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United States Law as It Affects Geothermal Development

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ABSTRACT

The laws of the United States and of the various states have inhibited the rapid development of geothermal energy. Although the federal Geothermal Steam Act of 1970 became law in December 1970, it was not until 1974 that competitive lease sales were held on federal lands, and only now are noncompetitive leases being issued or scheduled for issuance.

The many legal requirements, obstructions, and limitations have made the task of the limited number of persons charged with responsibility to accelerate geothermal development difficult and time consuming. For example, the requirements of the National Environmental Protection Act, the authority exercised by the Office of Management and Budget and Internal Revenue Service, the requirements of various government agencies, such as the Forest Service, have all contributed to the delay. Above all, there has been, until recently, no overriding priority granted to geothermal development.

The various states have defined geothermal resources in their own way and in so doing have in many cases raised issues as to the character and ownership of the resource. Such confusion has inhibited development.

Local governmental agencies have delayed development by imposing time-consuming, expensive, and frequently unnecessary requirements relating to environmental matters.

A major lack is the absence of adequate means of communication between local and state agencies and industry as to problems to be resolved.

INTRODUCTION

The objectives and concerns of those in the geothermal field are the same, regardless of the country or area. The technical problems and experiences are also of a similar character. While it is true that different technical problems and experiences occur in different areas, they are not confined to specific countries. The challenges presented in the development and use of geothermal resources are universal in character and scope; and, I venture to say, there is considerable similarity in all countries with the problem of finding and establishing the proper balance and relationship between the development and use of the resource and the legislation and regulation affecting that activity.

It has too frequently been our experience in the United States, and I daresay it has been the same in some other countries, that, as to geothermal resources, many want to

act in the play but few undertake to read the script to find out what the play is about.

The laws of the United States and of the various states in which geothermal resources are found have been too slow to recognize that geothermal resources do not fit established categories and that they must be treated separately and differently from other known and established resources.

The legislative and regulatory bodies are coming all too slowly to recognize the intimate connection between and interdependence of developing the resource and providing the means of using it.

Significantly, worldwide development and use of geothermal resources has become an objective at a time of worldwide concern with environmental matters, and in this setting geothermal resources have been caught up in a maze of laws, regulations, and overlapping jurisdictions which have delayed its development and use far beyond what would be required by legitimate environmental concerns.

I construe the role of this paper to be to deal with matters of general application, not only in the United States but in other countries fortunate enough to contain geothermal resources. It is not my intent here to deal in any greater detail of United States law as it affects geothermal development than is necessary to present a picture of universal application, so that we may all learn from the experience of others. What has happened and what is happening in the United States offer lessons and examples from which we may learn, if we are willing.

UNIQUENESS OF THE RESOURCE

It is now generally agreed that the heart of geothermal resources is the natural heat below the surface of the earth. It is that heat, however caused, that we seek, but the heat must be made available for use at the surface. That occurs in the form of vapor (natural steam) or water from underground reservoirs and may someday be made available by injection of fluids to hot rocks and return to the surface of such fluids heated by these subsurface rocks.

The definition of geothermal resources contained in the federal Geothermal Steam Act of 1970 is broad and universal in its application. It recognizes that the natural heat of the earth, in whatever form it is made available at the surface, is the resource; but the Act does not take the next crucial step to declare that geothermal resources are of a separate and distinct character which do not fit the established definitions, or commonly accepted treatment, of minerals generally or of water.

In the United States, as you know, we have fifty sovereign states, each of which has jurisdiction over lands and resources within its boundaries, except generally as to lands belonging to or under control of the federal government; and even as to these lands there are disputes now pending as to the extent of state authority over federal lands, waters on these lands, and so on. Most states in which geothermal resources have been found or where there is likelihood that they will be found have enacted laws defining the resource and regulating its development. All of these laws recognize that the core of geothermal resources is the natural heat of the earth and that what makes its use possible is an intervening agent such as steam or water of various characteristics and content. Only a few states—Idaho, Washington, and Oregon, in a bill now pending in the Oregon legislature, come to mind—specifically recognize in their geothermal laws that geothermal resources do not fit any established pattern or definition. They are unique and distinct from other resources. Their differing manifestations and characteristics and the different uses to which they may be put make it impossible, and certainly undesirable, to fit them into any established mold of statutes, regulations, or concepts applicable to other energy sources or materials.

INADEQUATE LAWS AND REGULATIONS

The failure of the laws and regulations applicable to geothermal resources to deal with this fundamental truth has impeded and will continue to impede extensive development of geothermal resources and will, as its use increases, create very real problems for those desiring to rely upon geothermal resources for electric power production and for other uses.

So far, in the United States, our governmental institutions have been too slow in establishing criteria and accepting concepts applicable to geothermal resources. We have been so fearful of generally imaginary and exaggerated dangers or detriments that we have imposed conditions and restraints on development of geothermal resources before we have allowed ourselves to ascertain whether such dangers or detriments may occur.

We have been so intimidated by the "possibility" that we have unreasonably delayed determination of the "probability."

Our legislators and regulators have developed such a mistrust of business and industry that the measure of truth is not what is said or demonstrated, but who has said it or demonstrated it. This has been the climate in which geothermal laws and regulations have been considered and adopted.

Laws and procedures have been complicated when simpler approaches would be more effective. Instead of removing impediments to rapid development and use of this promising resource, barriers and delays are imposed and manpower and resources are consumed for purposes which are not necessary or reasonably required.

I do not intend to indict all legislators or all governmental agencies. There are some—but not enough—who see and understand the condition I have outlined, and there is a growing awareness that those in the geothermal industry should have a major role in helping to develop laws, regulations, and programs that will work and will encourage the more rapid development and utilization of geothermal resources. I know that the recently established federal

Energy Research and Development Administration is attempting to develop practical and meaningful programs and that the United States Geological Survey and Bureau of Land Management are attempting, within the limits of their manpower and budget, to simplify procedures and encourage more rapid development. Here in California the Division of Oil and Gas, a division of the Conservation Agency, through its geothermal division, has been fully aware of the practical problems of the geothermal developer and has done all it can to help resolve these problems.

OBSTRUCTIONS

But there has not been enough effort spent toward simplifying requirements and eliminating the onerous and wasteful burdens on manpower and resources in ever-proliferating paper work, studies, reports, and other nonproductive activities.

Lack of Clear Guidelines

The developers and potential users of geothermal resources have not been given fixed guidelines to follow. They have not been advised that if they meet certain conditions they can proceed with their operations. Quite the contrary, they are told that even if they meet federal requirements in certain areas they must prove that the federal guidelines are adequate in order to protect against unknown, unsubstantiated, and remote possibilities dreamed up by persons who, despite their protestations, do not want to see our energy resources developed.

The environmental impact reports, environmental impact statements, environmental impact assessments, and the myriad of permitting procedures under our laws and regulations, federal and state, are not structured to accomplish specific environmental benefits or controls. They do not, for the most part, concern themselves with affirmatively fixing guidelines, limitations, or permitted procedures. Ostensibly they are for the purpose of guiding governmental agencies in making decisions as to the desirability of public or private projects. Actually they have become the means of delaying projects without offering any positive alternatives.

Obstructionism

The wealth of technical papers presented at this symposium indicates that a great deal is known in the field and that technology is sufficiently advanced now to warrant far more geothermal development and use than is now taking place in this country. What then has held back and continues to hold back development and utilization of geothermal resources in the United States? What is it that is depriving the overwhelming majority of the people of the benefits to accrue from this resource? There is absolutely no question that the fault is institutional and legal. And these institutional and legal barriers are fed by an attitude, a mood which is prevalent among many of our legislators, among too many of the members of the staffs of legislative committees, and among too many persons charged with applying or administering laws. That attitude, that mood is one of hostility to those in the business of finding, developing, and utilizing energy resources. It is an attitude that considers it entirely proper and in the public interest to impose well-nigh

impossible conditions and constraints on those in the business of developing energy resources and then berating them for failing to do their job. It is a mood which says, "Go ahead, develop the resource, and if we think you are not doing the job well enough, we will take what you have developed away from you."

It is a mood of vindictiveness, of vengeance for past wrongs, real and imagined. The geothermal developer is caught in this surrealist atmosphere, and legislation affecting geothermal resources is proposed or passed in this climate.

Benefit of Experience

If this symposium were not held in the United States and in the State of California, where I reside, I would consider it inappropriate to publicly discuss as openly as I have here the legal and institutional problems that are impeding more rapid geothermal development. But here I am at home, and it is my moral obligation to you and to the people to expose those institutional weaknesses and defects which are hampering—a better word would probably be "plaguing"—the geothermal industry. If those of you from other lands can learn from our experience, we will have achieved a major purpose of this symposium.

It is generally agreed that exploration, development, and utilization of geothermal resources in the United States have proceeded at a pace which is much too slow. To contend that the delay is caused by a sinister conspiracy of the large oil companies is preposterous and a distortion of the facts. What then are the causes?

There are, to be sure, technological difficulties that vary from area to area; but these problems have not been sufficient to cause the snail's pace of development and use.

We are concerned in this paper with legal and institutional matters, and it is in this arena where the solutions must be achieved.

Legal Tangles

What is generally referred to as the geothermal industry consists of three broad categories—(1) exploration, (2) development, and (3) utilization. Exploration and development are, of course, closely related because the purpose of exploration is to find something worthy of development. Without exploration there would be no development. Without the ability to develop there would be no reason for exploration, and without a means of utilizing the resource there would certainly be no purpose in its exploration and development. These simple truths would not seem to require repetition or explanation, but the laws and regulations and administrative procedures under which the geothermal industry operates are blind to these truths. That is bad enough, but a review of pending or proposed legislation in various states and in the Congress indicates that the problems may be compounded, unless persons in responsible places call a halt to this senseless, self-defeating, self-destructive, unreal attitude that permeates our legislatures and our administrative agencies.

Let me give you an example of what I am referring to. Here in California we have The Geysers where two small companies, Thermal Power Company and Magma Power Company, and one large company, Union Oil Company of California, have been the earliest and most extensive operators. Burmah Oil and Gas Company and Pacific Energy

Corporation are also operating in The Geysers field. Sun Oil Company, Shell Oil Company, and others have done some, as yet unsuccessful, exploration in the area. Applications for permission to drill wells, exploratory and development, have been held up for many months and for as much as a year. Pacific Gas and Electric Company, purchaser of the geothermal steam, is behind schedule over two years in construction of plants to utilize the steam because their applications have not been acted on.

These delays have been occasioned by the requirements of state and county laws, regulations, and procedures. The geothermal resources developer is not told, without delay, that a permit will issue for the drilling of wells subject to certain conditions. Pacific Gas & Electric is not told, without delay, that it may construct a power plant subject to inclusion of certain facilities to protect the environment. They are told only that an environmental impact statement must be prepared and when it is prepared, they are generally told it is inadequate and they must try again; and then if they succeed in satisfying the requirements of the administrative body, they may be subjected to further delays in the courts to test the completeness of the statement.

In the state of California and in other states, the delay in developing and using geothermal resources can be overcome if the state legislatures will revise or repeal those laws that require statements and reports and instead establish the mechanism for the fixing of specific requirements and guidelines to be met and followed. These specifications should be fixed by appropriate administrative agencies after public hearings in which the geothermal industry is asked to participate. The requirements imposed should be within technology presently feasible and can vary from time to time as technology improves or changes. The requirements must be arrived at after a balancing of the public needs and the short- and long-range benefits and detriments—real, not imaginary—to be gained from our geothermal resources.

Hopeful Signs

What is happening at The Geysers is an example of what must be avoided if the benefits from geothermal resources are to be achieved now, when we need them most. In the Imperial Valley area in California, however, the local officials have encouraged geothermal exploration to define the character and limits of the resource during the exploratory stage. I fervently hope that when the time comes to develop the resource more intensively and to build facilities for its use that the public agencies in Imperial Valley will not feel that they are required under state law to follow The Geysers example. I am hopeful that they will find a better way.

States such as Nevada, Arizona, and Idaho have avoided, to date, the imposition of onerous burdens on those desiring to explore for geothermal resources in their jurisdictions. Hopefully, they will profit by the California experience and adopt more realistic programs and procedures as geothermal exploration and development gains momentum in their states.

The federal Geothermal Steam Act of 1970 was a first effort by the federal government in the field. It was a good first effort, thanks to the indefatigable efforts of then Senator Alan Bible and his staff and the staffs of the Senate and House Interior Committees. But the Act could have, and should have, reflected a greater recognition of some of the practical problems of the industry. The refusal of the personnel of various federal agencies to deal with things

as they are and their unwillingness to accept or verify the facts as presented required compromises in the Act and in the regulations under the Act, which have contributed to delays in geothermal development. I have no doubt that the long time that it took to finally adopt the regulations under the Act was occasioned by the efforts of those in government who understood the problems and legitimate needs of the geothermal developer to override the senseless restraints on development which others in government insisted on.

Toward the Future

The federal problem has been lack of a centrally directed, integrated policy with respect to geothermal resources. Even today, after creation of the Energy Research and Development Agency, I do not see the elements of an integrated, centrally directed policy. I am assuming, of course, that the federal policy would be to accelerate geothermal exploration, development, and use. That has been the declared policy in the past, but it has not been achieved.

There are so many overlapping jurisdictions, such fragmentation of authority, such contradicting points of view and philosophies within the federal government and within federal agencies, that nothing will suffice short of a directive by the President himself to the federal departments and administrative agencies that rapid exploration, development, and utilization of geothermal resources is of prime priority and a major national objective, and that they must support that objective in all ways. I suggest that even if such directive were given it would be necessary to designate a Presidential assistant to see that it is carried out.

In the Congress there have been a number of eloquent and sincere proponents of laws intended to encourage and support geothermal resources development and use. These laws will be helpful, but since they are primarily directed toward advancing geothermal technology, they have not dealt sufficiently with the institutional problems and will, therefore, not accomplish the accelerated development and use which is desired and intended.

What is required of Congress is a greater application to the practical realities that confront the geothermal industry every day. Congress should address itself to the special institutional problems of the geothermal industry alone—with a fresh look and for the purpose of encouraging the industry. If abuses develop in the industry, there is time then to meet them, but what the industry needs now is the chance to go and to prove itself. Congress should establish a tax policy to encourage development and use and not leave that to the vagaries, prejudices, and philosophies of bureaucrats in The Treasury Department and its Internal Revenue Service. Congress should provide for a loan program adequate to meet the needs of prospective users or developers of proven geothermal resources. The loan guarantee program under existing legislation is not adequate to achieve the acceleration in development and use intended, and past history leads one to expect that by the time the various governmental agencies involved get through framing the regulations, it will be as difficult to get a loan for geothermal purposes as it is to cash a personal check these days in a strange town.

Congress should correct the flaws which are now apparent in the Act of 1970 relating to leasing of federal lands. It should also address itself to revision of legislation relating

to proprietary rights in technology developed by private industry which receives some federal support. Existing legislation does not encourage limited joint private and public projects, which could be fruitful in developing geothermal technology.

Misnamed Protection Laws

Congress should address itself to the revision or repeal of those misnamed environmental protection laws, the main effect of which is to cause delays and the waste of manpower and resources—laws which do not directly address themselves to environmental protection. What is required is the same as that required of the various states—laws which establish the mechanism for fixing the guidelines and specifications to be met, within the framework of existing technology.

All laws and regulations are adopted within the framework of a dominating philosophy or attitude. That philosophy or attitude can be supportive of a project or industry or it can be distrustful, fearful, and destructive. The legislation and regulations can be based on fact and reality or on fears, suppositions, and misinformation. All legislation depends heavily on staff work, and the attitudes and philosophies of staff personnel play a vital role in the molding of legislation. All administration of laws depends on departmental and agency personnel. Their attitudes and philosophy determine how the laws are applied and the extent to which legislative intent is carried out.

Communication

A way must be found to be able to communicate openly and informally with the staffs of legislative committees and with the personnel of administrative agencies in order to answer questions, to exchange ideas, to break down prejudices and misconceptions, and to inform as to the real life facts and experiences. Although Congress and the various state legislatures provide for formal committee hearings and testimony on bills being considered, this is not an adequate or proper forum to develop the information and facts necessary to a proper consideration of the subject matter of bills relating to geothermal resources. I am sure this applies to other areas, but geothermal resources are our concern today. By the time a bill reaches a formal committee hearing, opinions are already fixed, adversary roles are already assumed, reputations are already involved, and votes have already been counted. The staff has already reported, and it feels compelled to defend the integrity of its report. And time is limited. This is hardly the environment in which to engage in the kind of presentation and consideration of facts which are essential in considering bills relating to geothermal resources. Unless a means is found for open, informal discussion between geothermal industry people and legislators and staff personnel involved in proposed or pending legislation and between those in the industry and those in administrative agencies framing and enforcing regulations and the laws, there will be no assurance that these laws and regulations will reflect the true needs of the industry or strike at the real abuses that might develop.

Unless such means of communication can be developed and unless we can discuss with our governmental representatives on an open and above-board basis with mutual respect and tolerance our experiences, needs and limitations,

and unless we are heard, we will continue to experience the dissemination, in all forms, of misinformation—some deliberate, some innocent. Unless we are heard, we can expect the proposal and adoption of legislation and regulations often detrimental to the objective of accelerating, in an acceptable manner, the development and use of the resource; and we will wonder why, when geothermal resources have so much of value to offer to the people, it is so difficult to break through the wall of bureaucracy to obtain the little support necessary to achieve such a great goal.

CONCLUSION

The geothermal industry in the United States was started by hardy pioneers. They did it on their own, without seeking

or receiving government support or encouragement. That is the heritage of our industry. We will push ahead and the nation will profit by it, but we would like to move forward very much faster. We would like to explore more areas, develop more fields, and build more facilities to use geothermal resources. We would like the people here and elsewhere, wherever the resource is available, to benefit from this potentially cleaner and cheaper source of energy. We know that this can be accomplished in an environmentally acceptable manner. We are aware of our responsibilities, and we intend to honor them. We ask only that our laws and institutions support us in this worthwhile objective. We ask only that our hands be untied and that our words be heard and accepted as those of honorable, concerned men and women.