

was approved as minute No. 43  
No. 43 by the State Lands  
Commission by a vote of 3  
to 0 at its 6-30-92  
meeting.

CALENDAR ITEM

**43**

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06/30/92  
PRC 4596  
PRC 4597  
PRC 6422  
PRC 6423  
Willard  
Adams  
Frey

APPROVAL OF AGREEMENTS FOR THE SALE OF GEOTHERMAL STEAM,  
STATE GEOTHERMAL RESOURCES LEASES  
PRC'S 4596, 4597, 6422, AND 6423  
LAKE AND SONOMA COUNTIES

**LESSEES:**

Union Oil Company of California  
NEC Acquisition Company  
Thermal Power Company

**PURCHASER:**

Pacific Gas and Electric Company

**AREA, TYPE LAND AND LOCATION:**

The Geysers Steam Field, Lake and Sonoma Counties

**BACKGROUND:**

The State has over 5,000 acres of reserved mineral interest lands under lease to Union Oil Company of California (50 percent), NEC Acquisition Company (25 percent) and Thermal Power Company (25 percent) in The Geysers Steam Field. The leases were entered into between 1971 and 1974. The lease agreements provide that geothermal resources shall not be disposed of except in accordance with sales contracts approved by the Commission. In May 1970, Pacific Gas and Electric Company (PG&E), Union and its partners executed contracts for the sale of steam at The Geysers. The Commission approved these agreements in July 1972.

As a result of disagreement over interpretation of certain provisions in the original agreement, and changes in the steam field performance, Union and its partners filed lawsuits in 1985 and 1986 against PG&E alleging breach of contract. In 1987 PG&E filed a cross-complaint, alleging breach of contract by Union and its partners. Because all parties agreed that the litigation issues were complex and the outcome uncertain, an agreement was reached in 1988 to negotiate a settlement and revise the 1970 contracts. PG&E, Union and its partners contend that the litigation underscored the dated and ambiguous nature of certain critical provisions of the 1970 contracts, and that settling the litigation and making best use of the steam resources and the plant facilities required a realignment of their business relationship.

**STATUTORY AND OTHER REFERENCES:**

P.R.C. Section 6913, Lease Provisions, Paragraphs 4 and 6.

AB 884:

N/A.

**OTHER PERTINENT INFORMATION:**

In September 1991, Union and PG&E executed a new steam sales agreement. Similar agreements were entered into with NEC Acquisition Company and Thermal Power Company. These agreements have been submitted to the Commission for its review and approval pursuant to the respective lease agreements.

On May 13, 1992, Commission staff conducted a public workshop concerning its review of the sales contracts. The workshop was attended by over forty individuals representing sixteen organizations with interests in The Geysers. Union and PG&E responded to questions and comments raised by staff and other participants at the workshop. There were concerns expressed at the workshop by some industry representatives that the sales price was not high enough.

Currently, the Union leases produce about 3.8 billion pounds of steam per month, equivalent to about 265 megawatts of electricity. Total output from The Geysers is currently about 1,500 megawatts. The State's royalty revenue from the Union leases (school lands) averages about \$260,000 per

month at the current price of \$14.15 per megawatt-hour. The price under the new steam sales agreement would be about \$17.38 per megawatt-hour.

The formula that determines the price under the existing contract involves several factors. They are the 1968 base steam price, the ratio of last year's best heat rate in the PG&E system to the best heat rate in 1968, the ratio of last year's fossil fuel costs to the fossil fuel costs in 1968, last year's fossil fuel plant output, last year's nuclear plant output, and last year's nuclear fuel costs. The critical factors are the cost of fossil fuel and the cost of nuclear fuel, with fossil fuel having the greatest impact. The fossil fuel component typically represents 80 percent of the price and the nuclear component 20 percent.

The price paid to Union under the current contract is the lowest in the field. The proposed new price will bring it closer to an equitable price structure. The proposed new price formula will result in a price 20 to 30 percent higher than the existing formula for the next few years. The base price for the new agreement will be \$16.50 per megawatt-hour (for 1990) times an escalation factor composed of the arithmetic average of the prior year's changes in the Producer Price Index for Crude Petroleum, Producer Price Index for Natural Gas and Consumer Price Index. Applying the annual adjustments results in a price of about \$17.38 per megawatt-hour for 1992. Like the old price, the new price formula is based on electricity generated. The new formula no longer includes PG&E nuclear plant output and costs, or PG&E fossil fuel plant output and costs. The effect of these changes is to make the new price higher, at least in the near term, and less volatile than the old price. Therefore, better planning for investments can be made.

In addition to the pricing provisions of the agreements there are several other areas involving the payment of fees which will be subject to royalty consideration. In consideration of PG&E's right to curtail generation below the operating capacity during times of non-peak needs, the steam producer is paid a flat fee of \$46,417 per month (CPI escalated). The steam producer will also receive a monthly

payment for its disposal of effluent liquids (by reinjection) collected at the power plant facilities. The State has previously agreed to the accounting procedures and payment of royalty on any profit attributed to the injection operations, and approval of the subject sales agreements will not affect these procedures. Additionally Union and Thermal will receive a one-time payment of \$18 million for settlement of a claim that PG&E failed to account for properly in the geothermal pricing calculation, the fossil fuel inventory writedown required by the PUC. The State will receive its royalty share of this settlement.

Of major concern to The Geysers steam field producers, power plant operators and State and local government regulators is the pronounced productivity decline being experienced in the field. To address these concerns the California Energy Commission established a Geothermal Technical Advisory Committee (TAC) and included as one of its directed goals, the development of cost-effective alternatives for efficient management of the steam resource. The members of industry within the TAC Consortium have proposed an Interim Coordinated Resource Management Plan which has five elements. They are: power plant improvements or plant shutdown and steam shifting between plants; water injection; variable generation, additional drilling and steam quality improvement between reservoir and turbine. The new contract is consistent with the objectives of this plan. Relative to the old contract, the new contract provides incentive for Union and PG&E to better utilize and manage the resource. There are specific requirements and incentives for additional investment to increase production and provide for more efficient generation, special provisions for maintenance of steam quality standards, procedures for plant shutdowns, retirements and redirection of steam for efficient usage and provision for variable or cycling generation.

In the interest of better resource management and insuring future cooperation, it is proposed that the approval of these contracts include a condition that Unocal continue to participate in the TAC and support the refinement and implementation of a Final Resource Management Plan. PG&E has committed to the State Lands Commission to also continue

and cooperate with the TAC. Additionally, Union will be required to prepare and submit for Commission consideration a five-year operations plan which would be updated annually. The plan would be reviewed for its consistency with the terms and conditions of the leases. Under the plan, Union would (a) develop goals that provide for stimulation and enhancement of production and report annually on planned and implemented Union and/or PG&E projects that further these goals and (b) identify resource renewal goals (such as water injection) and report annually on planned and on-going projects that further resource renewal goals. Union would further be required to supply the SLC, upon request, information obtained under Section 11 of the Steam Sales Agreement regarding all future operating plans of PG&E. If cost-effective projects identified by the TAC and to be implemented by Union are not included in the plans of the parties, then Union may be requested to justify to the Commission why such projects are not being proposed and implemented.

**EXHIBIT:**

A. Location Map.

**IT IS RECOMMENDED THAT THE COMMISSION:**

1. FIND THAT THE ACTIVITY IS EXEMPT FROM THE REQUIREMENTS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO 14 CAL. CODE REGS. 15061, BECAUSE THE ACTIVITY IS NOT A PROJECT AS DEFINED BY PRC 21065 AND 14 CAL. CODE REGS. 15378.
2. AUTHORIZE APPROVAL OF THE AGREEMENT FOR THE SALE OF GEOTHERMAL STEAM BETWEEN UNION OIL COMPANY OF CALIFORNIA AND PACIFIC GAS AND ELECTRIC COMPANY DATED SEPTEMBER 30, 1991, ON FILE IN THE OFFICE OF THE COMMISSION AND BY REFERENCE MADE A PART HEREOF.
3. AUTHORIZE APPROVAL OF THE AGREEMENT FOR THE SALE OF GEOTHERMAL STEAM BETWEEN NEC ACQUISITION COMPANY AND PACIFIC GAS AND ELECTRIC COMPANY DATED SEPTEMBER 30, 1991, ON FILE IN THE OFFICE OF THE COMMISSION AND BY REFERENCE MADE A PART HEREOF.

4. AUTHORIZE APPROVAL OF THE AGREEMENT FOR THE SALE OF GEOTHERMAL STEAM BETWEEN THERMAL POWER COMPANY AND PACIFIC GAS AND ELECTRIC COMPANY, DATED SEPTEMBER 30, 1991, ON FILE IN THE OFFICE OF THE COMMISSION AND BY REFERENCE MADE A PART HEREOF.
5. MAKE THE ABOVE APPROVALS SUBJECT TO THE FOLLOWING CONDITIONS:
  - A. THE APPROVAL SHALL NOT BE CONSTRUED SO AS TO VEST IN THE LESSEES OR IN ANY OTHER PARTY TO THE AGREEMENTS ANY RIGHT, TITLE, OR INTEREST IN THE SUBJECT LANDS IN ADDITION TO THOSE CONVEYED BY THE LEASES ISSUED BY THE COMMISSION.
  - B. IN THE EVENT OF ANY CONFLICT BETWEEN THE TERMS AND CONDITIONS OF THE AGREEMENTS AND THOSE OF THE LEASES OR THE RULES AND REGULATIONS OF THE STATE LANDS COMMISSION, THE TERMS AND CONDITIONS OF THE LEASES AND THE RULES AND REGULATIONS OF THE COMMISSION SHALL PREVAIL AS BETWEEN THE STATE AND ITS LESSEES AND ANY OTHER PARTY TO THE AGREEMENTS.
  - C. THE APPROVAL SHALL NOT BE CONSTRUED AS A PRIOR APPROVAL BY THE COMMISSION OF ANY ASSIGNMENT OF ANY LEASE OR OF ANY RIGHT, TITLE, OR INTEREST IN THE LANDS COVERED BY ANY LEASE.
  - D. UNION, AS OPERATOR UNDER THE LEASES SHALL CONTINUE TO PARTICIPATE ACTIVELY WITH THE CALIFORNIA ENERGY COMMISSION TECHNICAL ADVISORY COMMITTEE FOR DEVELOPMENT OF A COORDINATED RESOURCE MANAGEMENT PLAN FOR THE GEYSERS STEAM FIELD.
  - E. UNION, AS OPERATOR UNDER SAID LEASES, SHALL PREPARE AND SUBMIT FOR COMMISSION REVIEW AND CONSIDERATION, AS TO COMPLIANCE WITH THE LEASES, A FIVE-YEAR OPERATIONS PLAN WHICH SHALL BE UPDATED ANNUALLY. UNDER THE PLAN, UNION WOULD: (A) ADVISE THE COMMISSION ON UNION'S PLAN FOR OPERATIONS ON EACH OF THE LEASES, WHICH WOULD INCLUDE UNION'S PLANS TO STIMULATE AND OTHERWISE ENHANCE PRODUCTION, AND TO REPORT ANNUALLY ON PLANNED AND IMPLEMENTED PROJECTS THAT FURTHER THESE GOALS AND

IMPROVE RECOVERY EFFICIENCY; (B) IDENTIFY RESERVOIR MANAGEMENT GOALS AND REPORT ANNUALLY ON PLANNED AND ON-GOING PROJECTS THAT WOULD STIMULATE PRODUCTION OR INCREASE RESERVES ON THE STATE LEASES; (C) REPORT ON PLANS AND INFORMATION RECEIVED FROM PG&E UNDER SECTION 11 OF THE STEAM SALES AGREEMENT TO THE EXTENT SUCH INFORMATION AFFECTS THE STATE LEASES; AND (D) REQUEST INFORMATION UNDER SECTION 11 OF THE STEAM SALES AGREEMENT CONCERNING THE LEASES IF REQUIRED BY THE STATE.

- F. UPON PAYMENT OF THE SETTLEMENT FOR FUEL OIL INVENTORY WRITEDOWN, UNION AND THERMAL SHALL PROMPTLY SUBMIT TO THE STATE ITS ROYALTY SHARE OF THE SETTLEMENT. IF PAYMENT IS RECEIVED BY THE STATE AND THE STEAM SALES AGREEMENT FAILS TO BECOME EFFECTIVE, PURSUANT TO THE TERMS OF THE AGREEMENT, THE STATE WILL RETURN THE ROYALTY SHARE OF THE SETTLEMENT WITH THE STATE'S ACCRUED INTEREST; THE INTEREST RETURNED SHALL NOT EXCEED AN AMOUNT BASED ON THE RATE OF INTEREST OWED BY UNOCAL AND THERMAL TO PG&E.
- G. THE STATE SHALL RECEIVE A ROYALTY SHARE OF ALL CURTAILMENT FEES WHICH WILL BE ALLOCATED TO THE RESPECTIVE LEASES BASED ON PRODUCTION. THE STATE'S ROYALTY SHARE CAN BE REDUCED TO THE EXTENT THAT THE SALES PRICE HAS NOT BEEN INFLUENCED BY CURTAILMENT AS DETERMINED BY THE STATE.
- H. THE APPROVAL SHALL NOT AFFECT THE SETTLEMENT AND ACCOUNTING AGREEMENT FOR EFFLUENT DISPOSAL OPERATIONS DATED MARCH 29, 1984.
- I. IN THE EVENT THAT PACIFIC GAS AND ELECTRIC COMPANY (PG&E), IN ACCORDANCE WITH THE TERMS OF THE AGREEMENTS, FOR ANY REASON BECOMES A SUCCESSOR TO UNION AS OPERATOR UNDER ANY STATE LEASE, P.G.&E.'S OPERATIONS SHALL BE SUBJECT TO AND IN ACCORDANCE WITH ALL THE TERMS AND CONDITIONS OF THE LEASE, REGULATIONS AND STATUTES, ALL TO THE SAME EXTENT THAT UNION'S OPERATIONS WERE SO SUBJECT, IT BEING SPECIFICALLY UNDERSTOOD THAT NO ASSIGNMENTS OR RIGHTS IN ANY STATE LEASE CAN BE OR SHALL BE EFFECTIVE UNLESS AND UNTIL SUCH ASSIGNMENTS HAVE BEEN APPROVED BY THE STATE LANDS COMMISSION.

CALENDAR ITEM NO. 43 (CONT'D)

THIS APPROVAL SHALL BECOME EFFECTIVE UPON EXECUTION OF AN APPROPRIATE DOCUMENT BY A DULY AUTHORIZED OFFICER OF UNION OIL COMPANY OF CALIFORNIA, NEC ACQUISITION COMPANY, AND THERMAL POWER COMPANY ACCEPTING THE ABOVE CONDITIONS AS THEY RELATE TO THEIR COMPANY.

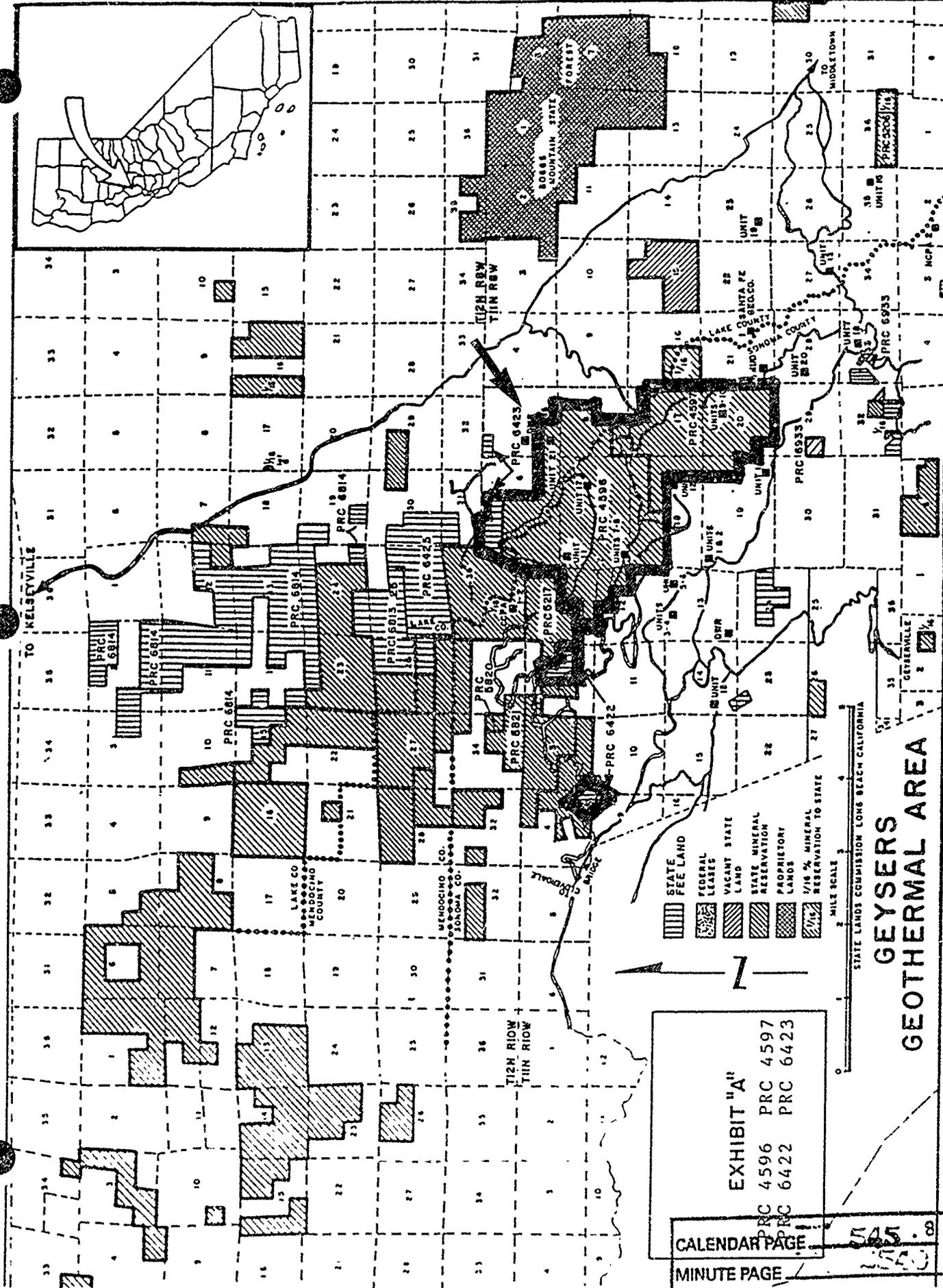


EXHIBIT "A"  
 PRC 4596 PRC 4597  
 PRC 6422 PRC 6423  
 CALENDAR PAGE  
 MINUTE PAGE

STATE LANDS COMMISSION LONG BEACH CALIFORNIA  
**GEYSERS  
 GEOTHERMAL AREA**

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