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CALIF. DIV. OF OIL & GAS

GEOHERMAL HOT LINE

A Publication of the
California Division of Oil & Gas

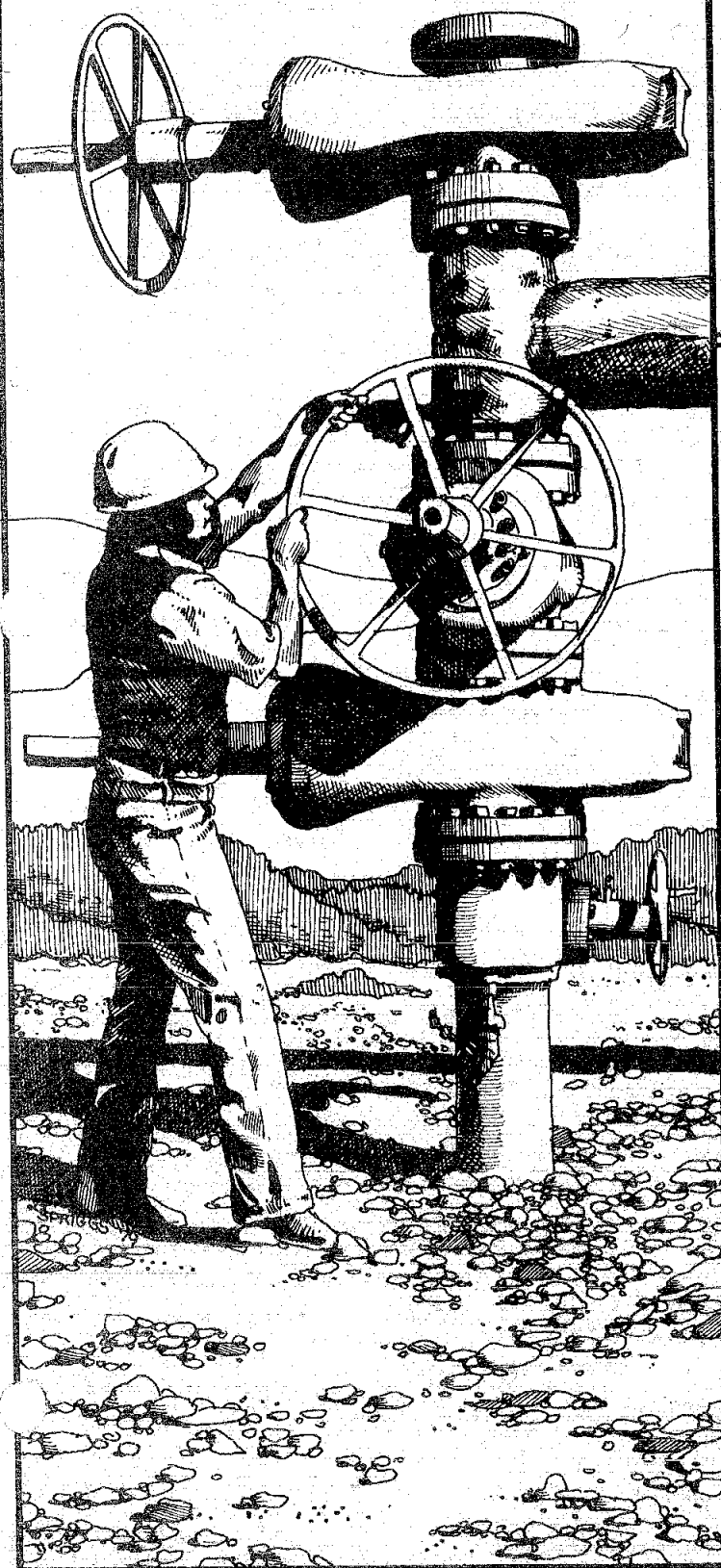
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MARCH 1979

TECHNICAL ADVISORY COMMITTEE AT WORK

On February 8, 1978, the Geothermal Resources Board expanded the membership of the Technical Advisory Committee (TAC) to include three public members and representatives of all state agencies concerned with geothermal energy. Since then, the TAC has met monthly to review geothermal activity; to coordinate information among elements of state government, including information on contracts with the federal system and local governments; to provide a forum for resolution of interagency conflicts; and to provide a united response from California to numerous requests and initiatives from the federal Department of Energy.

The TAC holds quarterly meetings with federal agencies such as the Department of Energy, Bureau of Land Management, United States Geological Survey, United States Navy, Bureau of Reclamation and the Forest Service. In 1978, a federal interagency panel on geothermal streamlining received TAC recommendations for improving the federal geothermal leasing program. TAC representatives from state agencies have cooperated in creating nonduplicative funding proposals submitted to the Department of Energy and assisted in structuring federal-state support for programs and legislation.



California

Geothermal Resources Board Workshops

In late 1978, the Department of Conservation's Geothermal Resources Board received a grant from the Department of Energy to conduct four workshops on California geothermal energy.

The first workshop, County Planning for Geothermal Development, was held December 7 and 8, 1978 in Sacramento. It was attended by about fifty persons from all levels of government, the geothermal industry, and public interest groups. Workshop participants underscored the need for closer state-local interaction in planning for geothermal development.

Local governmental representatives expressed the need to be better informed of potential impacts of geothermal development and of available mitigation measures. Local ordinances can then address environmental impacts more effectively.

Local government and geothermal industry representatives suggested the differing environmental impacts of high temperature and low temperature geothermal resource development be recognized by the state and reflected in state regulations. Also, while representatives of many counties expressed interest in preparing geothermal elements to county general plans to regain local control over aspects of geothermal exploration and development, they reiterated their reliance on outside sources of funding to do so.

The second workshop, Federal Leasing and Environmental Review Procedures for Geothermal Development - Approaches to Expediting the Process, was held January 18 and 19 in Sacramento. It was attended by approximately sixty persons, from all levels of government (including 13 California counties), the geothermal industry, and the public.

Many of the county representatives felt that most local levels of govern-

ment should develop the regulations governing geothermal exploration and development. They felt that if and when counties amend their general plans to address geothermal resources to specify acceptable areas for development and establish permitting procedures, state and federal agencies should accept the county regulations. Representatives from many counties felt that local government rather than the state should regulate direct uses of low-temperature geothermal resources.

One topic discussed was the Bureau of Land Management Wilderness inventory conducted pursuant to the Federal Land Policy and Management Act of 1976. The BLM has identified approximately 300,000 acres of land having both wilderness characteristics and untapped geothermal resources. If the BLM recommends these areas to be classified as wilderness areas by Congress, geothermal resources there will be locked up from 1982 until 1992, when Congress is required to act. Some workshop participants felt that exploration for geothermal resources should be allowed during the ten-year time period. Then, if commercial fields are discovered, Congress will have this knowledge before delineating the wilderness areas.

The third workshop, Transmission of Geothermally-Generated Electricity from Remote Areas, was held on February 15 and 16 in San Francisco. Details of this workshop will be in the next issue of the Hotline.

The fourth workshop, covering direct uses of low temperature geothermal resources, will be held March 8 and 9 in Sacramento. This workshop will bring together current users of low temperature geothermal energy with potential users (small utilities, food processors, and others) and financial institutions. Direct use of low temperature geothermal resources as a cost-effective alternative to fossil fuels will be

discussed.

Send questions or comments regarding the workshops to Suzanne Butterfield, Geothermal Workshops Coordinator, Department of Conservation, 1416 Ninth Street, Sacramento, California 95814. Phone (916) 322-5873.

The Geysers Electrical Output Increased

In February, Pacific Gas and Electric Company started the turbine in power plant Unit 12 at The Geysers for the first time. A 2 to 3-week test will follow.

Once on line, Unit 12 will add 110 MWe to the output from The Geysers, rais-

ing the field output to 612 MWe.

Pipelines to the new plant can be interconnected with lines to power plant Units 7 and 8 and Units 9 and 10 so steam may be diverted among the units in the event of a turbine shutdown. Union Oil Company of California will supply steam to the plant from about fifteen geothermal wells.

Geothermal Brine Used in Hydroponics Research

At the University of California's Lawrence Livermore Laboratory, biologists are growing sugar beets in geothermal brine. The researchers want to learn which brine chemicals are taken up by the plants and how the brine affects plant growth.

Nevada

"No Tax" Recommended on Nonproductive Geothermal Leases

According to the Nevada Mining Association Bulletin, the Nevada Legislative Commission recommended that nonproductive leases for geothermal exploration be exempt from property taxes. The recommendation will be considered by this session of the Nevada State Legislature.

The commission also recommended a net proceeds tax similar to that levied on mines be levied when production begins on a lease. However, to allow such a tax policy, the Nevada State Constitution might have to be amended.

Western Utilities Study Nevada Geothermal Potential

Sacramento Municipal Utility District (SMUD), Eugene Water and Electric Board, and Sierra Pacific Power have begun the first stage of a three-phase study to build a geothermal power plant in Nevada.

The three utility companies signed a letter of intent in which each agreed to pay \$100,000 into the project. Pacific Gas and Electric Company may join the venture as well, bringing

the total investment to \$400,000.

Phase A of the project, a one year effort, includes reservoir assessment to reduce potential sites to one location of which Desert Peak is a good possibility. This phase also includes designing a 20 MWe flash steam plant that conforms to Nevada's legal and environmental requirements, and hiring architectural and reservoir engineers for the project.

When phase A is completed, each utility may withdraw from the project. The last two phases consist of constructing the 20 MWe plant and a decision by SMUD on its rights to the remaining resource.

DOE Geothermal Loan Guaranty Program Puts Dehydration Plant on Line

Geothermal Food Processors, near Reno, has become the first commercial user of geothermal energy under the geothermal loan guaranty program. The vegetable dehydration plant, using geothermal hot water for heat and for process water in the dehydration plant, will save an estimated 1.17 million cubic feet of natural gas a year. The DOE guaranteed a loan of over \$2.8 million to help finance the \$3.8 million project.

DOE Supports Northern Nevada Exploration

In the fall of 1978, the DOE awarded contracts for more than \$4 million for exploration in northern Nevada. The four contracts went to three companies: Union Oil Company of California (\$801,000 for the Stillwater area near Fallon, and \$989,895 for the Beowawe

area), Getty Oil Company (\$859,330 for the Lovelock area), and Southland Royalty Company of Fort Worth (\$1.4 million for the Dixie Valley area). The contracts will run for two or three years.

To date, these contracts represent the largest federal commitment to Nevada's geothermal future.

Texas

Geothermal Space and Water Heating System for Hospital

The Torbett-Hutchings-Smith Memorial Hospital in Marlin, Texas, has received a grant from the Department of Energy to finance about 63 percent of a \$600,000 geothermal test project. The 30-month project will be co-funded by the Texas Energy Advisory Council and local agencies. Water of 64°C (147°F) from a 1037 m (3,400 ft.) geothermal well will be used for space

and water heating. Spent water will be injected into a second well.

Geopressured Well Abandoned (update, October 1978)

The DOE has converted a geopressured test well in Brazoria County, Texas, to a disposal well after drill pipe was lost in the hole. The well reached about 4790 m (15,700 ft.) and was plugged back to about 2560 m (8,400 ft.). Another hole will be spudded soon.

Federal

Competitive Lease Sale Schedule as of 01/30/79

Lease sale dates are provided by the state directors of the U. S. Bureau of Land Management (BLM). Lease sale dates are tentative until public notice is issued 30 days prior to sale. Lease sale notices may be obtained by contacting the appropriate BLM state office.

| <u>LOCATION OF KGRA</u> | <u>LATEST SALE DATE SCHEDULED</u> | <u>ORIGINAL SALE DATE</u> |
|--|-----------------------------------|---------------------------|
| East Mesa, CA | 03/15/79 | 08/17/78 |
| New Mexico Reoffers, NM | 04/ /79 | 04/ /79 |
| Marysville and Boulder Hot Springs, MT | 05/15/79 | 04/05/76 |
| Mono-Long Valley, CA | 06/ /79 | 02/ /79 |
| Nevada Reoffers, NV | 06/ ?/79 | 06/ ?/79 |
| Indian Heaven and St. Helen, WA | 07/ /79 | 03/19/79 |
| Bellmap-Foley Hot Springs, OR | 07/ /79 | 07/06/78 |
| Gillard Hot Springs and Clifton, AZ | 08/ ?/79 | 08/ ?/79 |

| | | |
|---|----------|----------|
| Island Park (Idaho and Montana) | 10/ ?/79 | 10/ ?/79 |
| Alvord Desert, OR | 01/ /80 | 02/09/78 |
| Lassen, CA | 03/ ?/80 | 03/ ?/80 |
| Gerlach Northeast, Double Hot Springs, and Fly Ranch, NE, NV | 04/ ?/80 | 04/ ?/80 |
| Newberry Caldera, OR | 05/01/80 | 05/01/80 |
| The Geysers (MRL), CA | 07/15/80 | 05/ ?/79 |
| McCredie, OR | 10/23/80 | 10/05/78 |
| Beckworth Peak, CA | 11/ ?/80 | 06/ ?/79 |
| Coso, CA | 12/ ?/80 | 12/ ?/80 |
| Corwin Springs, MT | 12/ ?/80 | 12/ ?/80 |

Philippines

Geothermal Power in Philippines

Philippine Geothermal Inc. (PGI), a subsidiary of Union Oil Company of California, is producing geothermal hot water for electrical generation on Luzon Island, Philippines. PGI supplies energy for a 55 MWe power

plant operated by the National Power Corporation.

PGI has discovered two hot water fields on Luzon. Over 60 wells have been drilled. Electricity production is expected to exceed 440 MWe by 1980. The power will be used in Manila and other cities on Luzon.

Publications

Geothermal Energy in New England, by James Centorino. Field measurements of geothermal gradients in selected New England locations as well as general information. 150 pp. Available from J. R. Centorino, 71 Columbus Avenue, Salem, Mass. 01970. \$20.00.

Map Showing Thermal Springs, Wells and Heat-Flow Contours in Colorado, J. K. Barrett, R. H. Pearl, and A. J. Pennington, 1976, Scale 1 = 1,000,000. Known geothermal resource areas, springs and wells, water characteristics (temperature, discharge, total dissolved solids), 015 HFU contour interval. Available from Colorado Geological Survey, Department of Natural Resources, 1313 Sherman Street, Room 715, Denver, Colorado 80203. \$1.50.

Hydrogeological Data of Thermal Springs and Wells in Colorado, J. K. Barrett and R. H. Pearl, 1976, 124 p. Locations, physical measurements,

chemical analyses, spectrographic analyses, radioactivity. Map of springs and wells (scale approx. 1 = 2,600,000). Available from Colorado Geological Survey, Department of Natural Resources, 1313 Sherman Street, Room 715, Denver, Colorado 80203. \$1.50.

Balancing Energy and the Environment: The Case of Geothermal Development, by Phyllis Ellickson, 1978 152 p. The federal role in resolving state and local environmental disputes over the development of geothermal energy is examined. The publication discusses when and how the federal government should become involved in decision making, and to what extent it should exercise legal and administrative options open to it to resolve environmental issues (with geothermal development in California used as a case study). Available from the Rand Corporation, 1700 Main Street, Santa Monica, California 90406, \$7.00. Publication R-2274-DOE.

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Map Price Change

Effective January 1, 1979, all California
Division of Oil and Gas maps, including
geothermal maps, will cost \$3.00 each.

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