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Division of Public Utilities

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Memorandum

TO: Public Service Commission

FROM: Division of Public Utilities
Philip Powlick, Director,
Artie Powell, Energy Manager
Jamie Dalton, Utility Analyst
Charles Peterson, Technical Consultant

DATE: November 5, 2009

RE: Purchase Power Agreement between PacifiCorp, dba Rocky Mountain Power, and U.S. Magnesium, LLC, Docket No. 09-035-20.

RECOMMENDATION, (QF PPA only) (Approval, with recommendation)

The Division recommends that the Commission approve the power purchase agreement between PacifiCorp and U.S. Magnesium, LLC.

The Division recommends that the Company provide, at least quarterly, the hourly power purchased under this contract so that the Division may monitor the contract and be better prepared to make recommendations in the future.

ISSUE

On or about August 20, 2009, Rocky Mountain Power (Company, or RMP), a division of PacifiCorp, filed a proposed power purchase agreement (PPA) for Commission approval between it and US Magnesium, LLC (US Mag). This PPA will succeed the existing PPA that

expires on December 31, 2009. The existing PPA was approved by the Commission in Docket No. 03-035-38. Subsequent to the filing, the Division met with representatives of the parties, submitted data requests, and had informal information exchanges with RMP and US Mag.

The Commission held a scheduling conference on August 13, 2009 and subsequently issued a Scheduling Order requiring the Division and the Office of Consumer Services to respond to the Company's application by November 5, 2009. This memo, outlining the Division's investigation and conclusions, is in response to the aforementioned Commission Order.

The Division recommends that the Company provide, at least quarterly, data regarding the hourly power purchased under this contract so that the Division may monitor the contract and be better prepared to make recommendations in the future.

ANALYSIS

The PPA is dated August 19, 2009 between PacifiCorp and US Mag. The agreement states that US Mag "owns, operates and maintains magnesium production and related facilities, including an existing gas-fired generation facility…"[1] located in Tooele County, Utah. The Nameplate Capacity Rating of the generation facility is 45 megawatts (MW). The estimated normal maximum sustained output of the generating facility is about 36 MW. The US Mag facility is operated as a qualifying facility (QF) as defined by 18 C.F.R Part 292.[2] US Mag has previously provided its FERC self-certification to PacifiCorp prior to the implementation of the previous contract, which expires on December 31, 2009. All interconnection requirements have been met and the US Mag facility is fully integrated with the Company's system.

US Mag estimates that the average net monthly output of the facility to be delivered to RMP will be about 238,272 megawatt-hours (MWh) to PacifiCorp, or about 27.2 MW per hour on

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[1] PPA, page 1.
[2] Op. Cit. page 5, section 3.2.6

average.[3] US Mag has the option, but not the obligation, to deliver approximately 45 MW per hour (the nameplate capacity) to PacifiCorp.[4] The pricing in this contract varies monthly with high load and low load hour pricing for each month. US Mag has indicated that it tentatively plans for major scheduled maintenance on one of its units in March 2010.[5]

The Agreement before the Commission is expected to run for a term of 12 months: beginning January 1, 2010 and ending December 31, 2010. The current contract expires December 31, 2009.

Under the terms of the Commission order in Docket No. 03-035-14, non-firm QF resources are not entitled to a capacity payment. Therefore, this Agreement contains energy-only prices. As set forth in Section 5 and Exhibit E of the contract, the price per megawatt hour (MWh) varies by month and by high load and low load hours. The average annual price is approximately $40 per MWh.[6] To this MWh price is added an adjustment for avoided line losses. The avoided line losses payment amounts to an additional 4.36 percent added to the price per MWh.[7] The relatively high prices during the months of July through September provide an incentive for US Mag to provide as much power as possible during those months of relatively high demand on PacifiCorp's system. Similarly, the higher prices for on-peak hours act as an incentive for the QF to operate during the hours of the day when demand on PacifiCorp's system is highest.

The prices for next year's contract are based upon PacifiCorp's June 2009 forecast price curves. In June 2009 energy prices were significantly down from the historical highs during the previous year. Due, in part, to the current economic recession, energy prices are expected to be more stable during 2010 than they were in 2008.

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[3] Op. Cit. page 1
[4] Op Cit. section 4.2.
[5] PPA, Exhibit D.
[6] PPA, Exhibit E.
[7] PPA, Section 5, p. 6.

The general terms and conditions of the Agreement appear to be generic in nature and closely mirror those in prior, similar contracts. The main differences appear to be the price to be paid for delivered energy. The non-price related conditions within the Agreement appear to be generic and reasonable.

Avoided Energy Costs

This PPA with US Mag is represented to comply with the Commission's QF pricing methodology ordered in Docket No. 03-035-14. The Division has tested the contract pricing for compliance with the approved methodology by performing its own GRID run. The Division's GRID run was able to verify the contract pricing.

In its GRID run the Company assumed that US Mag would be making available approximately 30.6 MW each hour throughout the year, apparently based upon taking 85 percent of the "normal sustained maximum" of 36 MW. This amount is contrary to the historical operations of the US Mag QF, which has averaged less than 28 MW over the 2006 to 2008 time period.[8] The Division determined through its own analysis that changing the assumed output by plus or minus one standard deviation from the 2008 annual mean of 27.97 MW, has an immaterial impact on price. The standard deviation in 2008 was about 8.5 MW.

Therefore, the Division determined that based upon the conditions present at the time the PPA was negotiated, the avoided costs are reasonable. The spreadsheets showing the results of the Division's GRID run are available to the Commission upon request.

The PPA's Avoided Transmission Losses

The Company and US Mag argue that an avoided line loss adjustment of 4.36 percent should be provided under this contract. They claim that the development of this adjustment is consistent

[8] PPA, p. 1.

with Commission guidance provided under Docket No. 03-035-14 (QF docket). In proceedings under the QF docket, several parties raised the issue of avoided transmission line loss adjustments for non-firm QF contracts. The Division argued that avoided cost transmission line loss adjustments should not be given to QFs with non-firm or "must-take" contracts in applying the methods that were proposed. However, the Division indicated that it may consider giving QFs avoided transmission line loss adjustments if ratepayer neutrality could be assured.[9,10] The Division and Company proposals in the QF docket were similar in that they involved comparing distances from the QF and a proxy plant to the load center (i.e. the Wasatch Front). The adjustment was to be calculated against the Company's FERC approved Open Access Transmission Tariff (OATT) percentage.

In the end, the Commission was not satisfied with any of the proposed solutions and declined to adopt guidelines for non-wind QFs.[11] In a subsequent clarification order issued on May 26, 2006 under the QF docket, the Commission indicated that it would evaluate the reasonableness of avoided transmission loss payments to QFs on a case-by-case basis.

This PPA includes an avoided line loss adjustment that is developed by first determining if the QF is located in the Wasatch Front load center, which includes the "Utah North" and "Utah South" transmission "bubbles" as defined by the Company's GRID production cost model. The Company argues that if the QF is located in these bubbles, avoided line losses may be warranted, as this will reduce the need for the Company to import energy from outside this area. This, in turn, decreases the amount of physical energy losses that would otherwise occur with the importation of energy from a more distant generation resource. The Company also argues that there may be additional unique circumstances applicable only to the QF under examination that may also result in consideration of additional avoided line loss adjustments.

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[9] Direct Testimony on Rehearing of Andrea Coon, February 10, 2006, lines 99-101, Docket No. 03-035-14.
[10] PacifiCorp also recommended that no line loss adjustment be given non-firm QFs. The agreement to give US Mag a line loss adjustment appears to be at variance with the Company's position. See Reconsideration Direct Testimony of Bruce W. Griswold, February 10, 2006, lines 86-91, Docket No. 03-035-14.
[11] See Order dated April 19, 2006, pp. 13-15, Docket No. 03-035-14.

The Company argues that the location of the US Mag QF is indeed within the above transmission bubbles and therefore provides a benefit of reducing the need for imported energy. Consequently, according to the Company, it should be eligible to receive an avoided line loss payment. In addition, the Company notes that the US Mag QF is located at the end of a dedicated radial line that is needed to serve the US Mag load. The Company argues that when the US Mag QF is operating, it is avoiding the energy that would have otherwise been required to serve the load for the entire US Mag complex. As a result, there are additional line loss savings that should be considered.

The 4.36 percent figure is based upon the Company's current FERC OATT, effective April 1, 2006, of 4.48 percent with two adjustments. The first adjustment was made by using the GRID model to calculate the percentage of the total megawatt hours that the US Mag QF had avoided that were outside the Utah North and South transmission bubbles. Then, the Company multiplied it by the PacifiCorp FERC OATT transmission level line loss rate 4.48 percent. The US Mag QF avoided resources were outside the Utah North bubble 79.46 percent of the time, so the OATT rate of 4.48 percent was multiplied by 79.46 percent, resulting in a weighted loss adjustment of 3.56 percent.

The second adjustment was based upon what the Company terms are project-specific, unique characteristics that warrant enhancements to the factor. As indicated above, the Company notes that the US Mag QF is located at the end of a radial line initiating at the Company's Terminal substation and terminating at the US Mag facility. The Company previously developed a physical energy loss study for this line. This study found that losses for this terminal line totaled approximately 0.8 percent.[12] Because of the benefits of the US Mag QF in serving system load,

[12] The 0.8 line loss figure was first determined in the Desert Power QF Docket No. 04-035-04. The QF PPA contract, dated September 24, 2004, between Desert Power and PacifiCorp was approved by the Commission in its Order dated October 7, 2004, included Exhibit 1 which set forth the calculation of avoided line losses in that docket. Concurrently, avoided line loss amount was included in the QF contract between U.S. Magnesium and PacifiCorp and briefly mentioned in the Pre-filed Direct Testimony of Bruce Griswold, on page 12, in Docket 03-035-38. As discussed earlier, subsequent testimony in 2005 and 2006 in the generic QF Docket No. 03-035-14, disputed the use of an avoided line loss adjustment in the case of non-firm QF contracts.

they argue that these losses should likewise be included. Adding this loss rate to the 3.56 percent weighted loss adjustment factor results in the 4.36 loss adjustment factor stated in this filing.

Both the Company and US Mag object to the inclusion of the Division's Non-Firm Energy Adjustment, as applied to other QF contracts, both this year and in 2008. This adjustment takes into account the fact that the US Mag QF PPA represents the provision of non-firm energy with no minimum delivery obligations. This adjustment represents the calculated differential between energy plus capacity prices and energy-only prices, which is essentially made by taking the ratio of non-firm to firm pricing per Utah Electric Schedule No. 37. This adjustment represents an attempt to compensate other ratepayers for inefficiencies that may be introduced into PacifiCorp's system by the non-firm nature of the contract. However, both the Company and US Mag take issue with this concept and argue that the level of a contract's "firmness" has no bearing on the determination of line losses. They claim that line losses only occur when physical power is transmitted. In other words, line losses are not affected by the "firmness" of a resource. While the Division has argued for this adjustment previously, after further review of this argument and as this is a one year agreement, the Division has agreed not to propose this line loss adjustment in the current docket. The Division intends to investigate the line loss adjustment issue further, probably in the spring of 2010. The Division believes that the Company and other interested parties should evaluate this, and other related issues further for future contracts to determine if a more consistent policy and approach for developing line loss calculations can be achieved.

For the present, the Division believes that PacifiCorp's approach has a reasonable basis. That is, the analysis is relatively easy to perform and to check by use of the GRID model. The FERC OATT will be reviewed and updated by PacifiCorp and the FERC from time to time. While, US Mag's output varies widely over the course of a day, the Division concluded that the US Mag QF could not be considered to be operating as if it were a firm resource. However, the Division agrees that it is reasonable to give US Mag the benefit of avoided line losses albeit at a reduced rate from the OATT.

Based upon the foregoing, the Division does not oppose the avoided line loss adjustment in this PPA, as there appears to be some sound arguments regarding this adjustment presented by US Mag and the Company. In general, however, the Division is unconvinced at this point that allowing an avoided transmission line loss adjustment to QFs providing non-firm power is appropriate for all qualifying facilities. The Division recommends that PacifiCorp provide, at least quarterly, data regarding the hourly power purchased under this contract to the Division so that the Division may monitor the contract and be better prepared to make recommendations in the future.

While the Division believes that the method for calculating line losses in this matter appears to be both reasonable and practical, absent definite Commission guidelines regarding the policy with respect to non-wind QFs with a non-firm PPA, or the calculation of avoided transmission losses in QF contracts, various methods and assumptions may be employed by PacifiCorp and its counterparties as they negotiate their contracts. Since each QF contract will be unique in many ways, the Division does not view its position on line losses in this case as setting any precedent.

CONCLUSION

The Division concludes that the terms of the US Mag Power Purchase Agreement generally are generic and comply with the Commission's guidelines and order in Docket No. 03-035-14. Assuming avoided line loss adjustments are permissible in non-firm QF contracts, the Division concludes that there is a reasonable basis for the transmission line loss adjustment in this PPA. However, the Division does not necessarily endorse a line loss adjustment for all non-firm QF contracts, or for future contracts with US Mag. The other contractual arrangements and facts in this matter, in particular the method for calculating the avoided energy costs, have been previously found to be just and reasonable and in the public interest. The Division recommends that the Commission approve the Power Purchase Agreement between US Mag and PacifiCorp.

cc: Michele Beck, Committee of Consumer Services
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