



**OXBOW POWER SERVICES, INC.**



October 14, 1999

By overnight delivery

Minerals Management Service  
Royalty Management Program  
Building 85, Room A-613  
Denver Federal Center  
Denver, CO 80225

Attention: Mr. David S. Guzy  
Chief, Rules and Publications Staff

Re: Advance Notice of Proposed Geothermal Valuation Rulemaking

Ladies and Gentlemen:

Oxbow Geothermal Corporation and Oxbow Power of Beowawe, Inc. operate geothermal steam fields and electric power plants on federal lands in Nevada known as the Dixie Valley project and the Beowawe project respectively. Oxbow submits these comments on the Advance Notice of Proposed Rulemaking published by the Minerals Management Service on August 19, 1999. We believe that the proposed rulemaking constitutes a breach of faith with the geothermal resources industry; it appears to be driven solely by a desire to increase revenues to those units of government which participate in the federal royalty share, at the expense of geothermal producers. The geothermal steam value in most cases is determined by applying the netback valuation method to the electricity sale price. The price for electricity has fallen sharply in recent years and thus, obviously, the value of geothermal steam has likewise tumbled. This consequence of increased competition in the electricity industry does not mean that the valuation regulations require revision.

**I. The goal of the regulations is to establish the value of steam.**

The Advance Notice of Proposed Rulemaking states that "application of the netback method in the deregulated California electric power market has resulted in a dramatic decrease in geothermal royalty payments." This statement is false. In fact, falling electricity prices, and not the application of the netback method, have resulted in decreases in geothermal royalty payments. When the Minerals Management Service adopted the current valuation regulations on November 8, 1991, 56 Fed. Reg. 57256, it justified the use of the netback valuation method with the following rationale:

The netback approach is a recognized method of deriving the value of mineral resources for royalty purposes. The MMS disagrees that the netback procedure is conceptually inappropriate for valuing geothermal resources used to generate electricity. ... Under the netback procedure the value of the geothermal resources (thermal energy) is determined by subtracting the costs of generating and transmitting electricity from the revenue received for the sale of the electricity (that is, the value of the electricity). *Thus, the resource value tracks the value of the converted form of energy (electricity) derived from use of the resource.*

56 Fed. Reg. 57260 (emphasis added). When electricity prices were high, the MMS shared in the benefit of those high prices. Now that electricity values have fallen, that does not mean that the netback procedure is inappropriate. In fact, the netback procedure is simply producing resource values which track the value of the electricity, just as the MMS forecast in the preamble to the current regulations. Therefore, the mere fact that geothermal royalty revenue has decreased does not justify a change to the valuation method.

If we were to follow the apparent logic of the Advance Notice of Proposed Rulemaking (*i.e.*, that a decrease in royalty payments means that the valuation method must be changed), then the rules for valuing oil and gas should have been changed in 1997 when the prices for those commodities fell precipitously. For example, the Minerals Management Service's mineral revenues report for fiscal year 1997 (Table 34) shows that the State of California received \$26,015,000 in onshore mineral revenues in 1996. That share fell almost 22% in 1997 to \$20,336,000. Since the royalty clauses in both federal oil and gas leases and federal geothermal leases provides for payment of royalty based on the value of production, it is obvious that federal royalties will rise and fall with the value of the commodity used to arrive at the value of the resource (*i.e.*, electricity in the case of geothermal resources). The mere fact that royalties have fallen simply bears no logical relationship to the theory in the Advance Notice of Proposed Rulemaking that the valuation regulations are therefore no longer appropriate.

## **II.. Proportion of Profits**

Oxbow was an active participant in the rulemaking process for the current valuation regulations which were some four years in the making. During that process, Oxbow proposed an alternative to the netback methodology which was referred to as the "proportion of profits" method for valuing the geothermal steam. The MMS rejected this proposal explaining as follows:

The MMS does not view the proportion-of-profits method as an accurate determinant of capital cost because it reflects a company's profitability rather than the industry's cost of capital. Also, as previously stated, MMS does not find compelling the argument that the rate of return on investment

attributable to resource development must be the same as that attributable to other components of the geothermal project. In addition, MMS is not comfortable using a different rate of return for each project.

56 Fed. Reg. 57266. Given the above statements by the MMS, it is supremely ironic that the MMS is now proposing a "rate of return" valuation methodology which would "determine a resource value that yields the same rate of return for both the resource recovery and power plant portions of the geothermal project." 64 Fed. Reg. 45214 (1999). The notice gives no indication as to why such a method would now be acceptable, other than the implicit rationale that it would increase royalties. Oxbow accepted MMS's rejection of its proportion of profits proposal in 1991 and proceeded with its development of the Dixie Valley and Beowawe fields based on forecasts using the MMS netback valuation method. Now, for no logical reason, the MMS proposes to change the rules in the middle of the game and thereby introduce another element of uncertainty in project economics for geothermal steam producers who are already dealing with falling electricity prices. This action by the MMS is patently unfair and will serve as a disincentive to development of geothermal (and other) resources on federal lands because producers cannot ensure investors or lenders that the rules of the game will not be changed. There is no reason for industry to believe that the MMS will not again change the valuation regulations when electricity prices rise, since it was willing to do so when electricity prices fell.

### **III. Rate of Return**

The Advance Notice of Proposed Rulemaking suggests that the rate of return on capital investments provided under the current regulations should be reduced. Again, the only apparent rationale offered for this need is the fact that royalty revenues have decreased. In 1991 when the current regulations were adopted the MMS provided the following rationale for using two times the Standard & Poor's industrial BBB bond rate:

In previous product valuation rulemakings (for example, oil and gas valuation rulemakings at 53 F.R. 1213 and 1262, January 15, 1988), MMS determined that the rate of return on depreciable capital investments should be closely associated with the cost of money necessary for construction of transportation and processing facilities. The MMS concluded that a corporate bond rate adequately considered the risks involved in such ventures and believed that the Standard & Poor's industrial BBB bond rate represented a rational choice among the available alternatives. This conclusion was viewed primarily in terms of long term debt; the impact of equity financing was unknown. During the mid-1980's (1983 to 1987), the Standard & Poor's industrial BBB bond rate ranged from a low of about 9.5% to a high of about 15%; the average was about 12%, which is correlative with the interest rates on long term debt reported in the geothermal industry's comments. However, considering that equity financing may account for 50% or more of the capital invested in the power plant and transmission line, and

that the return on equity may be as high as 40%, the weighted average cost of capital to finance geothermal power projects is *easily greater than a straight corporate bond rate*. For example, if half of a project was financed by equity investment at an expected rate of return of 40% and the remaining half by long term debt at an interest rate of 12%, the total cost of financing the project would be about 26%. This amount, as well as the weighted average rates of return calculated by the industry commenter, is within the range of Standard & Poor's industrial BBB bond rates increased by a factor of 2. *The MMS finds that a rate of return of 2 x Standard & Poor's industrial BBB bond rate is a reasonable representative cost of capital for financing geothermal power projects; this rate of return therefore is adopted in the final rule for use in determining transmission line and generating cost rates under the netback procedure.*

56 Fed. Reg. 57265 (emphasis added). The Advance Notice of Proposed Rulemaking does not suggest that the cost of capital for geothermal producers has declined and, of course, most existing geothermal projects came on line when the costs of capital were as described in the preamble to the current valuation regulations. It would be nothing short of arbitrary for the MMS to reduce the rate of return on capital allowed under the valuation regulations simply to achieve an increase in royalty revenues.

#### **IV. Percentage of Revenues**

The MMS also proposes a "percentage of revenue" alternative method for valuing geothermal steam which would set the value at some stated percentage of the electricity value. This suggestion is also contrary to the rationale the MMS used to require the netback method in the 1991 regulations. In the 1991 regulations, the MMS specifically noted that geothermal resources vary greatly depending on their location and the heat of the resource. Therefore, it is inconceivable that a flat percentage of electricity value would produce an appropriate "value" for the geothermal steam in all locations. The MMS explained in the 1991 regulations as follows:

Unlike other energy resources - such as oil, gas and coal - geothermal resources must be used immediately after production and in close proximity to the production well because of the rapid dissipation of heat in the surface environment. Accordingly, markets for geothermal resources are restricted to the fields in which they are produced and to the type of usage for which they are suited.

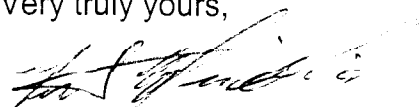
56 Fed. Reg. 57257 (1991). The statement quoted above remains true today. Therefore, how would the MMS select a nationwide percentage figure to be applied to electricity sales values to arrive at the value of geothermal steam? Would the MMS eyeball economics in the Geysers and arrive at a percentage figure? If so, Oxbow's projects, located in remote areas of Nevada, are likely to be unfairly penalized because their project costs are

significantly higher than those in the Geysers or other areas closer to population centers.

## V. Conclusion

Royalty revenues certainly have fallen (as have the revenues of the geothermal steam producers who sell electricity). Oxbow believes the reasons for the decline are multifaceted, including market changes. While we sympathize with the fiscal impacts that declining revenues may have on individual royalty recipients, we fail to see how such an event warrants the wholesale change of regulations for valuation across the entire geothermal resources industry. Oxbow too would enjoy receiving steady predictable revenues. However, unless the MMS can guarantee us a fixed electricity price, Oxbow and its royalty owners are subject to the vicissitudes of the electricity market. Because Oxbow has invested large amounts of capital in the Dixie Valley and Beowawe plants, it is obvious that we believe in the long term viability of the independent power production market and anticipate increasing electricity prices eventually. We are disappointed that the MMS capitulated to political pressures to justify an arbitrary change to the regulations which were painstakingly developed over a four year period. Thank you for your consideration of these comments.

Very truly yours,



Frank Misseldine  
Business Manager

cc: Sen. Richard Bryan  
269 Russell Senate Office Building  
Washington, D.C. 20510

Sen. Harry Reid  
528 Hart Senate Office Building  
Washington, D.C. 20510