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STREAMLINING THE FEDERAL
GEOTHERMAL LEASING AND
PERMITTING PROCESS: BACKGROUND
PAPERS, ANALYSIS AND RECOMMENDATIONS

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A REPORT TO THE PACIFIC REGION TEAM,
DIVISION OF GEOTHERMAL ENERGY

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Jack McNamara, President

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INTRODUCTION

On April 20, 1977 President Carter publicly unveiled his National Energy Plan (NEP). Included in its menu of supply, demand and regulatory selections were two geothermal-specific options.

One involved changes in the federal tax treatment of geothermal exploration and development expenditures. NEP would allow the current write-off of the intangible (i.e., non-salvageable) portion of those costs, though it said nothing of depletion, -- cost, percentage, or otherwise.

The other was directed towards the other major, geothermal industry - identified legal and institutional barrier - the federal leasing program. Specifically, the President pledged only that: "The Department of Interior, the Department of Agriculture, and the States will be encouraged to streamline their leasing and environmental review procedures to remove unnecessary barriers to development of geothermal resources."^{1/} Just how serious this "encouragement" would be, and when, or if, it would turn into serious administrative and legislative pressure for policy-level and budgetary changes was left to the imagination. It is also noteworthy that "the States", of whom no one has really complained, were included as "targets," along with DOI and DOA.

¹Executive Office of the President, Energy Policy and Planning The National Energy Plan (April 29, 1977), at p. 78.

In response, the Interagency Geothermal Coordinating Council (IGCC), chaired by Robert Thorne, DOE Asst. Secy. for Energy Technology, created a Streamlining Task Force (Force) to flesh out the President's statement. The Force is headed by Winston B. Short of BLM and has additional representation from Forest Service, USGS, the Division of Geothermal Energy (DOE) and the Office of Leasing and Programs (DOE). Most of the staff and back-up work has been directed by DGE/DOE's Randall Stephens, chairman of the IGCC's Institutional Barriers Panel (IBP). The Force is scheduled to make its Final Recommendations to the IGCC early this month and Asst. Secty. Thorne is slated to announce same at the Geothermal Resources Council Annual Meeting in Hilo, Hawaii on July 26th.

As Legal and Institutional contractor to the Pacific Region Team, we have analyzed the federal leasing and permitting programs, as well as those of the five states in the Region. We have also analyzed the relevant statutory and regulatory frameworks of the land management agencies involved, as well as the "options" prepared by the Force and the California State-Federal-Local Task Group.

In the Report that follows, we will deal first with the present statutory responsibilities and management structures of the Forest Service (I), BLM (II) and the Pacific Region States (III), as well as the roles of D.O.E. and D.O.D. (IV).

We turn next (V) to critiques of the Force's June 1978 "Options Paper" (a) and the California Task Group's "Working Paper" of June 21, 1978 (b).

Finally, we make our own recommendations (c). These are intended as both input to the Streamlining Task Force and a report to the Pacific Region Team/DGE on the status and problems involved in land acquisition and development in the five states of their Region.

SECTION ONE:

THE LAND MANAGEMENT AGENCIES OF
THE PACIFIC REGION - FEDERAL & STATE

I - THE FOREST SERVICE (U.S. DEPT. OF AGRICULTURE)

INTEGRATING ENERGY DEVELOPMENT AND LAND
MANAGEMENT GOALS IN THE NATIONAL FORESTS:
OR HOW GEOTHERMAL RESOURCES GOT LOST IN THE
WOODS*

* To be published in the Natural Resources Lawyer (Fall 1978)

Integrating Energy Development
and Land Management Goals in the National Forests;
Or How Geothermal Resources Got Lost In The Woods *

By: Jack McNamara **

I GEOHERMAL RESOURCES AND THEIR ROLE IN NATIONAL ENERGY POLICY

(A) GEOHERMAL'S POTENTIAL:

Geothermal resources possess the potential to provide a large part of the answer to the Nation's energy "problem" -- whether one defines the latter as overdependence upon imports, a shrinking domestic energy fuels base, or the negative environmental effects of increased reliance upon fossil fuels.

Even by the necessarily conservative estimates of the U.S. Geological Survey, the energy "target" presented by the three smallest of the five geothermal resource types is already a large one. Three years ago, the Survey estimated that already discovered and commercially producible deposits of "steam", "hot water" and "geopressured" systems alone could power 140,000 megawatts of electrical generating capacity. ^{1/} This power source is equivalent to 140 large nuclear generating plants or Hoover Dam-sized hydro facilities and would represent roughly a 33%

* The research underlying this article was supported by the National Science Foundation (Grant No. AER 75-09194) and the Division of Geothermal Energy (U.S.D.O.E.) (Contract No. E-76-S-03-0113 Project No. 29).

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increase in our total installed generating capacity. But even this does not tell the full geothermal story.

Using a model developed for the Geothermal Energy and Law Project at the U.S.C. Law Center, the author has estimated that each 110 megawatt geothermal power plant, running at an 80% load factor, could replace over 1.3 million barrels of air-fouling and probably imported fuel oil annually.^{2/} Thus, only ten such installations (totalling 1100 megawatts) would allow us to save 13 million barrels of fuel oil every year. If this oil supply had been imported (assuming @ \$14/bbl), the foreign exchange savings would be roughly \$182 million annually. There is also a national security advantage to be gained from the utilization of this secure, domestic resource. Though the latter has never been quantified, it represents another large plus for geothermal resources.

If President Carter's National Energy Plan is enacted in anything like its original form, increased domestic coal use will be mandated as our chief substitute for oil imports. Questions have already been raised over the air quality impact of this switch. The use of large amounts of coal also raises the possibility of a so-called "greenhouse-effect" worldwide as a result of the increased carbon dioxide CO₂ accumulating in the atmosphere.

We should also consider the possible impact upon coal miner health and safety and the costs and feasibility of reclaiming strip-mined Western lands.

Each 110 megawatt geothermal powerplant represents 316,000 Tons of coal production and utilization that could be foregone annually as a result of its operation.

There is also the possibility (first raised by the City of Burbank) that coal and geothermal, perhaps our largest domestic energy resources, can be combined in a so-called "hybrid-cycle" powerplant. Their synergistic impact would reduce the plant's coal requirements by as much as 15%^{3/}.

Another possible approach would use the geothermal resources to "pre-clean" the coal, removing its damaging sulphur content before combustion. Coal already accounts for one-fifth of our total energy consumption, and fuels nearly 45% of our electricity generation.^{4/} Replacing it, or augmenting its supply in environmentally acceptable ways, should be an important energy policy goal. Geothermal resources, moreover, show great promise in meeting this need.

Nor is electricity generation (which presently accounts for approximately one-third of our total energy consumption) the only possible avenue for fruitful geothermal application. Worldwide,

in fact, non-electric usage, with its higher thermal efficiency,^{5/} is the dominant geothermal setting. In the United States this is still dimly perceived, but already there are existing non-electric uses at Klamath Falls, Oregon and Boise, Idaho, while other communities throughout the West are actively investigating the inviting prospects of plugging geothermal into this key energy use sector.^{6/} Residential and commercial use (mostly for space heating and cooling purposes) accounts for about 14% of our "primary energy consumption" (i. e. not including electricity).^{7/} Thus geothermal resources are directly applicable to nearly one-half of our energy needs, one-third being electricity generation and another 14% non-electric space heating and cooling.

The total geothermal "resource base", including both discovered and projected resources (at both present and slightly higher future prices) is enormous. USGS estimates run, at the low end, into several hundred thousand "quads."^{8/}

Total national energy consumption has ranged around 75 "quads" each of the past five years, so geothermal could theoretically supply up to one-half of our total energy needs for 4000 years. The resources found to date, however, are centered in the Western U. S., from the Gulf Coast to the Pacific Northwest. Thus geothermal's greatest initial impact

will be in that area, freeing up more "mobile" fuels for use elsewhere.

(B) LEGAL AND INSTITUTIONAL BARRIERS TO GEOTHERMAL DEVELOPMENT: FEDERAL TAX AND LAND POLICIES:

It is thus clear that development of geothermal resources should be a high priority in any National Energy Policy. The U.S. Department of Energy and its predecessors, have, indeed, singled out geothermal as one of our "mid-term" (1985-2000) priorities.^{9/} Moreover, D.O.E.'s Division of Geothermal Energy (DGE) has, for over three years, been wrestling with the numerous impediments standing in the way of getting several thousand geothermal-based megawatts, as well as smaller amounts of direct application energy, into production by 1985.

To date, DGE has found its most bothersome hurdles to be in the legal and institutional area. To consolidate the geothermal-impacting activities of all the federal agencies, it formed the Interagency Geothermal Coordinating Council (IGCC), and created a special staff panel on "Institutional Barriers" (IBP). The work of this group, and DGE's contractors, has pointed to two crucial roadblocks.

The first, and perhaps largest barrier in the legal and institutional area was the federal tax treatment of geothermal explora-

tion and development expenditures. The second major policy hurdle has been the federal lands management program.

There is no question that present Federal tax treatment remains the major legal hurdle confronting the future development of this resource. Geothermal is presently accorded no statutory preferences and even its hard won judicial ground is not secure. The IRS is presently challenging geothermal developers at The Geysers when they claim the benefits of percentage depletion and current expensing of intangibles. This, despite the fact that these were granted by both the U. S. Tax Court and the Ninth Circuit Court of Appeals over the Service's 10/ challenge several years ago. Efforts to enact these benefits into statutory law passed the Senate in 1976, but fell victim to the exigencies of Conference Committee trade-offs and the press of the massive Tax Reform Act of 1976.

President Carter's National Energy Plan proposed intangibles alone. The House, despite the urgings of DGE, added only a curious hybrid, i. e., 10% (accelerated) cost depletion. The Senate was more expansive, opting for intangibles and a sliding 11/ percentage depletion provision, culminating in 15% in the 1980's.

The geothermal project model mentioned earlier 12/ ran these and approximately ten other possible tax regimes on a Discounted

Cash Flow basis. It showed clearly that without the tax benefits granted by the Senate, investments in geothermal exploration and development yield rather paltry rates of return. They are therefore unable to compete with tax-favored investments in other natural resources or manufacturing.

However, the most intractable and least understood problem facing geothermal resources development may not involve enacting new federal tax legislation, but rather integrating geothermal projects with the recently-enacted statutory responsibilities of the federal land management agencies, particularly the Forest Service.

II FEDERAL LAND POLICY AS A BARRIER TO GEOTHERMAL DEVELOPMENT

(A) THE BACKGROUND: NATIONAL LAND USE PLANNING:

Development of geothermal energy is, by necessity, a land-intensive undertaking. The energy contained in geothermal resources can not be transported any great distance from the production field without suffering large losses in its useful heat content. Powerplants or industrial utilization facilities must therefore be sited in that field and connected to the wells drilled into the reservoir by pipelines. The total land parcel needed to support this complex surface configuration of plants, pipelines

and wells varies from 700 to 1000 acres for each 110 Megawatt facility.

It is easy to see then, how geothermal development would be especially vulnerable to land use and land management decisions. In fact, geothermal growth has fallen into the policy interstices caused by Congressional enactment of both goal-oriented, energy policy legislation and more long-term, land use management statutes.

While Congress was creating ERDA^{13/} and directing it to develop geothermal resources as one alternative to fossil fuels^{14/} it was also enacting legislation designed to protect and enhance other societal values through the vehicle of long-range land use planning.

Perhaps realizing that the creation of a theoretically unending series of environmental impact statements on an ad hoc basis, as required by the National Environmental Policy Act,^{15/} was a poor substitute for a priori planning, many members of Congress endeavored to enact comprehensive land use planning legislation. Unfortunately for their efforts, many citizens seemingly resent large scale planning by a central government, apparently seeing it as the "path to socialism". A wave of angry letters therefore swamped every Congressional attempt at enacting such legisla-

^{16/}tion. Congress was forced to resort to a piecemeal approach.
First it passed the Coastal Zone Management Act of 1972.^{17/}

In 1976, after several unsuccessful attempts, it enacted legislation requiring the Department of Interior and its Bureau of Land Management (BLM) to "inventory" the vast "public lands"^{18/} and produce "land use plans" for this enormous area.^{19/} It did not, however, tell BLM how it was to integrate this enormous, newly delegated task into its existing responsibilities for oil, gas, coal, and geothermal leasing and administration of the mining laws, or with the land use responsibilities of the other major federal actor, the Forest Service. This latter point, in particular, is crucial to geothermal's future.

(B) THE FOREST SERVICE, LAND USE AND THE CONGRESS:

Congress has been even more expansive in its recent land use directives to the other major federal land manager -- the Forest Service. As a result, due to the Service's responsibilities under a series of enactments dating back to 1960^{20/} geothermal resources within 200 million acres of National Forests are enmeshed in requirements for "roadless area" wilderness studies, "multiple use" plans, "renewable resource" inventorying and "land use" planning. As a consequence, there is a de

facto moratorium on development of this valuable alternative energy source on nearly one-third of the onshore, potentially valuable federal land. This "Gordian Knot" of cumulative and conflicting congressionally-mandated duties has thus far defied the best efforts of DGE and the other federal agencies represented on the I. G. C. C. that have aimed at resolution.

As of January 1, 1978, no less than 1858 noncompetitive geothermal lease applications had been filed on Forest Service-administered land, but only 33 leases (1.78%), have been issued. Most of the 891 applications still "awaiting action" had been on file for four years, and it had been over seven years since passage of the Geothermal Steam Act of 1970,^{21/} which authorized leasing.

It is the purpose of this article to untangle the legal maze that Congress has created in the National Forests, and propose solutions to the hurdles presented by these enactments to geothermal development.

III THE FOREST SERVICE'S LAND USE PLANNING RESPONSIBILITIES

(A) THE MULTIPLE USE-SUSTAINED YIELD ACT OF 1960 AND ITS FORBEARS: UNBRIDLED DISCRETION?:

The idea of separating the nation's vast forest lands from the rest of the public domain was first given legislative approval

in 1891. Spurred by the efforts of Gifford Pinchot and others, fifteen reserves, totalling 13 million acres, were set aside initially, with a strict prohibition against logging.^{22/} Six years later, these areas were designated "National Forests" in order to "furnish a continuous supply of timber for the use and necessities of citizens of the United States."^{23/}

Even at this early date, a policy of bifurcating forest management authority between "mineral" and "non-mineral" lands was clearly expressed by Congress. The Secretary of Interior was directed to examine lands within the forests and redesignate them as "public lands" available for appropriation under the Mining Laws.^{24/} As we shall see, with the unfortunate exception of the 1970 Geothermal Steam Act, this policy has continued throughout subsequent legislation.

The Forest Service itself was established within the Department of Agriculture in 1905 but was still without authority over mining activities.^{25/}

Not until 1974 did the Forest Service promulgate regulations covering mining operations within the Forests, and only after a stormy, three year struggle with both mining and environmental interests.^{26/} At one point the House Interior Committee's Sub-

committee on Public Lands told the Service flatly that they could find no statutory authority whatsoever supporting the proposed ^{27/} regulations.

While Congress clearly told the Service to keep its hands off mining (and later, mineral leasing), it also allowed it to manage the timber, rangeland and other resources within its domain pretty much as it wished.

In 1962, Professor Charles Reich stated that the "standards Congress has used to delegate authority over the forests are so general, so sweeping, and so vague as to represent a turnover of virtually all responsibility."^{28/} Geothermal resources were not to enjoy such a free rein.

Not until 1960 did Congress make its first attempt to establish some policy guidelines, in order to channel the broad discretion of the Forest Service for management of its burgeoning holdings. However, the Multiple-Use Sustained Yield Act of 1960^{29/} did not actually result in effectively broadening the Service's planning scope, since they had been employing multiple-use planning principles since their inception. The Act merely gave statutory sanction to an ongoing administrative practice. Significantly, although Congress stated that: "The national forests are established

and shall be administered for outdoor recreation, range, timber, watershed and wildlife and fish purposes"^{30/}, they did not give any priority to the five "resource" values enumerated.

The Act also stated that "(D)ue consideration shall be given to the relative values of the various resources in particular areas."^{31/} Unsurprisingly, judicial interpretation of the 1960 statute has been fairly consistent: the planning process is entirely "committed to agency discretion" and therefore not open to judicial review.^{32/} Only if a Service action is "arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law,"^{33/} or without observance of procedure required by law" can the courts upset the Service's decision. These avenues are open, not under any Forest Service-specific legislation, but under the general sweep of the Administrative Procedure Act.^{34/}

The 1960 statute is still the basic Congressional planning directive to the Service. One commentator has stated that, as a result: "The near absolute discretion of the administrator in resource use decisions has been established"^{35/}. A Senate Agriculture and Forestry Committee Report stated that the 1960 Act "gave the Forest Service the widest and most comprehensive charter, for management of the 187,000,000 acres it administers,

that any federal agency possesses."^{36/} Unfortunately for geothermal resource development, this broad-gauged discretion made the Service an appealing target for litigation under later statutes.

It is also noteworthy for our purposes that, in 1960, Congress took pains to reaffirm the hegemony of Interior over mineral leasing on forest lands under the Mineral Leasing Act of 1920 when it stated: "Nothing herein shall be construed as affecting the use or administration of the mineral resources of national forest lands."^{37/}

(B) THE WILDERNESS ACT OF 1964: THE COUNTER ATTACK BEGINS

Similarly, the Wilderness Act of 1964,^{38/} while it instructed the Department of Agriculture to study all "primitive" areas within National Forests for possible inclusion as Wilderness Areas (such review to be completed within ten years), also reiterated the now long-standing congressional policy of Interior control over "mineral" activity within the Nation's forests. Mineral leasing and mining activities were to be allowed in "wilderness areas" until 1983,^{39/} and Interior was to survey "wilderness areas within national forests . . . on a planned, recurring basis . . . to determine the mineral values that may be present."^{40/}

The Service's performance under the Wilderness Act and N.E.P.A. (enacted five years later) has been a most fertile seedbed of environmental litigation. Moreover, since their passage, the Service has not fared well in court.^{41/}

Using these statutes and the federal courts increasing leeriness over such broad agency powers, environmentalists and conservationist forces have mounted a series of almost-always successful challenges to a previously sacrosanct administrative stronghold.^{42/}

The Service's response has been to go to the other extreme — complying meticulously with the requirements of the Wilderness and Environmental Policy Acts, as well as the others noted below. This trend, which began in the early 70's, reached its crest after the historic "Monongahela" case in 1975.

Their compliance with the Wilderness Act is perhaps the best example of this reversal and its attendant negative impact upon geothermal resource development. As noted, the 1964 statute actually mandated a wilderness study of those lands already within or contiguous to existing Service "primitive areas" only. It permitted, but did not require, review of other "roadless areas" within the National Forest System. However the

Sierra Club and others pressed the Service into this latter inventory when the legislation compromised the broader mandate they had sought. The Service complied, initiating a "Roadless Area Review and Evaluation" in 1967. But they based their action on the Multiple Use-Sustained Yield Act, not the Wilderness Act. They apparently felt that such detailed knowledge was necessary to their planning process. In addition, legislation creating "instant wilderness" areas was popping up constantly, and they needed an inventory in order to respond to it. At this time, of course, they had yet to taste judicial defeat, and their insularity burgeoned into arrogance. The Service made "little effort . . . to complete the inventory . . . [or] to press [their Regional offices] on it until 1971, one year before the deadline set for the completion of the inventory."^{44/} Unsurprisingly, the Sierra Club brought suit against the Service's final "selection" of less than eleven (11) million acres (virtually all within or near the Service's own "primitive areas") as "areas for further study".^{45/}

In order to settle the case, the Service agreed that, in addition to adding over one (1) million acres to the "further study" category (which thus totalled 12.3 million acres), they would not subject any of the remaining 53 million acres to "uses

incompatible with wilderness" until a more intensive inventory and review process had been finished and a Final EIS on that review completed.^{46/} Thus the entire 56 million acre inventory was, in effect, closed to other uses.

This second, more intensive "roadless area review and evaluation" was dubbed "R. A. R. E. II." It began in 1974. Not until November of 1977, after 227 public workshops attended by over 17,000 persons, was the "inventory phase" complete. The original R. A. R. E. list had grown from 1449 to 1920 parcels and from 56 million acres to a total of 65.7 million acres. The entire package, over one-third of the entire Forest System, was now to be "evaluated".^{47/} This decision phase was to be completed by the end of 1978.^{48/}

It is difficult to conceive of an end to the Service's now thirteen-year old wilderness "roadless area" review and study. The filing of a lawsuit challenging any final selection of wilderness areas (and, hopefully, the return of the remaining millions of acres to multiple-use planning) can be anticipated. Congress has set no deadline for the end of wilderness "study", and groups favoring preservation of certain areas have been able to push the Service into this seemingly endless "review" process. The

only question seems to be when R. A. R. E. III will commence.

(C) THE GEOTHERMAL STEAM ACT OF 1970: A KEY ROADBLOCK:

Another key legislative impediment to the growth of geothermal resources on Forest Service-administered land is an obscure subsection of the Geothermal Steam Act itself. For it is this statute which, by deviating from previously — noted congressional policy, gave the Forest Service a veto over geothermal development within their provinces. Set in the context of the Wilderness study, etc. and the Service's other responsibilities, it has created a "geothermal still-life."

This policy departure is all the more puzzling since it is one of a kind, with no historical precedent. Nor was any policy rationale whatsoever raised in Congress to justify this singular treatment.

As mentioned, the mining laws were always administered by Interior, even within the forests themselves. The Mineral Leasing Act of 1920 is also clear. That statute grants to Interior the exclusive authority over the leasing of the minerals in question, on "lands ... owned by the United States, including those in^{49/}national forests; ... and in national parks and monuments"

The Geothermal Steam Act, on the other hand, gives the

Service a far stronger hand. Though it granted Interior leasing authority for "geothermal steam and associated resources" on all lands "administered by the Department of Agriculture through the Forest Service, including public, withdrawn, and acquired lands ...", ^{50/} it also states that "Geothermal leases for lands withdrawn or acquired in aid of functions of the Department of Agriculture may be issued only with the consent of, and subject to terms and conditions as may be prescribed by the head of that Department to insure adequate utilization of the lands for the purposes for which they were withdrawn or acquired." ^{51/}

Quite obviously, approval of geothermal projects can only be forthcoming after satisfaction of the Service's ongoing responsibilities under the Wilderness Act, as well as the more sweeping enactments which followed the Steam Act into law.

(D) THE FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT OF 1974:

In the aftermath of the 1960 Act, several authorities pointed out the need for a better Congressional "handle" on the Service. ^{52/} Congress responded with the Forest and Rangeland Renewable Resources Planning Act of 1974. ^{53/}

The Service was required to develop (by 1975) and maintain

(updating in 1979 and every ten years thereafter) a "national inventory" of "renewable resources";^{54/} to develop (but not until the year 2000) multidisciplinary "land management plans" for all units of the national forests themselves;^{55/} to issue a periodic "National Renewable Resource Assessment";^{56/} and to provide an annual progress report to Congress on its inventory and planning efforts.^{57/}

The Service has been publishing periodic progress reports on its compliance with the Act.^{58/} Significantly, however, they turned down a request that a full, separate chapter be devoted to minerals, while separate sections were added on e.g., threatened and endangered species.^{59/} The Act itself defined "renewable resources" as "those matters within the scope of the responsibilities and authorities of the Forest Service on the date of this Act."^{60/} As we have discussed, this has never included minerals or energy fuels.

The time frame allowed the Service for the performance of all these functions is indeed generous (2000 has been selected as the target year).^{61/} The Division of Geothermal Energy, on the other hand, is laboring under a 1985 "deadline".^{62/} More importantly, the prospective geothermal investor/developer must

make his/her decisions today if that 1985 goal is to be met.

Above all of this hovers the President, telling the American people that our energy situation is the "moral equivalent of war,"^{63/} and pledging that "The Departments of Interior and Agriculture will streamline their leasing and environmental review procedures to remove unnecessary barriers to development of geothermal resources."^{64/} It would behoove the President to consider, when promising "streamlining" of Forest Service procedures, the provisions of the National Forest Management Act of 1976.^{65/}

(E) THE NATIONAL FOREST MANAGEMENT ACT OF 1976:

This statute amended the already-sweeping 1974 planning legislation in several ways. First, it added considerably more detail as to the contents of the land use management plans to be developed for each unit of the National Forest System.^{66/} In addition, as if any formal provision was necessary to insure the attention of "private attorneys general" to the Service's performance, Congress mandated "public participation" in the formulation or revision of any such plan.^{67/} Thus the 227 public workshops held on R. A. R. E. II's inventory are but a prelude.

(F) THE RESULT: A DE FACTO MORATORIUM:

In light of the myriad of statutory responsibilities standing

between the Service and its required "consent" to a geothermal lease, it would not be surprising if geothermal's developmental pace within the Forests were glacial. But it has not yet reached that level. There simply is no pace.

As of January 1, 1978, only 33 noncompetitive geothermal leases have been issued on Forest Service land. This represents less than 2% of the noncomp lease applications filed. Many applicants have withdrawn or been rejected by the Service, but nearly 1,000 others are still "awaiting action" by the Service.^{68/}

The "action" being awaited is either a R.A.R.E. II study; a "renewable resource inventory"; a "land use plan"; or an EIS on one of the above. Fully 78% of the "pending" non-competitive lease applications are in four states: California has 169; Idaho, 208; Oregon 218; and Washington 100.^{69/}

All of these states are high in geothermal potential.^{70/} Though it is not possible to convert this backlog directly into megawatts on line, imported fuel saved, or precious natural gas replaced, it is clear that a large, potential energy source is literally being lost in the woods.

Nor do the areas conceded to the best geothermal prospects — the so-called "Known Geothermal Resource Areas" (or "KGRA's"),

which are to be leased competitively, ^{71/} fare much better, even though the Service is supposedly giving them a "priority". ^{72/}

Seven such KGRA areas have EIS's completed or in progress (the completion dates are set out): (1) Mono-Long Valley (CA) (to be completed late this year); (2) Cove-Fort (UT) (completed in 1974); (3) Glass Mountain (CA) (to be completed in 1979); (4) Lassen (CA) (no date set); (5) Island Park (ID) (early 1979); (6) Cascades (Ore) (same); (7) Valles Caldera (New Mexico) ^{73/} (completed in 1977).

Worse, when the last named was put up for competitive bid last year, on 12,000 of the 30,000 acres within the Santa National Forest there was a "no surface occupancy" stipulation due to its inclusion in R.A.R.E. II. In other words, a lessee could pay for the right to look at the land from helicopter or spacecraft, but not explore or develop it except with passive geological and geophysical techniques. Not a single bid was received on that ^{74/} acreage.

The Mono-Long Valley area has been "studied" for nearly five years. An EIS on the Service's Land Use Plan (LUP) for the area is now due out before the end of 1978, and a localized Environmental Analysis (EA) must then be done on the 45,000

acres most eagerly sought after by developers. By the early part of 1979 we may know how much, if any, of that area is open to development.

It is clear that the present system is just not working as far as geothermal is concerned. Minerals in general have never been a primary Service responsibility. In addition, when the agency published its "priority" list for minerals last year, geothermal was dead last, behind coal, oil, gas and hard rock mining.^{75/} The IGCC has set up a special "Streamlining Task Force" to propose solutions to the delays in geothermal leasing and exploration which are being experienced on Forest Service and BLM lands. When they make their report later this year, they should consider both legislative and administrative recommendations.

IV POSSIBLE SOLUTIONS

(A) LEGISLATIVE PROPOSALS:

(1) The Geothermal Steam Act:

The Steam Act's requirement of Forest Service "consent"^{76/} to every geothermal lease is an inexplicable policy anomaly in an otherwise-consistent, nearly century-old Congressional

posture of total Interior Department control over "mineral" development within the National Forests. It could be that Congress was honestly confused as to whether geothermal resources were "mineral" or "water" and, if the latter, subject to management by the Service itself. Another Steam Act section ^{77/} required the Justice Department to bring a lawsuit settling just that issue in the context of federal mineral "reservations" issued under the Stock-Raising Homestead Act. That suit resulted in a decision that geothermal resources are to be considered a ^{78/} "mineral" for purposes of interpreting those reservations.

Convincing arguments have been put forward for such a treatment ^{79/} in other contexts as well.

Certainly, at this time, and for federal land management and mineral leasing purposes, geothermal resources should be regarded as "minerals", rather than "water" or "watershed". Over seven years have passed since Steam Act passage and the true nature of the various geothermal resource types is now known with much more certitude. Any Congressional confusion over geothermal resources can now be dispelled and responsibility for their administration placed exclusively within Interior. Congress could speed up geothermal development without sacrificing

environmental values by repealing the Steam Act subsection in question. This would put geothermal resources on the same policy basis as coal, oil, gas, and uranium found beneath Forest Service-administered lands. In other words, the "primary authority" would be Interior's. BLM would therefore continue to solicit comments from the Service prior to exercising its discretionary authority over leasing, but would no longer be bound by same.

Then if the Service wished to continue baseline environmental, "Roadless Area" or "renewable resource" studies in anticipation of a land use plan, BLM could nonetheless go ahead and issue leases following preparation of a joint Environmental Analysis Report (EAR) and with appropriate stipulations to protect the environment.

The time lost by EAR preparation is usually from one-third to one-half that involved with a full EIS, and is certainly acceptable in order to protect non-energy values. In areas of more extreme environmental sensitivity or a high level of public awareness, it is best to prepare an EIS. BLM and the Service both follow this latter procedure presently and this would continue.

More importantly, the oft-repeated developer complaint that drilling on adjacent state and private land is being held up by the unsettled land position of interstitial federal parcels ^{80/} could be answered.

It is possible, of course, that BLM would be sued for following the procedure suggested above, with the more cautious Service position introduced against them as evidence. Thus far, however, BLM has been upheld when it leased geothermal parcels following an EAR only and after deciding not to go ahead with a full EIS. ^{81/} If Congress removed Service "consent" as a requirement, BLM's exercise of "lead agency" status in the manner described would probably satisfy most, if not all, judicial scrutiny.

Many of the areas thus leased will doubtless turn out to be non-commercial. Others will be so isolated as to defy effective, economic utilization. All of these leases will be turned back to the Service for one of its primary management uses. No one knows just what percentage will follow this route. If oil, gas and mining experience is any guide, it could range from 8 of 9 to 63 of 64. Thus, at least 89% of these areas will never be developed and the geothermal lessee will be required to restore them to their prior status. But the few which are developed will certainly

be capable of making a contribution to reducing our dependence upon fossil fuels, an ever-greater share of which must be imported.

(2) The Wilderness Act:

In addition to amending the Geothermal Steam Act, the Wilderness Act should be amended to permit geothermal exploration in all "study" or inventory areas until 1983. The law currently allows mining locations and mineral leasing up to that date.

The net result of these two amendments would be to allow exploration for and assessment of geothermal resource potential within the National Forest System and to gather more information for inclusion in the Service's land use plans for the units of that System. Both of these gains in public land knowledge can proceed without significant environmental degradation.

Notably, BLM is already required to survey all lands within National Forests "which are closed to appropriation" under the Mining and Mineral Leasing laws (i. e., wilderness areas) for possible reopening to such development. It would therefore seem that resource assessment in areas not yet closed to mining location and mineral leasing, for purposes of ascertaining geother-

mal resource potential, is a rational public policy, particularly in the present energy crunch.

(B) ADMINISTRATIVE PROPOSALS:

In the short term, however, we must recognize that obtaining Congressional acquiescence to any suggestions for statutory amendment will be a painstaking process. Neither of the proposed amendments would seem that controversial. The author is not, after all, suggesting an amendment to N.E.P.A. exempting geothermal exploration (whether passive or deep-hole) from the statute's strictures, or opting for a similar waiver in the C.E.Q. Guidelines issued pursuant to the 1969 act. Nonetheless, it must be borne in mind that geothermal leasing legislation took a full ten years to enact, and, more crucially, that its final form differed greatly from that originally put forward.

But we must also remember that we are presently operating under a new psychological regime. There is a growing awareness nationwide of the need for expediency in our domestic energy efforts. We now have a cabinet-level department devoted to promoting that development.^{84/} The Division of Geothermal Energy, has been in existence since January 1975, and it bears specific responsibility for geothermal development. DGE has developed

its own expertise in support of that mission over the past three and one-half years. Similarly, the excellent work of the U.S. Geological Survey's Area Geothermal Supervisor (Reid Stone) and BLM's Geothermal Coordinator (George Nielson and now Ted Holland), as well as Ed Johnson, Howard Banta and other individuals within the Forest Service's various Mineral Offices, did not exist prior to 1974. Consequently, the expertise of all these agencies was not available to assist Congress in its interminable dealings on the Steam Act. The relevant Congressional committees and their staffs are also much more aware now than they were even three or four years ago. In sum, geothermal now has a voice, and the weight of combined experience behind it.

It may well be, however, that the federal budgetary and personnel assets which now exist to support geothermal resource development are most effectively deployed on a more informal level. While proposals such as those espoused by the author or the Streamlining Task Force are grinding their way through the legislative mill, the above-named offices might be better advised, and geothermal resources better served, by a concentration of their efforts (and budgets) on "high-priority" geothermal areas. At this stage of our knowledge, any attempt at listing the top 20

or 25 geothermal fields, while certainly an exercise in speculation, is not, however, a totally idle exercise. By focusing, through the IGCC and IBP, on this number of areas for EAR/EIS preparation and approval of subsequent lessee Plans of Operations, the clout and expertise developed by all of the federal agencies can best support geothermal growth.

In order to further expedite this development, DGE should consider transferring large amounts of its budget to the federal land management agencies -- BLM and Forest Service -- and the regulatory entity -- USGS's Conservation Division -- for "preparation" of specifically earmarked "target areas." Rather than funding yet more multi-million dollar "studies" by its National Laboratories, these funds could go towards EAR/EIS preparation in areas like The Geysers, Coso Hot Springs or the numerous Forest Service areas presently blanketed by lease applications and "awaiting action" year after year.

It is not yet too late to find out that at least part of the answer to our energy problems is buried deep in the woods.

FOOTNOTES

- 1/ WHITE and WILLIAMS, ASSESSMENT OF GEOTHERMAL RESOURCES OF THE UNITED STATES - 1975 (Geological Circular 726), p. 155.
- 2/ For a full discussion of the model and the myriad of assumptions contained therein, see STONE and MCNAMARA, PRELIMINARY ANALYSIS OF THE IMPACTS OF FEDERAL TAX REFORM ON GEOTHERMAL ENERGY DEVELOPMENT IN THE UNITED STATES (Oct. 1976), at Appendix A, MCNAMARA/USC MODEL.
- 3/ CITY OF BURBANK, SITE-SPECIFIC ANALYSIS OF HYBRID GEOTHERMAL/ FOSSIL POWER PLANTS, (June 1977), Chart at P. XII.
- 4/ F. E. A., Monthly Energy Review, (Nov. 1976) at p. 42.
- 5/ See PROCEEDINGS OF THE U. N. SYMPOSIUM ON GEOTHERMAL RESOURCE DEVELOPMENT (S. F. 1975).
- 6/ The Quarterly Review of the Geo-Heat Utilization Center at the Oregon Institute of Technology, Klamath Falls, provides good coverage of these burgeoning developments.
- 7/ Monthly Energy Review, op. cit., at p. 42.
- 8/ WHITE and WILLIAMS, op. cit., at p. 148. Note: One quad = 10^{15} BTU's.
- 9/ A NATIONAL PLAN FOR ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION, ERDA 76-1 (U. S., ERDA, July 1976).
- 10/ Arthur E. Reich v. C. I. R. 52 TC 700 (1968) and Reich v. C. I. R. 454 F.2d 1157 (9th Cir. 1972).
- 11/ See H. R. 8444 ("A Bill To Establish A Comprehensive National Energy Policy"), at §§ 2072 (intangibles) and 2073 (the strange "cost-depletion-disguised-as-percentage-depletion" section), and also H. R. 5263 ("The Energy Production and Conservation Tax Incentive Act") as passed by the Senate on October 31, 1977.

12/

At fn. 2. For a fuller discussion of the federal tax barrier to future geothermal development, see McNamara, Constraints on Geothermal Development - Tax and Beyond, 13 LAND AND WATER LAW REVIEW 203 (1977).

13/

Energy Reorganization Act of 1974 (P. L. 93-438).

14/

Federal Non Nuclear Energy Research Development and Demonstration Act of 1974 (P. L. 93-577) and the Geothermal Energy Research Development and Demonstration Act of 1974 (P. L. 93-410).

15/

P. L. 91-190.

16/

See Land Use Is An Emotional Issue; if You Don't Believe It, Read Lawmakers' Mail, WALL ST. J., 7/3/75, at p. 20, for the flavor of the opposition.

17/

P. L. 92-583; 86 Stat. 1280, 16 USC 1451-64.

18/

Public Land Statistics-1974 (BLM, 1976) at pp. 12 and 10, states that nearly 500 million acres onshore are under BLM's aegis.

19/

The Federal Land Policy and Management Act of 1976 (P. L. 94-579).

20/

The Multiple Use - Sustained Yield Act of 1960 was the first (P. L. 86-517). Other enactments which we shall examine below include: the Wilderness Act of 1964 (P. L. 88-577); The Geothermal Steam Act of 1970 (P. L. 91-581); the Forest and Rangeland Renewable Resources Planning Act of 1974 (P. L. 93-378); and the National Forest Management Act of 1976 (P. L. 94-588).

21/

Op. cit., fn. 20.

22/

Creative Act of 1891, 16 USC §471.

- 23/
Organic Administration Act of 1897, 16 USC §§473-482, 551.
- 24/
16 USC §482.
- 25/
Forest Transfer Act of 1905, 16 USC §§ 472, 554.
- 26/
Dempsey, Forest Service Regulations Concerning the Effect of Mining Operations on Surface Resources, 8 NAT. RES. LAW 481 (1976).
- 27/
Letter from Hon. John Melcher to John McGuire, Chief of the Forest Service (June 20, 1974), reprinted in Dempsey, op. cit., supra note 26, at Appendix A.
- 28/
Reich, BUREAUCRACY AND THE FORESTS (Center for the Study of Democratic Institutions, 1962).
- 29/
P.L. 86-517, 16 USC §§ 528-531.
- 30/
16 USC § 529.
- 31/
id.
- 32/
See, e.g., Dorothy Hardin Foundation Inc. v. Hardin, 317 F. Supp. 1072 (D.N.C. 1970); Sierra Club v. Hardin, 325 F. Supp. 99 (D. Ala. 1971).
- 33/
Dorothy Hardin Foundation, Inc., supra, at p. 1075.
- 34/
See esp. 5 USC 706(2)(C) and (2)(D).
- 35/
Meacham, The Multiple Use-Sustained Yield Act: A Decade of Consideration, 10 IDAHO L. REV. 105 (1973). at P. 115.

36/

Senate Rpt. No. 93-686, (1974 U.S.C.C.A.N.) at p. 4068.

37/

16 USC § 528.

38/

P.L. 88-577, 16 USC §§ 1131-1136.

39/

16 USC § 1133(d)(3).

40/

16 USC § 1133(b)(1).

41/

No federal trial court saw fit to strike down a significant Service action until 1970. *Parker v. United States*, 448 F. 2d 793 (10th Cir. 1971), cert. den., 405 U.S. 989 (1972), aff'g 309 F. Supp. 593 (D. Colo. 1970).

42/

See, e.g., *Sierra Club v. Butz*, 349 F. Supp. 934 (N.D. Cal. 1972); *Wyoming Outdoor Coordinating Council v. Butz*, 484 F. 2d 1244 (10th Cir. 1973); *Minnesota Public Interest Research Group v. Butz*, 402 F. Supp. 1276 (D. Minn. 1975); *Zieske v. Butz*, 406 F. Supp. 258 (D. Alas. 1975). All of these cases involved challenges to Service logging practices under NEPA and the Wilderness Act.

43/

West Virginia Division of the Izack Walton League of America v. Butz, 552 F. 2d 945 (4th Cir. 1975). This case flatly prohibited "clearcutting" in the huge Monangahela National Forest.

44/

ROBINSON, THE FOREST SERVICE: A STUDY IN PUBLIC LAND MANAGEMENT (Resources for the Future, 1975) at p. 163.

45/

Sierra Club v. Butz, Civil No. 1223-72 (D.D.C. 1972). See also, FINAL ENVIRONMENTAL IMPACT STATEMENT ON ROADLESS AND UNDEVELOPED AREAS (U. S. D. O. A. /Forest Service) (Jan. 1973).

46/

ROBINSON, *op. cit.*, at pp. 164 and 191.

- 47/
Federal Register, Vol.42, No. 223, Friday, Nov. 18, 1977,
at pp. 59688-89.
- 48/
id.
- 49/
30 USC § 181 (emphasis added).
- 50/
30 USC § 1002.
- 51/
30 USC § 1014(b) (emphasis added).
- 52/
See, esp., Strand, Statutory Authority Governing Management
of the National Forest System -- Time For A Change?, 7 NAT.
RES. LAW. 479 (1974) and Subcomm. on Public Lands, Sen. Comm.
on Interior and Insular Affairs, Report on Clearcutting on Federal
Lands, 92nd Cong., 2d Sess. (Comm. Print. 1972).
- 53/
P.L. 93-378, 88 Stat. 476, 16 USC 1601-1610. For a full discus-
sion of the legislation, see Greenfield, The National Forest Service
and the Forest and Rangeland Renewable Resources Planning Act
of 1974, 15 NAT. RES. J. 603 (1975).
- 54/
P.L. 93-378, § 2, 88 Stat. 476, now 16 USC § 1601.. See THE NATION'S
RENEWABLE RESOURCES -- AN ASSESSMENT, 1975 (U.S.D.O.A./FS).
- 55/
P.L. 93-378, § 8.
- 56/
16 USC 1601.
- 57/
P.L. 93-378, § 7(c).
- 58/
See: PROPOSED ALTERNATIVE FOREST SERVICE PROGRAM
DIRECTIONS AND NATIONAL GOALS, U.S.D.O.A./FS (Feb. 1977);
DRAFT ASSESSMENT ELEMENT OUTLINE (Feb. 1977); and
THE RESOURCES PLANNING ACT: A PROGRESS REPORT (Jan. 1978).

59/

See PROGRESS REPORT, at pp. 7-10.

60/

P.L. 93-378 at § 11.

61/

P.L. 93-378, § 8, now 16 USC 1607.

62/

ERDA 77-9 GEOTHERMAL ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION PROGRAM FIRST ANNUAL REPORT, ERDA-DGE (April 1977).

63/

Text of the President's Energy Policy Message (April 20, 1977).

64/

"Fact Sheet on the President's Program," White House Energy Policy Staff (April 20, 1977) at III, H, (2)(b).

65/

P.L. 94-588, 90 Stat. 2949.

66/

See, e.g., § 6, now 16 USC §1605.

67/

16 USC § 1605 (d) and (g).

68/

All figures are from BLM, Geothermal Leasing Summary, (Dec. 31, 1977).

69/

id.

70/

Fully 61.7% of all "Known Geothermal Resource Areas" (KGRA's) are within these four states. Monthly Geothermal Report, USGS (July, 1977) at p. 17.

71/

30 U.S.C. § 1003, PL. 91-581, § 4.

72/

Statement of Ed Johnson, Forest Service at Aug. 1977 meeting of Sub. Committee on Legal and Institutional Problems, Advisory Committee on Geothermal Energy.

73/

id.

74/

USGS, Monthly Report, (Sept. 1977).

75/

Statement of Ed Johnson, op. cit..

76/

30 U.S.C. § 1014(b).

77/

30 U.S.C. § 1020(b).

78/

United States v. Union Oil, 549 F. 2d 1271 (9th Cir. 1977), reh. den. Sub. Nom. Ottoboni v. United States, 98 SCT 121 (1977), rev'g United States v. Union Oil, 369 F. Supp. 1289 (1973).

79/

See Olpin, The Law of Geothermal Resources, 14 RKY. MTN. MIN. L. FOUND. 123 (1968).

80/

Business Week, 8/11/75, at pp. 68-69.

81/

Sierra Club v. Hathaway, Civ. 75-489, (D. Oregon, 1975), appeal now pending before the Ninth Circuit (No. 75-3216). This litigation is usually referred to as the "Alvord Desert Case."

82/

16 USC § 1133(d) (3) allows mining and mineral leasing activities, "subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and exploration drilling and production . . ." Geothermal exploration could be added to this grant.

83/

43 USC 1814(b) (1).

84/

Department of Energy Organization Act, P.L. 95-91, 91 Stat. 565, 42 USC 7101, et. seq..

II - THE BUREAU OF LAND MANAGEMENT
(U.S. DEPARTMENT OF INTERIOR)

FEDERAL LAND MANAGEMENT POLICY AND
THE DRIVE TO DEVELOP AN ALTERNATE
ENERGY SOURCE, GEOTHERMAL ENERGY:
SHALL THE TWAIN EVER MEET?*

* To be published in the Natural Resources Journal (Spring 1979)

Federal Land Management Policy And
The Drive To Develop An Alternate Energy Source.
Geothermal Energy: Shall The Twain Ever Meet?

Jack McNamara

I. INTRODUCTION:

Since the Arab oil embargo of October, 1973 and the sharp O.P.E.C. price increases of that same Fall, national attention has focused on the so-called "Energy Crisis" and our dire need for something called an "Energy Policy". While wave after wave of Congressional and Executive action (or at least motion) has been forthcoming^{1/} and the federal energy budget has soared even higher than O.P.E.C. — set oil prices,^{2/} yet another policy trend has, quietly but surely, made even more progress in a vital, related area.

Though it is not, in the abstract, contrary to the espoused national goal of "energy independence", federal land use planning and its attendant "inventorying" of the vast "public lands"^{3/} poses severe problems for energy planners working to achieve the former end. Exploration for and development of onshore oil and gas, coal and geothermal resources beneath the vast, mostly uncharted expanse of the "public domain" may have to await intensive identification and classification of hundreds of millions of acres under the statutory mandates of the Forest and Rangeland Renewable Resources Act of 1974,^{4/} the National Forest Management Act of 1976^{5/} and, in particular, the Federal Land Policy and Management Act of 1976.^{6/} The author

has dealt elsewhere with those two recent statutes affecting the 187 million-plus federal acres under the management of the Forest Service and their impact upon geothermal resources development.^{7/} The purpose of this article is to examine the impact of the Federal Land Policy and Management Act of 1976 (FLPMA) upon the development of onshore domestic energy sources, particularly the potentially vast alternate energy derived from geothermal resources.^{8/}

II. THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA):

(A) The Background:

When Senator Haskell (D. Colo.) introduced the bill which would eventually become the FLPMA, (S. 507, usually called the "BLM Organic Act") on January 30, 1975 for himself, Senator Jackson (D. Wash.) and the late Senator Metcalf (D. Mon.) he stated that, although the "public domain" dated back to October 30, 1779, federal management of this enormous area had left quite a bit to be desired. "For over a century and a half this vast land mass was woefully neglected over one billion acres were transferred out of federal ownership The land which remained lacked any consistent management"^{9/} He then pointed out that it was not until the passage of the Taylor Grazing Act of 1934^{10/} that the "general policy of Federal land disposal and the failure to accept

land management responsibilities was abandoned"^{11/}. Noting that the Forest Service and Park Service had "Organic Acts" statutorily defining their respective land management responsibilities since 1897 and 1916, respectively, Haskell called "the lack of a BLM Organic Act . . . convincing evidence of the embarrassing failure of Congress to complete the legislative task of providing a comprehensive statutory base for the management of all our public lands"^{12/} and " . . . a dereliction of duty"^{13/}. Two months later he and Jackson introduced the Nixon-Ford administration's version, which closely paralleled their own.^{14/} Its passage thus seemed assured.

(B) The Public Land Law Review Commission:

Senator Jackson had served on the Public Land Law Review Commission (PLLRC) in the late 1960's, and had been introducing virtually identical legislation since that panel made its final report to Congress in 1970.^{15/} Curiously, the Public Land Law Review Commission's recommendations leaned strongly towards a pro-energy fuels/pro-mineral development stance. It came out, e. g., as "strongly [in] favor, [of] . . . an overriding national policy that encourages and supports the discovery and development of domestic sources of supply"^{16/} since "total reliance on foreign sources would be a hazardous economic and political policy."^{17/}

The Commission further stated that "Mineral exploration and

development should have a preference over some or all other uses
on much of our public lands"^{18/} and it felt that this "use preference
is warranted by nature's sparse and random distribution of valuable
mineral deposits and the vital relationship between our national
welfare and assured supplies of minerals"^{19/}.

While recognizing that "the environment must be given consi-
deration,"^{20/} they felt that "regulations must not be arbitrarily applied"^{21/}
and "development will frequently have to proceed, subject to reason-
able controls designed to lessen the adverse impacts, even though
those impacts exist."^{22/}

Significantly, even though the Commission felt that "Congress
should continue to exclude some classes of public lands from future
mineral development"^{23/}, it noted that "Too often in the past exclusions
have been accomplished with little or no knowledge of mineral values"^{24/}
and called for "mineral examinations" and "mineral surveys" (through
the use of geological, geochemical and geophysical techniques) in
order to "provide reliable information"^{25/} as to the mineral values
being foregone by any exclusion, withdrawal or reservation. They
went even further and urged such passive mineral exploration on
already excluded areas.^{26/} It is intriguing to note that these rather
clear, pro-development statements were authored in July, 1970,
fully three years before the "Energy Crisis" made a dent on the

national consciousness. Yet S. 507, as introduced in January, 1975 and passed in October 1976, in the midst of that crisis fever, had a diametrically opposed set of priorities.

(C) The Legislative Transformation:

Section 102.(a) of S. 507 directed the Secretary of the Interior to "prepare and maintain an inventory of all national resource lands giving priority to areas of critical environmental concern."^{27/} The latter were defined as "areas within the national resource lands where special management attention is required when such areas are developed or used to protect, or where no development is required to prevent irreparable damage to, important historic, cultural, or scenic values, or natural systems or processes, or life and safety as a result of natural hazards."^{28/} The Administration's version was indistinguishable and the final legislation retained the draft language, both as to the environmental priority^{29/} and the definition of these "sensitive"^{30/} areas.

Though both the draft bill and final public law contained a "savings" phrase ("The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands"^{31/}) it was clear that the pro-energy development recommendations of the

PLLRC had been replaced by a pro-environmental prioritization in Congress, despite the intervening burgeoning of the "Energy Crisis". This new set of management duties, which shall be discussed in more detail in IV (below), comes, moreover, on top of NEPA requirements which BLM, USGS and the Forest Service were still struggling to implement. Geothermal resources, being the newest member of the "club", and located mainly in areas previously untouched by mineral development, would bear the brunt of these new responsibilities. Even in their absence federal geothermal leasing had been a long slow march.

III. THE GEOTHERMAL STEAM ACT AND THE FEDERAL
GEOTHERMAL LEASING PROGRAM PRIOR TO PASSAGE
OF THE FLPMA:

(A) Early Attempts At Access:

Attempts at securing access to the geothermal resources believed to exist beneath the "public lands" began in the early 1960's. Magma Power Company, the pioneering geothermal firm, which had begun production at The Geysers in the late 50's, attempted to file mining claims for geothermal resources on the federal lands. When they were rebuffed in this by the Interior Department Solicitor, ^{32/} they then tried to purchase geothermal resources under the Materials ^{33/} Act of 1947. This creative ploy was, unfortunately, also turned

- 1 -

back by Interior which, after originally succumbing to Magma's ^{34/} logic, then reversed itself, stating that it failed to perceive an unstated Congressional mandate to "dispose" of geothermal resources in that legislation's authority to sell, outright, vegetative materials such as yucca and "common varieties" of sand, gravel and other surface deposits of similar character located on federal land. ^{35/}

New legislation was obviously needed.

(B) The First Geothermal Leasing Legislation:

The first attempt at creating federal leasing authorization for geothermal came in the 88th Congress, when then-Senator Bible (D. Nev.) introduced a bill to amend the Mineral Leasing Act of 1920 ^{36/} to include geothermal resources. ^{37/} The bill was the subject of several hearings before the Senate Interior Committee, ^{38/} but, despite a favorable Committee recommendation, ^{39/} and Senate passage ^{40/} failed enactment by the House.

S. 1674, introduced by Sen. Bible in the 89th Congress, fared ^{41/} much better. It was reported favorably by both Interior Committees and passed by both Houses, ^{42/} but vetoed by Lyndon B. Johnson because it ran "counter to sound public policy." ^{43/} He cited "six major flaws", including provisions rather standard in oil and gas leases, such as a lease coterminous with production and royalties payable

only on steam "sold or utilized." He also opposed the legislation's extension of "grandfather" rights to Magma and others who had filed mining claims or obtained mineral leases on federal land prior to September 1, 1965, allowing them to convert these to geothermal ^{44/} leases.

(C) The Geothermal Steam Act of 1970 And Its Implementation:

Finally, in the waning moments of the 91st Congress, the Geothermal Steam Act of 1970 was enacted. ^{45/} However the already decade-long struggle to obtain rights to the geothermal resources underlying the federal lands was only beginning.

The recent passage of N.E.P.A. (1969), the relative infancy of geothermal development and the "virgin" nature of the areas in which it occurred led to a protracted delay before issuance of the first geothermal leases.

A "programmatic" EIS was deemed necessary, one which would describe the impacts of the entire federal geothermal leasing program on over one million acres of federal land scattered over five states. This acreage had been "withdrawn" by Interior in the late 1960's in anticipation of leasing authorization. ^{46/} In addition, this broad-scale environmental document included specifics on the three areas (all in California) believed the most promising — The

Geysers, Mono-Long Valley and Imperial Valley. This all took place in the early tumultuous and heavily litigated post-NEPA phase, of course, and Interior understandably took great pains to assure themselves and others that their efforts would withstand the judicial scrutiny they were becoming increasingly accustomed to in their mineral leasing programs for coal and O. C. S. oil and gas. In addition, geothermal development was a relative unknown, and thus its actual impacts hard to gauge. The only commercial field in the U.S. — The Geysers — could not serve as an accurate model since its dry steam system is the exception rather than the geothermal rule. Thus, it was not until October, 1973 that the EIS was finally completed.^{47/}

The first competitive lease sale was held shortly thereafter, in January 1974, fully three years after passage of the Steam Act.^{48/} Noncompetitive leasing — the other component of the federal lands geothermal program — did not begin until January, 1975, with the issuance of one lone lease in Nevada. This administrative prioritization of competitive over non competitive leasing was due to two factors — BLM's oft-expressed desire for an all-competitive system (and their experience with noncompetitive leasing in coal and onshore oil and gas) and OMB's pressure to bring "quick returns" to the Treasury from lease bonuses. Unfortunately, due to the still —

evolving nature of geothermal exploration techniques, choosing the best (or Known Geothermal Resources Areas) for competitive bidding was mostly an exercise in speculation. In addition, the unnecessarily vague statutory "KGRA" definition unduly skewed this choice towards inclusivity, with the result that many "KGRA" tracks received no bids or drew token offers only.^{49/}

Although BLM has not required EIS preparation on either succeeding competitive lease sales or noncompetitive lease issuance, its creation of the less-time consuming Environmental Analysis Records (EARs) for these tracts has nonetheless led to some further delays in leasing, vociferous complaints from developers,^{50/} and at least one environmentalist lawsuit for failure to do a full EIS.^{51/} Nevertheless, the program has made significant progress.

(D) Status of The Geothermal Leasing Program:

BLM's latest summary shows that 6,160 noncompetitive applications have been filed, (4,395 on BLM — administered land) but only 939 BLM leases have been issued.^{52/} Fully 607 are awaiting preparation of an E.A.R..^{53/} Developers, however, had withdrawn 1,839 applications, refused to accept 138 proffered leases and relinquished another 190 leases after issuance.^{54/} Another 1,344 applications had to be rejected by BLM, mostly due to a "KGRA" classification by^{55/}

USGS. In all, some 4,291 of the 6,160 original applications (or 70%) had been accounted for, while the bulk of those still "awaiting action" were on Forest Service land (988 of the remaining 1,869, or 53%).^{56/}

In sum, BLM, despite restrictive budgets, fear of lawsuits and a myriad of other responsibilities, both mineral and otherwise, had done a tolerably good job at turning out geothermal leases prior to the passage of the FLPMA.

IV. THE IMPACT OF THE FLPMA ON THE FEDERAL
GEOHERMAL LEASING PROGRAM:

(A) Public Lands Inventory and Land Use Planning Mandate:

The basic additional responsibility thrust upon BLM by the FLPMA involves the aforementioned "inventory" of the public lands, identifying "their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern".^{57/} Since the area covered by the statute's sweep totals nearly 500 million acres,^{58/} this delegation represents a sizeable task. As it inventories, BLM must also formulate "land use plans" for this vast area,^{59/} though no "target date" is set for their preparation. This is in contrast to the National Forest Management Act,^{60/} where the year 2000 is set up as the outside limit.

It does not appear that Congress intended that BLM "drop

everything" and go into inventorying/land use planning full scale. The inventory subsection itself states that "The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands."^{61/} This statement, the total absence of even an expansive time-frame such as that given Forest Service, and the absence of any earmarked budget authorization^{62/} make it clear that ongoing and future energy projects on the public lands, including geothermal leasing, shall proceed in parallel with the implementation of BLM's new planning responsibilities.

On the other hand, there is no blinking the fact that BLM's present levels of personnel and budget are far below optimal, given their numerous duties, both new and pre-existing. BLM has only one employee per 45,000 acres, versus one for every 8,500 acres in the Forest Service and one in 4,000 acres in the Park Service.^{63/} Thus it may be forced to "water down" its commitment to geothermal leasing/EAR preparation etc., simply as a matter of internal exhaustion. Though Congress did take the somewhat extraordinary step of requesting that BLM (beginning last year) come forth with a four-year projection of its budget needs and a request for authorization of same, "notwithstanding any budget guidelines or limitations imposed by any official or agency of the executive branch,"^{64/} it is

not yet clear if appropriations in equal amounts will follow.

The subsection in question seems to be a thinly-veiled slap at the Office of Management and Budget (O.M.B.). Charles Callison of the Public Lands Institute recently stated that BLM has long been "cowed by O.M.B., a single-track, money-saving agency that probably has not understood that, like running a farm, running the public lands requires some investment to produce optimum benefits."^{65/} Given this historical background, one should probably expect more than a bit of leanness in BLM's ultimate budget appropriations. If the FLPMA is really going to impinge on geothermal resources leasing, however, the pinch will probably come first from other, more specific duties mandated by the Act.

(B) BLM Wilderness Study:

In 1964, Congress established the "National Wilderness Preservation System."^{66/} Unlike the National Forest System or National Park System, areas to be included therein would continue to be managed by the agency having responsibility for them prior to their classification as "wilderness."^{67/} A "wilderness" was defined "as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain,"^{68/} and also possessed certain other characteristics, including a size

of "at least five thousand acres . . .".^{69/} As usual, Congress was freer with its prose than its purse, however, and appropriations for administration and management of such areas were expressly forbidden.^{70/} The Act did not apply, with some minor, specific exceptions, to BLM's sprawling domain. It was directed, instead, at the Forest Service and Park Service as well as the national wildlife refuges and game ranges managed by the U. S. Fish and Wildlife Service. In the FLPMA, however, Congress handed BLM the job of identifying possible wilderness areas within its lands, and this time they were given a deadline:^{71/}

"Within fifteen years after the late of approval of this Act, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands of the public lands, identified during the inventory required by section 201(a) of this Act as having wilderness characteristics described in the Wilderness Act . . . [cite]."^{72/}

There are several other Congressional dictates also contained in this section and these will have an impact on geothermal leasing and development on the public lands. First of all, although Congress has directed that such areas shall continue to be subject to "existing mining and grazing uses and mineral leasing in the manner and degree . . . same . . . [were] being conducted on the date . . . of

this Act . . . ^{73/} this is of little solace to the fledgling geothermal leasing program, which is roughly a full century behind mining activities on federal lands and a half-century shy of onshore oil, gas and coal leasing.

In addition, Congress called for management of such areas "in a manner so as not to impair the[ir] suitability . . . for preservation as wilderness" ^{74/} during "the period of review." ^{75/} They further strengthened this by calling upon the Secretary of Interior to take " . . . by regulation or otherwise . . . any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection." ^{76/} It is difficult to conceive of geothermal resource exploration of anything but the most passive geological/geophysical type taking place in such a context.

Moreover, it is likely that even that minimal assessment will be performed only by federal agencies. The Act provides, in a faint echo of the Public Land Law Review Commission, that no final wilderness recommendation be made to the President until the Geological Survey and Bureau of Mines have conducted "mineral surveys" of the designated area "to determine the mineral values, if any, that may be present . . ." ^{77/} Both the 1964 and 1976 enactments also require mineral surveys even after wilderness

classification,^{78/} but to the author's best knowledge, such assessments have never been carried out.

To get a sense of the impact of the BLM Wilderness Study upon energy projects, one need only look at Pacific Power and Light's proposed 500 kv transmission line from Shoshone, Idaho to Medford, Oregon. 93 roadless areas were identified by BLM along the proposed route. A preliminary inventory concluded that no less than 32 of these areas " . . . may have sufficient wilderness values to warrant their further study as possible wilderness areas . . ."^{79/} The Secretary of Interior has suggested a drastically altered route to the utility.^{80/}

Unlike a power line corridor, however, geothermal resource systems can not be moved around like chessmen to avoid wilderness values. Their fate under BLM's Wilderness Study remains clouded. Even lands already leased for geothermal may be reclassified as a result of the inventory.^{81/}

(C) California Desert Conservation Area:

While there is peril to geothermal development in both the long term inventorying provision and 15 year wilderness study dictate of the FLPMA, its most immediate impact may be felt in those prime geothermal prospects included within the Act's most specific directive —

the creation, by 1980, of a land use plan for the "California Desert Conservation Area"^{82/} (CDCA). The "California Desert" plan must cover a vast area roughly equal to one quarter of this 100 million plus acre state. It extends from both the Mexican and Arizona borders, along the Eastern Sierra's to the Inyo National Forest on the North, and westward past the Lancaster-Palmdale area of Los Angeles County and into the Anza-Borrego Desert State Park of eastern San Diego County.^{83/} For our purposes, it is significant because it contains the Coso Hot Springs and East Mesa KGRA's.

The latter is already the site of two proposed, developer-built geothermal power plants, both on federal land.^{84/} The former, located mainly within the U.S. Navy's China Lake Naval Weapons Center, is as yet relatively unexplored but widely believed to be a significant prospect, perhaps containing yet another dry steam field.^{85/} BLM and the Navy have reached a tentative Memorandum of Understanding (MOU), a sort of inter-agency treaty, as to the leasing of the 43,000 federal acres within the 52,000 acre-KGRA and plan to initiate a full EIS by September of this year. Much of the area's attractiveness stems from its proximity to the state's largest electric load center (Los Angeles), as well as several large transmission lines.^{86/}

Creation of a land use plan for the California Desert, which

includes many sensitive areas, or an EIS for geothermal leasing at COSO is bound to run into intense interest and objections by environmentalists, Native Americans, recreational users and the archeological/scientific community.^{87/} It would not be surprising if either or both were subject to legal challenge upon completion.

Already, BLM's time frame for the COSO EIS has been shuffled and is now strikingly in sync with that of the Cal Desert study.^{88/} Thus there may have already been some "slippage" in progress towards leasing this key geothermal prospect.

V. SUMMARY:

The Federal Land Policy and Management Act of 1976, by greatly expanding the Bureau of Land Management's already-overburdened responsibilities for land use planning on nearly 500 million acres of federal land; mandating a wilderness review and evaluation on this total area within 15 years; and a specific land use plan by 1980 on an area containing several of the most significant geothermal prospects, has cast a pall over the future of geothermal resource development on the federal lands. Only by drastically upgrading BLM's budget and personnel levels and putting evaluation of areas containing potentially important geothermal systems on a high priority basis can Congress insure that this potentially vast, secure energy resource makes a contribution towards meeting our future fuel needs.

FOOTNOTES

1/

See, e.g., the Energy Policy and Conservation Act of 1975 (P.L. 94-163); Emergency Petroleum Allocation Act of 1973 (P.L. 93-159); the Federal Non-Nuclear Research, Development and Demonstration Act of 1974 (P.L. 93-577); the Dept. of Energy Organization Act of 1977 (P.L.); the Energy Conservation and Production Act of 1976 (P.L. 94-); the National Energy Act (H.R. 6831).

2/

The FY 1979 budget request for the new Department of Energy is \$10.69 billion.

3/

"Public lands" is used here as a broad term, covering National Forests, Parks, Monuments, "public" and acquired lands, etc., rather than its usual term of art sense, i.e., lands which have always been in the "public domain" and lands obtained in exchange for other "public lands" or for timber on "public lands".

4/

P.L. 93-378 [S. 2296] (8/2/74), 16 U.S.C. §1601 et. seq..

5/

P.L. 94-588 [S. 309] (10/22/76), 16 U.S.C. §1600 et. seq..

6/

P.L. 94-579 [S. 507] (10/21/76), 43 U.S.C. §1701 et. seq..

7/

See McNamara, "Integrating Energy Development and Land Management Goals In The National Forests: Or How Geothermal Resources Got Lost In The Woods," to be published in Natural Resources Lawyer in late Summer, 1978.

8/

The latter are defined by the Geothermal Steam Act of 1970 (P.L. 91-581, 84 Stat. 1566 (12/24/70)) as follows: "'geothermal steam and associated geothermal resources' means (i) all products of geothermal processes, embracing indigenous steam, hot water and brines; (ii) steam and other gases, hot water and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations; (iii) heat or other

FOOTNOTES (con't)

associated energy found in geothermal formations; and
(iv) any by product derived from them" (30 U.S.C. § 1001 (c)).
For a discussion of their scope, See McNamara, op. cit., and
USGS Circular 726 (1975).

9/
Cong. Rec. (1/30/75) at p. S1231 (Clawson, Peffer, etc.).

10/
P.L. Taylor

11/
Cong. Rec., op. cit., ibid.

12/
id.

13/
Cong. Rec., op. cit., at p. S1232.

14/
S. 1292 (Cong. Rec., 3/22/75, at p. 4883).

15/
One Third of The Nation's Land (PLLRC, 6/20/70)
Hereinafter cited as PLLRC.

16/
ibid, at p. 121 (emphasis added).

17/
id.

18/
ibid, at p. 122 (emphasis added).

19/
id.

20/
ibid, at p. 123.

21/
id.

22/
id. (emphasis added).

FOOTNOTES (con't)

23/
id.

24/
id.

25/
id.

26/
id.

27/
Cong. Rec. (1/30/75) at p. S1233, § 102 (a).

28/
ibid, at p. S. 1232.

29/
P. L. 94-579, § 201(a), 43 U.S.C. § 1711 (inventory) and
43 U.S.C. § 1712 (c)(3) (land use plans).

30/
ibid at § 103 (a), 43 U.S.C. § 1702. The words "fish and wildlife
resources or other" were inserted prior to "natural systems or
processes."

31/
S. 507, § 102 (a); P.L. 94-579, § 201(a) (43 U.S.C. § 1711(a)).

32/
See fn. 34, infra.

33/
Act of July 21, 1947, 61 Stat. 681, 30 U.S.C. § 601.

34/
Letter from Theodore F. Stevens, Solicitor, U.S. Dept. of
Interior, to Joseph W. Aidlin, Magma Power Co., L.A., Calif.,
Jan. 19, 1961. "Water . . . although it is a mineral substance
or material, has never been deemed to be a mineral subject to
location . . . [It] is clearly a mineral material [and] may be
sold under the Materials Act of . . . 1947", Quoted in Brooks,
"Legal Problems of The Geothermal Industry", 6 Nat. Res. J.
511 (1966).

35/

"Upon reconsideration of this question we believe that geothermal steam is not subject to disposition by this Department as a 'mineral material' under the Materials Act . . . [We] conclude that geothermal steam is developed from hot springs systems and that the greatly dominant component in these systems is meteoric water" Letter from Interior Solicitor to J.W. Aidlin Aug. , 1961, reprinted in Hearings on S. 883 Before the Subcomm. on Minerals, Materials and Fuels of the Sen. Comm. on Interior and Insular Affairs, 88th Cong., 1st Sess., 70 (7/12/63).

36/

Act of Feb. 25, 1920, 41 Stat. 437, 30 U.S.C. § 71 et. seq..

37/

S. 883 (1963).

38/

On July 12, 1963 and October 25, 1963.

39/

Senate Report No. 1508 (Calender No. 1447), 88th Cong., 2d Sess. (Aug. 20, 1964).

40/

On August 21, 1964.

41/

See Senate Rpt. No. 683 (Calender No. 666), 89th Cong., 1st Sess., (Sept. 1, 1965) and House Rpt. No. 2140, 89th Cong., 2d Sess., (Sept. 28, 1966).

42/

Passage date.

43/

Geothermal Steam Act of 1966 - Memorandum of Disapproval, 112 Cong. Rec. No. 21, (10/22/66) at pp. S. 28863-28864.

44/

id.

45/

P.L. 91-581, 84 Stat. 1566 (Dec. 24, 1970). See also Senate Rpt. No. 1160, 91st Cong., 2nd Sess. (1970, CIS # S443-80) and House Rpt. No. 91-1544, 91st Cong., 2nd Sess. (1970, CIS # H443-70).

FOOTNOTES (con't)

46/

See: 32 F.R. 2588 (2/7/67); 32 F.R. 4030 (3/14/67);
32 F.R. 4506 (3/24/67); 38 F.R. 35507 (12/28/73).
See also Exec. Order 5389 (7/7/30), as amended by Public
Land Order 399 (8/20/47). (12 F.R. 5780-1).

47/

EIS

48/

12 tracts (8755 acres) at The Geysers were offered and high
bids on 10 accepted totalling \$5,045,246.86; Seven tracts
(13,714.03 acres) at Mono-Long Valley were offered but only
three bid on, for \$632,818.43; 14 tracts (30,168.53 acres) at
E. Mesa (Imperial Valley) were offered but only five drew bids,
for \$653,133.82 in "quick" revenue to federal coffers.

49/

As of 9/30/77, of 471 parcels (896,317 acres) put up for competi-
tive lease, only 227 (426,334 acres) had received any bids
(with nine rejected by BLM as not meeting presale USGS estimates
of value) for a total of \$18,061,217.00 in revenue or a \$44.18 per
acre average. This total includes the roughly \$6 million brought
in by 12 tracts in The Geysers. (BLM Monthly Summary Status
Report (9/30/77)).

50/

See, e.g. Proceedings: Conference on Geothermal Energy and
The Law (Feb. 3, 4 & 5, 1975) (U.S.C. Law Center and
National Science Foundation (R.A.N.N.) at pp. 13-14 and 20-21,
and Business Week, 8/ /75, at pp. 80-81, where one developer
charged that:

51/

Sierra Club v. Hathaway, Civ. No. 75-489 (D. Ore.) (usually
called the "Alvord Desert Case") currently on appeal to the
Ninth Circuit, where oral argument was held on 1/3/78 (Civ.
No. 75-3216). The District Court refused to enjoin the lease
sale and require an EIS (Order of June 23, 1975).

52/
BLM, Monthly Summary Status Report (9/30/77).

53/
id.

54/
id.

55/
id.

56/
See McNamara, op. cit. for a discussion of these problems.

57/
P.L. 94-579, 90 Stat. 2743, at § 201(a), 43 U.S.C. § 1711.

58/
ibid, at § 103 (e) ("The term 'public lands' means any land . . . administered . . . through the Bureau of Land Management . . .")
BLM's Public Land Statistics 1976 shows BLM's at 470, 174, 318.40 acres (Table 9, at p. 20).

59/
P.L. 94-579, at § 202 (a), 43 U.S.C. § 1712.

60/
Op. cit., fn. 3.

61/
P.L. 94-579, at § 201(a), 43 U.S.C. § 1711.

62/
§ 201(b) begins, e.g., "As funds and manpower are made available"

63/
Nice, "Senate Looks At BLM Funding Needs", High Country News, (1/27/78), at p.12.

64/
P.L. 94-579, at § 318 (b), 31 U.S.C. 1301 note.

65/
Nice, op. cit.

FOOTNOTES (con't)

66/

P.L. 88-577, 78 Stat. 890, 16 U.S.C. §§ 1131-1136.

67/

16 U.S.C. § 1131 (b).

68/

16 U.S.C. § 1131 (c).

69/

id.

70/

16 U.S.C. § 1131 (b).

71/

P.L. 94-579, § 603, 43 U.S.C. § 1782 (a).

72/

id.

73/

43 U.S.C. § 1782 (c).

74/

id.

75/

id.

76/

id.

77/

43 U.S.C. § 1782 (a).

78/

P.L. 94-579, § 603 (c), 16 U.S.C. § 1133 note.

79/

BLM News (1/24/78), BLM Oregon State Office.

80/

id.

81/

P.L. 94-579, § 202(a), 43 U.S.C. § 1712 (a) and § 202 (d), 43 U.S.C. § 1712 (d).

FOOTNOTES (con't)

82/

P.L. 94-579, § 601, 43 U.S.C. § 1781.

83/

Map of California Desert Conservation Area (BLM Drawing Number: CA-69 (Jan. 1977)).

84/

Magma Electric (a Magma Power Co. subsidiary) and Republic Geothermal are the actors, the latter with a federal loan guarantee.

85/

USGS has extensive open files on the area and D.O.E.'s Division of Geothermal Energy has funded the drilling of two exploratory holes.

86/

See McNamara, Legal and Institutional Barriers to Geothermal Development: An Area By Area Study (USC Law Center, Feb. 1978).

87/

See Report of The State Geothermal Resources Task Force: Executive Summary and Recommendations (Dec. 1977) at pp. 10-12.

88/

Oral Communication to the Author.

III - THE PACIFIC REGION STATES AND GEOTHERMAL LEASING

(a) ALASKA

The State of Alaska has the potential to be the richest source of energy fuels in the U.S. - a conglomeration of mid continent/Gulf Coast oil and gas, New Mexico-Wyoming uranium, Rocky Mountain coal and California-Basin Range geothermal.

Little is definitively known of the latter resource however. USGS Circular 726 (1975) lists only four known hot water systems above 150°C and 24 below that temperature within Alaska.^{1/} The paucity of solid resource assessment is due primarily to the predominance of federal lands in the State. Fully 96.4% of the state's acreage is controlled by various federal government agencies.^{2/}

A total of over 352 million acres (out of the 365,481, 600 state total) are under federal aegis.^{3/} Nearly 21 million are administered by the Forest Service,^{4/} while the U.S. Fish & Wildlife Service is responsible for over 22 million,^{5/} the Bureau of Indian Affairs for 4 million plus,^{6/} the National Park Service for 7 million^{7/} and the BLM a whopping 295 million acres.^{8/} Various DOD entities manage an additional 2.5 million acres.^{9/}

Thus the geothermal story in Alaska - from resource assessment and land acquisition through development - will be a federal tale. Two salient issues have begun to emerge on this front already: One involves land claims by Native Americans; the other Congressional initiatives to create

a 100 million acre "instant wilderness", closing off nearly one third of the state to energy resource exploration and foreclosing any development of geothermal energy in the process.

For the purposes of the Pacific Region Team's Mission, the claims of Alaska's Native Americans will probably be ironed out in large part by the time serious attention is focused on the state's geothermal resources. The Alaskan Native Claims Act of 1971^{10/} set up a procedure whereby Native Corporations could be formed and a certain amount of the previously public lands would then be ceded to them.^{11/} Public Land Order 5418^{12/} was promulgated three years later to assure that no intervening claims could defeat the purpose of this statute. PLO 5418 thus withdrew all previously "unreserved" lands in Alaska. The Team has also set up a contract with the United Indian Planners Association (UIPA) to assure coordination of state and federal geothermal activities with Alaskan Native claims and aspirations. In fact, many of the Native Alaskan corporations will probably develop the geothermal resource potential underlying their lands for both residential and commercial uses.

The pending Alaska Lands Act,^{13/} on the other hand, poses a grave threat to future geothermal and other energy development in the state. It would permanently close off an enormous, 100 million acre area to that use, preserving

it instead for inclusion in the wilderness system, and the creation of fish/wildlife refuges.

Both of Alaska's U.S. Senators^{14/} have vowed to filibuster the legislation to death. The Pacific Region Team must seek the guidance of the State itself before it enters this fray. Some compromise, however, should be worked out. Hopefully, resource assessment (including deep drilling) could continue for a period of seven to ten years. This would allow a true value trade-off between resource and non-resource values, rather than the one-sided scale we are now faced with by the House-passed measure.

State lands in Alaska are mostly within the three-mile limit offshore and are therefore not believed to be valuable for geothermal development at this time.

(b) CALIFORNIA

In this state, where the largest geothermal developments have taken place, it is unfortunate that state lands are not more pre-eminent. They account for roughly 10% of the total state acreage, compared to 45% federal, with the balance private.^{15/} In almost every respect, the state's procedures and their implementation by the State Lands Commission (SLC)^{16/} and its staff (the State Lands Division) far surpass the pace set on federal lands within California.

There are problems, however, and it is doubtful that the letter of the two-phased California procedures could

be carried out on the far more expansive federal parcels. The spirit of their involvement would go a long way on the federal side however. Several recent examples highlight this point in dramatic fashion. One involves the question of mineral-severed lands; another the use of "no surface occupancy" (NSO) leases outside KGRA's in areas of mixed (federal-state-private) ownership; yet another touches on wilderness study areas.

(1) The now infamous U.S. v. Union Oil litigation^{17/} was not concluded until October, 1977, almost seven full years after the Congress directed the U.S. Dept. of Justice^{18/} to bring a test case to quiet title to ownership of the geothermal resource underneath lands whose surface was patented (sold) to private persons under the Stockraising Homestead Act of 1916.^{19/} While that arduous, frustrating process was taking place, several key geothermal areas were being held in limbo. They included portions of The Geysers itself and other prospects in Oregon and Idaho.^{20/}

California had an identical legal dispute in progress over some state mineral-severed lands.^{21/} By contrast with BLM, however, the SLC entered into an agreement with the developer who had already leased from the surface owners (Union Oil). They directed Union to pay all royalties into an escrow account pending the outcome of the litigation. Thus two large leases in The Geysers have been productive during the same period that the contested federal lands stood by idle.

(2) An even more telling example of the superior SLC approach is the "no surface occupancy" (NSO) leases recently issued by BLM in the North Salton Sea area of Imperial County. Two years ago, SLC granted some prospecting permits on state lands in this checkerboarded ownership area. Several months later, the state permittee complained to SLC that they could not drill their state parcels. They feared that their noncompetitive lease applications on adjacent lands would be lost if their state land wells turned up a "discovery". The entire area would then be re-classified as a KGRA and opened to competitive bid.

Since the state permittee was a small company, they had no hope of successfully bidding at the sale and, in any event, could not afford to wait for it to take place. SLC issued a press release,^{22/} accusing BLM of holding up geothermal development on state and private land in California.

There was no immediate response from BLM. What is upsetting about their failure to reply is that they had already been directed by their Washington superiors to issue "no surface occupancy" (NSO) leases in exactly this type of situation. BLM "Instruction Memorandum No. 77-119"^{23/} had been issued on March 4, 1977 and went to all BLM State Directors, including presumably the Sacramento office. It ordered them to give "priority . . . to processing the pending [lease applications] . . . considering the length of

time most of the offers have been pending."^{24/} The example used in the memo, and in the decision of the Interior Board of Land Appeals (IBLA) which was used as its basis,^{25/} involved Forest Service lands. But it took little creativity to apply it to the checker-board land situation found more often around BLM lands. Sacramento BLM saw no reason to exercise that creativity.

SLC and its permittee kept up their pressure however. Finally, in March of this year, fully one year after the Washington BLM directive, Sacramento BLM called SLC to tell them they had unearthed a "new procedure" that could be used in North Salton Sea. To no one else's surprise, it turned out to be the "no surface occupancy" lease. They did cut back its application however. No acreage within "wilderness study" areas was eligible though the IBLA and BLM both spoke of precisely such a case. Nonetheless, it was a step forward. It did come as a surprise to SLC when, several weeks later, BLM called back to ask for a formal letter from SLC, "encouraging" the federal agency to move ahead. SLC obliged,^{26/} amidst some disbelief, and BLM finally issued the leases prior, it must be noted, to completing their EAR on the area.

(3) If more examples of SLC's positive attitude were needed, one could cite their issuance of prospecting permits in the highly-regarded Randsburg area of San Bernardino County while BLM has back-burnered neighboring non-competitive

applications due to their inclusion in "wilderness study areas" by its "Cal Desert" Land Use Planning (LUP) group.

(4) There is also the flexibility of SLC's competitive bidding procedures. They have used net-profit share bidding on two parcels in The Geysers, thus assuring small developers of a chance at the acreage and obtaining potentially higher long term returns to the public coffers. Sacramento BLM has stuck steadfastly to bonus bidding, with the result that many non-Geysers tracts draw no bids.

It is most noteworthy that in none of the four cited examples are the many distinctions and differences between the controlling federal and state statutes a factor in the differing conduct of the California SLC and their federal BLM counterparts. It is purely and simply a matter of attitude. SLC has a "can do" attitude. BLM stalls, procrastinates and invariably does nothing until pushed, if at all. Unfortunately, the vast majority of California's KGRA acreage is under their control as federal mineral lessor.

At Randsbury, e.g., 11,653 of the nearly 13,000 KGRA acres are BLM's, over 90%.^{27/} Coso is 84% federal (BLM (32.2%/Navy (51.5%)). Mono-Long Valley is 23% BLM, 63% Forest Service, for a federal total of 86%. Knoxville (65% BLM), Lovelady Ridge (82% BLM & FS), Beckwourth Peak (100% BLM), Glass Mountain (97.3% FS) and Lassen (70% FS) are similarly controlled by federal entities, not by SLC.

But it is doubtful that major statutory changes - even if they can be enacted - will turn BLM (or FS) into replicas of the California State Lands Commission. This is unfortunate, since a majority of DOE's identified hydrothermal prospects in the state are federally managed.

(c) HAWAII

The Pacific Region Team has identified one glowing prospect in this state already. The Puna field on Big Island will soon be the site of a five megawatt wellhead generator.

Unfortunately, the leasing situation in this state, which is heavily dependent upon imported oil, is not yet clear. Recent developments, however, augur well for the early initiation of state leasing.

The State's first geothermal leasing statute was not passed until 1974.^{28/} It created a geothermal resources lease under the general rubric of a state mining lease.^{29/}

Geothermal leasing in Hawaii must also be seen in light of the State's unique land ownership regime. Much of the land is owned under patents or grants tracing back to the Royal Kingdom of King Kamehameha I. The state, however, has consistently claimed ownership of all minerals "in, on, or under state lands" ^{30/} and their claim has been upheld by the Hawaii Supreme Court despite their failure to include such a reservation explicitly in a

land patent.^{31/} This too, is a tradition dating back to the Royal Kingdom, whose patents contained a similar reservation.^{32/}

As in California, however, the precise legal ownership of "geothermal resources" - as between the surface (private) and mineral (state) regimes - is subject to dispute. Thus the largest private landowners exert a powerful voice in the State's geothermal policy deliberations. The State is also operating from a scarce mineral/energy resource background. Their mining lease statute, framed primarily with an eye toward bauxite production, has been little used.

It is therefore not surprising that regulations implementing the 1974 statute were not promulgated until the Spring of this year.^{33/} The drafting of a geothermal lease then occupied the staffs of the Dept. of Land & Natural Resources and Attorney General's office. The state lease should be finalized before the end of this year. Developers have already begun to enter into leases with private surface owners, and a flurry of activity on Big Island (Hawaii) can be expected in the wake of the final version of the state's lease form.

It is possible, if not probable, that a test case will be brought by private land owners, challenging the state's purported hegemony over geothermal resources of the various islands. If that be the case, the state should

consider an escrow arrangement like that used by the State of California. Development could then take place, unfettered by legal posturing.

An additional future problem in Hawaii involves control of the geothermal resources under the islands various (and numerous) DOD installations. The Lualualei Naval Ammunition Depot on the West side of Oahu is believed to be a top prospect. It is located within a few miles of Hawaii's largest load center. This dispute will be discussed below (in IV) since it is not a Hawaii state problem and less than 10% of the state's acreage is federally controlled.^{34/}

(d) OREGON

Oregon, like California, faces largely federally-related (and created) problems in its leasing. Nearly 53% of the state's acreage is federally-controlled, a total of 32.4 million acres.^{35/} Nearly 16 million (15,577 million) of those are under the aegis of the Forest Service,^{36/} while an almost identical amount (15.740 million) fall to BLM.^{37/}

Most of the latter's acreage is in the Eastern Desert regions. It includes the highly-regarded Alvord and Vale prospects. The Forest Service's domain stretches up and down the lush Willamette Valley south of Portland. Mt. Hood is the most highly-touted prize in that area, though some

of the non-competitive areas to the South have attracted considerable attention as well. In yet another parallel with California, Oregon's meagre state holdings have accounted for nearly as much activity as the far greater federal acreage. Only five small state leases are in existence, covering less than 10,000 acres. Yet several deep tests have been drilled upon them.

The two federal agencies, by contrast, had received 1035 lease applications by January 1, 1978. Only 105 of these had been issued.^{38/} Four times that many were "pending" and not one deep hole had been drilled on federal land.^{39/}

The problem in Oregon is not at the state level.

(e) WASHINGTON

This state has one prospect already identified (Baker Hot Springs) and, most of its potential acreage is federally-controlled. It thus resembles Alaska more than any other state. The major issue involves the fight over future plants, rates and preferences to Bonneville Power Administration (BPA) power. Its outcome will go far towards determining the future role, if any, of geothermal resources within the state. Washington's most pressing need, like that of Alaska, is resource assessment. Only five identified, >150°C. systems are listed in Circ. 726,^{40/} and one of these is not available for development, being

in a National Park.^{41/} More telling is the fact that only five systems of less than 150°C are set out.^{42/}

FOOTNOTES

- 1/ Assessment of Geothermal Resources of the United States, USbS Circular 726 (1975), at Table 4, p.10 and Table 5, pp. 24-26.
- 2/ Public Land Statistics 1976 (BLM, 1977), at Table 7, p.10.
- 3/ id.
- 4/ ibid, at Table 9, p.14.
- 5/ ibid, at Table 9, p.19.
- 6/ ibid, at Table 9, p.20.
- 7/ ibid, at Table 9, p.21.
- 8/ ibid, at Table 9, p.20.
- 9/ ibid, at Table 9, pp. 27-30.
- 10/ Dec. 18, 1971, 85 Stat. 688.
- 11/
- 12/ March 25, 1974.
- 13/ H. 39 (Udall) passed the House by a whopping margin in June, 1978. A threatened filibuster by both Alaskan Senators has halted its march through the Senate, however, despite the support of the Carter Administration.
- 14/ Ted Stevens (R.) and Mke Gravel (D).
- 15/ Public Land Statistics - 1976 (BLM, 1977), at Table 7,p.10.

- 16/ Composed of three elected officials - the State Controller (Chairman), Lieutenant Governor and Director of Finance.
- 17/ 369 F. Supp. 1289 (N.D. Cal.1973), rev'd 549 F.2d 1271(9th Cir.1977), reh.den.sub.nom. Ottoboni v. U.S., 98Sct. 121 (1977)
- 18/ 30 USC § 1020(b), Geothermal Steam Act of 1970, § 21, P.L. 91-581, 84 Stat. 1572.
- 19/ 43 USC § 299.
- 20/ See McNamara, Preliminary Assessment of Thirty-One Geothermal Prospects (U.S.C. Law Center, 1978) for a discussion of this problem.
- 21/ Pariani v. State of California, (Superior Ct. SF) 657-291.
- 22/ See Appendix A.
- 23/ From Associate BLM Director George Turcott.
- 24/ BLM I.M. No.77-119 (3/4/77) at p.2.
- 25/ Chevron Oil Company, IBLA 76-424 (3/15/76).
- 26/ See Appendix B.
- 27/ Report On The Status of Development of Geothermal Energy Resources in California (JPL 1976) JPL 5040-25, at Table 5-4, p. 5-6, and Analysis of Requirements For Accelerating The Development of Geothermal Energy Resources In California, JPL 77-63 (JPL 1977) at pp.2-36. All the figures in this paragraph are derived therefrom.
- 28/ Statutes 1974, Act 241 (H.B. No. 2197-74), approved June 14, 1974.

29/

H.R.S. Chapter 182 "Reservation and Disposition of Government Mineral Rights". All of the relevant definitions were amended to include "geothermal resources" as defined in § 182-1(9).

30/

H.R.S., Chp. 182, § 182-2.

31/

Re Land Title, Robinson, 49 H.429 (1966).

32/

See Robinson, above, at pp.438-440 and Thurston v. Bishop, 7 H.421 and Knudsen v. Bd. of Ed., 8 H.60.

33/

Regulations on Leasing of Geothermal Resources and Drilling For Geothermal Resources in Hawaii, (Regulation No.8, Dept. of Land & Natureal Resources, State of Hawaii. The U.S. Dept of Interior took an identical time to create theirs, with a century of mineral and energy experience behind them.

34/

Public Land Statutes - 1976 (BLM, 1977) at Table 7, p.10.

35/

id.

36/

ibid, at Table 9, p.15.

37/

id., at p.21.

38/

Noncompetitive Geothermal Leasing (BLM, 12/31/77) at p.1.

39/

Monthly Geothermal Report (US6S, April 1978).

40/

US6S Circ. 726(1975) at Table 4, p.20 (Baker H.S., Gamma H.S., Kennedy H.S., Longmire H.S. and Summit Creek (So.Da.)).

41/

Longmire H.S.

42/

US6S Circular 726 (1975), at Table 5, p.48.

IV - THE FEDERAL "WILD CARDS" -
(A) D.O.E. and (B) D.O.D.

Though neither the U.S. Dept. of Energy (DOE) nor the U.S. Dept. of Defense (DOD) has a prominent "lead" position in the federal geothermal leasing program, they both control key contact points with it and possess between them the potential to gum up the works to a degree far exceeding their ostensibly minor roles.

(A) D.O.E.

The D.O.E. involvement in geothermal leasing is, typically, multi-tentacled.

(1) The Division of Geothermal Energy (DGE), extant since the inception of E.R.D.A. in January 1975, has as its mission the acceleration of geothermal resource development. Towards that end, Randall Stephens of DGE chairs the IGCC's Institutional Barriers Panel. It is his work and that of his contractors which has both brought to life and supported the Force for the past year.

Unfortunately, however, these efforts have suffered, from the beginning, from a lack of coordination with industry. In fact, many leading industry spokespersons told Stephens and his legal/institutional contractor at a meeting last Fall that the present system, though flawed, was working tolerably well overall, and even very well in some states. In any case its continuation, with some modifications, was preferable to "re-opening the Steam Act," thus allowing horizontal divestiture and other potentially damaging amendments a forum.^{1/}

They also expressed strong opposition to a "phased" system, (de-coupling exploration and development), as Stephens had proposed, unless there was some guarantee of the right to develop tied to the initial exploratory permit. Though this latter provision is part of the State of California's approach, environmentalists are dead set against its inclusion in federal law. Thus the Force started out with fairly implacable, diametrically opposed viewpoints, on its (or at least DGE's) key recommendation.

DGE as a whole has been reorganized several times in its short three and one-half year existence. These re-shufflings came, it must be remembered, in the wake of the creation of the Division itself, a move which attempted to consolidate the disparate geothermal R & D programs going on throughout the federal structure. Primarily the Division drew its start-up personnel from two agencies: the now-defunct AEC and NSF, with the former most numerous. These personnel also brought with them the old AEC's "National Lab/ hardware oriented" way of doing business. It is a bias which has been and still is reflected in DGE's budgetary and staff priorities. The creation of more effective pieces of equipment through large and frequent infusions of money into the National Laboratories still dominates their funding requests. The often intangible, always people-related institutional barriers are therefore relegated an abysmally meagre share

of the Division's efforts. Even the budget-line dubbed "Legal, Institutional & Environmental" is made up in large degree of technical, hardwarish environmental items.

Thus DGE's institutional efforts have been consistently undernourished and, at least in the case of geothermal leasing, clearly misconceived.

(2) The birth of D.O.E. in October 1977 brought forth an Assistant Secretariat whose existence was intended to compensate, at least in part, for the hardware-happy bias noted above. It might be though that Stephens of DGE could draw upon this high-level team for support.

The first person chosen for the post of Assistant Secretary for Policy Analysis was Al Alm, formerly of E.P.A. and clearly a non-technocrat. Unfortunately, knowledge of resource development practices was apparently not a primary job qualification, nor was knowledge of geothermal resources. Alm's shop has therefore already made two large dents in the legal/institutional prong of DGE's mission by: (a) failing to include any analysis of the impact upon geothermal development of the Forest Service's "R.A.R.E. II" wilderness study when it did so (loudly) for coal and onshore oil and gas. (It was unfortunately matched in this aberration by DGE)^{2/} and (b) by telling Capitol Hill that it opposed the inclusion of percentage depletion in any geothermal tax incentive package. Thus Stephens best piece of work is being actively scuttled, not by Treasury, which has long opposed it, but by D.O.E. itself.

Perhaps we are fortunate that Alm's office is not represented on the Force, or involved therein. But we can be sure that if the Force does come up with any workable reforms, the troops of the Assistant Secretary for Policy Analysis (DOE) will be right there to either oppose them outright or turn them into some monster that DGE and the geothermal industry will be forced to kill.

(3) The final D.O.E. entity which has an impact upon geothermal leasing is the Office of Leasing Programs. Created by Congress to give the new super-department an active role in federal energy leasing, it too would seem like a prime candidate for support of the Force. It is, indeed, represented on the ad hoc group.

It will therefore be most interesting to see if the Force takes up an early industry (and Interior) suggestion that this new DOE office be abolished as a prime "streamlining" recommendation.^{3/} DOE's leasing function, it must be interjected, is to screen every energy-related lease issued by BLM for the correctness of its "economic" terms.

The immediate geothermal industry reaction to this was panic, as a minimum of 30 days is allotted to this dubious function by the D.O.E. Organization Act,^{4/} and "economic" can be easily stretched to fit virtually any lease term. Developers also feel that if they do not like the terms of a particular lease, they will not sign it or bid on it. No DOE intervention is necessary.

Interior's response to DOE has actually been a model for "streamlining the geothermal leasing/permitting process." They have simply ignored the new D.O.E. office. Unfortunately, it will not go away that easily.

(4) There should also be a place in the workings of the Force for consideration of the activities of the Assistant Secretary for Environment (D.O.E.) and his perceived role in slowing down the Geothermal Loan Guaranty Program (GLGP) by purportedly demanding a full-blown EIS prior to each and every guaranteed loan disbursement. President Carter's pledge extended to "environmental review procedures" as well as leasing itself. The attention of the Force must be similarly broad.^{5/} When the rigorous environmental procedures of the State of California and the Dept. of Interior can be satisfied (as they have in the case of the first such project - Republic Geothermal's 10 MWe plant at East Mesa), it hardly behooves D.O.E. to call for further deliberation.

(B) D.O.D.

The prime geothermal actor in the D.O.D. realm at this time is the U.S. Navy, though its other branches may eventually become involved as well. At present, Navy possesses the ability to effectively "sit on" the development of at least two key geothermal prospects, both in the Pacific Region.

One is Coso Hot Springs, within the Naval Weapons Center at China Lake, California. The other is within the Lualualei Naval Ammunition Depot on the West side of the island of Oahu, Hawaii.

The issue at question revolves around a disagreement between Navy (DOD) and BLM (DOI) as to the geothermal developmental authority over lands acquired by D.O.D. in pursuit of its mission. Unfortunately, a close reading of the Geothermal Steam Act^{6/} would indicate that both Interior and DOD can each make more than colorable arguments. Section 23 of that statute states: "Rights to develop and utilize geothermal lands owned by the United States may be acquired solely in accordance with the provisions of this chapter."^{7/} The sole "development and utilization"^{8/} mechanism would thus seem to be a lease issued by the Secretary of Interior.^{9/} Development by "governmental units"^{10/} including, presumably the Navy, would therefore be channeled through DOI-BLM, along with private sector development. The Act expressly includes these public entities as eligible for a geothermal lease,^{10/} thus indicating an intent to so structure their activities.

On the other hand, the disputed land in question at COSO, Lualualei and elsewhere is acreage acquired by DOD in pursuit of its activities. The Steam Act extends its wings over "lands administered by . . . [the Secretary of Interior] including public, withdrawn and acquired lands,

[lands] in any national forest or other lands administered by the Department of Agriculture, including public, withdrawn and acquired lands, and . . . lands which have been conveyed by the United States subject to a reservation . . . ", etc.. It would not seem that DOI nor DOA has ever "administered" DOD-acquired lands. They would therefore appear to be outside the scope of Interior's Steam Act - conferred jurisdiction.

This is not an anomalous result. Interior's control over the minerals beneath DOD-withdrawn land (former public lands withdrawn for DOD activities) is subject to veto by the Secretary of Defense.^{12/} Moreover, Interior-BLM's own geothermal leasing regulations state that "no geothermal lease affecting lands withdrawn for any agency outside the Department of the Interior shall be leased without the consent of the head of the agency for which the lands are withdrawn."^{13/}

With Interior discretion over withdrawn lands severely constrained, it is not illogical to perceive a Congressional intention to totally preclude their exercise of authority on lands acquired by departments other than themselves and DOA. This is particularly true of DOD, many of whose installations are closed to the public for safety reasons. Both COSO and Lualualei fall into this category.

We are therefore faced with a classic bureaucratic version of the Mexican Stand Off. Navy cannot develop their wholly-owned resources without a BLM lease. But

they can insure that no one else does. And as the megawatts and replaced oil and gas slip slowly into the Pacific Rim, the IGCC can always tell Congress that no solution is possible short of amending the Steam Act. Given the clout and antithetical positions of the two departments involved, this does not promise to be a brief struggle.

FOOTNOTES

1/ Notes of the "mini-Conference on The Geothermal Permitting Process," held Sept. 18 & 19, 1977 at USC by the USC Law Center's Geothermal Energy & The Law Project, (DGE's Legal & Institutional contractor).

2/ For an analysis of that potentially devastating impact, see I, (above) and "Geothermal Resource Development and Wilderness Preservation In Oregon and California," J. McNamara & Dr. Donald B. Elmer (Policy Analyst for DGE's Pacific Region Team), to be published in Transactions of the Geothermal Resources Council (1978), and reprinted as Appendix C, below.

3/ USC "Mini Conference", op. cit, fn. 1.

4/ P.L. 95-91.

5/ For a fuller sketch of the problem, see June 21, 1978 Letter of Mr. McNamara to Dr. Donald B. Elmer,

6/ 30 USC § 1001-1025, PL 91-51, 84 Stat. 1566.

7/ 30 USC § 1022.

8/ 30 USC § 1002.

9/ id.

10/ 30 USC § 1015.

11/ id.

12/ 43 USC § 158; P.L. 85-337; 72 Stat. 30; Feb. 28, 1958.

13/ 43 C.F.R. § 3201.1-2(b).

SECTION TWO:

ANALYSES AND RECOMMENDATIONS

V: CRITIQUE OF THE FEDERAL STREAMLINING
TASK FORCE AND THE CALIFORNIA STATE-FEDERAL-
LOCAL TASK GROUP AND RECOMMENDATIONS OF
JM ENERGY CONSULTANTS, INC.

(a) Federal Interagency Geothermal Streamlining Task Force (The Force)

As stated by the Force itself, its role has been to conduct "a comprehensive analysis of the elements of the present program. . . [in order to] identify the sources of delay and quantify delays which are actually occurring; and to determine the potential effects upon program performance of a series of options for program modification . . . in terms of their relative ability to support the Department of Energy's projected geothermal power-on-line schedule while adequately protecting the public interest and the environment."^{1/}

The primary output of this now year-old, ad hoc group is found in three, major "options."

(1) Option I: Basically, this first "Option" represents the position of the DOI agencies involved with geothermal leasing (BLM) and post-lease permitting/regulation (U.S. Geological Survey). Both entities are represented on the five-agency Force, thus giving them considerable clout.

It is therefore unsurprising that the Force " . . . is concentrating the largest bulk of its efforts on Option I . . ."^{2/} They are suggesting extensive "Program modifications" however.

The first would focus pre-lease environmental review on a broad, "regional or areawide"^{4/} basis. Unfortunately, they state that this change would "permit more dependence on existing or in-progress Management Framework Plans of

the Forest Service . . . "^{5/} Though laudable in the abstract, these planning mechanisms have proven extremely unwieldy in practice.

The Service's LUP on the Inyo National Forest in California (Mono-Long Valley) has gone on interminably. Fully five years have passed since BLM first contacted the Inyo Forester Supervisor concerning preparation of an EIS for geothermal leasing.^{6/} In the summer of 1973, the Forest Supervisor told BLM that it would not consent to geothermal leasing until its land use study was completed. It estimated the completion date as "April 1, 1974."^{7/} We are still awaiting completion of that LUP.

Even when it is complete, the Service has indicated that they can not make a decision until a geothermal-specific "EA" (Environmental Analysis) is completed. This is estimated to take from six to nine months.^{8/} BLM's first LUP is the "Cal Desert Study", which will have taken nearly four years when completed in Sept. 1980.^{9/}

It does not appear, then, that reliance upon the LUP's of BLM and the Service will result in "streamlining" geothermal leasing one whit.

The second "modification" of present practice being considered by the Force would set time limits for lease and permit issuance.^{10/} This is an excellent suggestion, though the Force gives it relatively short shrift and does not flesh it out with specifics. They do note that NOI's must now be issued within 30 days and that this is a precedent for other time limits.

Building upon the recent California State legislation, it would seem that 9-12 months should be adequate for lease applications, with 4-6 months for post lease permits. There should be no blinking of the fact that implementation of this recommendation will require "increased budgets and manpower in some BLM/FS . . . and USGS office[s]." ^{11/} There is a large base of support for such increase. The State of California' Secretary for Resources, e.g., recently asked BLM to shift its staff and budgetary priorities in California from OCS oil and gas to geothermal. ^{12/}

The Force's third "modification" would designate "in each agency field level coordinators for the geothermal program." ^{13/} There is little to criticize here, although increased staffing, particularly in key Forest Service districts, would probably cover it.

Similarly, its recommendation that lease stipulations (for archeological, etc.) be standardized ^{14/} is unobjectionable but hardly earthshaking. There is a seemingly redundant though good suggestion that Budgets be increased ^{15/} across the board.

On the oft-debated topic of KGRA definition, the Force suggests that non-competitive applications be honored unless the area is KGRA "at the time of application." ^{16/}

They also toy with, but do not endorse a proposal to "abolish the competitive interest regulations (4 §C.F.R. 32.00.0 - 5(k) (3))." ^{17/} This is a necessary and long overdue

reform. As the Force notes, 30% of the tracts offered competitively "have produced no bids at all,"^{18/} while many tracts bid on draw single, token offerings. Hopefully they will put more weight behind this recommendation in their final report.

Lastly, the Force recommends a "nomination procedure for both KGRA's and non-competitive areas ^{19/} and the use of "no-surface-occupancy" leases in wilderness study areas upon request.^{20/} Both of these are laudable recommendations and should be instituted.

(2) Option II: This "option" seems indistinguishable from the Force's first proposed modification to Option I. It would base leasing decisions on BLM/FS land use planning.^{21/} For the reasons cited under the discussion, it is totally unacceptable. Even Congress seemed to realize this when it directed both agencies to continue management under existing plans until their arduous land use planning processes were complete.^{22/}

(3) Option III: This option, basically the work of DOE/DGE, would separate exploration and development phases, and their attendant environmental assessments would be of shorter duration.^{23/} The lessee's "rights to develop"^{24/} would therefore be "held in abeyance"^{25/} through voluntary compliance with "special lease stipulations."^{26/}

The Force believes that amendment of the Geothermal Steam Act would therefore be unnecessary.^{27/} This is intended to soften developer opposition to the suggestion,

as noted above.^{28/} Unfortunately, it meets only one facet of their objections. Any requirement that a geothermal lease not convey full developmental rights is unacceptable to industry. If this option is available to developers "upon request," few, if any, will choose it. It is also less than certain that such an approach can be implemented without amending federal legislation, which is unlikely.

(b) California State-Federal-Local Agency Task Group:

This group, composed of members of both the State Geothermal Resources Board's Technical Advisory Committee (GRB-TAC) and of the field offices of the federal agencies working in California, has put together a "Draft Working Paper" for presentation to the Force at its June 21, 1978 Sacramento meeting. Included therein were 16 specific recommendations:^{29/}

- (1) "The Secretary of Interior should review geothermal exploratory procedures and amend . . . to allow for deep exploratory drilling prior to issuance of a lease."^{30/}

This is the practice now in effect on the OCS. The Group did not specify whether Interior or industry should do such drilling, or how many should be permitted in area, etc. Given the proprietary data problems involved, the need for competitive balance in the industry, and the risk of public dollars if USGS, e.g., were asked to do this, I find this proposal unpersuasive in its present form.

(2) "Assure increased deep exploratory geothermal drilling in California through DOE programs, industry initiatives, and favorable permitting climates."³¹

If "industry initiatives" includes passing the Senate version of the Energy Tax Bill, I agree. "Favorable permitting climates" is not spelled out, however, and "DOE programs" leave me cold if they result in replays of the Marysville, Raft River and Coso operations.

(3) "Strengthen diligence clauses to require drilling of deep exploratory wells within two years of the lease date."^{32/}

Frankly, I think this deadline is too stiff, given permitting delays and the exigencies of assembling a suitable "land package" and performing pre-deep test work.

(4) "Chief of the USFS should make a policy determination that geothermal leasing is a high priority USFS activity."^{33/}

Given the Forest Services' statutory priorities and historical constituencies, this seems highly unlikely. What would make more sense would be a commitment to adequately staff and support geothermal leasing activities in the National Forest System.

(5) "USFS should expedite preparation of management plans in the Northern California geothermal areas (Glass Mtn., Lassen, etc.)"^{34/}

Amen, when and if they finish Mono-Long Valley.

(6) "Federal, state and local agencies should accept environmental documents prepared by others (do not require multiple EIR's)."^{35/}

USGS and Imperial County initiated such sharing, prior to the new CEQ Guidelines. The State Energy Commission, USGS and BLM are preparing to do likewise for several Geysers-area power plants. This is a crucial suggestion - one ignored by the Force.

(7) "Assure early (pre-lease) designation of lead agency for powerplant siting."^{36/}

This would seem cleared up by the recent issuance of BLM plant-siting regulations and USGS "R&D" plant-licensing regulations.

(8) "Eliminate environmental redundancies in the DOE Geothermal Loan Guarantee Program."^{37/}

This refers to the problem noted above^{38/} and is a key, near-term priority also ignored by the Force.

(9) "Establish a common format for California and federal geothermal powerplant application requirements."^{39/}

This is presently being worked out between BLM and the Energy Commission in several instances. An ad hoc state-federal group is also working on it on a generic basis. The Force ignored this key aspect of environmental/permitting redundancy.

(10) "Urge Federal, state and local agencies to coordinate transmission live corridor activities."^{40/}

A key point in recent Pacific Team/State of California joint funding. Also ignored by the Force.

(11) " . . . permitting industry to initiate environmental reports . . . put financial burden on applicant."^{41/}

This would penalize the smaller companies which cannot afford to "buy" consultants for EIR preparation.

(12) "Establish means of collecting environmental baseline information supporting USFS geothermal leasing decisions, including definition of funding responsibilities."^{42/}

This is a bit obscure.

(13) "Make sure current USFS & BLM schedules for The Geysers, Imperial Valley, Coso, and Mono-Long Valley are adhered to."^{43/}

This dovetails with the recommendation of the Force that budget and staff levels be increased. It is an excellent suggestion.

(14) "In high potential areas, the Secretaries of Interior, Agriculture and Energy, or the Congress, should make a determination whether the energy exploration and development activities outweigh the need for wilderness."^{44/}

This fine suggestion needs to be beefed up by requiring energy exploration in wilderness study areas prior to determining whether or not they are more useful for energy

or wilderness use. Otherwise, the Saga of the One-Sided Scale will continue, as visible wilderness values outweigh non-existent energy data.

(15) "After discovery of a commercial resource, require initiation of powerplant negotiations within two years."⁴⁵

This is unnecessary. If a true "discovery" is present, the developer opens negotiations ASAP. It is also unenforceable. Who must the developer negotiate with, X, Y or Z?

(16) "Change State geothermal leasing procedures to allow issuance of competitive leases on demand by SLC."^{46/}

This seems to give SLC the option of calling up certain areas for bid. Given the legal requirement that a producing well be included in an area before it can be competitively leased, this would require a state statutory amendment. The effect on pre-existing state prospecting permits is unclear. If this would vitiate them, it is likely to do more harm than good.

(C) Recommendations:

Based upon all of the foregoing, we recommend the following:

(1) The Forest Service's consent to a geothermal lease must be abolished by amendment to 30 USC § 1014(b), as described above.

(2) The Wilderness Act of 1964 and the Federal Land Policy and Management Act of 1976 must be amended to require geothermal exploration, including deep drilling, in all wilderness study areas prior to January 1, 1985 and prior to their inclusion in the National Wilderness Preservation System.

(3) The KGRA regulations should be changed to eliminate "competitive interest" as a criteria. The definition of "Known Geologic Structure" (KGS) (contained in the Mineral Leasing Act of 1920) or that of "Known Geothermal Area" (KGA) (found in the California Geothermal Resources Act) should be substituted. Only areas containing proven, commercial wells could then be classified as KGRA.

(4) Industry should be asked to nominate priority leasing areas and the staff and budget of the relevant BLM, USGS and USFS offices should be increased to handle the load of lease applications, environmental studies and permits in those priority areas.

(5) The DOE Organization Act should be amended to abolish DOE "economic term" involvement with each geothermal lease prior to issuance.

(6) All geothermal lease applications should be issued or denied within 270 days. If no action is taken within that period, they will be deemed accepted and issued forthwith. Similarly, all post lease permits shall be issued or denied within 180 days or considered approved.

(7) Geothermal leasing on all federal lands in California should be turned over to the State Lands Commission, with issuance of leases by BLM a ministerial act only.

(8) Jurisdiction over geothermal development on DOD-acquired lands should reside in the relevant DOD entity.

(9) The Geothermal Loan Guaranty Program (GLGP) should accept and adopt the EIR/EIS of the involved state or local entity as its own for projects financed under its aegis.

(10) Lands offered for competitive bid once and not bid upon should be immediately and automatically reclassified as non-KGRA and opened to non-competitive application.

FOOTNOTES

- 1/ "Program And Objectives of the Interagency Geothermal Streamlining Task Force" (mimeo, June 1978), hereinafter cited as "Force."
- 2/ *ibid*, at p.2.
- 3/ *id*.
- 4/ *id*.
- 5/ *id*.
- 6/ Inyo National Forest "Historical Critical Path-Geothermal" (June 1978), hereinafter cited as "Path".
- 7/ Letter from Inyo Forest Supervisor E.L. Towle to BLM California State Director, 9/11/73, in "Path" at p.2.
- 8/ Statement of Asst. Regional Forester State Geothermal Leasing Meeting, April 5, 1978 in Sacramento.
- 9/ See II, above.
- 10/ "Force", at pp.4-5.
- 11/ *ibid*, at p.4.
- 12/ Letter of Resources Secty. Hugh Johnson to BLM, June 1978.
- 13/ "Force", at p.5.
- 14/ *ibid*, at p.6.
- 15/ *ibid*, at p.11.

16/ ibid, at p.10.

17/ ibid at p.9. They state that it "is being investigated."

18/ id.

19/ ibid at p.7.

20/ ibid at p.8.

21/ ibid, at p.11.

22/ See I & II, above.

23/ ibid, at p.13.

24/ id.

25/ id.

26/ id.

27/ id.

28/ see IV(a) , above.

29/ "Geothermal Leasing In California", June 21, 1978,
hereinafter cited as "California Working Group."

30/ California Working Group, at p.9.

31/ id.

32/ id.

33/ id.

34/ *ibid*, at p.10.

35/ *id.*

36/ *id.*

37/ *id.*

38/ see IV, above

39/ *id.*

40/ *id.*

41/ *id.*

42/ *id.*

43/ *id.*

44/ *id.*

45/ *id.*

46/ *id.*

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CALIFORNIA STATE LANDS BIDS SUCCESSFUL

Sacramento, November 8, 1976 — State Controller Kenneth Cory says spirited bidding for State-owned geothermal resources shows how the Federal Government's policies amount to giving away energy in a time of shortages and short-changing the taxpayers at the same time.

"The Federal Bureau of Land Management has had a geothermal program since 1970, and despite a huge staff of experts, still has practically no leasing program," said Cory, who is Chairman of the State Lands Commission which developed the State's leasing program.

"The State Lands Commission, on the other hand, has held two geothermal lease sales this year and both have drawn record-sized bids.

"Our most recent lease sale on November 3 attracted a top bid offer of 47.77 percent of net profits for a 434-acre parcel in Sonoma County. Worked out on the federal system of cash bonus bidding, this is equivalent to a bid of \$15,000 per

acre or \$6,510,000.

"Yet during the long-awaited first federal lease sale in the same area, the bids averaged out to \$830 per acre.

"Not only has the federal government been painfully slow in proceeding with a geothermal energy program in a time of shortages, but they have been giving it away for ridiculously low prices. That's short-changing the taxpayers.

"The State Lands Commission pioneered the concept of net profit bidding in an attempt to open up the field of geothermal energy development to a greater number of developers.

"The results of our first two competitive lease sales this year indicate we are on the right track with net profit bidding.

"Despite this, the federal government holds fast to its front-load bidding procedure. The result is that the major oil companies, in geothermal as well as oil and gas, are the only ones who can afford to bid.

"It is about time the people in Washington took a look at what we are doing in California and stopped giving away the public's resources at bargain basement prices," Cory concluded.

STATE LANDS COMMISSION

EXECUTIVE OFFICE

1807 13th Street

Sacramento, California 95814

KENNETH CORY, Controller

ERVYN M. DYMALLY, Lieutenant Governor

ROY M. BELL, Director of Finance

April 3, 1978

W 6325.8

Mr. Ed Hastey
State Director
Bureau of Land Management
2800 Cottage Way
Sacramento, California 95825

Dear Ed:

On March 14, 1978, John Moon of your Resources Division staff met with staff of the Commission's geothermal unit to discuss BLM's efforts to coordinate permit expediting procedures with counties and to discuss a procedure to speed issuance of non-competitive applications.

I am pleased to learn that you are working out procedures for joint permitting efforts with counties. We have been experimenting with the same idea. Hopefully, we can use our joint experiences to speed development on both State and federal lands.

Our first attempt at this procedure was with issuance of a geothermal prospecting permit for Boggs Mountain State Forest in Lake County.

The Commission uses two procedures for environmental impact documentation for geothermal projects on State lands. If a developer goes to the county first for a use permit for a private leasehold and the study area also contains State-owned lands, after a county prepared EIR is adopted and certified, the Commission will re-certify that document for application for State lands within that study area.

If the Commission is the lead agency, as was the case in the application for a prospecting permit on Boggs Mountain

State Forest, the staff prepares the EIR or it is done by a contract consultant.

On Boggs Mountain we saw a unique opportunity to establish the viability of geothermal energy development with other uses and at the same time saw a chance, by working closely with local government, to substantially reduce the normal permitting time.

Commission staff, staff of the Department of Forestry and representatives of the applicant first met on Boggs Mountain to select potential drill sites. Selection was made on the basis of geological as well as environmental considerations. Five potential sites were selected and dealt with in the Draft EIR.

Commission staff then asked the county in effect, "What do you need in our document so that you will be able to use it for your permitting procedures?" From that point on, staff continued to work closely with the county planning staff as well as the Air Pollution Control District to make certain their concerns were dealt with in the document.

A pre-draft copy of the draft EIR was sent to all interested governmental agencies and their comments and suggestions were incorporated into the Draft which was then circulated through the State Clearinghouse.

The Commission then scheduled a joint hearing on the Draft with the Lake County Planning Commission in Lakeport. This hearing was preceded by an onsite inspection of proposed drill sites by staff of the Commission, and members of the Lake County Planning Commission. All comments received as a result of that hearing and from circulation of the document were answered in the final EIR.

Our permittee has not yet applied to the county for processing of use permits for this project, but we feel that this procedure has produced an environmental document which will be useful to the county and should assist in considerably shortening permitting time on the local level.

Staff has informed me of the Bureau of Land Management's proposal to expedite issuance of non-competitive applications. I am very interested in your proposals because we have had strong indications that the failure of BLM to process this backlog of applications has had the effect of slowing exploration and development on adjacent State-owned lands.

If this proposed procedure of issuing non-competitive leases without the right of surface entry could be implemented promptly, it would be of immediate assistance to one of our permittees, QB Resources in the Salton Sea area, and could also be applied on other locations where the State has applications

Mr. Ed Hasteley

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April 3, 1978

pending because of the fear of the applicants that their action on State land could prejudice their chances for non-competitive federal leases in the same area.

John Moon indicated he would supply staff with additional information on BLM's leasing program so that we could determine where this new leasing concept could be most effectively applied. After we have this material and can determine our land picture where you have pending applications, I think it would be useful to schedule another meeting to attempt to start a joint program in motion.

I feel that such a joint program, properly publicized through industry, could have a snowballing effect which will be beneficial to development on both federal and State lands.

I am pleased to learn that BLM is considering this move and look forward to working with you in the future to expedite development of geothermal energy in California.

Sincerely,



WILLIAM F. NORTHROP
Executive Officer

Appendix C

"GEOTHERMAL RESOURCE DEVELOPMENT AND WILDERNESS PRESERVATION IN OREGON & CALIFORNIA"

I. Introduction:

Preservation of "wilderness" values and the areas of the federal lands containing them began officially in 1924, when the Forest Service set aside part of the Gila National Forest in New Mexico in order to protect its distinctive "primitive" character.

Forty years later, Congress, by the Wilderness Act of 1964, designated fifty-four separate units comprising some nine (9) million acres as the National Wilderness Preservation System (NWPS). All of these lands were located within National Forests, National Parks or Fish and Wildlife Refuges. Those three agencies were also directed to inventory their domains for other "wilderness" areas and nominate same to Congress.

The Federal Land Policy and Management Act of 1976 extended this effort to the 500 million acres of public lands managed by the Bureau of Land Management. Their initial "inventory" got under way last year.

In addition, Congress itself creates additional, "instant" wilderness areas by statute. Pending legislation, e. g., would create such areas on 900,000 acres in Montana and nearly 100 million acres in Alaska.

In many areas of Oregon and California, wilderness study and evaluation has precluded even passive exploration for geothermal resources. This paper attempts to identify the precise areas of perceived conflict between geothermal development and wilderness study and evaluation and suggests a possible resolution.

II. The Forest Service Wilderness Preservation Program:

(a) 1964 Wilderness Act and R.A.R.E.:

The Forest Service was the primary target of the Wilderness Act of 1964. The bulk of the existing Wilderness System therefore lies within national forests. Shortly after the enactment of that statute, the Service began a "Roadless Area Review and Evaluation" (R.A.R.E.). More than eight years later, 274 wilderness study areas containing an additional 12.3 million acres were finally selected for inclusion in the NWPS. These were selected from an initial R.A.R.E. inventory of 1449 areas totally 56 million acres. The latter equalled almost one-third of the total National Forest areas.

The Service could not satisfy the Sierra Club and other conservationist groups with this effort, however. The "rejected" areas were therefore set aside, to be examined again during the Service's land use planning effort for each particular unit within its system. These planning efforts had been conducted in a piecemeal fashion under existing Service policy since the early part of this century. Multiple-use planning efforts by the Service were finally given Congressional sanction by the Multiple Use-Sustained Yield Act of 1960. Pressure by conservationist and environmental groups for more public input to that process eventually brought about the Forest and Rangeland Renewable Resources Planning Act of 1974, which mandated land use plans (LUP's) and the National Forest Management Act of 1976, which required extensive public participation in the planning process.

Simultaneous with this wave of legislative mandates, the Sierra Club demanded that many areas not included within the original, 56 million acre R.A.R.E. inventory be added to that list. The Service

complied, reviewing each parcel's wilderness potential again during its L. U. P. procedure. Thus the process of wilderness review became an open-ended one, with no target set as a possible closing date for "final" decision.

From the standpoint of geothermal development, this is an unpalatable situation. Though a legislative compromise in the 1964 Act resulted in the inclusion of a clause allowing mining locations and mineral leases within wilderness areas until the end of 1983, that language did not, on its face, extend to geothermal resources. Thus a protracted court fight or legislative debate would be necessary to gain such an inclusion, with exploration no doubt barred pending its outcome.

In addition, areas being studied for possible wilderness status were even more strongly protected — by the statute, Service policy, preservationist pressure and court rulings — and closed to surface use altogether.

(b) R. A. R. E. II:

The situation got worse, from geothermal's point of view when the Service initiated a second, full-blown, formal wilderness review in 1977 — the so-called R. A. R. E. II. Service Chief John McGuire characterized it as "an acceleration of the roadless portion of the Forest Service land management planning process." For geothermal, however, it constituted yet another legal and institutional roadblock. Adding areas identified by the Sierra Club and others, the Service came up with a new "initial inventory" of 1,920 areas encompassing 65.7 million acres. A list of these areas was published in the Federal Register on November 18, 1977. The Service set October 1978 as its decision date. Supposedly, those areas not selected for Wilderness nomination or further study will be released for multiple use, including geothermal exploration and development.

(c) R. A. R. E. II Impact on California/
Oregon Geothermal Development:

Maps produced by the Service for California and Oregon showed that "wilderness study areas" practically blanketed many forests within the two states. Moreover, several of the areas to be "evaluated" were believed high in geothermal potential. A whopping 6,122,182 acres in California alone are under "review" and therefore closed to geothermal exploration, save by air or space craft. Included were over one million acres in the prized Inyo National Forest; 220,000 acres in the Lassen National Forest; 213,000 acres of the Mendocino National Forest; 200,000 acres in the Modoc National Forest; and 83,000 in the Plumas National Forest.

Oregon is the site of nearly 3 million acres of R. A. R. E. II inventory. Included are: 255,000 acres in the Deschutes National Forest; nearly 90,000 acres in the Fremont National Forest; 140,500 acres in the Willamette National Forest; and 203,000 acres in the highly-regarded Mount Hood National Forest.

Amidst much pressure from other federal agencies and the geothermal industry, Forest Service officials in all of the above named areas have been pushing ahead with the preparation of Land Use Plans and Environmental Impact Statements. Statements covering Inyo, Deschutes, Willamette, Fremont and Mount Hood are either out or will be some time this year. Their emergence may be a Pyrrhic victory, however, if the inclusion of R. A. R. E. II areas within their boundaries results in designation of all such lands as fit for "no surface occupancy" leases only. Such was the case in the EIS prepared by the Service for the geothermal lease sale in the Santa National Forest of New Mexico last year. Fully 12,000 of that areas's 30,000 acres were so restricted due to wilderness study and not a single bid was received on that acreage.

Unless a parcel is situated among previously-leased private, state or other Federal land, a "no surface occupancy" lease is virtually useless.

(d) What Can The Geothermal Community Do?

The Service will be making its determinations this year. A Draft EIS outlining the reasons for its choices should now be in circulation. The geothermal community must inform itself and present testimony on key areas of interest in Oregon and California. The Service has stated that the "evaluation phase" of R. A. R. E. II shall give "particular emphasis" to "factors related to energy and mineral resources . . .". The mining and oil and gas industries have given strong input to the Service, particularly in Forests located in the so-called "Overthrust Belt."

The Department of Energy formally noted the negative impact of wilderness designation on domestic oil and gas production. It also mentioned coal and uranium, but not a word was heard concerning geothermal resources. Thus the geothermal industry must fight its own battles. In California and Oregon in particular very little non-conservationist input has been given by anyone in government or industry. Since resource assessment and exploration within study areas is not allowed, all minerals are at a severe disadvantage in the Service's "evaluation phase". For several key geothermal resource areas, that disadvantage could become a bottomless pit.

In addition, the industry should move for an amendment to the Wilderness Act to allow geothermal exploration in study areas prior to any final decision as to wilderness classification.

III. BLM Wilderness Inventory:

The 1976 Land Policy and Management Act officially gave BLM both wilderness inventorying and planning responsibilities for the first

time. The impact of their Wilderness inventory may affect geothermal resource development as much or more than the Forest Service's program.

BLM controls nearly 450 million acres in the western states. Nearly 300 million acres are in Alaska alone. Like the Forest Service, BLM began designating what it then called "primitive" or "natural" areas before being ordered to do so by Congress. Between 1969 and the enactment of the 1976 statute, eight areas totalling 170,000 acres were so classified. This is far less than the 12 million plus acres of Service land set aside for Wilderness Preservation. However the initial experience under the BLM Wilderness Review should give little solace to geothermists in Oregon and California.

It took BLM some seventeen (17) months to come up with a "Notice of Intent To Develop Wilderness Review Procedure". Not until March 8, 1978 was the notice of the existence of a "Draft Wilderness Policy and Review Procedure" acknowledged. Creation of a "Final" procedure would follow public comment at numerous workshops to be held across the Bureau's vast domain. Preservationist and environmental groups declared themselves "generally pleased" and "favorably impressed" with the Draft Policy and Procedure paper. Geothermal developers, on the other hand, may have to sit down and breathe deeply.

Unlike the land use planning mandates contained in the 1976 statute, the wilderness review procedure section does not contain any Congressional directive that ongoing energy and other projects go ahead through the normal EAR/EIS process notwithstanding the absence of a Land Use Plan on the area in question.

The wilderness review portion of the law, on the other hand, requires only that BLM conduct their wilderness reviews first in "areas where major projects are proposed that relate to national issues, such

as mineral, energy and renewable resources needs". In other words, energy projects get the bad news first. They don't get to proceed until BLM determines whether or not the area they seek is or is not "wilderness". If the first energy project to obtain such early review is any guide, this means that many BLM areas will join the Forest Service's vast "study inventory" on the geothermal sidelines.

Pacific Power and Light (PPL) got a "priority" wilderness review on its proposed 500 kilovolt transmission line from Midpoint, Idaho to Medford, Oregon. BLM found no less than 93 roadless areas covering some 2.2 million acres and 27 islands in the path of the power corridor. Of this total, some 32 areas (875,300 acres) and 20 islands were recommended for "wilderness study". Since the 1976 Act does not require BLM to complete its wilderness review until 1991, the future of the P.O. & L. power line is not bright.

Ominously, there are nearly 16 million acres of BLM land in both California and Oregon. This total is roughly equal to Forest Service land in both states. Such key geothermal areas as Alvord, Vale, The Geysers, Coso, Randsburg and North Salton Sea may be in the path of the disease known as "wilderness inventory paralysis".

Once again, the industry must raise its collective voice, pointing out the geothermal energy values present in these areas. In addition, they should ask for an amendment to the Federal Land Policy and Management Act of 1976, allowing geothermal exploration in wilderness study areas prior to any final decision.

IV. Congressional "Instant Wilderness" Legislation:

The two most notable recent developments in this key arena are the creation of the 900,000 acre Absaroka-Beartooth Wilderness Area in Montana and the proposed "D-2" Alaskan lands legislation (HR. 39 (Udall)). The first has already passed into law, but the second is the subject of much controversy and it affects geothermal.

The sheer size of the proposed Alaskan wildlife refuge and wilderness withdrawal (over 100 million acres) should give us pause, particularly when almost no resource assessment has yet taken place. Many geothermal systems and large oil and gas finds are believed to lie underneath the lands in question. A pending amendment would allow deep hole and passive mineral exploration for several years, with final wilderness designation postponed until that time. The geothermal industry should support this amendment.

Unfortunately, the original Wilderness Act has an even stronger assessment requirement, directing the Forest Service, Park Service and Fish & Wildlife Service to enlist Bureau of Mines and the U.S. Geological Survey to identify "mineral resource values" on "a planned, recurring basis." To the author's knowledge such assessment, if it took place at all, was minimal. Nonetheless, the vigilance and responsible input of the geothermal industry could assure that the stricture of any such amendments would be carried out in the future.