BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of PacifiCorp for Approval of an IRP Based Avoided Cost Methodology for QF Projects Larger than 1 MW	))))))	Docket No. 03-035-14

RECONSIDERATION REBUTTAL TESTIMONY OF KENNETH T. HOUSTON

February 17, 2006

Q. Please state your name and business address.

A. My name is Kenneth T. Houston. My business address is 700 N.E. Multnomah, Suite 550, Portland, Oregon 97232.

Q. Have you previously filed testimony in this matter?

A. Yes. I filed reconsideration direct testimony on behalf of PacifiCorp on February 10, 2006.

Q. What is the purpose of your testimony?

A. The purpose of this rebuttal testimony is to respond to direct testimony filed on February 10, 2006 by Richard Collins on behalf of Wasatch Wind LLC, Gregory Probst for West Consulting LLC and Andrea Coon for the Division of Public Utilities. I will respond to assertions and arguments made in relation to avoided transmission costs and Bruce Griswold will address issues relating to avoided transmission losses and the RFP.

Q. Mr. Collins asserts that he has reservations about using the SIS model to determine the amount of any avoided cost because the model has not been reviewed by an objective third party. Are his concerns well founded?

A. No. The model used is the base case power flow model developed and provided by the Western Electricity Coordinating Council (WECC). The model is developed jointly by all utilities in the WECC and is used by these same utilities for planning and system impact studies. PacifiCorp may be required to add some

changes to the model to include any lower voltage systems (46 kV, 69 kV, 115 kV, and 138 kV) not included in the overall WECC models. PacifiCorp planning engineers use these models and standard load flow software to conduct contingency and stability studies which define interconnection requirements. Assumptions on unit dispatch may be required to accommodate new generation sources. This model is used to assess all interconnection applications whether QF or under the OATT. Studies are done according to standard industry practice and should be reproducible by the interconnecting customers. In fact, in two recent cases the generation developer has requested to validate PacifiCorp's system impact study results for their projects. PacifiCorp has shared the study model and assumptions used with the generation developers consulting engineer, subject to certain confidentiality provisions.

Q. Ms. Coon suggests the PacifiCorp proposal should be expanded to include the transmission network above 138 kV. Please review PacifiCorp's position on this issue ?

A. The PacifiCorp proposal limits the avoided cost portion of the system impact study to the 138 kV system and below. For a multitude of reliability and other reasons as stated in my previous reconsideration direct testimony, PacifiCorp does not believe a 100 MW or smaller QF will have any measurable impact to defer or avoid any facilities on the high voltage transmission network. The PacifiCorp proposal was made in an attempt to review the portion of the network where savings would most likely occur while keeping the study scope within reasonable durations and costs.

However, the system impact study could be expanded for a QF developer and include the higher voltage network studies, however this would require additional time and expense for the developer. Main grid studies above 138 kV often involve neighboring transmission system and require joint planning studies, increasing complexity, costs and time requirements. If the Commission chose to provide developers an option to expand the avoided cost studies to the high voltage system, PacifiCorp's proposed system impact study durations for these studies would need to be expanded from 120 days to 180 days at a minimum.

Q. The only time that a transmission line investment (above 138 kV and above) can be avoided is when a QF entirely eliminates the need for it. Do you believe that a QF is capable of ever doing so?

A. Due to the size of QFs in this Docket, although possible, it is unlikely that an IRP resource and the associated transmission will be avoided. The considerations that are taken into account in developing the IRP resource are not the same as those that influence the location and construction of a QF. The IRP deals with issues such as meeting the Company's total system load demands and growth, system stability and security and power quality. These factors do not directly influence the development of a QF project. For example, a wood waste generating plant located near a saw-mill for fuel may not be located near a load large enough to absorb the power generated and the Company still has an obligation to serve the load when the resource is off line. Similarly, a wind generating facility may not generate sufficient energy to serve load or, as is more likely, due to the fact that they are usually located in remote areas to take advantage of a reliable wind

resource would not be located near a load large enough to absorb the power generated. Also, due to the fact that the wind QF depends on wind as a fuel source, it cannot be dispatched when needed and therefore cannot reliably serve load at all times when required.

The Company is not claiming that QFs will never avoid or defer transmission construction, rather, each case needs to be assessed on its own merits.

Q. Mr. Probst concedes that in most circumstances a proposed transmission line's scale is not affected by a proposed QF. What factors preclude the scaling down of a transmission line given the existence of a QF?

A. When a decision regarding the scale of a proposed transmission line is made and that line is added to the Company's 5-year plan or even in its IRP, the most efficient scale is chosen to match the requirements. However, the decision is made in the context of some physical and commercial constraints.

Avoided cost methodologies that are applied to generation do not work for transmission. There are certain characteristics of a transmission line that make it very difficult to scale down in order to allow for avoided capital costs. This can best be explained by example. IRP generation resources are typically of large scale, but can be scaled down in size if QF resources eliminate or defer the full requirement for a Company owned generation resource. However, in the case of transmission, calculation of avoided costs on a pro rata basis is not appropriate for several reasons. First, major transmission lines, unlike generation, are not easily scalable. Voltage level and conductor ampacity, coupled with a proposed line's

interaction with the existing systems, determine capacity. Using a very simplified analogy, typical capacity additions for a new line might be 200 MW for a 138 kV line, 400 MW for a 230 kV line, and 600 MW for a 345 kV line. In addition, due to transmission right-of-way limitation, once a decision is made to construct a line, the capacity of the line should not be scaled down with the addition of resources closer to load due to various reliability reasons including the outage and maintenance of the QF. Therefore, the Company should only avoid transmission investments if the new resource completely eliminates the need for a transmission line.

Secondly, Transmission lines are constructed for a multitude of reliability reasons and not solely for a new resource addition. Large generator outages, system reserve requirements, load following requirements, reactive energy flow, voltage support, mitigation of unscheduled flows, and many other reliability concerns all factor into a decision to construct a major transmission line. Reliability issues alone make it inappropriate to consider pro rata calculations when calculating avoided cost. The addition of a new QF near a utility's load would not be a major factor to avoid, defer or downsize a planned major transmission line.

Q. Mr. Probst asserts that because a QF or RFP project has impacts on the transmission system over a long period of time, it is inappropriate to compare the QF's impact to the 5-year transmission plan. He argues that the impact should be considered over a 10-year horizon as in the IRP. Do you agree?

A. No. I made the point in my reconsideration direct testimony that the IRP provides only a rough approximation of the additions and upgrades required in the system over a 10-year horizon. The 5 year transmission plans are more accurate in terms of whether a transmission resource is actually required or not because system requirements become better known as load requirements become clearer and better defined. Transmission additions and upgrades are required for a number of reasons, not just to interconnect a new generation resource.

As stated in my reconsideration direct testimony, system security and stabilization can often best be achieved by investing in transmission. Transmission is the only way to serve load in the event of planned and unplanned generation outages. However, all of these factors can only be accurately identified over a 5-year time horizon rather than a 10-year horizon.

The transmission system needs to comply with specific reliability standards. A five year horizon provides adequate time to identify needed transmission investment which may have a 4-5 year permitting and construction window. The 5- year time frame also provides a reasonable level of certainty about economic conditions, community expansion plans, load growth and other factors that require

additional infrastructure. The reliability of the system must be met on an hourly basis. The level of specificity on the data required to evaluate system reliability and the impact on the operations of the system becomes less accurate when the planning horizon extends out more than five years.

Should the Commission agree to expand the study period to 10 years, it is reasonably certain that a proportion of the transmission that was identified as potentially avoided from the 5th to the 10th year will be required anyway. Consequently, ratepayers would have to initially pay for the original avoided transmission cost payments made to QFs and they would also have to pay a further amount for the actual transmission additions and upgrades that are eventually required. This would be in violation of the ratepayer indifference standard.

Q. Does this conclude your testimony?

A. Yes it does.