Michael J. Uda
UDA LAW FIRM, P.C.
7 W. 6th Avenue, Suite 4E
Helena, MT 59601
(406) 457-5311
(406) 447-4255 fax
muda@mthelena.com

Yvette K. Lafrentz
DONEY CROWLEY PAYNE BLOOMQUIST P.C.
220 South Pacific Street
P.O. Box 1418
Dillon, MT 59725
(406) 683-8795
(406) 683-8796 fax
ylafrentz@doneylaw.com

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF The Complaint By Oak Tree Energy LLC Against NorthWestern Energy For Refusing To Enter Into A Purchase Power Agreement	**DOCKET NO. EL11-006**

OAK TREE ENERGY, LLC'S RESPONSIVE TESTIMONY OF J. RICHARD LAUCKHART

I. INTRODUCTION

Q. Please state your name and employment.

A. My name is J. Richard Lauckhart. I am an energy consultant.

Q. Are you the same J. Richard Lauckhart who provided Direct and Rebuttal Testimony in this proceeding?

A. Yes.

Q. What is the purpose of this Additional testimony in this case?

A. On May 15, 2012, the South Dakota PUC (SDPUC) issued an Interim Order; Order For and Notice of Further Hearing in this proceeding. That Order called for additional testimony of the parties to be filed on or before June 6, 2012. On May 31, 2012, the SDPUC issued an Order Cancelling Procedural Schedule and Hearing which canceled the June 6, 2012 date for submission of additional prefiled testimony. On October 11, 2012, the SDPUC issued an Order Granting in Part and Denying in Part Motion for Partial Reconsideration and Application for Reconsideration in Docket EL11-006. On October 15, 2012, the SDPUC issued a Procedural Order; Order for and Notice of Hearing for filing of additional and responsive testimony and hearing to address the issues outstanding following the Interim Order as modified by the Reconsideration Order. NorthWestern Energy, the SDPUC staff, and I all filed additional testimony on November 21, 2012. This is my responsive testimony. In this testimony I respond to the testimony that NorthWestern Energy and SDPUC staff filed on November 21, 2012.

II. SUMMARY OF TESTIMONY

Q. Please summarize your Responsive Testimony in this case.

A. The Federal Code of Regulations (CFR) § 292.304 states that rates paid to qualifying facilities shall not discriminate against qualifying cogeneration and small power production facilities. In my opinion the rates proposed by NorthWestern and the SDPUC staff, if adopted in total by the SDPUC, would violate the requirement that rates paid to qualifying facilities shall not discriminate against qualifying cogeneration and small power production facilities. I point out that certain changes in the analysis performed by NorthWestern and SDPUC staff, if adopted by the SDPUC, would allow rates to be set in compliance with 18 CFR § 292.304.

III. INCONSISTENCIES WITH CFR § 292.304 NONDISCRIMINATION REQUIREMENTS

Q. Why do you believe that NorthWestern's initial testimony filed last week is discriminatory?

A. When NorthWestern justifies investments in resources it owns, NorthWestern takes a different approach to the cost of alternatives than that which it has used in this proceeding. For

example, NorthWestern used a "differential revenue requirement" method to justify its investment in the Spion Kop wind project proceeding. That analysis shows the lowest cost of alternative to the Spion Kop wind project was $68/MWh. That analysis was done in the February 2011 timeframe. Yet for Oak Tree, NorthWestern claims the cost of the alternative to the Oak Tree wind project is only $39/MWh. Since the timeframes are the same, the difference in cost is simply a product of NorthWestern's opportunistic decision to use a different approach to the cost of alternatives. Instead of using the "differential revenue requirement" method, NorthWestern chose to use a "hybrid incremental coal cost/market purchase" method in this proceeding. Further, NorthWestern makes different assumptions about inputs within the two methods even though the time frame for the assumptions is the same. While there may be some minor differences between costs in Montana and costs in South Dakota, there is no legitimate basis for South Dakota avoided costs to be nearly half of Montana avoided costs. In fact, there may be reasons that South Dakota avoided costs are higher than Montana avoided costs. For example, evidence in this proceeding indicates that while South Dakota appears short on capacity, the Bonneville Power Administration has indicated there is a surplus of capacity during peak load periods in the Northwest.

Q. Are there other reasons you believe that the testimony NorthWestern filed last week is discriminatory?

A. Yes. When NorthWestern was analyzing various alternatives of meeting its capacity needs in South Dakota, NorthWestern's board decided that power purchases were not an option. First they claimed that third parties were not willing to continue to sell capacity to them because those third parties would need that capacity themselves. NorthWestern also claimed there were transmission constraints that made capacity purchases problematic. For those reasons, NorthWestern's board decided that its lowest cost alternative for meeting its peaking needs in South Dakota was to build the Aberdeen gas turbine. The cost of the Aberdeen gas turbine is about $141/kw-yr. NorthWestern has further indicated that a second new unit at Aberdeen will be needed in the very near future. However, in this proceeding NorthWestern claims that its avoided capacity cost is only $___/kw-yr based on a November 10, 2010 preliminary offer NorthWestern received from Basin Electric. Clearly if NorthWestern could acquire capacity for

$___/kw-yr it should not have been building a combustion turbine for capacity that cost $141/kw-yr. Plainly, NorthWestern is discriminating against qualifying facilities in how it values capacity costs for its own resources, including ones that are still avoidable, as opposed to how it values avoided capacity costs for qualifying facilities.

Q. Is there still another reason you believe that the testimony NorthWestern filed last week is discriminatory?

A. Yes. NorthWestern owns a significant share of the Big Stone coal plant operated by Otter Tail Power Company. The owners of Big Stone have retained a consultant who performed an analysis in the February 2011 timeframe that indicates the incremental cost of power from the Big Stone coal plant, after retrofitting with needed environmentally driven improvements, will be at least $74.4/MWh. The Owners' consultant also stated that the best alternative to this $74.4/MWh is an alternative that costs over $100/MWh. If NorthWestern had proposed to treat the costs of replacing the output of the Big Stone project consistently with the way it is calculating avoided costs for Oak Tree, then NorthWestern should agree that energy and capacity equivalent to the Big Stone output could be purchased in the market for considerably less than $74/MWh. NWE's calculation of an avoided cost of only $39/MWh for the Oak Tree project, while at the same time supporting a decision to retrofit Big Stone at a cost of $74/MWh, is an obvious example of discrimination.

Q. Why do you believe that Staff's initial testimony filed last week would result in discrimination against Oak Tree if adopted by the SDPUC?

A. Staff is indicating that they believe the market price for capacity will be $20/kw-yr for the next 20 years. If this is truly Staff's position, Staff must vigorously oppose, on prudency grounds, the inclusion of the new Aberdeen gas turbine in NorthWestern's ratebase. For the Staff to fail to treat capacity costs similarly in both proceedings would be an obvious example of discrimination. Further, if Staff believes its forecast of market energy and capacity prices, Staff must oppose any approval of the Big Stone environmental retrofit project. Although Staff has yet to provide any testimony or other comment on either the Aberdeen gas turbine or the Big Stone retrofit, there is no reason to believe that Staff will make disallowances for

NorthWestern's projects based on Staff's forecast of market energy and capacity prices. The point is that the treatment of utility owned resources and qualifying facilities must be the same in order to avoid discrimination. Utility regulation is supposed to be a surrogate for competition, and permitting NorthWestern to unfairly bias the competition by providing NorthWestern with preferential treatment unfairly tilts that competition towards NorthWestern. Staff must recognize the need for consistent treatment, and its role in ensuring a level playing field.

Q. The SDPUC has yet to rule and Staff has yet to file testimony in either the Aberdeen or Big Stone Proceedings, so you can't be sure the SDPUC will be inconsistent in its consideration of rates for Oak Tree and its consideration of the prudence of NorthWestern's proposed investments in Aberdeen and Big Stone, correct?

A. That is true. But NorthWestern and the Staff are putting the SDPUC in an awkward position if the SDPUC adopts their proposals as made in the testimony they filed last week. The SDPUC will then have stated how they intend to address power supply alternatives and the SDPUC will need to use the same analysis and inputs in their decisions on the prudence of the Aberdeen and Big Stone environmental retrofit investments in order to avoid discriminating against Oak Tree.

IV. YOUR PROPOSED CHANGES IN THE ANALYSIS PERFORMED BY NORTHWESTERN

Q. What changes do you propose be made to the analysis performed by NorthWestern and why do you think those changes are appropriate?

A. I first propose that the market heat rate reflected in NorthWestern's testimony last week be rejected and replaced by the market heat rate reflected in Staff's testimony. In NorthWestern's testimony, NorthWestern's witnesses chose a new source of information to develop a new market heat rate. In order to develop a forecast of market heat rates, NorthWestern needed a forecast of spot market electricity prices and a forecast of natural gas prices.

Q. Where did NorthWestern go to get a forecast of spot market electricity prices?

A. NorthWestern chose to use a forecast of spot market prices that can be found in a proprietary publication, the Argus Electricity newsletter. That source is problematic from a number of standpoints. First, we are being asked by NorthWestern to take on faith that NorthWestern properly used the Argus forecast because we are not able to get it ourselves. Second, it is not known how that forecast is prepared. The Argus website indicates that it is a combination of actual futures transactions combined with "expert estimates" when there is little or no volume traded in the electricity spot market product.

Q. Where did NorthWestern go to get its forecast of natural gas prices?

A. For its forecast of natural gas prices, NorthWestern chose to use gas forward prices published by the Intercontinental Exchange. It is not clear how the Intercontinental Exchange develops its gas price forecast and what, if any, volume is being traded when they make a forecast.

Q. Is there a problem in getting natural gas price forecasts and spot market electricity price forecasts from two different sources?

A. Yes. Spot market electricity prices are heavily impacted by natural gas prices. In any forecast of spot market electricity prices there is typically a forecast of natural gas prices which is a primary driver in spot market electricity prices. If you develop a market heat rate utilizing a different source for the natural gas price forecast other than that natural gas price forecast upon which the electricity price forecast was originally based, that alternative gas price forecast may be wildly inconsistent with the assumptions used in the natural gas price forecast that underpins the spot market electricity price forecast. The result is that when you divide the spot market electricity price forecast from Source A by the gas price forecast from Source B, you are likely comparing apples and oranges and have a market heat rate that makes little sense in the real world. I believe this is what NorthWestern has done. Based on my experience, the market heat rate that NorthWestern has employed in its Additional Testimony is much lower than those observed in the actual markets.

Q. How did Staff develop their market heat rate forecast?

A. Staff developed its market heat rate forecast indirectly by using an analysis performed by the Eastern Interconnection States Planning Council (EISPC). That study used consistent natural gas prices and electricity prices. That is a much better approach to determining market prices. Therefore, I propose that the SDPUC adopt Staff's approach on market energy prices over NorthWestern's approach.

Q. What other proposed changes would you make to NorthWestern's analysis that was presented in supplemental testimony filed last week?

A. I first propose that the proposed "hybrid method" methodology reflected in NorthWestern's testimony last week be rejected and replaced by the "hybrid method" methodology reflected in Staff's testimony. While I personally believe that the Hybrid method should not be used at all, I understand that the SDPUC has required filings in this proceeding to reflect the hybrid method. In NorthWestern's additional testimony, NorthWestern did not use the same hybrid method it proposed in this proceeding earlier this year. Instead NorthWestern chose to perform a massive amount of new analyses to update its "hybrid method" numbers. Oak Tree could not possibly properly investigate this massive new study given the timeframe of this hearing. More importantly, the massive new study apparently results in much more of the avoided cost being based on the incremental cost of coal and much less on market prices. It is not clear why NorthWestern had not done this study before the hearing earlier this year. In any event, in the testimony filed last week, staff performed its own analysis of the proper application of the hybrid method. Clearly Staff would be less biased than NorthWestern in performing such an analysis. I believe the SDPUC should adopt the Staff analysis of the proper application of the hybrid method over NorthWestern's new analysis.

Q. What other proposed changes would you make to NorthWestern's analysis as presented in its additional testimony?

A. NorthWestern proposed that capacity be valued at $___/kw-yr in 2013 based on a November 10, 2010 preliminary offer NorthWestern received from Basin Electric for additional

market capacity. NorthWestern then proposes to increase this capacity rate in future years at a general inflation rate since apparently the "preliminary offer" from Basin Electric was for only one year. Clearly basing an avoided cost on a "preliminary offer" is not appropriate given the fact that NorthWestern itself chose to build the Aberdeen gas turbine specifically because capacity purchases would not be available in the future. The NorthWestern analysis set forth in its additional testimony should be adjusted to show the capacity avoided cost being the cost of the Aberdeen gas turbine.

Q. What does NorthWestern propose in its additional testimony with respect to the capacity credit to be attributed to the Oak Tree project?

A. NorthWestern proposed that 12.9% of Oak Tree's nameplate capacity be its capacity contribution for avoided cost purposes <u>for the first year</u> of Oak Tree's generation. After the first year, NorthWestern proposes that the capacity credit percentage be based on historical data. As discussed below, 20% is a more accurate capacity contribution.

Q. Do you understand how this proposal by NorthWestern would be implemented?

A. No. It is not clear who would do the analysis of the historical data after the first year. The SDPUC needs to be aware that NorthWestern is not a part of MISO at this point and typically it would be MISO that performs the historical analysis. If NorthWestern is not a part of MISO, then it will not be MISO that performs the analysis for Oak Tree. If MISO does not do it, then apparently NorthWestern will be making the calculations. Although MISO is objective in making such determinations, it is not clear that NorthWestern will be. Further, I fear that the annual capacity contribution calculations will lead to annual disputes before the SDPUC. It is far better that the capacity contribution be determined over the proposed 20-year of the contract, and I believe that 18 CFR § 292.304 requires that this option be made available to qualifying facilities.

Q. Do you have other problems with NorthWestern's proposal on capacity credit percentage?

A. Yes. NorthWestern's proposal to use 12.9% in the first year is based on a MISO Planning Year 2011 LOLE (aka Loss of Load Expectation) Study Report. Mr. Rounds provides a link to that report in his testimony. That 2011 LOLE report actually calculated a different capacity credit value for each of 129 different wind plants in the MISO footprint. As indicated on page 58 of that 2011 LOLE report, while the average capacity credit for the 129 wind plants was 12.9%, the range of capacity credits for the 129 wind plants encompassed a low of about 2% to a high of about 32%. Clearly, each individual plant has a specific capacity contribution percentage, and there is no reason to believe that a specific plant like Titan or Oak Tree energy would have the average capacity contribution. Instead, it would have to be assigned a capacity contribution consistent with the output of that particular plant. MISO makes available the names of the 129 plants and the capacity credit of each plant to a "Market Participant." Neither Oak Tree nor I qualify as a "Market Participants" as defined by MISO and, therefore, we have no access to the individual plant data and/or the information to determine if any of the plants are the Titan Wind plant to which the commission order in this proceeding refers.

Q. Have you found other information on wind capacity credits on the MISO web site?

A. Yes. I have found the MISO Business Practice Manual that deals with Resource Adequacy. Attachment 1 to this testimony is this Business Practice Manual. As can be seen from the Exhibit, MISO has a specific capacity credit calculation for each individual wind plant.

Q. What other information did you find on the MISO web site related to wind capacity credit?

A. I have found the Wind Capacity Credit report dated December 2012. While this report would not have been available in February 2011, it is certainly relevant to a proposal whereby the capacity credit is to be adjusted every year based on the MISO methodology being applied each year. Attachment 2 to this testimony is the Wind Capacity Credit report dated December 2012.

Q. What did you learn from the Wind Capacity Credit report dated December 2012?

A. As can be seen on page 3 of the report, the average wind capacity credit for the MISO footprint has increased to 13.3%. Further, this page indicates averages for sub-areas (aka Zones) of MISO including Zone 1 which includes the Titan Wind project and Oak Tree wind project. For Zone 1 the wind capacity credit is higher than any of the other zones in MISO. This is not surprising because of the good wind regimes in Zone 1 as compared to the other zones of MISO. The average capacity credit for the Zone 1 area is 15.5%. It is also notable that even Zone 1 is a fairly large area with 67 wind plants in the MISO portion of Zone 1. Some of these wind plants will be older technology and some will be in wind areas that are not as good as Titan Wind or Oak Tree. Therefore, Titan Wind and Oak Tree should receive a higher Capacity Credit than 15.5%. As I indicated in my Direct Testimony in this proceeding, earlier Midwest Reliability Organization (MRO) studies and reports have estimated that 20% of wind nameplate capacity in the MRO area should be counted on to meet peak load. NorthWestern, Titan Wind and Oak Tree are currently in the MRO footprint and not the MISO footprint. Until there is a study prepared such as that performed by MISO to evaluate the specific Capacity Credit that would be given to Oak Tree, it makes sense to assign Oak Tree a 20% Capacity Credit.

Q. Are there other reasons that the Oak Tree capacity credit should be set at more than 12.9%?

A. Yes. We learned from NorthWestern on Tuesday of this week (November 27, 2012) that NorthWestern calculates the appropriate capacity credit for Titan Wind every year. We learned that in the year 2010 the capacity credit was 20% and that in 2011 the capacity credit was in the 30% range. Oak Tree is in the same wind regime as Titan Wind and has proposed to use newer turbines which will have improved technology and should increase Oak Tree's net capacity factor over that produced by Titan Wind. We also learned that Oak Tree's expected net capacity factor is higher than Titan Wind's net capacity factor. Therefore it is reasonable to expect that Oak Tree's capacity credit should be greater than Titan Wind's capacity credit. Clearly a forecast of a 20% net capacity factor for Oak Tree is not too high.

Q. Have you calculated the Avoided Cost using NorthWestern's assumptions but correcting NorthWestern's faulty assumptions regarding Market Heat Rate and appropriate application of the Hybrid Methodology as set forth in NorthWestern's additional testimony?

A. I have attempted to do so and believe my calculations fairly closely represent what NorthWestern would have calculated if it had corrected the market heat rate and hybrid methodology assumptions that appear in NorthWestern's supplemental testimony. I have calculated the avoided cost using:

- NorthWestern's gas price assumptions provided in its Additional testimony;
- NorthWestern's assumptions about market heat rates and the Hybrid Methodology approach used in NorthWestern's initial testimony in this proceeding;
- A 20% capacity credit for Oak Tree;
- The cost of capacity from the Aberdeen Gas turbine as the avoidable capacity cost; and
- A $7.5/MWh value for Renewable Energy Credits or "RECs."

My calculation indicates that using these assumptions to modify NorthWestern's calculation of avoided cost as set forth in its Additional testimony would produce an avoided cost of $59/MWh. I am reluctant to adopt this number in this testimony because it still suffers from the defect of a flawed market heat rate that assumes a fixed relationship between natural gas prices and electricity prices starting in 2012 and continuing for all 20 years of the forecast. I am also reluctant to adopt this number because it inappropriately relies, in my opinion, on the EIA-AEO 2011 Early Release estimate of natural gas prices. Even EIA states in its 2011 Early Release report that the values in that report need to be evaluated along with the other 30 cases EIA provides and not be relied upon uncritically as a "correct" forecast.

V. YOUR PROPOSED CHANGES IN THE ANALYSIS PERFORMED BY SDPUC STAFF

Q. What changes do you propose be made to the analysis performed by SDPUC Staff and why do you think those changes are appropriate?

A. I would like to first compliment Mr. Rounds on the effort he put into the testimony he filed last week. I think he did a very good job of: (a) trying to estimate a market price for electricity; and (b) studying the appropriate application of the Hybrid Methodology (even though

I don't believe the Hybrid Methodology should be used at all). However, I have concerns about his decision to only look at the EIA-AEO 2011 Early Release gas price forecast rather than looking at a number of possible gas price forecasts that were available at that time.

Q. Do you have any substantive changes to propose to SDPUC Staff testimony?

A. Yes. I believe that Staff's calculation of the avoided capacity cost is based on a flawed premise and is thus substantially inaccurate. First, Staff has chosen to use a $20/kw-yr avoided capacity cost in every year of the 20 year forecast. This calculation is not based on a reasonable assumption. Mr. Round's states in his testimony that he based his capacity cost calculations on $17/kw-year because it was his understanding that I testified to this number in my direct testimony. However, Mr. Rounds is mistaken. I used $17/kw-yr in the *first* year of the forecast, but escalated that number over time until about the year 2020 when the price hit the full cost of a new gas turbine, a value of roughly $100/kw-yr. I utilized the values which were set forth in the Black & Veatch Fall 2010 Energy Market Perspective. The first year value of $17/kw-yr was based in large part on a view by Black & Veatch that the Midwest portion of the United States was long on capacity at that time. However, Black & Veatch also assumed that the Midwest region's surplus of capacity would disappear over the coming years. As a result, Black & Veatch forecasted that capacity prices would grow substantially until 2020. As it turns out, evidence presented by NorthWestern in this case demonstrates that the surplus capacity available to NorthWestern essentially disappears as of the year 2013 or 2014. This is the justification that NorthWestern offered for choosing to build the Aberdeen gas turbine rather than purchasing surplus capacity in the market. Given these facts, any estimate that capacity can be purchased in the market for a price of $20/kw-yr for each of the next 20 years is premised on faulty assumptions and is therefore not supportable. I believe that SDPUC Staff analysis needs to be changed to reflect the cost of the Aberdeen Gas Turbine as the avoided cost of capacity. I estimate the cost of Aberdeen to be $141/kw-yr. *See* Attachment 2_Lauckhart Additional Testimony, Key Inputs & Results Tab, filed November 21, 2012.

Q. Do you have any substantive changes to propose to SDPUC Staff testimony?

A. Yes. Staff proposes to use the 12.9% average capacity credit given to 129 different wind plants in the MISO footprint using the same study that NorthWestern refers to. As indicated in my testimony above, MISO actually calculates a different capacity credit for each of the 129 wind plants in its service territory. Further, MISO indicates that the 67 wind plants in the MISO Wind Zone 1, where Titan and Oak Tree are located, will get considerably higher capacity credit on average than will the average of the 129 plants across its full MISO footprint. Finally, as I discuss above, Oak Tree will be using new technology and likely in a better portion of Zone 1. Therefore Oak Tree should get a higher capacity credit than the average of the capacity credits of all plants in MISO Zone 1. The Midwest Reliability Organization has indicated in the past that wind plants in its footprint should be assigned a capacity credit of 20%. Given that MISO indicates that the average of the current 67 wind plants in Zone 1 is 15.5%, and given the fact that Oak Tree should do better than the average on Zone 1, and given the fact that MRO has indicated that plants in its footprint should be assigned a 20% capacity credit, the SDPUC should adopt the 20% number for Oak Tree in the avoided cost calculation. Further, as indicated earlier in my testimony, we have learned that Titan Wind's actual capacity credit (as calculated by NorthWestern) has averaged higher than 20% over the first two years since it commenced generation. We have also learned that Oak Tree's net capacity factor is expected to be higher than Titan Wind's net capacity factor, which would be expected to result in higher capacity credit for Oak Tree. Finally we know that the Oak Tree wind technology is newer and better than Titan wind technology.

Q. Have you redone the Staff calculation of avoided cost?

A. Yes. Staff provided their Excel workbook and I could easily redo their calculation by simply changing their capacity credit assumption from 12.9% to 20% and by changing their cost of capacity to the cost of the Aberdeen gas turbine. I also added $7.5/MWh for the REC value since Staff did not address REC value.

Q. What resulting avoided cost did you get?

A. These modifications and using the other Staff calculations and assumptions results in an avoided cost of $68.3/MWh.

VI. SUMMARY O F THIS TESTMONY

Q. Please summarize this Responsive Testimony.

A. My opinion is that the testimony filed by Staff last week suffers from fewer defects than the analysis which was submitted by NorthWestern, is more consistent with PURPA's requirements, and is thus more defensible. My only major objection to Staff's testimony is with regard to Staff's avoided capacity cost calculations. As indicated in this testimony, if Staff calculations are only modified as to the avoided capacity cost, then their resulting Avoided Cost is just slightly below what I proposed in the testimony I filed last week. While an appropriately adjusted value from NorthWestern's numbers also falls within the range of the ten possible values I filed last week, it is clearly at the low end of the range. For the reasons stated in the testimony I filed last week, I believe it makes little sense for the SDPUC to adopt something in the low end of the range. Further, the SDPUC needs to remain cognizant that QFs are not supposed to be discriminated against. If the SDPUC decides that calculations at the low end of a range are appropriate for QFs, then the SDPUC needs to take the same approach when evaluating the prudency of resources that NorthWestern wants to add into ratebase. In summary, I believe the SDPUC has a very good record that supports an avoided cost of $68.3/MWh or $69.3/MWh.

Q. Does that conclude your Responsive testimony?

A. *Yes*.