided by the Economic Development Administration (Department of Commerce) and the Bureau of Indian Affairs (Department of the Interior), CERT's first step toward the fulfillment of its purpose was realized with the opening of an office in Washington, D.C. During March 1978, Federal funding for FY 1979 activities was secured, which allowed for program and service expansion. CERT will now operate two offices staffed by 42 persons: a Washington office that will serve as an information and policy assessment unit and a Denver office that will serve as a technical assistance unit providing assistance to the tribes in the areas of the physical sciences, education, training and employment, environmental and economic analysis, and financial and management activities. An organizational chart of CERT is attached as figure 1.

* Theodore Reynolds Smith is deputy director for economic development, Council of Energy Resource Tribes.

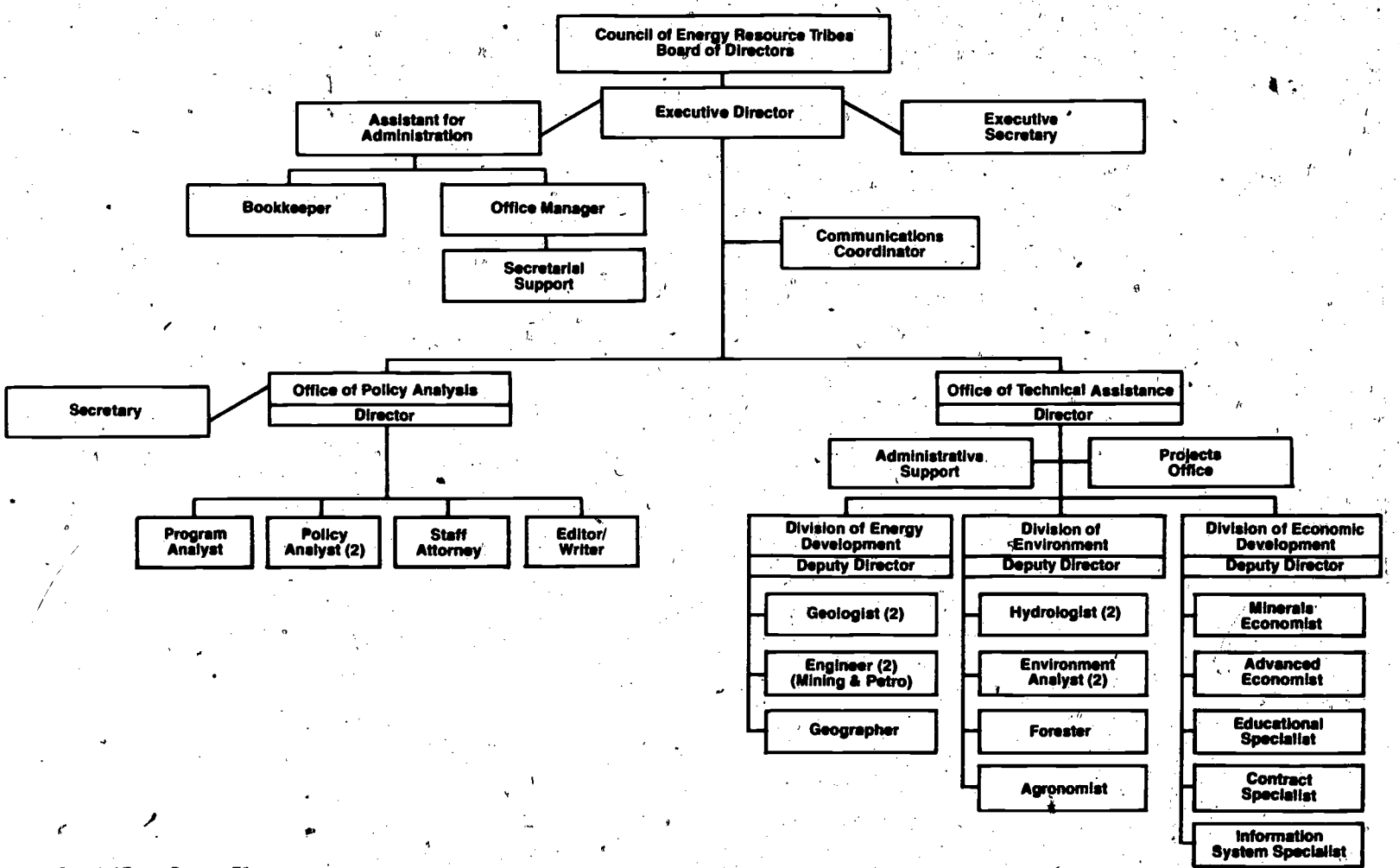
Energy Production Activities

The CERT tribes collectively own 40 percent of the country's uranium, 4 percent of its oil and gas, and 30 percent of all strippable coal west of the Mississippi. Nineteen of the CERT tribes have the potential for coal development, 14 the capacity for uranium development, and 13 the capacity for oil and gas development. Currently, three CERT tribes are commercially producing coal, and three tribes are producing coal for their own needs; nine CERT tribes are commercially producing oil and gas, and three CERT tribes have major uranium production on their lands. Additionally, 14 tribes are now weighing the decision either to enter into initial resource development or are considering the commercial development of another energy resource.

A list of the CERT member tribes and a map indicating their locations is presented as figure 2.

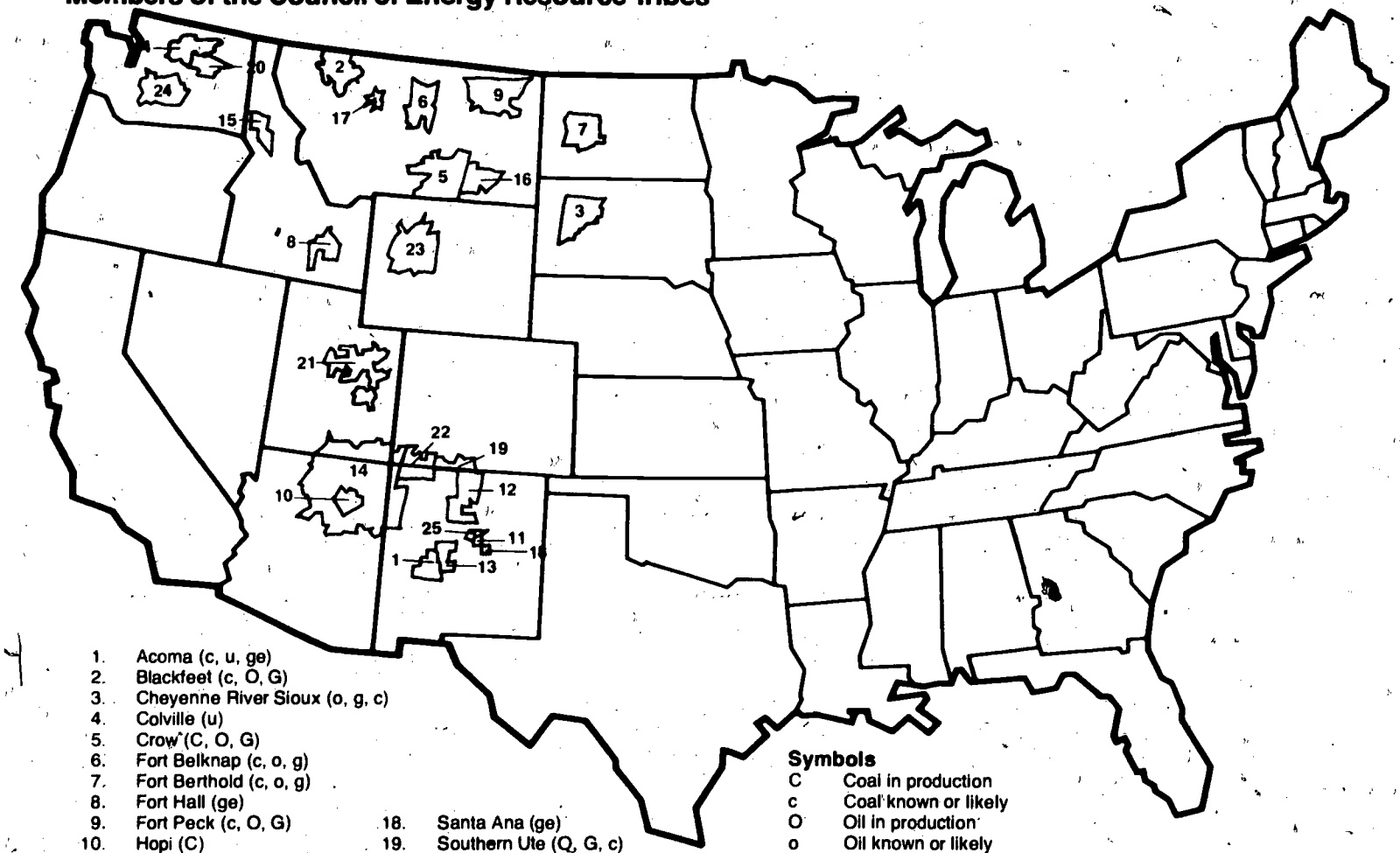
In addition to the energy activities being conducted on CERT tribal lands, there are 445 future energy-related projects being developed on or near tribal lands within the 10 Western States the tribes occupy. Eighty-seven of these projects are for future strip coal mines, 80 are for underground coal mines, and 11 are for future oil refineries and natural gas processing and storage facilities; 80 future uranium mines are planned. Actual production from these projects is scheduled to occur between 1978 and 1990. Tables 1, 2, 3, and 4 show project activity on a State basis for each of the above energy sources.

FIGURE 1
Organization, Council of Energy Resource Tribes



Source: Council of Energy Resource Tribes

FIGURE 2
Members of the Council of Energy Resource Tribes



1. Acoma (c, u, ge)
2. Blackfeet (c, O, G)
3. Cheyenne River Sioux (o, g, c)
4. Colville (u)
5. Crow (C, O, G)
6. Fort Belknap (c, o, g)
7. Fort Berthold (c, o, g)
8. Fort Hall (ge)
9. Fort Peck (c, O, G)
10. Hopi (C)
11. Jemez (ge, u)
12. Jicarilla (O, G, ge, c)
13. Laguna (U, c, ge)
14. Navajo (C, O, G, U, ge)
15. Nez Perce (c, ge)
16. Northern Cheyenne (c, u, o, g)
17. Rocky Boy (c, g, u, c)
18. Santa Ana (ge)
19. Southern Ute (Q, G, c)
20. Spokane (U)
21. Uintah & Ouray (O, G, s, u)
22. Ute Mountain (O, G, c, u, ge)
23. Wind River (O, G, u, c)
24. Yakima (ge)
25. Zia (ge, u)

Symbols

C	Coal in production
c	Coal known or likely
O	Oil in production
o	Oil known or likely
G	Gas in production
g	Gas known or likely
S	Oil shale in production
s	Oil shale known or likely
Ge	Geothermal in production
ge	Geothermal known or likely
U	Uranium in production
u	Uranium known or likely

Source: Council of Energy Resource Tribes

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TABLE 1
Future Strip Coal Mines and Capacities, by State

State	NEW MINES		EXPANSIONS TO EXISTING MINES		TOTAL	
	Number	Annual Production, MMtpy	Number	Annual Production,[1] MMtpy	Number	Annual Production, MMtpy
Alaska	1	—	—	—	1	—
Colorado	31	29.7	—	—	31	29.7
Montana	6	31.0	6	54.1	12	85.1
New Mexico	15	76.7	2	14.6	17	91.3
North Dakota	10	58.4	1	4.4	11	62.8
Oklahoma	12	—	—	—	12	—
Texas	5	23.2	2	26.0	7	49.2
Utah	3	13.0	—	—	3	13.0
Washington	—	—	1	5.0	1	5.0
Wyoming	22	160.7	9	38.3	31	199.0
Total	105	392.7	21	142.4	126	535.1

[1]Production figure in some cases may include existing production as well as expansion production.

TABLE 2
Future Underground Coal Mines and Capacities, by State

State	NEW MINES		EXPANSIONS TO EXISTING MINES		TOTAL	
	Number	Annual Production, MMtpy	Number	Annual Production, MMtpy	Number	Annual Production, MMtpy
Arkansas	1	0.2	—	—	1	0.2
Colorado	46	22.3	—	—	46	22.3
New Mexico	1	—	1	0.7	2	0.7
Oklahoma	7	0.5	—	—	7	0.5
Utah	28	33.3	3	10.2	31	43.5
Wyoming	5	6.4	1	0.2	6	6.6
Total	88	62.7	5	11.1	93	73.8

TABLE 3

Future Uranium Mines, Mills, and Enrichment Facilities, by State

State	Total mines	Total mills or enrichment facilities
Colorado	30	8
Louisiana	—	1
New Mexico	12	2
Oregon	1	—
South Dakota	1	1
Texas	34	1
Utah	21	—
Washington	1	1
Wyoming	15	4
Total	115	18

TABLE 4

Future Oil Refineries and Natural Gas Processing and Storage Facilities with Capacities, by State

STATE	OIL REFINERIES		NATURAL GAS PROCESSING PLANTS		NATURAL GAS STORAGE FACILITIES	
	Total projects	Capacity, bpd	Total projects	Capacity, mcfd	Total projects	Capacity, mcf
Alaska	1	30,000	3	2,796,552	—	—
California	7	47,500	1	100,000	—	—
Colorado	3	9,988	—	—	—	—
Hawaii	1	8,000	—	—	—	—
Idaho	—	—	—	—	1	—
Kansas	3	87,130	—	—	2	—
Louisiana	10	641,000	3	2,790,000	—	—
Nebraska	—	—	—	—	1	39,000
New Mexico	5	20,900	1	75,000	—	—
Oklahoma	2	15,391	4	213,000	—	—
Oregon	1	30,000	1	5,000	1	—
South Dakota	—	—	—	—	1	400,000
Texas	4	485,000	6	551,500	—	—
Utah	—	—	3	—	—	—
Wyoming	3	10,400	1	120,000	—	—
Total	40	1,385,309	23	6,651,052	6	439,000

Manpower Requirements

Projecting the manpower requirements these projects will demand is a difficult task, and current employment projection methods are not precise. National employment projections, therefore, will be used as employment growth indicators.

In the General Accounting Office's (GAO) report to Congress, "U.S. Coal Development. . .Promises, Uncertainties," it was estimated that between 93,100 and 157,000 new employees would have to enter the work force to produce the amount of coal projected to be needed by 1985. To achieve the tonnages projected for 2000, from 195,200 to 374,600 additional employees will have to enter the work force.

CERT's Technical Assistance Function

CERT's Denver office will be responsible for its technical assistance activities. There will be three areas of specialization aimed at meeting all aspects of Indian resource management needs; they are as follows:

1. Energy development
2. Environment
3. Human resource and economic development

In the Energy Division, a team of earth scientists and engineers will respond to tribal member needs in the areas listed below.

1. Mining engineering
2. Petroleum engineering
3. Geology
4. Distribution engineering
5. Alternative energy sources

As a complement to the energy development office, the Environmental Division will possess a team of specialists who will be capable of dealing with issues related to the following areas.

1. Water resources
2. Forestry
3. Agriculture
4. Soils
5. Environmental impact
6. Biological sciences

The Human Resource and Economic Development Division will attempt to draw upon the work of the other two divisions and to provide its own input in the fields indicated.

1. Education and human resource development
2. Market analysis
3. Resource valuation
4. Financial management
5. Socioeconomic analysis
6. Industrial organization
7. Management
8. Contract negotiation

Given access to these resources, it is hoped that the member tribes' ability to manage their resources and to deal effectively with development companies will be enhanced. I would like to emphasize that CERT's role is one of a technical nature and none of the above expertise is oriented toward advocating a specific point of view. If a CERT member tribe has a need in one of the areas mentioned—or in a related field—the CERT staff will respond to the best of its ability; however, all decisions on the course of action to be selected by a particular tribe are the sole responsibility of the individual tribe. CERT includes members who are very much opposed to resource development and members who are very much in favor of development. Hopefully, we can meet the needs of each.

Social and Economic Impacts of Natural Resource Development

In the limited space we have available, it would not be possible to provide a comprehensive summary of the problems and benefits associated with natural resource development. We would be fooling ourselves if we failed to acknowledge the pitfalls confronting the tribes who actively develop their energy resources. Nonetheless, prudent management of energy resources does offer hope for some tribes who suddenly find economic power close at hand, after more than a century of economic servitude. Still, the potential pitfalls are many and frequently surface in unsuspected fashion.

There is little need to dwell on the obvious, such as the scare of environmentally unsound projects that can no longer support "meaningful" vegetation after a major strip-mining operation or the changed ground water flow attributable to removal of subsurface conduit strata. As Harris Sherman pointed out, water is the key to much of what will happen in energy development in the western United States—this is particularly true of Indian lands.

Much of the Native American's way of life is founded upon a basic way of life where man lives by communicating with the land. Water is the lifeblood of this communication, and if some order of traditional values is to be sustained, then water must be viewed as a resource equally important as coal, oil, gas, or uranium.

At the one extreme, we have the potential of the boomtown that may have an apparent and disruptive impact upon a tribe, one from which the tribe may never recover. There is, however, another negative impact of a more long-term, subsequent nature. We must remember that in many cases we are talking of a nonrenewable resource when we think in terms of energy resource development. The per capita payment can be a positive help to a people in need, or it can be a mind-deadening addiction, which upon termination can cause serious disruptions in established ways of life. One comes to realize that energy development must be accompanied by a balanced economic development strategy. If a tribe selects to go with energy development, it should follow up with development plans that will sustain the income and employment base after the extractive resources are gone. This requires the "institutionalizing" of tribal government, the creation of tribal regulatory agencies, and the development of funding sources other than the Federal Government. Taxes will no doubt have to become a fact of tribal government life.

It should be emphasized that, even with its associated problems, development of energy resources is not necessarily bad. Much of the bad that we associate with resource development is tied more directly to human involvement—or the lack of it—than to the actual development of the resource. Energy resource development is a low-skill industry for most employees. Where high-paying, skilled jobs are available, there are generally very few Native Americans qualified to step in and compete for the positions. This situation breeds alienation and discontent. Why try if there is no future? This is again a major challenge for the CERT effort.

Human Resource Development

Increasing tribal career opportunities and decreasing tribal unemployment is primary to CERT's goal of promoting the general welfare of the energy-resource tribes. This goal presents a complex issue with a long and varied history of causes as well as unsuccessful solutions, as can be evidenced by the current 44 percent unemployment rate for CERT member tribes.

Two major and persistent barriers to tribal employment have been the lack of job-oriented training programs and the general disregard by reservation employers to comply with Indian preference hiring rights. These two barriers have acted together to perpetuate the high rate of tribal unemployment. To the resource tribes, the lack of appropriate training has served to promote Indian unemployment by allowing the energy industry to shirk its legally mandated Indian preference hiring requirements by saying, "There are no trained Indians to employ." As a result, not only are Indian energy resources being produced by non-Indians, but a majority of the jobs created are going to non-Indians as well.

It would be unrealistic to believe that CERT could overcome this obstacle overnight. CERT recognizes that a multitude of programs which have gone before have only begun to be felt. There are, however, things that can be done.

To begin with, we will work with the CERT member tribes to make preference hiring more effective. Time frames must be developed to place tribal members in management and technical positions. The energy apprenticeship training program for Indians (EAT) has been designed to address employment barriers by providing a national and reservation-based mechanism for working with the energy industry and the Indian people to promote and develop apprenticeship training opportunities for Indians in the energy fields. This proposed action will be accomplished through national program activities conducted by CERT and through subcontracting project activities to interested CERT tribes. The EAT program and its subcontractors will be responsible for accomplishing the following tasks and objectives:

1. The promotion and development of 10–20 new apprenticeship training programs in the energy-related fields.
2. The seeking out and placement of 100–200 Indians into registered apprenticeship training programs in the energy-related fields.
3. The review and analyzation of existing and potential apprenticeship training opportunities on Indian lands that are afforded by energy resource production and the compiling of such data for resource publication.

In addition to these requirements, CERT will also undertake the following responsibilities:

1. To work with the energy-producing companies and unions located on or near reservation lands who have not previously been involved in apprenticeship training to promote and develop Indian apprenticeship training opportunities.
2. To work with energy-producing companies located on or near reservation lands who are

currently involved in apprenticeship training projects in an effort to increase their enrollment of Indian apprentices.

3. To acquaint CERT tribal members with the opportunities available in the energy-related fields as apprentices, journeymen, or advanced trainees.
4. To seek out and identify Indian youths, both men and women, for energy-related apprenticeship training.
5. To assist eligible applicants for program acceptance by providing the necessary tutoring, counseling, and other necessary support services.
6. To provide followup services for at least 6 months to placed apprentices in an effort to maximize program completion.
7. To provide orientation and technical assistance to CERT tribes and their staffs as necessary.
8. To compile information on apprenticeship training in the energy-related fields and disseminate to appropriate educational institutions, business and industry, and government agencies.

CERT's activities in the human resource development area are not limited to the EAT program. A longer term strategy is designed to reach down into the local schools with programs that point to the rewards associated with careers in the energy field. Regular visits by successful Native American engineers and professional people will be used to demonstrate what the future can hold. We hope to demonstrate that tribal members can have their cake and eat it too—they can find rewarding, productive careers and work and live within the tribal context. We hope to launch an intensive drive to interest young students in the math and science fields and to orient them towards viable livelihoods in the energy field that will benefit both the individuals involved and the tribe as a whole.

In the community colleges, CERT will work with teachers and administrators to develop a curriculum that allows for the graduate to meet specific needs in the energy industry. In order to complement this educational program, it is hoped that CERT can serve as a clearinghouse for the placement of individuals trained in the energy field.

* U S. GOVERNMENT PRINTING OFFICE : 1979 629 098/2424