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Tuesday, August 5, 2003

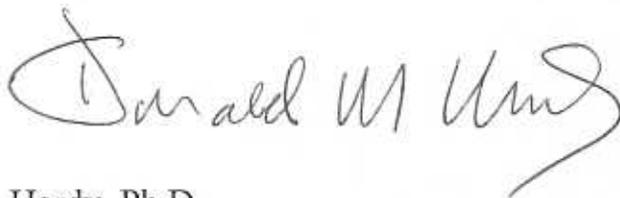
Mr. Edward F. Hulls, P.E.
Operations Manager
Western Area Power Administration
55 East Crossroads Boulevard
Loveland, CO 80539-3003

**Re: June 2003 Proposed Rates for Transmission and Ancillary Services
by the Western Area Power Administration**

Dear Ed:

PanAero Corporation is pleased to respectfully file the comments attached here, concerning the June 2003 Proposed Rates for Transmission and Ancillary Services by the Western Area Power Administration.

Regards,



Donald M. Hardy, Ph.D.
President

Attachment: Proposed NewWestern Fees for Wind Generated Electricity

NEW-FEES.WPD

Proposed New Western Fees for Wind Generated Electricity

Tuesday, August 05, 2003

PanAero Corporation, Lakewood, Colorado (phone 303-989-9060, fax 303-989-9066, and Email panaero@compuserve.com), respectfully submits these comments, concerning the June 2003 Proposed Rates for Transmission and Ancillary Services by the Western Area Power Administration.

Public Benefits. Wind generated electricity benefits the public by reducing the risks of natural gas price volatility, by creating vital new income for farmers and ranchers, by increasing national security because indigenous energy is safer than foreign energy, and by reducing harmful carbon dioxide emissions.

Public Ownership & Issues. The Western Area Power Administration (Western) is a federal government entity. The public pays for Western in two ways. First, as individual people who pay taxes. Second, as people who buy electricity on their farms and ranches, and in their towns and cities. The people pay for Western.

The question the public should ask is this: How do the policies of Western help, or hinder, the rapid increase of wind generated electricity, across the many states where Western operates?

As now proposed by Western, the new fees to be imposed on wind generated electricity hinder. **The proposed Western fees likely will stop wind projects that would be subject to these Western fees.** However, Western can rescind its present proposal, and devote adequate time to these issues during 2004.

The worst thing that can happen is to have inappropriate wind-specific fees set by Western for January 2004. This would be an unfortunate precedent for all other Western control areas and for non-Western control areas. Western now only has 36 megawatts of wind projects in the relevant Western control area, which has 5,200 megawatts of overall generation. There is no justifiable rush to impose fees on wind, especially large and illogical fees.

Western Can Help Wind Energy. On the positive side, Western has the potential to do great good in expanding the use of wind generated electricity.

Western markets and transmits about 10,000 megawatts (MW) of electrical power, operates over 17,000 miles of transmission lines, and sells almost 38,000,000 megawatt-hours (MWh) of electricity annually. Western operates across 14 states, which include excellent wind energy resources. Western's territory includes North & South Dakota, Montana, Wyoming, Colorado, New Mexico, Nebraska, west Texas, and other states. Has the time arrived for Western to help expand wind generated electricity?

Fairness. Western conducts large operations in California. The scope of Western's California operations is much greater than one wind project alone. In California, Western now is considering leaving the Cal-ISO transmission control area because Western could save about \$9,000,000 to \$24,000,000 in 2005. Much of the savings were attributed to avoiding the Cal-ISO charges for transmission access and reliability (California Energy Markets, June 27, 2003, page 11). For the entire year 2002 and all 14 states, Western collected only \$7,000,000 as Ancillary Services Revenue (Western Power Facts 2003). In comparison, one 250 MW wind project alone would pay Western over \$13,000,000 each year, as Western's new wind fees. Is this fair?

Western Owned Intermittent Generation. At the mid-July Western public meeting Western presented information concerning the 800 MW (megawatts) of Western hydro generators, "*most of it run of the river or small reservoirs.*" On August 01, 2003 Western wrote and said: "*A small reservoir is one which must be cycled on a short-term or daily basis due to the size of the active capacity and the amount of water that the Bureau of Reclamation (Reclamation) moves through it.*"

We asked Western how much does it cost Western to provide the following services (1) regulation, (2) energy imbalance, (3) scheduling, (4) transmission losses, and (5) other services, for each of these Western generators. On August 01, 2003 Western wrote and said: "*Western does not track the cost by facility or unit for regulation, energy imbalance, scheduling, transmission losses, or other services.*" If Western does not track the cost by facility for a collection totaling 800 megawatts of Western owned intermittent generation, then why does Western propose to both track and charge, by individual wind facility, various wind projects (which now total only about 36 megawatts)?

Fees to Individual Wind Projects. At the mid-July Western public meeting Western proposed new fees for individual wind projects. On August

01, 2003 Western wrote and said: "*Western does not track the cost by facility or unit for regulation, energy imbalance, scheduling, transmission losses, or other services. LAP [the Loveland Area Projects] should be viewed as a Load Serving Entity which has resources (hydro generation) and obligation (customer's deliveries) inside WACM [the Western Area Colorado Missouri control area]. Thus, LAP incurs its own cost for regulation, energy imbalance, transmission losses, and other ancillary services. Those [Western] costs are not tracked per generator, but as a total.*" If Western does not track its own cost by facility, then why does Western propose to both track and charge, by individual wind facility, various wind projects?

Variations of Loads. We asked Western for data about the variation of Western's loads, such as the maximum and minimum loads, the mean loads, and standard deviations of loads. We asked Western about the loads and the load variations that are relevant to the proposed new Western rates.

On August 01, 2003 Western wrote and said: "*Again, this load information was not used in any part of the proposed transmission and ancillary services rates and as such, is unrelated to the proposed rates.*" If load variations are not used by Western, then why does Western propose to charge wind projects, which act as negative loads, for variations in wind project output?

Forecasting. We asked Western what methods Western now uses to forecast Western loads. We asked if Western had done quantitative studies that measure the accuracy of Western's load forecasting methods. We asked if Western has measured the deviations between forecasted load and actual load, and then done various statistical analyses of the deviations. **On August 01, 2003 Western wrote and said: "*Western does not forecast its loads...*"**

Western has proposed forecasting for wind generated electricity. Why forecast individual wind projects if individual variable loads are not forecasted at least as accurately? If forecasting for wind projects (which act as negative loads) is required, then the same forecasting should be required for individual loads. In addition, equivalent fees should be charged to individual loads. To be fair, Western should add new types of individual load fees at the same time Western adds any new individual wind project fees. Alternatively, no fees should be charged to either individual loads or individual wind projects.

Imbalance Fees. Concerning imbalance fees, discussions with Western indicate that Western does charge for imbalance, and apparently expects to do so even for wind projects under the new fees. Western should clarify the wind 'exemption'. Other imbalance discussions with Western indicate that Western buys 'high' and sells 'low', on a statistical basis. Statistically, Western pays high prices for the megawatt-hours Western buys and gets low prices for the megawatt-hours Western sells. Thus, even if energy imbalance nets to zero, money is still lost. This brings to mind the old witticism about the person in business that said he lost a little money on every deal but made it up on volume. Perhaps Western should use, or better use, its large market presence to establish long-term electricity contracts that eliminate (or minimize) Western's losses when buying and selling megawatt-hours for imbalance purposes.

Positive & Negative Loads. Sometimes it is useful to think of wind electricity as if it were a 'negative load'. It appears that Western treats 'load' much more favorably than wind generated electricity. Compare what Western charges if 'load' is reduced by (a) directly reducing load or (b) by using wind electricity, which offsets load. Western in fact reduces fees to loads if loads are reduced. If wind electricity has (or can have) the effect of reducing loads, then why should wind electricity pay large penalty fees? In fact, why not pay wind electricity extra for the reduced load?

Large utility systems, like Western, are designed to handle large changes in load. If the Western system already handles large swings in load, then why should wind electricity, that only somewhat changes the pattern of load, be a problem or a special cost?

Thought Experiment. The following simplified 'thought experiment' shows how the proposed new Western fees will charge Western 'load' versus wind energy. The fees proposed by Western are much more favorable to 'load' than to wind energy.

At the mid-July Western public meeting, Western presented data about fees for 'load' and about proposed new fees for wind energy (as Western slides #13 and #15). Western, when questioned at the public meeting, explained that the physical units in these Western data were wrong, and had to be corrected. After the meeting, our company discussed with Western how to

correct the units in the Western data, and how to do example money calculations for 'load' and for wind energy.

Load Fees. Western load will be charged \$0.175 per kilowatt per month (see Western slide #13). Western said that a 250 MW load would pay about \$525,000 per year for its power level (capacity). This Western 'load' fee is calculated by Western as follows: \$0.175 per kilowatt times 250,000 kilowatts (of load) times 12 months in the year.

Consider this simplified 250 MW load when combined with an example new 250 MW wind project. The load can be variable or steady, but assume for simplicity that it is a steady load. Assume, also for simplicity, that the wind project operates at an average output of 100 MW. Now consider two cases.

Case One. In the first case, the 'load' entity buys the new wind project and connects the wind project 'behind the load meter'. Because the 'load' is reduced, by the electrical output of the new wind project, the Western load fees are reduced. The Western load fees are reduced by about 40% because the load (on average) is reduced by 40%. The 'load' entity now pays only about \$315,000 per year to Western as 'load' fees.

Case Two. In the second case, the 'load' entity connects its new wind project 'in front of the load meter'. The 'load' entity now pays large special fees per year for its wind project.

Wind Project Fees. Western has informally estimated that the new proposed Western wind project fees will cost about \$15 per megawatt-hour of wind energy produced. The example wind project operating at an average output of 100 MW would produce 876,000 megawatt-hours per year. With Western wind fees equivalent to \$15 per megawatt-hour, the wind project would pay \$13,140,000 per year to Western in special new wind project fees.

The 'load' entity will pay an additional \$525,000 per year for its 'load' fees to Western, because its 'load' was not reduced. The total fees paid to Western by the 'load' entity now are about \$13,665,000 per year. This is around 43 times as much, per year, as in case one above.

The fees paid to Western differ by over 4,000%, but there was no different effect on the Western system. The effect on the Western system

(physical, electrical, regulation, etc.) is the same in these two cases, but the fees paid to Western differ by about 4,338%.

Western may say that Western still would charge the wind project special fees when the wind project is 'behind the load meter'. However, Western apparently does not charge fees for load reduction, but rather reduces fees whenever load is less. Apparently Western would not charge extra fees if the load entity reduced its load by using energy management load control technology.

Would Western charge over \$13,000,000 per year to the 250 MW load entity if it reduced its load by using load management technology? However, Western is proposing to charge such large special fees if the load were reduced by the new wind project. Why?

Conclusion. This simple 'thought experiment' example shows that the wind energy fees proposed by Western are unfair and are not logical. Presumably Western does not intend to be unfair to wind energy. But if the proposed new Western fees for wind energy are allowed to become effective in January 2004, as Western now intends, then the Western result will be unfair to wind energy.

Action Requests. We request that Western rescind its present wind-specific fees and wind-specific proposals. We request that Western devote adequate time to these wind-specific issues during the year 2004. We support Western's proposed reduction of various other non-wind fees that Western charges.

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