

GL00734



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR TRAINING COMMAND
RANDOLPH AIR FORCE BASE, TX 78150

29 DEC 1981

REPLY TO
ATTN OF: DEE

SUBJECT: Minutes of Proposal Evaluation Conference, Williams AFB Geothermal Energy Development

TO: Earth Science Laboratory
University of Utah Research Institute
(Attn: Duncan Foley)
Research Park, 420 Chipeta Way, Suite 120
Salt Lake City, Utah 84108

Subject minutes are attached for your information and necessary action.

FOR THE COMMANDER

E. B. STEADMON
Chief, Engineering Div
Directorate of Engr & Constr
DCS/Engineering & Services

1 Atch
Minutes

Minutes of Proposal Evaluation Conference, Williams AFB Geothermal Energy Development

1. Subject conference was convened at 0830, 15 Dec 81 in Bldg 661, Randolph AFB TX. List of attendees is attached.

2. Representatives from the Department of Energy (DOE), University of Utah Research Institute (URRI) and EG&G Idaho, Inc., presented an overview of their detailed review. A copy of their review is also attached. All conferees agreed that the information contained in the DOE review should be included in a "concerns letter" to be distributed to the proposer prior to negotiation.

3. Conferees also agreed that the following additional subject areas should be addressed in the "concerns letter:"

a. There must be some means in the proposal to tie Phase I (resource confirmation/drilling) to Phase II (utility plant and distribution system construction and operation). This may be a cost share plan for Phase I as outlined in the Request for Proposal (RFP). The proposal currently calls for the Air Force to contribute \$1 million toward refurbishing the proposers's existing well, with no assurance of an eventual long term utility contract. Clarification of this point is mandatory before proceeding with further negotiation.

b. The Air Force must have a projected long term detailed utility rate proposal from the proposer before economics can be evaluated. The proposal should also address alternate (larger scale) development schemes such as chilled water central air conditioning and cogeneration. This long term utility cost of the proposed geothermal development should be compared against escalated conventional energy supplies for a 30 year life cycle cost analysis.

c. The proposal uses the term "avoided cost" of utilities. This term must be defined because of its special meaning in the Public Utilities Regulatory Practice Act (PURPA). In that act "avoid cost" refers to a utility's last increment of last increment of peaking generator capacity, and is, therefore, the highest portion of the rate structure. Purchase of geothermal energy at such a rate is not acceptable to the Air Force because it will result in a life cycle cost much higher than forecasted for conventionally generated power. This term must be clarified as it pertains to both Air Force use and off-base customers.

d. Information regarding his lease situation should be requested from the proposer. This information should include lease cost, length, and location. This information is required for thorough economic analysis of the proposal by the government.

e. The Air Force should investigate the cost of establishing the Salt River Project as a backup power source instead of the primary power source for Williams AFB. The cost of switch gear to accommodate tie in to geothermally produced power should also be determined. The proposal should contain an operation and maintenance plan with features designed to ensure an uninterrupted supply of energy.

f. The proposed cost of drilling (\$1.4 mil) appears high. The proposer should provide backup material to justify this cost. DOE personnel indicated a cost of \$.7 million would be more appropriate.

g. The proposal should indicate a justifiable estimate of the construction and life cycle operating costs for the new energy plant. Intended construction techniques should be discussed.

h. The proposer should predict the life of the resource so that it can be compared with life cycle economic analyses. The questions of possible low flow and whether it is caused by poor permeability or cementing should be addressed by the proposer.

i. The Air Force should attempt to gain access to the detailed drillers' logs of the existing wells. This information is necessary to determine if the project will stand on its own from a resource point of view.

j. If the existing well is deepened to 12,000 feet as proposed, the formation of the resource must be defined to determine chances for success sufficient to lead to Phase II plant construction.

k. The proposer should provide sufficient information to determine if using a higher level kickoff to generate chilled water would be more economical than the proposed development scheme. Current temperature information should be provided.

l. The proposer should clarify the apparent conflict in the proposal which includes drilling mud in the drilling costs but claims that latest geothermal techniques are to be used.

m. The possibility of additional well testing to verify the soundness of the proposal should be explored with the proposer.

n. The proposer should indicate an alternate reinjection plan if the existing well won't take water (for example, if a cementing problem exists).

o. The plant design proposal should include schematics which identify flow rates, temperatures and other pertinent information.

p. The proposal should contain a plant test and start-up program that provides for orderly and timely transition of the base facilities to use the plant utility.

q. The proposal should indicate seismic measurement during Phase II, plant construction and operation.

4. Conferees also agree on the following tasking:

a. Capt Bradford will research projected utility costs using conventional energy purchased from the Salt River Project. He will coordinate with Mr Taylor and Williams AFB personnel in this.

b. Capt Smith will research the cost of using Salt River conventional power as backup to geothermal energy.

c. Susan Prestwich volunteered to review the draft of the Air Force "concerns letter" to the proposer.

5. Project Schedule: The "concerns letter" is expected to go to the proposer in late January 1982. Hopefully, negotiations could then start in mid-February 1982.

RICHARD M. STEEDE, PE
Project Manager

- 2 Atch
1. List of Attendees
2. DOE Review

LIST OF ATTENDEES - Proposal Evaluation Conference, Williams AFB Geothermal
Energy Development--15 Dec 81

| <u>NAME</u> | <u>TITLE</u> | <u>REPRESENTING</u> | <u>PHONE</u> |
|----------------------|-------------------------|-----------------------------|---|
| Richard Steede | Mechanical Engineer | HQ ATC | 512 652-2786 |
| Susan Prestwich | Proj Mgr, Geologist | DOE-ID | 208 526-1147 |
| Tom Lawford | Mgr, Fed Proj Support | EG&G | 208 526-1844 |
| Frank W. Hornbrook | Elect Engr | HQ ATC | 512 652-2786 |
| Capt Scott L. Smith | Chief, Engr-Tech Design | 82 ABG/DEEE Williams AFB | AV 474-6891/6892 602 988- 2611/6891 |
| Capt Don M. Bradford | Comd Env Planner | HQ ATC | 512 652-3240 |
| Maj Michael Lumbard | Chief, Civil Law | HQ ATC | AV 487-4511 |
| Maj John Martinez | Chief, Procurement Law | HQ ATC/JAN | AV 487-4511 |
| M. D. Taylor | P.E., Mech | HQ ATC/DEMU | 512 652-2774 |
| Don Norville | Contracting Officer | HQ ATC/LGCTM | 512-652-2304 |
| Duncan Foley | Geologist | ESL/UURI | 801 581-3155 |

PART TIME:

| | | | |
|------------------------|------------------------|--------|--------------|
| Col Herbert D. Paul | DCS Engr & Services | HQ ATC | 512 652-6326 |
| Lt Col Gerald Dantzler | Actg Dir, Engr & Const | HQ ATC | 512 652-3991 |