**BACA GEOTHERMAL DEMONSTRATION
PROJECT
LEGAL AND REGULATORY CHALLENGES**

**FIRST SEMI-ANNUAL REPORT
FOR PERIOD THROUGH JUNE 30, 1980**

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ABSTRACT

The Legal and Regulatory Constraints Reports, issued semiannually, will identify and describe the major legal and institutional constraints associated with the Baca Geothermal Demonstration Project. The impacts of these constraints on the Project in terms of cost, schedule and technical design will also be analyzed. The purpose of these reports is to provide a guide for future geothermal development.

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PREFACE

The Legal and Regulatory Constraints Reports, issued semiannually, will identify and describe the major legal and institutional constraints associated with the Baca Geothermal Demonstration Project. The impacts of these constraints on the Project in terms of cost, schedule and technical design will also be analyzed. The purpose of these reports is to provide a guide for future geothermal development.

The following topics are discussed in Volume I (which covers the period through June 30, 1980):

1. The Baca Cooperative Agreement
2. The Permitting Process
3. Record of Decision
4. The American Indian Religious Freedom Act

In Section 1, The Baca Cooperative Agreement, the history of the Cooperative Agreement entered into by Union Geothermal, Public Service Co. of New Mexico and the U.S. Department of Energy is discussed. A general description of the Agreement is followed by a comparison of the Baca Agreement with the provisions of the Department of Energy Proposed Cooperative Agreement Regulations. Major deviations between the two are identified and analyzed.

Permitting requirements imposed by both the federal government and the State of New Mexico on developers and users of geothermal resources are discussed in Section 2. Prerequisites for the various permits are identified, an estimate of probable time involved between application and receipt of the permit is given, and any problems associated with acquiring the permit are disclosed.

Circumstances under which a federal agency, in this case DOE, must issue a Record of Decision are then described, followed by discussion of the federal regulations which prescribe the content of the document. DOE's decision to proceed with the Baca Project is analyzed, with emphasis on alternative courses of action considered by the agency, and mitigating measures identified which could lessen the effect of the Project on the environment.

A Resolution of Congress entitled "American Indian Religious Freedom" is the subject of Section 4. The resolution, enacted in 1978, states that the policy of the United States shall be to protect and preserve the inherent right of American Indians to believe, express, and exercise their traditional religions. The author describes how the Department of Energy implemented this policy with respect to the Baca Project.

Subsequent volumes of the Legal and Regulatory Reports will include the following information:

1. A discussion of the impacts caused by legal and regulatory constraints on project costs, schedules, and technical parameters.
2. An analysis of the actual time required to obtain the permits and certificates described in Volume I.
3. A progress report on PNM's application to the New Mexico Public Service Commission for a Certificate of Public Convenience and Necessity.
4. A description of any modifications to the Baca Cooperative Agreement.
5. A report on any developments involving the American Indian Religious Freedom Act vis-a-vis the Baca Project.
6. A report on the State Engineer's decision on Union Geothermal's applications to appropriate underground water and change the place and purpose of use of surface water.

SECTION 1

THE BACA COOPERATIVE AGREEMENT¹

1.1 INTRODUCTION

The history of the Baca Project Cooperative Agreement (Agreement) entered into by the Department of Energy (DOE), Union Geothermal Co. of New Mexico (Union), and Public Service Co. of New Mexico (PNM) in 1979 is the first topic of discussion in this section. A general description of the Agreement follows. The contents of the Agreement are then compared with the provisions of DOE's proposed Cooperative Agreement Regulations (44 Fed. Reg. 20594 (1979)). Clauses of the Baca Agreement which represent a major deviation from the procedure detailed in the regulations are analyzed.

1.2 HISTORY OF THE BACA PROJECT COOPERATIVE AGREEMENT

Union and PNM began discussing the possibility of jointly developing geothermal resources located in the Valles Caldera at Baca Location Number One, New Mexico in 1974. Union's function would be to extract the liquid-dominated geothermal resource from the ground, to produce steam from this resource, and to sell the steam to PNM. PNM's role would be to produce electricity from the steam at a power plant which it would construct. PNM also would commercially distribute the electricity.

By 1977 PNM and Union were exploring the possibility of jointly developing a fifty megawatt (50 MW) electrical power plant. The principal unresolved issue was the price at which Union would sell the steam to PNM.

In May 1977, DOE circulated a Request for Expressions of Interest and published a notice in the Commerce Business Daily to determine whether industry was interested in participating in partnership with the government to construct a 50 megawatt geothermal demonstration power plant. DOE subsequently distributed 140 copies of a Program Opportunity Notice (PON)² in September 1977, to solicit offers from private industry to participate in a geothermal demonstration power plant project. The PON contained four requirements:

- a. The proposed plant must be an integrated, commercial scale, geothermal electric power generating plant using a liquid-dominated resource.
- b. The plant generating system must use only geothermal energy as the heat source for generating power.
- c. The plant must meet all applicable environmental standards and requirements and comply with all applicable regulatory and permitting requirements.

¹Project Title: Geothermal Demonstration Power Plant. Cooperative Agreement Number: ET-78-F-03-1717. The Cooperative Agreement Number was later changed to DE-FC03-78ET27163.

²PON No. EG-77-N-03-1717.

- d. The project must include provisions for collection and reduction of data appropriate to the project and a means of reporting the data.

Following distribution of the PON, 29 persons representing 17 firms attended a preproposal conference. DOE received two proposals in response to the PON. It accepted the proposal submitted by Union/PNM³ for development of liquid-dominated fractured volcanic reservoirs by employing the flash steam process.⁴

DOE's statutory authority to engage in the demonstration project was vested originally in the Energy Research and Development Administration (ERDA) under the Geothermal Energy Research, Development, and Demonstration Act of 1974 (Pub. L. No. 93-410). This function was transferred to DOE by the Department of Energy Organization Act of 1977 (Pub. L. No. 95-91).

DOE began negotiating with Union/PNM in September 1978 to develop a cooperative agreement suitable for the Baca project. The agency's statutory authority to enter into cooperative agreements is based on the Energy Reorganization Act of 1974 (Pub. L. No. 93-438), the Geothermal Energy Research, Development, and Demonstration Act of 1974 (Pub. L. No. 93-410), and the Federal Nonnuclear Energy Research and Development Act of 1974 (Pub. L. No. 93-577)⁵.

In September 1978 the parties entered into a preoperative agreement⁶ which authorized Union/PNM to proceed in these areas:

- a. Acquisition of water rights;
- b. Design of the power plant;
- c. Project management and systems planning;
- d. Acquisition of land from Dunigan Enterprises for the plant site and acquisition of the right-of-way for the transmission lines; and
- e. Environmental work.

³ Although San Diego Gas & Electric Company's proposal was rejected at this time by DOE, the company later submitted a substantially similar unsolicited proposal which was accepted. The proposal involved development of a geothermal demonstration power plant to be located at the Heber Known Geothermal Resource Area (KGRA) in California's Imperial Valley. SDG&E and DOE have negotiated a cooperative agreement for this project.

⁴ The flash steam process involves rapid conversion of hot water into steam.

⁵ In 1977, the Department of Energy Organization Act (Pub. L. No. 95-91) transferred the authority which these statutes vested in ERDA to DOE.

⁶ A letter agreement was entered into later in September. This agreement was extended several times.

Negotiation of the cooperative agreement was completed on April 27, 1979. The principal points of negotiation were termination, revenue sharing, estimated cost and cost sharing, subcontracting, assignments, payment, and access to the plant site (DOE Justification of Negotiated Agreement). The Cooperative Agreement was executed on August 6, 1979.

1.3 THE NATURE OF A COOPERATIVE AGREEMENT

The nature of a cooperative agreement is best understood by distinguishing cooperative agreements, procurement contracts, and grants. These distinctions are set forth in the Federal Grant and Cooperative Agreement Act of 1977 (Pub. L. No. 95-224).⁷ The purpose of the Act is to clarify the three terms and to establish criteria for selecting the appropriate legal instrument for utilization by all federal executive agencies. The goal is to achieve uniformity so that the rationale for an agency's decision to select a cooperative agreement for use in a particular instance is comparable to the reasons a cooperative agreement is chosen by the same or any other federal agency in another situation.

Sections 4, 5, and 6 of the Act describe when an executive agency shall use a procurement contract, grant agreement, or cooperative agreement. Use of a procurement contract is appropriate whenever:

- a. the principal purpose of the instrument is the acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; or
- b. an executive agency determines in a specific instance that the use of a type of procurement contract is appropriate⁸.

Federal executive agencies shall use a grant agreement whenever:

- a. the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and

⁷Section 7 of the Act provides that its requirements apply to executive agencies authorized by law to enter into contracts, grants, or cooperative agreements. DOE may continue, therefore, to exercise its statutory authority to enter into cooperative agreements but must use this type of legal instrument only when the criteria of the Federal Grant and Cooperative Agreement Act are present.

⁸Section 4.

- b. no substantial involvement is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity⁹

The statute mandates the use of a cooperative agreement whenever:

- a. the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and
- b. substantial involvement is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity¹⁰.

To summarize, use of a procurement contract is appropriate whenever the government's principal purpose is to acquire property or services. In contrast to a procurement contract, the principal purpose of both a grant agreement and a cooperative agreement is the transfer of money, property, services, or anything of value to the recipient for a public purpose. The only distinction between a grant agreement and a cooperative agreement is that an executive agency must choose the latter when it anticipates "substantial involvement" between itself and the recipient "during performance of the contemplated activity."

The DOE Proposed Cooperative Agreement Regulations¹¹ state criteria for DOE selection of the cooperative agreement as the instrument for making an award. These criteria are identical to those contained in the Federal Grant and Cooperative Agreement Act discussed above. Section 600.211(d) of the regulations contains examples of "substantial involvement" between DOE and a recipient during performance of the contemplated activity.

⁹Section 5.

¹⁰Section 6.

¹¹44 Fed. Reg. 20594 (1979) to be codified in 10 C.F.R. Part 600. The regulations were issued by DOE pursuant to Section 644 of the Department of Energy Organization Act of 1977 (Pub. L. No. 95-91). DOE issued the assistance regulations in final form on July 8, 1980 (45 Fed. Reg. 46044). Effective date is October 6, 1980.

Greater flexibility in drafting an agreement has been cited as a major advantage flowing from the use of a cooperative agreement.¹² However, the Proposed DOE Cooperative Agreement Regulations contain a total of 76 standard federal procurement contract clauses to be considered for inclusion in a cooperative agreement (44 Fed. Reg. 20607, Section 600.290 (1979)). Inclusion of 24 of the clauses is labeled mandatory. The impact of these requirements on the Baca Agreement is analyzed in Section 1.5.2 below. The second advantage discussed is fairness to the recipient, particularly in the areas of termination rights, title to property, insurance, management, and allowability of costs.

1.4 DESCRIPTION OF THE BACA COOPERATIVE AGREEMENT

A general description of the Baca Agreement follows, with emphasis on negotiated portions of potential interest to other entities which might enter into similar cooperative agreements with DOE. The Agreement consists of nine integral parts:¹³

1. Schedule¹⁴
2. Statement of Work
3. General Provisions¹⁵
4. Project Management Plan
5. Billing Instructions
6. Project Cost Schedule
7. Precooperative Agreement Project Costs
8. Project Area
9. Special Bank Account Agreement¹⁶

¹² Mournighan, Stephen D., "Cooperative Agreements--An Alternative," N.C.M.A., page 7, July 1979.

¹³ Table 1-1, which accompanies this section at page 18, contains the Table of Contents of the Schedule and General Provisions portions of the Agreement.

¹⁴ The Schedule consists of 23 articles which were specifically negotiated by the parties.

¹⁵ The General Provisions section of the Agreement contains 32 standard procurement provisions, three of which were modified.

¹⁶ The form of the Special Bank Account Agreement, Appendix H of the Baca Agreement, is essentially that specified in the DOE Procurement Regulations (DOE PR Subsection 90-50.704-19).

1.4.1 Parties to the Agreement

Union and PNM are characterized in the Baca Agreement as separate entities (Constituents) which comprise a single entity called Participant. DOE and Participant are the parties to the Agreement.

Union and PNM initially favored an agreement in which they each would be characterized as separate Participants.¹⁷ Presumably under the latter arrangement each Participant would bear only the consequences of its own failure to perform the Agreement. In the Baca Agreement, however, the parties expressly agreed that if either Union or PNM fails to perform, the failure will be deemed failure of performance by both.

1.4.2 Term of Agreement

The effective date of the Agreement is July 14, 1978. It remains in effect until the Operational Phase of the project is completed (approximately March 1, 1987) or the Agreement is terminated pursuant to the Termination/Election to Continue provisions. Subject to the termination provisions, the Revenue Sharing provisions detailed in the Schedule remain in effect after completion of the Operational Phase.

1.4.3 Estimated Cost and Cost Sharing

The total estimated cost of performing the work under the Agreement is \$133,674,989 (Justification, page 2).¹⁸ The project is divided into three elements, entitled "Work Breakdown Structures" (WBS):

WBS 1.1 Wells and Steam Production

WBS 1.2 Power Plant and Distribution System

WBS 1.3 Data Gathering, Evaluation and Dissemination

DOE will contribute a maximum of \$24,480,000 in connection with WBS 1.1. A \$24,480,000 DOE cost ceiling is also established for WBS 1.2. DOE will bear all the costs under WBS 1.3, subject to modification. In addition, DOE will have expended \$7,415,500 for data which Union developed on the Redondo Creek area during the period between 1971 and 1977. This amount represents fifty percent of the expenses incurred by Union for the period from April 1971 through July 1978. The Agreement provides that Participant will receive no fee. The ratio of DOE's share of the overall cost of the Project to that of Participant is 49:51.¹⁹

¹⁷Justification of Negotiated Cooperative Agreement, page 4, hereinafter cited as Justification.

¹⁸The total estimated cost stated in Article IV of the Schedule in the Agreement is \$124,624,989. This figure does not include DOE's projected costs for Data Gathering, Evaluation and Dissemination.

¹⁹Justification, page 14 (1979).

The Estimated Cost and Cost Sharing section of the Agreement also contains a provision which requires the parties to use their best efforts to respond to any communication or submission from the other party in a "meaningful manner". In no event shall the response period exceed 15 working days from receipt of the initial communication or submission. The term "respond in a meaningful manner" is not defined in the Agreement. This omission has proven problematical, particularly in instances where DOE must give approval. The DOE Contracting Office has discretion, for example, to require that the Constituent obtain written consent from DOE before entering into a subcontract. Delay by DOE in giving consent appears to have posed financial and scheduling difficulties for Participant.

Participant's estimate of costs and schedule of performance were based on expected completion of the Environmental Impact Statement (EIS) process by August 6, 1979. In the event of significant delay beyond this date causing an increase in project cost, the parties agreed to negotiate in good faith to adjust equitably the parties' contributions. The government cost ceiling may be adjusted or other appropriate action may be taken following negotiations. The final EIS was not, in fact, published until January 22, 1980. The provision described above served as the vehicle for Modification Number One, effective January 1, 1980, which will be discussed in detail in Volume II of this report.

1.4.4 Information and Reports

Participant is required to provide information and reports specified in the Statement of Work and Project Management Plan. Provision is made for release by Participant to DOE of certain existing data, definition and collection of additional data, and reporting procedures.²⁰

1.4.5 Revenue Sharing

Union is obligated to reimburse DOE for a portion of the Project costs based on a specified formula if all of the following events occur:

- a. Participant operates the project facilities on a commercial basis for 12 months following the five year Operational Phase of the Project.
- b. The Agreement remains in full force and DOE participates in the Project at least until the Operational Phase commences.
- c. At the time payments are to begin, Federal income tax law entitles Union to deduct a depletion allowance corresponding to a percentage of net revenues received by Union from PNM for geothermal

²⁰ Article XXII of the Schedule contains a list of proprietary data to be withheld.

steam delivered.²¹ Provision is made for payments at three month-intervals. The amount of each payment by Union to DOE will equal 50 percent of Union's tax savings resulting from the depletion allowance deduction.

The Revenue Sharing provision contains these limitations:

- a. The maximum percentage recoverable by DOE is 50 percent of its "aggregate project costs".²²
- b. The percentage of costs for which Union must reimburse DOE is reduced in the event Union or PNM's aggregate Project costs exceed specified amounts.

1.5 COMPARISON OF THE BACA COOPERATIVE AGREEMENT WITH THE DOE PROPOSED COOPERATIVE AGREEMENT REGULATIONS

1.5.1 Introduction

The DOE Proposed Cooperative Agreement Regulations²³ were published in the Federal Register on April 5, 1979. Negotiation of the Baca Agreement was completed April 27, 1979. Therefore, theoretically, use of the Proposed Regulations was not mandatory. DOE did use the regulations, however, for major nontechnical portions of the Baca Cooperative Agreement.²⁴

Since the regulations will provide the format for future government-industry cooperative agreements, the purpose of this section is to determine how closely the Baca Cooperative Agreement conforms to this format. The discussion will emphasize Section 600.290 of the Proposed Regulations, which contains 76 standard government procurement provisions, classified as follows:

²¹The Energy Tax Act of 1978 added section 613(e) to the Internal Revenue Code. The section specifically allows percentage depletion for geothermal deposits. Because the percentage depletion allowance for oil and gas wells was severely curtailed in 1975, Union's obligation under the Baca Agreement was expressly conditioned on the continued existence of the percentage depletion allowance for geothermal deposits. Union's revenue sharing obligation completely terminates if Congress suspends the percentage depletion allowance for a period of more than seven years.

²²"Aggregate project costs" are actual costs incurred by Union, PNM, or DOE. DOE's costs arising under the Data Gathering and Dissemination element of the Project are excluded.

²³44 Fed. Reg. 20594 (1979) to be codified in 10 C.F.R. Part 600.

²⁴DOE's Justification of Negotiated Cooperative Agreement states that the Schedule and General Provisions sections of the Agreement contain clauses which "meet the intent" of the mandatory text portion of the Proposed Regulations (44 Fed. Reg. 20606, Section 600.290).

- a. Standard provisions which are mandatory as to text.
- b. Standard provisions with waiver, modification, and deviation allowed by justification in the cooperative agreement file.
- c. Optional provisions.

1.5.2 Mandatory Provisions

Section 600.290(c) of the Proposed Cooperative Agreement Regulations specifies 24 standard procurement provisions which are mandatory as to text. Any deviation, exception, or waiver must be approved by the Director of the Procurement and Contracts Management Directorate or his designee.²⁵ Four were omitted from the Baca Agreement: Inspection, Convict Labor, Nondiscrimination in Federally Assisted Programs, and Patent Indemnity. Most of the mandatory provisions which are included appear in the General Provisions section of the Agreement.

Two of the mandatory provisions appear in the Baca Agreement in modified form. The first modification is an addition to the standard procurement Assignment clause. It states that each Constituent has the right to make financing arrangements involving transfer or pledge of its interest in the Project. Unless DOE approval is obtained, however, each Constituent must perform its own obligations under the Agreement.

The second modification affects the Patent Rights clause. The standard procurement Patent Rights provision remains intact but is preceded by the statement that Participant intends to seek a waiver under the Federal Nonnuclear Research and Development Act of 1974 (Pub. L. No. 93-577).²⁶ Participant unsuccessfully negotiated with DOE to delete section (j)(2)(ii) of the standard clause. This section states that Participant shall not proceed with a subcontract without the authorization of the DOE Contracting Officer if the subcontractor refuses to accept the Patent Rights clause.

1.5.3 Standard Provisions with Waiver, Modification, and Deviation Allowed by Justification in the Cooperative Agreement File

Section 600.290(d) of the Proposed Regulations specifies 18 standard provisions which may be partially or wholly waived, modified or deviated from if the DOE Contracting Officer places a written justification containing specific reasons for that

²⁵ 10 C.F.R. Subsection 600.9.

²⁶ Procedure for obtaining a Patent Rights Waiver is set forth in 41 C.F.R. Section 9-9.109-6 (DOE PR 9-9.109-6). The benefit Participant will receive if it obtains a waiver of patent rights will not flow down to Participant's subcontractors. Each subcontractor must apply for an individual waiver (DOE Office of General Counsel).

action in the cooperative agreement file. While DOE issued a Justification of Negotiated Cooperative Agreement for the Baca Agreement, the Justification does not contain specific reasons, in most instances, for waiver, modification or deviation. Although 9 of the 18 clauses listed in Section 600.290(d) are omitted from the Baca Agreement,²⁷ the Justification only contains specific reasons for omitting the Termination for Convenience of the Government clause. The remaining eight omissions are neither mentioned nor rationalized in the Justification. However, it should be emphasized again that this particular cooperative agreement was negotiated before the regulations were formally adopted.

The Baca Agreement contains three provisions which differ significantly from the standard procurement clauses listed in Section 600.290(d) of the regulations: Termination/Election to Continue, Subcontracts, and Property Title. The following portion of this discussion will focus on these provisions.

1.5.3.1 Termination/Election to Continue

The standard procurement provision entitled "Termination for Convenience of the Government" allows the government to terminate a contract upon default of the Contractor or "whenever for any reason the Contracting Officer shall determine that such termination is in the best interests of the Government".²⁸ The Baca Agreement contains no such provision. Instead the parties negotiated a provision entitled "Termination/Election to Continue" which allows for termination or continuance under specified circumstances:

a. Termination Because Project is Not Deemed Viable by the Parties

1. The Parties can terminate the Agreement if they agree that the Project "is no longer viable for technical, environmental, or other reasons."
2. If only Participant wants to continue, the provision entitled "Termination for Convenience of the Government," discussed below, is applicable.
3. If only DOE wants to continue, it can contract during an 18 month period with a third party who would assume Participant's rights and obligations.

b. Termination for Convenience of the Government

If the government decides to terminate its participation in the Project because such action is in its best interests, it must transfer any interests it has in Project assets to Participant. The

²⁷ Termination for Convenience of the Government, Government Property, Subcontracting Plan for Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals, Stop Work Order, Utilization of Labor Surplus Concerns, Labor Surplus Area Subcontracting Program, Privacy Act, Standards of Work, Walsh-Healey Public Contracts Act.

²⁸ FPR Subsection 1-8.702.

standard procurement clause Termination for Convenience of Government provides for transfer of title to the government.²⁹ The government retains its rights under the Revenue Sharing³⁰ section of the Agreement only if its termination for convenience occurs during the Operational phase of the Project. Provision is also made for the government to pay Participant's Project costs.

c. Termination for Default

Either Party may terminate its performance if the other is in default. In a standard procurement contract only the government has the right to terminate for default.

1.5.3.2 Subcontracts

The standard procurement Subcontracts clause³¹ is included in the General Provisions section of the Baca Agreement. In addition, the Parties negotiated a provision entitled "Subcontracting" which appears in the Schedule. The article states that those provisions relative to labor and wages which are required by law shall be contained in subcontracts for construction, alteration, or repair if they are wholly or partially funded by the government.³² Subcontracts funded solely by Participant are specifically exempt from the Subcontracting article.

Subcontracts for small purchases, as defined in the Subcontracting provision, are exempt from most of the requirements of the Agreement. All provisions concerning patents are specifically made applicable to the extent that such provisions deal with subcontracting. Participant also agreed to include four specified clauses³³ in subcontracts for small purchases.

²⁹FPR Subsection 1-8.702(b)(6).

³⁰Discussed in Section 1.4.5 of this report.

³¹DOE PR Subsection 9-7.402-8.

³²The Schedule also contains an article entitled "Application of General Provisions" which specifies 12 of the 30 General Provisions of the Agreement which will not apply to work packages funded solely by Participant.

³³The clauses, entitled "Foreign Supplies," "Convict Labor," "Officials Not to Benefit," and "Covenant Against Contingent Fees", are contained in Standard Form 147, a Government form for order of supplies or services (FPR 1-16.901-147). The Baca Agreement Subcontracting clause states that, in the event Standard Form 147 is revised, the Parties will determine whether the revisions are applicable.

DOE indicated an intent to introduce a minority/disadvantaged business clause during negotiation of modifications to the Cooperative Agreement.³⁴ Section 600.290(d) of the Proposed Regulations³⁵ contains the text of this clause, which requires the contractor to comply in good faith with a Small and Small Disadvantaged Business Concerns Subcontracting Plan approved by the DOE Contracting Officer.³⁶

1.5.3.3 Property Title

DOE Procurement Regulations provide that title to property purchased by the contractor with reimbursement by the government as a direct cost item passes directly from the seller to the government unless the Contracting Officer otherwise provides.³⁷ Under the Baca Agreement, property title issues are resolved by Article VIII (Property Title) and Article IX (Public Law 95-238) in the Schedule. Article VIII generally provides that title to property acquired by either Constituent for the Project shall vest in such Constituent regardless of the funding source.

Article IX deals with the effect of Public Law No. 95-238 on the Property Title provision discussed above. Under Section 201 of the statute, the government must take title to government-funded facilities unless the Secretary of Energy or his designee determines that it is in the best interest of the government for title to vest in "other than the Government." The matter must also be referred to the appropriate committees of Congress for a specified period.

DOE represents to Participant in Article IX that the process of exempting those Baca Project facilities which are government-funded from the government title provisions of Public Law No. 95-238 has been completed. Participant's reliance on DOE's representation to this effect is expressly acknowledged.

³⁴ Baca Project Meeting No. 9, held May 14, 1980. Procedure for negotiating a modification, contained in the Changes clause, is discussed in Section 1.5.4.2 below.

³⁵ 44 Fed. Reg. 20607, Exhibit #2 -- To Subsection 600.290(d)(6) and (7). This clause, added by Pub. L. No. 95-907, is an amendment to the Small Business Act and Small Business Investment Act. Although the amendment became effective October 24, 1978, before negotiation of the Baca Cooperative Agreement was completed, it was not included in the Agreement.

³⁶ The Baca Agreement includes a brief clause entitled "Small and Minority Business Participation" which is a slightly modified version of FPR Subsection 1-1.710-3 (Utilization of Small Business Concerns). The clauses contained in the DOE Proposed Cooperative Agreement Regulations Subsection 600.290, Exhibit #2 are much greater in length and include detailed requirements for contractors which are designed to implement federal policy. DOE did not include Exhibit #2 in the final version of the Cooperative Agreement Regulations (45 Fed. Reg. 46044 (1980)). Reference is made in Sections 690.290(d)(ii) and (e)(41) of the Final DOE Regulations to FPR Temporary Regulation 50, Supplement 2 (45 Fed. Reg. 35809 May 28, 1980).

³⁷ DOE PR Subsection 9-50.704-21.

1.5.4 Optional Provisions

Section 600.290(e) contains 34 specified standard provisions which may be included in DOE Cooperative Agreements. These provisions may be modified in any manner. No deviation procedure is required. Three of these provisions which appear in the Baca Agreement in modified form, Excusable Delays, Changes, and Insurance -- Liability to Third Parties, are discussed below. The remaining optional provisions are omitted from the Agreement.

1.5.4.1 Excusable Delays

The standard procurement provision entitled "Excusable Delays"³⁸ states that the Contractor shall not be in default for failure to perform the contract if the failure arises from causes beyond control of the Contractor and he is without fault or negligence. A non-exclusive list of examples of such causes is included in the provision.

The Excusable Delays section of the Baca Agreement provides that neither the government nor the Participant shall be in default under the circumstances discussed above. The examples of excusable delays include several which are not specified in the standard provision:

- a. Shortages or unavailability of equipment or supplies necessary for performance of the Agreement constitute excusable delay.
- b. If a government agency having jurisdiction over the Parties causes delay through its action or inaction, Participant may claim excusable delay. All environmental and regulatory agencies are included in the category "government agencies."
- c. The Excusable Delays provision also contains a specific reference to strikes or labor disputes to the effect that a Constituent need not settle such a dispute against its will.

1.5.4.2 Changes

The Changes provision of the Baca Agreement states that any changes in the Agreement or in the Scope of Work to be performed under it shall be made only with the mutual written agreement of the Parties. This language marks a significant departure from that of the standard Changes clause³⁹ which provides for changes upon written order of the Contracting Officer of the government.

1.6 SUMMARY

This discussion traced the chronological development of the Baca Project Cooperative Agreement, including initial interaction between Union and PNM; DOE issuance of a Program Opportunity Notice for a geothermal demonstration power plant;

³⁸FPR Subsection 1-8.708.

³⁹FPR Subsection 1-7.602-3.

and Union, PNM, and DOE negotiations culminating in the Cooperative Agreement. The nature of a cooperative agreement was discussed, distinguishing cooperative agreements from grants and procurement contracts. A description of the Baca Agreement which included a discussion of the provisions entitled "Parties to the Agreement," "Term of the Agreement," "Estimated Cost and Cost Sharing," "Information and Reports," and "Revenue Sharing" followed. The section concluded with a comparison of the Baca Agreement and the DOE Proposed Cooperative Agreement Regulations.

An analysis was made to determine which of the 76 standard procurement clauses specified in Section 600.290 of the Proposed Regulations were included in the Baca Agreement. Those provisions which were included were then compared to the standard provisions. Where major modifications were found, the standard and Baca provisions were distinguished.

1.7 CONCLUSION

Under the Federal Grant and Cooperative Agreement Act, DOE must choose the cooperative agreement as the award instrument if it anticipates substantial involvement between itself and the recipient throughout the course of a project which the government enters into to accomplish a public purpose of support or stimulation. The cooperative agreement provides a more flexible mechanism than a procurement contract for achieving these goals.

The flexible character of the cooperative agreement will best be maintained if the private industry or other recipient is aware of the content of the DOE Cooperative Agreement Regulations. The recipient may receive a draft copy of the cooperative agreement as a part of the Program Opportunity Notice.⁴⁰ This is the appropriate time for the recipient to compare the agreement provisions proposed by DOE with the regulations, with emphasis on the standard provisions listed in Section 600.290 of the regulations. To negotiate the most flexible agreement possible, the recipient should be aware that, under the regulations, the listed standard provisions are characterized as mandatory, waivable or modifiable with justification, and optional. With this understanding, the recipient will be in a position to negotiate a cooperative agreement with DOE which is fair to both the federal government and the recipient and which reflects the fact that both parties are contributing to the cost of the project.

Cooperative agreements will apparently play an important role in formalizing relations between DOE and private industry in the future. DOE recently announced the award of cooperative agreements representing a cost to the federal government of \$100,000,000.⁴¹ The agreements, awarded pursuant to the Energy Security Act,⁴² were made for the purpose of developing synthetic fuels. Additional awards are contemplated. If private industry recipients are aware of how such agreements are formulated, they will be able to negotiate an instrument reflecting an equitable distribution of rights and obligations between the parties.

⁴⁰ 44 Fed. Reg. 20597, Section 600.231.1(7).

⁴¹ Los Angeles Times, July 10, 1980, Part IV, at 1, col. 1.

⁴² S. 932, 96th Cong., 2d Sess., Title I (Synthetic Fuels).

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SCHEDULE AND GENERAL PROVISIONS**

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III	Term of Agreement
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TABLE 1-1

GENERAL PROVISIONS

<u>Clause No.</u>	<u>Title of Clause</u>
1.	Labor Standards Provisions
2.	Assignments
3.	Examination of Records by Comptroller General
4.	Buy American Act
5.	Equal Opportunity
6.	Officials Not to Benefit
7.	Covenant Against Contingent Fees
8.	Small and Minority Business Participation
9.	Clean Air and Water
10.	Authorization and Consent
11.	Employment of the Handicapped
12.	Price Reduction for Defective Cost or Pricing Data
13.	Limitation of Funds (Cost-Sharing)
14.	Preference for U.S. Flag Air Carriers
15.	Disputes
16.	Changes
17.	Audit
18.	Allowable Cost and Payment
19.	Use of U.S. Flag Commercial Vessels
20.	Reporting of Royalties
21.	Notice and Assistance Regarding Patent and Copyright Infringement

TABLE 1-1 (Continued)

GENERAL PROVISIONS (Continued)

<u>Clause No.</u>	<u>Title of Clause</u>
22.	Patent Rights
23.	Rights in Technical Data
24.	Additional Technical Data Requirements
25.	Sex Discrimination Prohibited
26.	Civil Rights
27.	Permits and Licenses
28.	Subcontracts
29.	Subcontractor Cost and Pricing Data
30.	Rights to Proposal Data
31.	Competition in Subcontracting
32.	Contract Work Hours and Safety Standards Act

TABLE 1-1 (Continued)

SECTION 2

THE PERMITTING PROCESS

2.1 INTRODUCTION

Regulatory constraints on development and/or use of a geothermal energy source located in New Mexico are discussed below. The constraints are imposed by both state and federal agencies. In this section they have been divided into those constraints encountered by the resource developer (Union Geothermal) and the resource utilizer (PNM). Not included are constraints common to business in general, e.g., tax registration requirements and business licensing. Table 2-1 summarizes the permits required to construct and operate the steam production system, power plant, and electrical transmission system.

2.2 CONSTRAINTS TO THE DEVELOPMENT OF A GEOTHERMAL RESOURCE

A developer of geothermal resources must comply with the following requirements:

2.2.1 Permit to Drill

A permit to drill is routinely issued by the New Mexico Oil Conservation Division. The application for the permit is the only documentation required. There are three prerequisites to obtaining a permit for the drilling of a geothermal well: (a) the operator must file a Designation of Agent, naming a permanent resident of the state who will act as the repository for all records of wells drilled by the operator (this allows information on the wells to remain out of public record, protecting any information of a proprietary nature); (b) an out-of-state corporation must be licensed to do business in the state by the State Corporation Commission before it may engage in geothermal exploration within the state; and (c) a proper plugging bond for the type of well contemplated, issued by a responsible surety company licensed to do business in the state, must be approved (bonds vary from \$2000 to \$10,000 — the bond assures the plugging of a well that is non-productive or abandoned).¹ It takes 2-4 weeks for the Commission to process an application and grant approval. No hearings are held. One permit is required for each well prior to the start of drilling.

Note that if drilling is to take place on lands administered by the Secretary of the Interior, national forests or other lands administered by the Department of Agriculture through the Forest Service or on lands which have been conveyed by the United States subject to reservation of geothermal resources the permits for leasing would be issued by the Bureau of Land Management and the permits for operations by the U.S. Geological Survey.

2.2.2 Certificate to Produce Fluids

A certificate to produce fluids is also issued by the Oil Conservation Division prior to commercial production.² The certificate is not required for the testing of geothermal wells. An application is the only form of documentation required. No hearings are held and the application usually takes 4-6 weeks to process.

BACA GEOTHERMAL DEMONSTRATION PROJECT PERMIT REQUIREMENTS

<u>INSTITUTIONAL REQUIREMENT</u>	<u>GRANTING AGENCY</u>	<u>REQUIRED PRIOR TO:</u>	<u>ESTIMATED TIME FOR ISSUANCE^a</u>	<u>NOTE^b</u>
1. Permit to drill	New Mexico Oil Conservation Division (NMOCD)	drilling of geothermal well	2-4 weeks	No difficulties anticipated.
2. Certificate to produce fluids	NMOCD	commercial operation	4-6 weeks	No difficulties anticipated.
3. Certificate to inject fluids	NMOCD	using existing well for reinjection	2-4 weeks	No difficulties anticipated.
4. Permit to appropriate underground waters	New Mexico State Engineer	use of water	indefinite	Must acquire rights and show that use will be beneficial.
5. Archaeological clearance for steam production facilities	State Historic Preservation Officer + lead federal agency	activity on land	indefinite	Survey by outside group.
6. Permit for collection of rare and endangered species	New Mexico Game and Fish Department + U.S. Fish and Wildlife Service	construction	indefinite	
7. Certificate of public convenience and necessity	New Mexico Public Service Commission	commencement of construction of generating plant	2-18 months	Should begin application at conceptualization.
8. Permit to emit air pollutants	New Mexico Environmental Improvement Division	construction	1-2 months	Should consider requirements at conceptualization.
9. Permit for discharge of water contaminants to surface or groundwater	New Mexico Water Quality Control Commission + EPA	construction	4-6 months +	Should consider requirements at conceptualization. Closed cycle reinjections are exempt from regulations for two-year test period.
10. Archaeological Clearance for Electrical Production and Transmission Facilities	State Historic Preservation Officer + lead federal agency	activity on federal land	indefinite	Survey by permitted group.
11. Right-Of-Way permit	U.S. Forest Service + Department of Energy	laying of transmission lines	indefinite, may require EA or EIS	May need a long lead-time.

^aThe regulatory agencies, in most cases, determine when an application is "complete". The greatest time lapse is often experienced in compiling a completed application to the satisfaction of the agency.

^bNoted material explained in text.

The need for this permit is a result of confusion, common to most western states, as to the nature of geothermal energy. Is the resource water (steam vapor) or mineral? The certificate to produce fluids is required because the Oil Conservation Division (OCD) considers the product a mineral resource. The State Engineer's Office has regulations that treat the geothermal product as a water resource (see Section 2.2.4, *infra*). The technical aspects of the two agencies' drilling requirements are compatible. However, the two agencies operate under divergent philosophies concerning who has the right to how much of a given resource — specifically, hot water in liquid or vapor form.

The OCD operates under a philosophy of correlative rights. Correlative rights, simply stated, means that an owner of a portion of a geothermal reservoir (by virtue of the drilling permits issued by the OCD) has the right to recover, as much as is practical, without undue waste, its ratable share of the total geothermal resources of the reservoir based on its share of the land surface overlying the reservoir. But the State Engineer's Office puts further constraints on use of hot water because of its policy of prior appropriation (see Section 2.2.4, *infra*).

2.2.3 Permit to Inject Fluids and Permit for Discharge of Water Contaminants to Surface or Groundwater

The effluent limits stipulated in federal and state regulations increasingly deter the use of surface discharges. It is highly unlikely that a geothermal operator could obtain a permit for a direct surface discharge.³ Thus, geothermal fluids are usually recycled, evaporated, and/or reinjected into the geothermal reservoir. Deep-well reinjection, proposed at the Baca facility, is the preferred method of brine disposition in terms of conservation as well as pollution control because surface and groundwater contamination is prevented and reservoir pressure is maintained.

Disposition of produced geothermal water is under the jurisdiction of the Oil Conservation Division (OCD) and the State's Water Quality Control Commission (WQCC), of which the OCD is a member agency. While the statutes give the OCD exclusive control over brines produced with oil and gas, and the WQCC has delegated certain other areas of petroleum-related water discharge responsibility to the OCD, it is uncertain at this time how control over geothermal water disposition or plant effluent disposal will be shared by the two agencies. It is considered likely that the OCD will be given final jurisdiction over disposal and/or reinjection of geothermal waters. Currently, the OCD requires a permit to inject fluids prior to using an existing well for reinjection. It takes 2-4 weeks to process and issue the permit and no public hearings are required prior to issuance.

At the present time neither the federal government nor the State of New Mexico has a clear legal strategy for regulation of reinjection of waste fluids taken from a geothermal reservoir. The federal government can regulate reinjection under two statutes — the Clean Water Act⁴ and the Safe Drinking Water Act of 1974.⁵

The courts have held that under the Clean Water Act the Environmental Protection Agency (EPA) cannot require a National Pollution Discharge Elimination System (NPDES) permit for a deep waste well reinjection unless the reinjection will cause wastes to migrate to surface waters.⁶ Both the EPA and OCD have agreed to

designate the Baca facility as a zero-discharge unit (i.e., a geothermal unit which, because of waste reinjection, has no discharge of water contaminants to surface or groundwater). Because of this designation, a NPDES permit is not required. Responsibility for deep waste well reinjection will fall under the Safe Drinking Water Act. The Act and regulations promulgated in July 1980 are designed to protect underground sources of public drinking water from contamination.

Currently, both the EPA and OCD are exempting closed cycle geothermal reinjections from all water contaminant regulation for two years. The delay in regulation will allow observation of the composition of the reinjected fluids and testing the construction of the wells in an effort to determine the danger of seepage and to ascertain whether the fluids should be classified as hazardous.

2.2.4 Permit to Appropriate Underground Waters

The State Engineer operates under the doctrine of prior appropriation. Prior appropriation separates the ownership of land from the right to use the water on the land. The water is considered public property and is subject to appropriation for beneficial use. One can acquire the right to use water by applying the water to a beneficial use. The first person to apply beneficial use has the first and prior right to the water. Permits are granted to subsequent users only if the State Engineer finds that the granting will not impair the rights of prior users.⁷

In most areas of New Mexico, the water rights have all been previously appropriated. Therefore, for geothermal development, it will probably be necessary to acquire an existing water right by purchase from the present owner and to transfer the point of diversion of that water and its purpose of use. Water reinjected into the ground usually counts against the volume withdrawn and only the net depletion is considered in establishing the effect on existing water rights.⁸

Hearings have been held to determine whether Union Geothermal will be granted a permit to appropriate underground waters for use in the Baca Project. A more detailed discussion of the hearings on these water rights issues will be presented in a later report, after pending litigation is concluded.

Typically, less than one year is needed to acquire a permit to appropriate underground waters. A hearing is required if protests are filed against an application. The permit is then good for five years after which time it will be converted to a license which will be valid until the project is over.

The State Engineer considers a geothermal well to be a water well and the regulations of the Office require that all water wells be drilled only by state licensed water well drillers.⁹ To obtain such a license, a driller must pay a \$20 application fee and post a \$5000 performance bond, conditioned upon the applicant's compliance with the laws of the state and the rules and regulations of the State Engineer's Office (which also grants the license). The license is valid only so long as the bond is in effect.

2.2.5 Archaeological Clearance for Steam Production Facilities

The State Archaeologist, pursuant to the State Cultural Properties Act of 1977,¹⁰ issues permits to recognized archaeologists for survey work on state lands. The

Act prohibits excavation or destruction of any archaeological site with the use of mechanical earthmoving equipment when sites are on private or state land without a valid permit. Enforcement of the State Act on private land is in limbo following a Catron County judge ruling against application of the Act to private land.¹¹ The ruling has been appealed. An Archaeological Clearance is given by the State Historic Preservation Officer upon examination of archaeological survey records and mitigation plans related to steam production. A responsible archaeological survey is recommended by the State Archaeologist, regardless of who owns the land.

For federal clearance, the "lead agency" must grant a permit for a federally authorized group to perform an intensive archaeological survey. Federal legislation and regulations cover "significant" cultural artifacts on Federal, State and, possibly, County lands and in projects with indirect federal involvement through funding or permitting. The term "significant" is left vague but includes objects associated with sites eligible for inclusion on the National Register of Historic Places.¹² Private actions on private lands with no indirect federal involvement are not covered by federal legislation, although they are covered by state legislation, currently under appeal.

In the Baca Project, the lead agency is the U.S. Forest Service, Department of Agriculture. An archaeological survey was conducted by an outside group (The Office of Contract Archaeology at the University of New Mexico). Baca was deemed a historic district, but such a determination will have no practical effect on the project. The State Historic Preservation Office (SHPO) stated that there were no adverse effects and that in-place preservation of property was not necessary to fulfill the purpose of the State Historical Preservation Plan. The federal agencies involved will typically defer to the SHPO for archaeological clearance, simply reviewing and approving before such clearance is granted. The Baca facility was granted an archaeological clearance by the SHPO.

2.2.6 Assessment of Rare and Endangered Species

The New Mexico Heritage Program of the Natural Resources Department administers and the State Game and Fish Department enforces the New Mexico Endangered Species Act.¹³ New Mexico's list of species includes all federally recognized rare and endangered species pursuant to the Federal Rare and Endangered Species Act and the U.S. Department of Interior Fish and Wildlife Service's regulations.¹⁴ The State also has additional species classified as rare and endangered. There is no state statutory authority regarding plants.¹⁵ The Heritage Program has informal jurisdiction over plant species.

If any federally endangered species are found, a biological assessment is performed (often this is done as part of an EIS). Depending upon how critically the species is endangered, decisions regarding mitigation of any conflict with the species would be made in either a formal or informal consultation with the U.S. Fish and Wildlife Service.

Both the State Game and Fish Department and the U.S. Fish and Wildlife Service require collecting permits for the movement or sampling of any species listed as rare or endangered by their respective regulations. The only species considered

endangered by the Baca Project was the Jemez Mountains salamander (listed as endangered only by the State). The Department of Energy concluded in its EIS, however, that damage to these species can be mitigated. The mitigation plan for the salamander emphasizes avoidance of the patchily distributed habitat of the species. However, the plan indicates that, should an area inhabited by the salamander be unavoidable, biologists would move the affected animals to a suitable environment elsewhere in the region. Movement of a listed species would require a permit from the State Game and Fish Department. Such a permit has been obtained by the Participants in the Baca Project.

2.3 CONSTRAINTS IN THE UTILIZATION OF A GEOTHERMAL RESOURCE

The following requirements need to be met by the utilizer of geothermal resources.

2.3.1 Certificate of Public Convenience and Necessity

In order to construct and operate new generating capacity, an investor-owned electric utility in New Mexico must be granted a Certificate of Public Convenience and Necessity by the New Mexico Public Service Commission.¹⁶ (The PSC does not have jurisdiction over municipally-owned utilities or utilities on Indian land.) The certificate must be obtained before commencement of construction activities. Realizing the possible time lag, the applicant should start working toward licensing by the Commission as soon as the project is conceptualized.

With respect to the Baca Project, PNM originally planned to submit its application in June 1979, about nine months in advance of the projected start-up for construction. Due to the delay in issuance of the Final Environmental Impact Statement (EIS), however, the actual date of PNM's application was February 1980. PNM delayed applying until the Final EIS was complete so that it could provide the PSC with the information contained therein. In Modification Number One to the Baca Cooperative Agreement, PNM agreed to file its application within thirty days after notice in the Federal Register of publication of the Final EIS. The notice appeared in the Federal Register January 22, 1980. A full hearing before the PSC began on August 26, 1980, and will be considered in more detail in the next semiannual report.

2.3.2 Permit to Emit Air Pollutants

A permit to emit air pollutants¹⁷ must be obtained from the Environmental Improvement Division (EID) prior to construction or modification of any source of air contaminants which, if uncontrolled, would emit more than 10 pounds/hour or 25 tons/year, or would result in any emission of a hazardous air pollutant. These standards are regulatory criteria which only determine whether a permit is required. They do not have any bearing on whether a permit will be issued.

If the anticipated, uncontrolled air pollutants are in excess of the 10 pounds/hour limit, then the EID sets up a "dispersion model" to ascertain what concentrations of the contaminant would be reached in the ambient air. Pollution abatement devices are included in figuring the dispersion model. The Director of the EID may deny a permit if the controlled emissions create a concentration level that exceeds either state or federal ambient air standards. A permit denial by the Director can be

appealed to the Environmental Improvement Board (EIB). In addition to its authority to review decisions of the Director, the EIB is also empowered to issue variances to state air standards in cases where, for example, an emission concentration of a particular contaminant exceeds state ambient air standards but not federal. Board decisions on permits or variances may be appealed to the New Mexico Court of Appeals.

To date, experience has shown that hydrogen sulfide (H_2S) and Total Suspended Particulate (TSP) are the central air pollution problem areas associated with geothermal resource development. Neither of these is classified as a hazardous air pollutant. The EID's regulations limit the maximum allowable concentrations of total suspended particulates in the ambient air to specific daily, weekly, monthly, and yearly averages.¹⁸ The EIB recently revised the regulations for the allowable ambient air concentrations of hydrogen sulfide from 3 parts per billion (ppb) to 10 ppb after an appeal by PNM arguing that the 3 ppb limit was extreme. Although relaxed, the New Mexico ambient air quality standard for H_2S is still one of the most stringent of any in the country. Hydrogen sulfide emissions from the Baca plant are expected to meet the standard.

Within 30 days of receipt of a completed application for a permit, the EID must either grant, grant subject to conditions, or deny a permit for construction or modification of a source. In the case of PNM, a permit to construct the facility defined in PNM's application was granted subject to conditions relating primarily to controlling and monitoring H_2S emissions. In issuing the permit, the EIB specifically states that the application has been reviewed for compliance with both New Mexico Air Quality Control Regulations and state and federal Ambient Air Quality Standards.

2.3.3 Prevention of Significant Deterioration (PSD) Review

A PSD permit is normally required by the Environmental Protection Agency (EPA) if potential emissions of any pollutants subject to the Clean Air Act exceed 250 tons/year in any of the source categories subject to PSD review.¹⁹ However, in the recent Alabama Power Company v. Costle court case,²⁰ the Court of Appeals decided that certain of the EPA's regulations were contrary to the discernible legislative intent of the Clean Air Act. Final PSD regulations were published by EPA and became effective August 7, 1980. The new regulations reflect the Alabama Power Company decision.

One result of the Alabama Power decision is that the "potential to emit" standard for requiring a PSD has been redefined to apply to controlled rather than uncontrolled emissions. The regulations concerning PSD do not apply to the electrical production portions of the Baca facility, because the controlled H_2S emissions (as well as all other emissions of pollutants subject to the Clean Air Act) of the Project are below the 250 tons/year level. Thus, the permit application, filed under protest, was determined by the EPA to be unnecessary.

2.3.4 Archaeological Clearance for Electrical Production and Transmission Facilities

The State Historic Preservation Office granted clearance similar to that required for steam production facilities for the power plant and transmission lines upon examination of archaeological surveys and mitigation plans (see Section 2.2.5). PNM

sponsored a survey for the transmission corridor as part of its request to the Forest Service for a right-of-way permit. Since the power plant will be built on an archaeologically cleared site, no additional clearance will be necessary.

2.3.5 Right-Of-Way Permits

Prior to beginning construction of the transmission line, a right-of-way permit is required by the U.S. Forest Service for all rights-of-way across the Santa Fe National Forest and by the Department of Energy for all rights-of-way crossing those portions of Los Alamos which that agency administers. These rights-of-way account for only about 25 percent of the total transmission corridor. The remainder of the corridor was obtained as easements through private property. No permits were required for the private easements.

The U.S. Forest Service cannot respond to the permit request until the environmental review process is completed. The Forest Service can elect to join the EIS prepared under the auspices of DOE or prepare a separate document. Since the Forest Service chose the first alternative for the Baca Project it could not approve the permit application until (1) DOE issued the Record of Decision and (2) the Forest Service prepared an Environmental Assessment on the final transmission corridor alignment.

2.4 SUMMARY

The discussion in this section focused on the state and federal regulatory constraints encountered by Union Geothermal and PNM in the development and utilization of the Baca geothermal resource. The requirements covered in this report are summarized in Table 2-1. The report identifies the permitting agencies, states the requirements for permit or certification, estimates the necessary timetables involved, and discloses known problems associated with acquiring a clearance or permit.

2.5 CONCLUSION

Anticipation and preparation are the two keys to effective dealings with state and federal regulatory agencies and their concomitant rules and regulations. Permitting requirements with difficulties inherent in the development of any geothermal resource for commercial use (e.g., the certificate of public necessity and convenience and the air and water contaminant emission permits) should be considered at the time the project is conceptualized. Those requirements that may require long lead times, depending upon the particular site chosen for development (e.g., permit to appropriate water, permit to collect endangered species, archaeological clearances and right-of-way permits) should be pinpointed and complied with at the earliest possible date.

In addition, an applicant must be willing to suggest and to accept alternative solutions to problems perceived by the public and individual agencies. Participant has demonstrated this flexibility, for example, by offering alternative choices for transmission line corridors and by proposing a mitigation plan for an endangered salamander species that includes avoidance of the animal whenever possible.

At this writing, Participant has not yet secured all of the necessary permits described above. However, subsequent issues of this report will provide information regarding the current status of the applications.

REFERENCES

- ¹ Geothermal Resources Conservation, N.M.S.A. § 71-5-1 (1978 and 1979 Amendments). Geothermal Resources, Rules and Regulations, updated to 1979, Rules 100-102.
- ² Geothermal Resources, Rules and Regulations (1979).
- ³ Olpin, "Geothermal Development," The Landman, June 1980, p. 35.
- ⁴ Ch. 758, title I, § 101, 86 Stat. 816 (codified in scattered sections of 33 U.S.C.) (1976 and Supp. 1977).
- ⁵ Ch. 373, title XIV, § 1401, 88 Stat. 1661 (codified in scattered sections of 5, 21, 42 U.S.C.) (1976 and Supp. I 1977).
- ⁶ See *Exxon Corporation v. Train*, 554 F.2d 1310 (5th Cir. 1977). But see *U.S. Steel v. Train*, 556 F.2d 851-853 (7th Cir. 1977) for an exception.
- ⁷ N.M.S.A. § § 72-2-1 to 28 (1978 and Supp. 1979).
- ⁸ Nutter, "Geothermal Permitting in New Mexico," published by New Mexico Oil Conservation Division.
- ⁹ N.M.S.A. § 72-12-3 (1978).
- ¹⁰ N.M.S.A. § 18-6-1 (1978).
- ¹¹ *People of New Mexico v. Clarence Turley*, Catron County Criminal No. 79-11, New Mexico Court of Appeals No. 4354 (1980).
- ¹² National Historic Preservation Act, 1966, Pub. L. No. 89-665.
- ¹³ N.M.S.A. § 17-2-41 (1978). Regulation No. 599, Listings of Endangered Species and Subspecies of New Mexico, May 25, 1979.
- ¹⁴ Federal Endangered Species Act, 16 U.S.C. § § 1531 et seq.
- ¹⁵ But see: Endangered and Threatened Plant Species in New Mexico, revised 9-11-79.
- ¹⁶ N.M.S.A. § § 62-1-1 through 62-15-33 (1978).

¹⁷ N.M.S.A. § 74-2-1 through 74-2-17 (1978).

¹⁸ Nutter, "Geothermal Permitting in New Mexico," supra note 7.

¹⁹ Clean Air Act, 42 U.S.C. §§ 7401 et seq.

²⁰ 606 F.2d 1068 (1979).

SECTION 3

RECORD OF DECISION-CONCOMITANT TO EIS

3.1 INTRODUCTION

It is perhaps an understatement to state that the most difficult issue facing those deciding the fate of proposed geothermal projects is whether a project, in the interest of decreasing the U.S.'s dependence on imported energy, should go forward in spite of environmental drawbacks. The essence of the environmental process is not only to identify how a project will impact the environment but whether these impacts can be mitigated and/or monitored in order to permit project approval.

DOE formally decided to participate jointly with Union and PNM in the Baca Project when it issued its Record of Decision on May 5, 1980. This chapter will discuss the history of the process which culminated in the issuance of the Record and the requirements and contents of the Record. The impacts on project costs and scheduling resulting from the lengthy and often volatile environmental proceedings will be addressed in another semiannual report.

3.2 THE ENVIRONMENTAL PROCESS

In order to comply with the National Environmental Policy Act (NEPA),¹ the Department of Energy adopted final guidelines² for implementation of the procedural provisions of that Act as required by the Council on Environmental Quality (CEQ) regulations.³ The CEQ regulations require that federal agencies "integrate the NEPA process with other planning at the earliest possible time to insure that agency planning and decisions reflect environmental values."⁴ The guidelines issued by DOE pursuant to this mandate are supplementary to and must conform with the CEQ regulations.

Why are these regulations and guidelines relevant to the industry-government partnership created for the Baca Project? The answer is simple; implementation is not. Anyone proposing a Project (1) on federal land or (2) in which federal funds or guarantees are involved must assist the "lead agency" in complying with the NEPA process.

The lead agency is typically the agency primarily responsible for the government project or activity involved, e.g., a grant of federal funds, a lease on federal lands. In the Baca Project, the Department of Energy, in partnership with industry to build and operate a 50 MW geothermal power plant, assumed the lead agency role of preparing the necessary environmental documents.

What environmental documents are required? The answer varies depending on the complexity of the project and its potential impact on the environment. CEQ regulations and DOE guidelines assist the agency in determining which of three courses of action to follow.

- (1) If the proposed project is not on federal land or if it is clear that the action is not a major federal action significantly affecting the quality

of the human environment, neither an EA or EIS is required. However, a memorandum (entitled a Negative Declaration or a Finding of No Significant Impact) documenting this decision is required.

- (2) Where it is unclear whether an environmental impact statement (EIS) is necessary, a less detailed environmental assessment (EA) will satisfy NEPA. The federal lead agency makes this determination.
- (3) Where there is no doubt that the project will significantly affect the environment, the lead agency prepares an EIS. An EIS is a detailed and thorough study subject to stringent regulations and public participation. A Notice of Intent (NOI) to prepare an EIS is required to be published in the Federal Register as soon as practicable after the decision to prepare the EIS is made. The NOI is a mechanism designed to provide a reasonable opportunity for any and all interested persons to participate in the EIS preparation.

Pursuant to regulations, an NOI⁵ and a Record of Decision⁶ are now necessary in all projects requiring an EIS. (Whether issuance of a Record was contemplated or required for the Baca Project is still an open question.) The Record of Decision, also to be published in the Federal Register, is simply a concise public record explaining the basis for the agency's choice of plans. Table 3-1 gives a partial list of typical classes of action coming before DOE and the environmental documentation considered likely for that action.

3.3 REQUIRED CONTENTS OF A RECORD OF DECISION

According to federal regulation,⁷ a Record of Decision must:

- A. State what the decision is;
- B. Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable and including identification and discussion of economic and technical considerations, agency statutory missions, and national policies which influenced the agency in making its decision; and
- C. State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted and, if not, why they were not adopted. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.

3.4 BACKGROUND TO RECORD OF DECISION

In 1977 the Department of Energy proposed to jointly fund the design, construction and operation of a hydrothermal-based electric power plant. Information

TYPICAL CLASSES OF ACTION

<u>Normally do not require either EA's or EIS's</u>	<u>Normally require EA's but not necessarily EIS's</u>	<u>Normally require EIS's</u>
Information gathering, analysis and dissemination.	DOE actions which enable or result in engineering development activities i.e., detailed design, development and test of energy system prototypes.	DOE actions which are expected to result in the construction and operation of a full- scale energy system project.
Actions in the nature of conceptual design or feasibility studies.	DOE actions which provide grants to state or local gov- ernments for energy conserva- tion projects.	DOE actions which pro- mote energy conserva- tion through regulation of energy use on a sub- stantial scale.
Actions involving routine maintenance of DOE-owned or operated facilities.		

TABLE 3-1

Source: DOE Guidelines 10 C.F.R. Part 1021.

submitted by the offerors in their January 31, 1978, proposal to DOE included an environmental element.

Having chosen PNM and Union's proposal for joint development at the New Mexico site, the agency next determined that a full EIS should be prepared. A draft EIS was issued in July 1979.

At the time of its issuance, the supplemental internal guidelines referred to in Section 3.2 had not been proposed. They were published for public comment on July 18, 1979.⁸ From discussions with DOE officials involved in this project, it is apparent that drafting the agency procedures pertaining to the EIS process closely tracked preparation of the draft EIS itself. The uncertainty surrounding internal DOE procedures for issuing the EIS and Record may account, in part, for the lengthy delay between issuance of the draft EIS in July 1979, the final EIS in January 1980, and publication of the Record in May 1980.*

For the future applicant to DOE in the geothermal area, familiarity with these guidelines is helpful in two respects: (1) it gives some insight into the role the environmental process plays both in the proposal and post-proposal award stages and (2) it informs the applicant of several areas in which it can speed up the environmental process.

An illustration of one possible means of accelerating the environmental process is a provision in the guidelines which requires DOE to establish time limits for the NEPA process when requested to do so by an applicant. Unfortunately, the guidelines provide no penalty to DOE if these time limits are not followed. The tack taken by PNM and Union in their Agreement with DOE offers a partial solution to this dilemma: costs associated with environmental delays are subject to negotiation (see Section 1).

The ideal solution, of course, is to adhere to the agreed-upon time table. Time delays not only drive up costs to complete the project but defeat (1) the future willingness of industry to participate with the federal government in any energy-related endeavor.

While the discussion to this point has focused on the need for DOE to prepare an EIS, who, in fact, has the responsibility within this large organization for its issuance? The DOE guidelines and the precedent set by the Baca EIS and Record of Decision indicate that the program office, i.e., the Division of Geothermal Energy (DGE) and the Assistant Secretary of Resource Applications, is responsible for environmental decisionmaking in projects of this nature.

DOE's role is supported by the NEPA Affairs Division, Office of the Assistant Secretary of the Environment. The NEPA Affairs Division reviews the document prepared by DGE and, if appropriate, makes recommendations for change. Therefore, while the Assistant Secretary of Resource Applications issues the Record of Decision, the Secretary of the Environment must concur before its publication. (Because of the

* While the internal guidelines were not formally adopted until March 1980, DOE operated under the proposed guidelines since the date of first publication (45 Fed. Reg. 20694).

direct impact of the project on the Indian Pueblos, the Office of the Director - Intergovernmental Affairs, Office of the Secretary of Energy, which acted as an advisor on issues of infringement of Indian rights, was also a signatory to the Record of Decision.) This now seemingly straightforward delineation of functions was, before the Baca Record of Decision, unclear at best. Initially there were indications that it was the responsibility of the Secretary of the Environment to pass upon the agency's participation in the Project. It was concluded otherwise after the EIS was published.

3.5 THE RECORD OF DECISION IN THE BACA PROJECT

3.5.1 Introduction

The Record of Decision⁹ effective May 5, 1980, almost one year after issuance of the draft EIS, closely follows the format mandated by CEQ regulations. It begins with a brief statement of DOE's decision to go forward with participation in the Project and a description of the activities to be undertaken. The Record then describes the Project alternatives considered, in much the same fashion as is presented in the EIS.

3.5.2 Alternatives and Considerations

The alternatives, and considerations militating against selection of each, follow:

- (1) Non-participation in funding the Project, i.e., no federal action whatsoever — inconsistent with federal policy favoring alternative energy sources.
- (2) Delay funding the Project — but there are no major breakthroughs foreseeable in technology in the near future to reduce environmental impacts. Additionally, a delay would postpone transfer of information to the geothermal industry, thus retarding geothermal development.
- (3) Fund a non-electric use of the geothermal resource — an alternative inconsistent with the federal policy of developing electricity from a liquid-dominated hydrothermal resource.
- (4) Develop a different site within the Baca — Redondo and Sulfur Canyons were considered but posed the same basic environmental problems as the site chosen.
- (5) Develop a different site at another location within the United States — those considered included Imperial Valley, California; Roosevelt Hot Springs, Utah; and Beowawe, Nevada. These sites (along with Baca) are the only locations with enough confirmed liquid-dominated hydrothermal resources to support a 50 MW demonstration power plant. Only Heber was actually proposed as a site, but was initially rejected for non-environmental reasons.

- (6) Use an alternative plant design — different designs were considered for the systems most likely to affect the environment, e.g., condensor cooling, hydrogen sulfide abatement, and power cycle. It was concluded that higher costs, water requirements and less commercially available technology outweighed the benefits of design alternatives.
- (7) Use an alternative transmission route — two other routes were considered which would tie the plant to the load center at Albuquerque via a substation at San Ysidro. Alternate routes, however, do not solve the problem of opposition to locating the Project at the Baca site.

The Record of Decision initially concluded that of the seven alternatives, 1, 2, 5 and 6 were environmentally preferred. However, with respect to 1 and 2, related to no federal funding or delayed funding, the Decision found that the ultimate environmental impacts did not differ substantially from the Baca Project. DOE eliminated Alternative 6 (different plant design) for the reasons noted above. Locating the plant at an alternative site (Alternative 5), more specifically Heber, was rejected on technical, management, business and programmatic grounds. It was acknowledged, however, as having no major environmental and institutional drawbacks. In fact, DOE is now funding a project at the Heber site with SDG&E under a contractual arrangement similar to the Baca Agreement but with a single party as Participant.

3.5.3 Advantages to the Baca Project

DOE decided that, at the present time, Baca is the best place to prove the commercial viability of hot-water geothermal resources from fracture-dominated reservoirs. The resource at Baca is large, and PNM and Union Geothermal have agreed to proceed with full-scale development as quickly as possible.

The advantages of supporting Union-PNM in building a demonstration plant at Baca include:

- a. System design — all major components have proven performance records.
- b. Prime geothermal resource — the resource is high grade, having a high temperature and a low salinity; the resource is large, and it is typical of many other high-grade resources in the country.
- c. Service area — the surrounding area has experienced drops in voltage and will likely have an increased power demand in the future.
- d. Capabilities of the DOE's partners — Union Geothermal has 20 years experience in geothermal resource development, and PNM is a privately-owned utility serving over half of the residents of New Mexico.
- e. Cost-sharing — costs will be shared equally by the government and its partners.

- f. Information gathering and dissemination — data will be available to all interested.

DOE concluded that these advantages, as well as the feasibility of mitigating the environmental impacts of the Project, favored development at the Baca site.

3.5.4 Addressing Environmental and Institutional Concerns

The Record states that the Project's major drawbacks are the potential for environmental and institutional impacts. However, it is DOE's belief that these impacts, once mitigated, should be small and are well within agency guidelines and CEQ regulations. Primary areas of concern and the measures for mitigating them are discussed below.

- A. Degradation of air quality due to the release of hydrogen sulfide.
 - 1. During well testing, measures will be taken to limit the amount of gases released.
 - 2. The power plant will comply with the New Mexico ambient air quality standard for hydrogen sulfide (see Section 2.3.2).
- B. The depletion of surface and groundwater supplies.
 - 1. For the wellfield portion of the project:
 - a. Wastewaters will be reinjected to minimize fresh water contamination.
 - b. Depletion of water supplies will be offset by a reduction of water use in the Jemez River Basin.
 - 2. For the power plant:
 - a. All cooling water makeup will be obtained from geothermal condensate.
 - b. A portion of the water rights retired by Union will be used to offset expected depletion in other areas of the plant.
- C. Infringement on Indian religious practices. DOE concluded that,
 - 1. The Pueblos do not possess property rights in the Baca area which justify a claim of infringement on religious activities at Baca.
 - 2. The Pueblos have failed to show that the Project will infringe on their religious freedom.

DOE based its conclusions in 1 and 2 in large part on its inability to ascertain whether the Project is located near sacred religious sites. This inability was attributable to the Indians' reluctance to disclose these areas (see Section 4). Nevertheless, DOE plans to pursue a mitigation plan to minimize the "generalized" impacts that the Pueblos raised.

D. Destruction of the habitat of the Jemez Mountain salamander, a New Mexico State endangered species.

1. Dense Jemez Mountain salamander population areas will be avoided where possible.
2. Where avoidance is not possible, removal and relocation of individual salamanders will be carried out by biologists.

E. Scenic intrusion by the transmission lines. Visibility of the lines from public use areas will be reduced by:

1. Routing the right-of-way through less visible areas.
2. Using long spans at road crossings.
3. Maintaining vegetation screens along public lands.
4. Using non-specular cable.

3.6 SUMMARY AND CONCLUSION OF THE RECORD OF DECISION

Under NEPA and CEQ regulations, the federal environmental process is triggered any time the government involves itself in a proposed activity which could significantly affect the environment. One of three courses of action may be taken: (1) no environmental document is required, (2) an environmental assessment is sufficient, or (3) an environmental impact statement is necessary.

The Baca Project is an action expected to result in the construction and operation of a full-scale energy system project. Under DOE's internal environmental guidelines, this class of action requires preparation of an EIS. This chapter discussed how the procedure of the EIS and subsequent Record of Decision issuance evolved within DOE and the substantive issues addressed by the Record.

The Department of Energy balanced the expected benefits to be derived from the Baca Demonstration Project against the potential environmental and institutional impacts. Included issues were the possible degradation of air quality, the depletion of surface and groundwater supplies, allegations by certain Indian tribes of infringement on religious freedom, the potential reduction in the number of land use options for the Baca, the chance of further endangering the Jemez Mountain salamander, and scenic intrusions from the transmission line.

As a result of these evaluations and in recognition of fulfilling agency objectives of "showing the economic integrity of commercial power generation from hot water resources,"¹⁰ DOE decided to participate in and partially fund the Baca Project.

However, the Department of Energy, PNM and Union Geothermal acknowledged their responsibility regarding the Project's potential environmental and institutional impacts and are each implementing measures to mitigate and monitor such impacts.

REFERENCES

¹ 42 U.S.C. §§ 4321 et seq.

² 45 Fed. Reg. 20694.

³ 40 C.F.R. Parts 1500-1508.

⁴ 40 C.F.R. Part 1501.2.

⁵ 40 C.F.R. Parts 1501.7 and 1506.6.

⁶ 40 C.F.R. Part 1505.2.

⁷ Id.

⁸ 44 Fed. Reg. 42135.

⁹ DOE Record of Decision (Issued May 5, 1980).

¹⁰ Id. at 6.

SECTION 4

THE AMERICAN INDIAN RELIGIOUS FREEDOM ACT

4.1 INTRODUCTION

In the process of data collection and selection of legal constraint issues for this report, it became readily apparent that the religious significance attached to the proposed Baca site by various Indian Pueblos is easily one of the most formidable constraints to the success of this project. The importance placed by the Pueblos on the exercise of their religious beliefs has, in an overall sense, united otherwise independent groups. As the Record of Decision issued by DOE acknowledged, "Infringement on Indian religious practices is the most difficult issue to mitigate satisfactorily" (Record at pg. 9).

Additionally, a fairly recent Act granting a statutory, rather than strictly constitutional, protection for the Indians' practice of religion is the American Indian Religious Freedom Act of 1978. Because of its almost certain use in future Indian rights' litigation and, as shown in Figure 4-1, its potential applicability to future geothermal projects, a separate chapter has been devoted to its discussion.

4.2 THE ACT

The text of the American Indian Religious Freedom Act is simple: "Henceforth it shall be the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites."¹

Congress' Indian Affairs Committee determined there was a need for such an act as "it became apparent that there were many instances where the religious rights of the traditional Native Americans were being infringed upon by Federal statutes, regulations, or enforcement policies."² Examples of federal interference with Indian religious freedom discussed in the legislative history of the Act are:

1. Denying access to physical locations on federal land.³
2. Imposing undue restrictions on the use of substances and sacred objects, such as peyote and eagle feathers.
3. Failing to adequately protect Indian religious ceremonies from intrusion by non-Indians.⁴

The House Report states that the purpose of the Act is "to insure that the policies and procedures of various Federal agencies, as they may impact upon the exercise of traditional Indian religious practices, are brought into compliance with the constitutional injunction that Congress shall make no laws abridging the free exercise of

religion."⁵ Arguably, the scope of the Act is coextensive with that of the First Amendment free exercise clause.

4.3 The American Indian Religious Freedom Act Report

The second section of Public Law 95-341, the joint resolution of Congress which includes the American Indian Religious Freedom Act quoted above, provides that the President shall direct the federal departments, agencies, and other instrumentalities responsible for administering relevant laws to evaluate their policies and procedures. This evaluation is to be conducted in consultation with native religious leaders to determine what changes are necessary and appropriate to protect Native American religious cultural rights and practices. The resolution directed the President to report to Congress in August 1979 regarding the results of the evaluation, changes in administrative policy and procedure, and recommended legislative action.

In response to the Congressional mandate, the Secretary of Interior sent a memorandum to all federal departments, agencies and instrumentalities seeking their response. The Secretary then assembled a Task Force to compile a report based on these responses as well as consultations with leaders of traditional native religions. The Federal Agencies Task Force prepared a document entitled "American Indian Religious Freedom Act Report" which the Department of the Interior published in August 1979.⁶

The Department of Energy submitted to the Task Force a memorandum stating that it identified protection of sacred sites as a potential problem area.⁷ In lieu of any unnecessarily cumbersome mechanism for protecting Indian religious freedom, DOE proposed integrating protection of free exercise of religion into the environmental review process. Before proceeding with a proposed activity, the Department will ascertain whether the site at issue is related to the religious rites or ceremonies or is a sacred site of any traditional religion which is currently being sincerely practiced by any American Indian, Eskimo, Aleut, or Native Hawaiian. If the investigation finds indications that the site is currently a subject of religious practices, then the leaders of traditional native religions are to be consulted in order to determine whether the Department's proposed action would infringe on the free exercise of religion in any way. DOE anticipates that the most difficult issue will typically be whether proposed alteration of a site will deny access to a sacred site or otherwise infringe on the free exercise of religion. If consultation indicates that a conflict between the proposed project and the free exercise of religion exists, DOE will consult further with the religious leaders and prepare alternate plans. The Department will then decide whether alternate plans which do not infringe on religious rights will adequately fulfill DOE's goals. If it determines that the alternate plans are not feasible and that the original plan will deny free exercise of religion, DOE must decide whether the project is crucial.

To safeguard against this decision being made by those intimately involved with the project, DOE's Assistant Secretary for Environment, whose functions are structurally separate from those of the program offices, will make the finding as a part of the environmental review. If the Secretary concludes that the proposed action is compelling, the Internal Review Secretariat, which includes the Indian Affairs Office, will review the findings and justification. The findings, accompanied by the Intergovernmental and Institutional Relations report, will be forwarded to the Energy Secretary

Figure 4-1. Location of KGRAs in Relation to Indian Reservations of the Western United States

for his written approval before final action is taken. Lastly, the findings and justifications will be published and communicated to the native traditional religious leaders and other concerned parties.

4.4 THE ACT AND THE BACA PROJECT

Because of the DOE funding of the Baca Project, an assessment of the impact of the Project on local tribal religions was incorporated into the Environmental Impact Statement. DOE consulted extensively with Indian tribal leaders and outside experts on Pueblo religion to ascertain whether the Project is located on or near sacred Indian religious sites.⁸ Comments pertaining to the infringement issue were received on the draft environmental impact statement, and tribal leaders made comments at a DOE-sponsored hearing conducted by the All Indian Pueblo Council.

During the preparation of the Final Environmental Impact Statement, DOE carried out additional consultations with Pueblo representatives. Despite these efforts, however, the agency was unable to obtain detailed information on specific religious practices and, therefore, concluded that it was unable to evaluate the potential impacts of the Project on the practice of religion. The alleged infringements, as expressed by various Indian spokesmen, took the form of:

1. destruction of religious sites;
2. destruction of sacred areas, plants, animals, birds, trees, etc.;
3. invasion of privacy;
4. interference from transmission lines;
5. contamination and/or loss of water for sacred practices;
6. depletion of sacred springs; and
7. interference with access to religious sites.⁹

The Pueblos have taken the position that the entire Jemez Mountains area, including the Baca location, is sacred and thereby constitutes a religious site. They have, consistent with their beliefs, been unwilling to identify the location of specific religious sites in the area. An archaeological survey in the Project area revealed no indications of active or abandoned religious shrines. As a result of its consultations with the Pueblo Indians and a review of the property rights in the Project area, DOE determined that:

1. The Pueblos do not possess property rights in the Baca sufficient to support a valid claim of infringement on any specific religious activities that occur on the Baca;
2. There has been no showing by the Pueblos that the Project will infringe upon their religious freedom.¹⁰

DOE concluded that the lack of specific Indian property rights combined with the incomplete accounts of the religious significance of the location were insufficient to contravene the need for development of geothermal energy as recognized by Congress in the Geothermal Energy Research, Development, and Demonstration Act of 1974.¹¹

DOE's decision, therefore, was to participate in the Project. The Department proposed the following mitigation plan to protect Indian religious freedom:

1. Consultations with Indian leaders on the design, siting, and construction of power plant facilities, including transmission lines, to minimize impacts on areas of religious significance;
2. Consultations throughout the operating period of the facility to assure minimum interference with religious rights and practices;
3. Protection and preservation of religious sites located in the Project area or otherwise under the project operator's control;
4. Guarantees of access to religious sites under the project operator's control;
5. Prompt notification of Indian leaders in case of an accident that could cause contamination of fresh water supplies;
6. Assistance in identifying areas within the Baca location where religious objects may be collected; and
7. Consultation on plans for any future geothermal development by the project operators at the Baca location.¹²

These proposed mitigation measures were rejected by the Pueblo Indians. The only alternatives acceptable to the Pueblos were no federal action or relocation of the Project to other sites in the United States. From data available, DOE complied with the procedures it set forth in the memorandum to the Federal Agencies Task Force (see Section 4.3.1 above) in deciding to proceed with the Baca Project.

4.5 THE SCOPE OF THE ACT

The courts are currently delineating the scope of the American Indian Religious Freedom Act. In Sequoyah v. Tennessee Valley Authority,¹³ the only reported decision citing the Act, the Sixth Circuit Court of Appeals refused to issue an injunction requested by the Cherokee Indians. The Indians asserted that the proposed impoundment of the Tellico Dam would result in flooding a valley which was sacred to the Cherokee religion. The court held that the Act was inapplicable because Congress specifically authorized completion of the Project notwithstanding any other laws.

The Court of Appeals then considered the Indians' constitutional arguments. The District Court had determined that the Cherokees' First Amendment rights under the free exercise clause were not violated because the tribe held no legal right of access to federal land which they claimed had religious significance. However, the Court of Appeals stated that lack of a property interest was only one factor to be

considered. A factor to which the appellate court gave great weight was the centrality or indispensability of the claimed site to the Indians' religious observances. The court held that the Cherokees failed to establish the centrality of the site to their religion.

DOE's findings regarding the religious significance of the Baca Project site closely parallel the fact situation in Sequoyah. DOE found that the Pueblos have no property interest in the site because the land is privately-owned. In addition, the Pueblos did not, in DOE's opinion, establish that the site is significant to their religious activities. Under the Court of Appeals rule of law in Sequoyah, therefore, no constitutionally-recognizable First Amendment right has been shown.

4.6 SUMMARY AND CONCLUSION

Due to the level of federal involvement in the construction of most geothermal facilities and to the proximity of Indian, Eskimo, Aleutian, and Native Hawaiian lands to many Known Geothermal Resource Areas (see Figure 4-1), an assessment of the impact of potential geothermal projects on the religious practices of local tribes will likely be a necessary part of the environmental process. The Baca facility is not the first geothermal project to receive heavy opposition from local Native Americans.¹⁴ The Indians' vehement opposition to the Baca Project has resulted in increased costs and schedule delays and may eventually lead to litigation. As a new body of law on the American Indian Religious Freedom Act develops, the parameters of the Act will be more sharply defined.

REFERENCES

- ¹42 U.S.C. § 1996.
- ²House Report No. 95-1308, 1978 U.S. Code Congressional and Administrative News 1262, 1265.
- ³The legislative history of the Act and the Task Force Report discussed in Section 4.3 express an intent to allow Indian access to religious sites on federal land if feasible. These documents do not address one issue raised by the Pueblos protesting the Baca Project, i.e., do the Indians have a protected right of access to allegedly significant religious sites located on privately-owned land?
- ⁴Id. at 1263-64.
- ⁵Id. at 1262.
- ⁶U.S. Department of the Interior, Federal Agencies Task Force, American Indian Religious Freedom Act Report 51-87 (1979).
- ⁷The DOE memorandum is included in the Task Force Report, Appendix B.
- ⁸The Mitre Corporation, Baca Ranch Geothermal Demonstration, Background Study of Pueblo Indian Religious Freedom, November 1979.
- ⁹U.S. Department of Energy, Final Environmental Impact Statement, Geothermal Demonstration Program, Baca Project 4-23 January 1980.
- ¹⁰DOE Record of Decision, supra.
- ¹¹Pub. L. No. 93-410.
- ¹²Final Environmental Impact Statement, supra at 11-4.
- ¹³620 F.2d 1159 (6th Cir. 1980).
- ¹⁴For examples of vehement opposition by Natives to geothermal development in Alaska and Hawaii see, "The Legal and Institutional Problems Facing Geothermal Development in Alaska," 1978, published by the DOE; and "The Legal and Institutional Problems Facing Geothermal Development in Hawaii," 1978, published by the DOE.