

MASTER

FINAL TECHNICAL REPORT: STUDY AND ANALYSIS OF
SELECTED LEGAL, INSTITUTIONAL, AND PUBLIC-POLICY
PROBLEMS EFFECTING HYDROTHERMAL GEOTHERMAL COM-
MERCIALIZATION IN THE FIVE PACIFIC RIM STATES

Prepared for the Division of Geothermal
Energy, Assistant Secretary for
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Department of Energy

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→ J. M. ENERGY CONSULTANTS, INC.

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INTRODUCTION:

In carrying out its performance tasks under U.S. D.O.E. Contract No. DE-AC03-79-ET-27241, J. M. ENERGY CONSULTANTS, INC., has delivered sixteen (16) different Technical Reports covering nine (9) separate contract tasks.

The total length of all Technical Reports delivered to is in excess of five hundred (500) typewritten pages. Many of the sixteen (16) separate Technical Reports were devoted to in depth analyses of the Federal land management-related problems present at major "target prospect" KGRAs throughout the Pacific Rim States. Other major topics analyzed under the contract included: financial incentives; transmission line access; substantive environmental requirements in air, water and solid wastes; water law; and the myriad geothermal-impacting activities of the legislative and regulatory agencies of the State of California.

A report-by-report update follows, bringing all these analyses to the present for DOE's use during Fiscal 1982.

SUMMARY AND UPDATE OF TECHNICAL REPORTS:

(A) The first Technical Report delivered under the instant contract was entitled "Site-Specific Legal and Institutional Analysis of the Barriers to Hydrothermal Geothermal Commercialization Present at Target Prospects in the Five Pacific Rim States,"¹ consisting of forty (40) pages plus footnotes. It was delivered in performance of Task 1 and delivered timely (on October 20, 1979). It focused on all of the major legal

¹J.M. Energy Consultants, Inc., Report No. 1014 (October 20, 1979).

problems present at no less than twenty (20) target prospect KGRAs: Eleven (11) of these were in California, two (2) in Hawaii, two (2) in Washington State and five (5) in Oregon. Unfortunately, the major problems noted there continue to bedevil geothermal commercialization nearly two years later.

In particular, the hydrogen sulfide (H₂S) emissions situation at the Geysers continues to slow down development. As predicted there,² the California Air Resources Board's "Model Rule for H₂S Emissions" has been superceded by stricter limits (5-8 lbs./hr.) on emissions issued by the North Sonoma and Lake Co. A.P.C.D.s under their New Source Review rules. Thus far, the California Energy Commission has refused to test its statutory "override" or "pre-emption" authority against these local air districts. As also predicted there, however,³ the so-called "upstream process," developed with DOE funding, has allowed several proposed plants to obtain air quality clearance nonetheless (DWR "Bottle Rock" and SMUD "Geo 1"), even without the surfacing of any legal/institutional solution to the H₂S problem.

The California KGRAs under Forest Service control remain unleased and undecided. These include Mono-Long Valley, (incredibly) Lassen, Glass Mountain, and Bechwourth Peak.

Coso H.S., too, is yet to be leased, although a BLM EIS was completed in the fall of 1980. Randsburg, a BLM area, as well, has also not been opened up to leasing and exploration.

The Imperial Valley prospects are being developed more rapidly (cf. Union and SCE at Bramley, e.g.) but a shortage of transmission line

²ibid, at pp 8-11.

³id.

capacity out of the Valley has already put a damper on developer hopes.⁴ A San Diego Gas & Electric--Arizona Public Service line won't be in place until 1984. As a result, both SDG&E and SCE have contracted to buy geothermal-based power from Mexico, where only a short spur line was required for interconnection. It is a bitter pill for the developers to swallow.

Washington state's Mt. St. Helens prospect was subject to a well-known natural disaster and Forest Service reticence to allow leasing continues to dog Breitenbush, Mt. Hood, Belknap-Foley, and several other Oregon prospects, as noted in October, 1979.⁵

(B) The second Technical Report,⁶ the first so-called "Tracking Report on Federal Land Management Actions," (also Task 2) was timely delivered on November 20, 1979. It focused on the Forest Service "R.A.R.E. II" program's progress in Congress.⁷ That remains virtually the same now as when written. It pointed out the continuing slowdown on leasing California KGRAs and analyzed the Forest Service's EAR for the Fremont National Forest.⁸ Fortunately, this latter decision has recently been changed to allow leasing on virtually all these lands, rather than deny it or limit it to no surface occupancy on the bulk of the Forest Service acreage.⁹

(C) Technical Reports in January, 1980,¹⁰ April, 1980,¹¹ and

⁴ ibid., pp 22-23.

⁵ ibid., pp 28-36.

⁶ J.M. Energy Consultants, Inc. Report No. 1015 (Nov. 20, 1979).

⁷ ibid., pp 1-9.

⁸ ibid., pp 11-21

⁹ Memorandum of Decision, March 31, 1981, Regional Forester, Pre-Northwest Region.

¹⁰ J.M. Energy Consultants, Inc. Report No. 1017 (Jan. 20, 1980).

¹¹ J.M. Energy Consultants, Inc. Report No. 1020 (April 20, 1980).

July, 1980¹² focused (in support of Task 3) on the oft-times confusing picture in California at the state and local government level. (Task 3). Key issues addressed included hot springs legislation, creation of a state geothermal finance authority, distribution of BLM geothermal revenues to the counties and siting decisions on various powerplants at The Geysers. The air quality and land use problems associated with the latter drew much scrutiny, and the arduous permit process still entangling PG and E's Unit 16 and its Geysers to Lakeville transmission line bear witness to the seriousness of the concerns expressed therein.¹³

(D) March 20, 1980 saw the timely delivery of an in-depth (38 pp plus footnotes) review and Technical Report focusing on "State Water Rights Law"¹⁴ (Task 4). The interconnection problems and legal definition problems noted therein are still a ticking bomb in the path of hydrothermal commercialization.

(E) Four major studies of Federal land-related problems formed the basis for (Task 2) Technical Reports in May,¹⁵ August,¹⁶ October,¹⁷ and November, 1980.¹⁸ The reports looked in depth at the numerous and lengthy BLM, Forest Service and Fish and Wildlife Service EIS and EA documents, and other decisions as they effected the so-called Geysers Peak "MRL," the California Desert Conservation Area, and the Coso H.S., Mono-Long Valley, Alvord, and Lassen KGRAs. Unfortunately, none of those areas has yet been put for lease, with the exception of a handful

¹² J.M. Energy Consultants, Inc. Report No. 1023 (July 20, 1980).

¹³ See, e.g., Report No. 1023, pp 14-19.

¹⁴ J.M. Energy Consultants, Inc., Report No. 1019 (March 20, 1980).

¹⁵ J.M. Energy Consultants, Inc., Report No. 1021 (May 20, 1980).

¹⁶ J.M. Energy Consultants, Inc., Report No. 1024 (August 20, 1980).

¹⁷ J.M. Energy Consultants, Inc., Report No. 1025 (October 20, 1980).

¹⁸ J.M. Energy Consultants, Inc., Report No. 1026 (November 20, 1980).

of tracts at Alvord which received little attention by industry. The legal and institutional problems delineated in those four reports remain virtually the same now as when written. Unless altered in the near future, they will choke off geothermal development on the Federal lands, costing the U.S. millions in foregone tax and royalty revenues and also many million BTUs of renewable energy. These lost energy sources could otherwise back out imported oil and other more versatile fuels for use elsewhere in our economy where alternative replacements are not available, such as the transportation sector.

(F) In December, 1979, we delivered an in-depth (38 pages plus footnotes) "Review" of California's pre-1979 legal and policy treatment of geothermal development. This Technical Report (Task 3) formed the backdrop for the other three California-specific reports noted in (C) above.

Again, it is sobering to note the remaining "problems" set out at the conclusion of that December, 1979 Technical Report

--Federal land use, state power plant siting, local air permits, state finance authority,²⁰ etc.,

--still haunt geothermal in California, over a year and a half later.

(G) In June, 1980, we delivered another lengthy (48 pp plus footnotes) review of a key and highly underrated legal and institutional problem--transmission line access (Task 5) from key KGRAs in the Pacific Rim.²¹ After an extensive review of the pertinent Federal and state legis-

¹⁹ J.M. Energy Consultants, Inc. Report No. 1016 (December 20, 1979).

²⁰ ibid., pp 35-38.

²¹ J.M. Energy Consultants, Inc. Report No. 1022 (June 20, 1980).

tion and regulation as well as profile of all the key utility players, both public and private, we zeroed in on The Geysers, Imperial Valley, Coso, and Mono-Long Valley. We pointed out the sad paradox that the two with the best transmission line access (Coso and Mono) were both unleased and unexplored, but the two mature provinces developmentally (The Geysers and the four KGRAs in the Imperial Valley) had institutional and physical problems. We thought at the time that these were amendable.²² But the siting and permit difficulties experienced at The Geysers by PG and E have intervened before our proposed institutional solutions could even come to the fore, in the access and wheeling stage. And SCE has delayed any plans for an Imperial Valley line, leaving San Diego Gas & Electric's 1984 interconnection with Arizona Public Service as the only foreseeable access route. This state of affairs also resulted in SCE and SDG&E's contracting with Mexico to purchase several hundred megawatts of their geothermal-based power with plans for purchases of several hundred more by 1990.

(H) In January, 1981, we again focused on a single, major Federal lands legal problem confronting geothermal--the extensive wilderness reviews by Forest Service and BLM (Task 7).²³ Despite the continuing severity of the problems we noted there, the recent change in administrations in Washington has, as we anticipated,²⁴ produced some immediately favorable changes in posture by BLM and Forest Service. Most encouraging is BLM/Interior's dropping of its appeal in the case of Rocky Mountain Oil & Gas Association vs. Andrus.²⁵ Though the wilderness review programs

²² ibid., pp 38-48

²³ J.M. Energy Consultants, Inc. Report No. 1027 (January 10, 1981).

²⁴ ibid.

²⁵ (D.Wyo) Civ. No. C78-265R, November 7, 1980.

of both BLM and the Forest Service are continuing, many of the decisions made therein are subjective judgment calls in which the inclinations of the decision-maker are crucial. It would now seem that those inclinations will in the near term favor development, including hydrothermal geothermal leasing development exploration and utilization projects.

(I) In February, 1980, we once more delivered an in-depth (41 pages) look at a major legal problem--substantive environmental regulation of geothermal development (Task 8).²⁶ That analysis is up to date and needs no expansion here. The major area for concern remains air quality, with PSD (attainment) and offset (non-attainment) permit processes often being applied to the same power plant application and very stringent emissions limitations (5-8 lbs./hr. of H₂S) being imposed by both EPA and local air districts. Some relief from this regulatory duplication is necessary.

(J) Financial incentives were the focus of our March, 1981 Technical Report.²⁷ We looked at the various stages of the hydrothermal fuel cycle, the places where a Federal financial incentive was required and the history of those incentive programs which have been enacted by Congress. We concluded by urging the continued budgetary support of several already-enacted programs.

(K) In support of Task 6 of the instant contract, we have responded on many occasions both in writing and telephonically to Mr. Randall Stephens (DGE/HQ) requests for quick-response assistance in this complex area. These responses included setting up a series of

²⁶ J.M. Energy Consultants, Inc. Report No. 1028 (February 20, 1981)

²⁷ J.M. Energy Consultants, Inc. Report No. 1029 (March 20, 1981).

West Coast meetings for Mr. Stephens in January, 1980 with industry representatives to discuss financial incentives and the drafting of a July, 1980 memo to him on the Endangered Species Act and its application by the U.S. Fish & Wildlife Service to the "Borax Lake Chub" in the Alvord (Oregon) KGRA. On at least a half-dozen other occasions during the contract, the Principal Investigator responded to telephonic inquiries by Mr. Stephens for opinions, information, etc., on pertinent legal and institutional issues concerning the Pacific Rim "target prospects."