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LEASING OF FEDERAL GEOTHERMAL RESOURCES

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Pursuant to the Geothermal Steam Act of 1970 and the regulations published on December 21, 1973, the first Federal geothermal competitive lease sale was held on January 22, 1974, by the Department of the Interior, offering 33 tracts totalling over 50,000 acres in three Known Geothermal Resource Areas in California. On January 1, 1974, Federal lands outside Known Geothermal Resource Areas were opened to noncompetitive lease applications, of which, 3,763 had been received by June 1, 1974. During fiscal year 1974, a total of 22 competitive leases had been issued in California and Oregon. The principal components in the Department involved in the leasing program are the Geological Survey and the Bureau of Land Management. The former has jurisdiction over drilling and production operations and other activities in the immediate area of operations. The latter receives applications and issues leases and is responsible for managing leased lands under its jurisdiction outside the area of operations. The interrelationships of the above agencies and the procedures in the leasing program are discussed.

I. INTRODUCTION

On December 24, 1970, the Geothermal Steam Act (Public Law 91-581) was signed into law. This act authorized the Secretary of the Interior to lease certain public lands for development of geothermal steam and associated geothermal resources. At once, an interdisciplinary Geothermal Task Force was established within the Department. The Task Force was assigned responsibility for preparing leasing and operations and unit regulations for the proposed geothermal resources leasing program and for preparing environmental impact statements required under the National Environmental Policy Act of 1969. To assure the widest possible public participation and input, proposed regulations were published three times in the Federal Register. Finally, after careful consideration and revision, the regulations were officially promulgated on December 21, 1973.

The final environmental impact statement published on October 23, 1973, provided the public with additional information about the program and furnished additional basis for the preparation of leasing regulations.

In addition, on February 6, 1974, the Secretary of the Interior established, by Secretarial Order 2962, a Geothermal Environmental Advisory Panel to

advise the Supervisors of the Geological Survey (GS) and the Authorized Officers of the Bureau of Land Management (BLM) and other land managing agencies in carrying out their responsibilities related to environmental impacts in connection with operations under leases issued under the Geothermal Steam Act of 1970.

These, in brief, were the actions preceding or directly related to announcement of the geothermal leasing program. Before moving to a discussion of the mechanics by which the Department administers the leasing program, I should like to differentiate between the two types of leases - competitive and noncompetitive.

According to law and regulation, public land classified by the U.S. Geological Survey as Known Geothermal Resources Areas (KGRAs) can be leased only competitively to the highest qualified bidder. All other public lands open to geothermal leasing, including those classified as prospectively valuable for geothermal resources, are subject to noncompetitive lease applications. In determining whether lands should be classified as KGRAs the Geological Survey considers geology, nearby discoveries, and competitive interest. Under the regulations, an overlap of 50% or more in noncompetitive lease applications is considered evidence of competitive interest and subjects the land involved to classification as a KGRA.

On December 21, 1973, the Secretary of the Interior announced the first competitive lease sales on three KGRAs in California for January 22, 1974. It was also announced that applications for noncompetitive leases for Federal lands outside KGRAs would be accepted beginning January 1, 1974. Before bringing you up to date on current results of the leasing program, in terms of the applications received and the leases issued, I will first discuss some of the more important aspects considered and some of the interrelationships involved in the administration of the program.

Two components of the Department of the Interior primarily involved in the geothermal leasing program are the Bureau of Land Management and the U.S. Geological Survey. The former is responsible for 1) receiving lease applications and issuing leases noncompetitively, 2) holding competitive lease sales and issuing ensuing leases, and 3) managing leased lands under BLM jurisdiction outside the immediate area of geothermal operations. When lands are under other Federal jurisdiction (generally U.S. Forest Service), that agency manages leased lands outside the immediate area of operations. Under the regulations the BLM responsible official, or other management agency responsible official, is known as the "Authorized Officer."

The Geological Survey responsible official is known as the "Supervisor." This official, as a representative of the Secretary and subject to the direction and authority of the Director of the Geological Survey and other appropriate Geological Survey officials, has jurisdiction over 1) drilling and production operations, 2) handling and measurement of production, 3) determination and collection of royalties and, 4) in general, all operations conducted on a geothermal lease subject to the regulations in 30 CFR 270 and 271 and the applicable regulations in 43 CFR Group 3200.

The Supervisor, in performing his duties, shall ensure that all activities within the area of operations will conform to the best practices, are conducted in such a manner as to protect the deposits of the leased lands, and will result in the maximum ultimate recovery of geothermal resources, with minimum waste. He shall also ensure that such operations are consistent with the best use of the land and the protection of the environment. The regulations require that the Supervisor shall, prior to approval of a plan of operations or prior to issuing orders or rules, consult with and receive comments from appropriate Federal and State agencies, lessees, operators, or interested parties. For example, any plan of operation must be approved by the appropriate land management agency.

I previously mentioned the Geothermal Environmental Advisory Panel established by Secretarial Order 2962 to advise Supervisors and Authorized Officers. Briefly, the panel is responsible for giving advice on environmental aspects in any new geological or geographical areas. The panel is also available on request for additional advice or consultation regarding operations which may affect the environment under any geothermal lease. The Supervisor (for plans within the area of operations) and the Authorized Officer (for plans or permits outside the area of operations) shall, prior to his approval of such plans, submit the plans in any new geological or geographical areas to the Chairman of the Panel. The Chairman of the Panel, within 15 days, shall respond as to whether the panel intends to provide advice in that particular case. The panel will have 30 days after receipt of the plan within which to supply its advice, unless the time is extended by the Secretary.

Now, for some specific examples of the interrelationship between the Geological Survey and BLM, the U. S. Forest Service, or other land management agencies.

II. COMPETITIVE LEASE SALES

When BLM, on its own motion or in response to nominations from industry, proposes to offer lands for leasing within KGRAs, the Geological Survey is responsible for determining the appropriate parcelling of tracts and for establishing rentals and royalties. The GS will report to BLM on needed lease terms and conditions, including environmental and surface rehabilitation stipulations, relating to mineral exploration and extraction. The GS makes all geologic, engineering, and economic value determinations including a resource evaluation on each tract to be offered and a postsale recommendation to BLM regarding acceptance or rejection of the high bonus bids. The GS makes geologic and engineering inputs to environmental analyses and environmental impact statements prepared by BLM in advance of competitive lease sales. At that time, GS and BLM usually consult and confer regarding any special lease stipulations needed for operational requirements or environmental protection measures. The Forest Service and GS consult in the same way on environmental analyses and lease stipulations on areas proposed for leasing in National Forests.

III. NONCOMPETITIVE LEASE APPLICATIONS AND ISSUANCE

The first of each month becomes a new filing period for noncompetitive lease applications. These lease applications, filed with BLM state offices, are opened at the end of each month and serial register pages are made. Copies of the serial register pages are sent to the BLM Authorized Officer and the Geological Survey for their information. After further processing and determination of adequacy of application, if the lands covered by the application are determined to be subject to leasing, the application will be sent to GS for a KGRA report and recommended lease stipulations and to the BLM or another land management agency Authorized Officer for review, determination of whether or not an environmental analysis is required, and any other recommendations. If the lands are not determined to be in a KGRA and if the environmental analysis indicates that issuance of a lease will not cause a major environmental impact or constitute a major Federal action, GS and BLM, or other land management agencies, develop any necessary special lease stipulations. Then, if these are accepted by the applicant, the lease will normally be issued.

IV. PLAN OF OPERATIONS

The lessee must submit a plan of operation pursuant to regulation prior to entry upon the leased lands for any purpose other than casual use. Operations will not be permitted on the lands until the plan of operation has been approved. The contents of the plan of operations are outlined in 30 CFR 270.34. The plan is submitted to the Supervisor and both the Supervisor and the Authorized Officer of the appropriate land management agency must approve the plan.

The Supervisor, after receipt of the plan of operations, sends a copy to the appropriate Authorized Officer and arranges for discussions of the plan, inspection of the area when appropriate, consideration of necessary modification of the plan, and review by the Authorized Officer of any GS environmental analysis for the proposed operations. Following completion of the environmental analysis and agreement on the plan, the plan of operations is formally approved by the Supervisor and the Authorized Officer. The copy of the approved plan, from the Supervisor to the lessee, specifies the notices and permits required by the Supervisor in the area of operations and those required by the Authorized Officer in the remainder of the leased area. Also, in any new area the plan of operation is furnished to the chairman of the Geothermal Environmental Advisory Panel for consideration and possible suggestions regarding the environment.

V. GEOTHERMAL RESOURCE EXPLORATION OPERATIONS

Exploration operations for unleased public lands administered by BLM are covered in 43 CFR 3209; permits are obtained from the Authorized Officer. Exploration operations on leased lands are covered in 30 CFR 270.78. These permits are obtained from the Supervisor.

The BLM furnishes GS with a copy of the Notice of Intent for exploration operations on unleased lands for review of any engineering or geologic hazards and a copy of their recommendations for appropriate conditions of approval. For example, in some areas the allowed depth of seismic or shallow temperature holes may need to be restricted so that unwanted hot springs or geysers are not created. The GS, likewise, furnishes BLM with copies of the Notice of Intent for exploration on leased lands, and receives suggestions on appropriate conditions of approval regarding the protection of surface resources and uses.

VI. GEOTHERMAL RESOURCES OPERATIONAL ORDERS

The Supervisor, as part of his responsibility in administering the operating regulations, issues "Geothermal Resources Operational (GRO) Orders." These are formal, numbered orders implementing, in more detail, the manner in which 30 CFR 270 will be complied with in an area, region, or any significant portion thereof. Most of the GRO orders the Supervisor issues are applicable in all the states where geothermal operations are conducted.

One of the most important orders, from an operational standpoint, will be on drilling procedures. This will cover well casing and cementing, pressure testing, blowout prevention equipment and tests, mud program, and well logging requirements. There will be an order on the requirements for 1) plugging, suspending, or abandonment of wells, 2) well completion procedures and required wellhead equipment, 3) air quality requirements, noise suppression, water quality protection, and other antipollution and environmental protection factors, and 4) various forms, reports and records required by the regulations. Any requirements of GRO orders relating to surface uses or resources will be coordinated with the appropriate land management agencies. Other operational requirements will be coordinated, as appropriate, with other agencies such as the California Department of Oil and Gas, with industry, and with the public.

The preceding has been a general overview of the way we have begun to operate the geothermal resources leasing program. Please understand that this is an evolving program. As more experience is acquired, some changes in the way we conduct the program may be expected.

Earlier I stated that I would bring you up to date on leasing activity thus far. First, on the first competitive lease sale in three KGRAs in California, 33 tracts of land totalling 52,788 acres were offered. Total high bids were \$6.8 million dollars on 23,598 acres bid on. A total of 21 leases have been issued. In addition to this first sale, one lease has been issued as the result of a competitive sale on a KGRA in Oregon, held in fiscal year 1974. Since the beginning of fiscal year 1975, a third sale has been held on a KGRA in Utah. Twelve leases covering 23,391 acres are in the process of being issued. Regarding the future of competitive sales, the Department is considering about 25 KGRAs for possible lease sales in fiscal year 1975. It is proposed that about 15 sales will actually be held, depending upon personnel and fiscal limitations.

With regard to noncompetitive applications, 3,763 applications had been received by June 1, 1974, covering about 8 million acres of public land. No leases have as yet been issued. It is estimated that a total of 6,500 applications will be filed between January 1, 1974 and June 30, 1975, including the 3,763 previously mentioned. It is also estimated that about 20%, or 1,300, of these applications will contain sufficient overlap to require rejection and reclassification of the areas concerned as KGRAs. It is hoped that approximately 1,000 leases will be issued during fiscal year 1975 as a result of noncompetitive applications, in addition to leases issued as a result of competitive lease sales.

In addition to the above, investigations to determine resource values will be undertaken because of the scarcity of background data on geothermal resources development. This will be coordinated with geologic research activity to obtain the best possible information with which to establish lease sales.

In closing, our objectives in the geothermal resources leasing program are as follows:

- (1) To assure conservation of the geothermal resource, including maximum ultimate recovery of the resource and prevention of waste, both below the ground and in utilization after production.
- (2) To promote safety of operations from the public health and safety down to the individuals and equipment involved in the actual geothermal operations.
- (3) To protect the environment by assuring that mineral exploration and production are conducted with the maximum protection of the environment including rehabilitation of disturbed lands.
- (4) To assure that maximum coordination is achieved among all Federal agencies involved and that maximum efficiency and economy in our operations results.
- (5) To assure that the Federal Government receives its fair share of the resources.

All of us are engaged in what seems to me to be a most challenging and useful enterprise in developing additional vitally needed energy sources. I fully believe that geothermal energy will play a significant role and I am happy to have an opportunity to work in the Federal leasing program.