SULLIVAN, MOUNTJOY, STAINBACK & MILLER PSC

ATTORNEYS AT LAW

Ronald M. Sullivan
Jesse T. Mountjoy
Frank Stainback
James M. Miller
Michael A. Fiorella
Allen W. Holbrook
R. Michael Sullivan
Bryan R. Reynolds
Tyson A. Kamuf
Mark W. Starnes
C. Ellsworth Mountjoy
Mary L. Moorhouse

September 27, 2012

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SEP 28 2012

PUBLIC SERVICE COMMISSION

Via Federal Express

Mr. Jeff DeRouen
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

RE: *Application of Big Rivers Electric Corporation to Transfer Functional control of Its Transmission System to Midwest Independent Transmission System Operator, Inc.*, P.S.C. Case No. 2010-00043

Dear Mr. DeRouen:

Enclosed for filing in the Public Service Commission ("*Commission*") general correspondence file for Big Rivers Electric Corporation ("*Big Rivers*") are an original and ten copies of the report of Big Rivers in compliance with finding number two in the November 1, 2010 order of the Commission in the above-styled matter. In that finding, Big Rivers is required to "file a report by September 30 of each year describing its current evaluation of available options for complying with NERC's contingency reserve requirement and its review of the short-term and long-term costs and benefits of continued membership in Midwest ISO."

I certify that a copy of this compliance filing has been served on each party of record in the above-styled matter. Please contact me if you have any questions regarding this filing.

Sincerely yours,

James M. Miller

James M. Miller
Counsel for Big Rivers Electric Corporation

Copies to: Mark Bailey
Albert Yockey
Douglas Beresford, Esq.

Telephone (270) 926-4000
Telecopier (270) 683-6694

100 St. Ann Building
PO Box 727
Owensboro, Kentucky
42302-0727

Service List
Case No. 2010-00043

Keith L. Beall
Gregory A. Troxell
Midwest ISO, Inc.
701 City Center Drive
P.O. Box 4202
Carmel, Indiana 46082-4202

Mark David Goss
Frost Brown Todd LLC
Suite 2800
250 West Main Street
Lexington, KY 40507-1749

David C. Brown, Esq.
STITES & HARBISON
1800 Providian Center
400 West Market Street
Louisville, Kentucky 40202

Michael L. Kurtz, Esq.
BOEHM, KURTZ & LOWRY
36 East Seventh Street, Suite 1510
Cincinnati, Ohio 45202

Hon. Dennis G. Howard, II
Hon. Lawrence W. Cook
Assistant Attorneys General
1024 Capital Center Drive
Suite 200
Frankfort, KY 40601-8204

Midwest Independent System Operator
Annual Cost/Benefit Update for Kentucky Public Service Commission

Prepared September 2012

Background

Big Rivers Electric Corporation ("Big Rivers") joined the Midwest Independent System Operator ("MISO") on December 1, 2010 to meet its NERC-mandated Contingency Reserve requirements. In 2009, Big Rivers commissioned Charles River Associates ("CRA") to conduct an economic assessment of the options available to Big Rivers for the supply of Contingency Reserve. The CRA Analysis completed in 2010 concluded that Big Rivers had no viable options for meeting its Contingency Reserve requirement other than with a stand-alone self-supply plan or by joining MISO. Based on CRA's analysis, joining MISO was estimated to be at least $32 million less costly to Big Rivers than stand-alone self-supply over the five year period from 2011 to 2015. Big Rivers was approved by MISO for membership in December 2009 and following approval by the Kentucky Public Service Commission fully integrated into MISO on December 1, 2010.

Today's Options

Big Rivers believes that the options for meeting its Contingency Reserve requirement are virtually unchanged from what was described in the analysis completed by CRA in 2010 and as described in Big Rivers' update to the Commission dated September 27, 2011. The same obstacles which hindered or prevented participation in other reserve sharing groups exist today as were identified in the CRA Analysis. The same obstacles which hindered participation in the PJM RTO as those identified in the CRA Analysis and more specifically in the September 2011 update to the Commission continue to exist today as well. While LG&E/KU was acquired in 2011 by PP&L and PP&L is a member of the PJM RTO, LG&E/KU has not changed from its ITO/RC operational construct and thus is not an RTO member. Additionally, East Kentucky Power Cooperative's potential membership in the PJM RTO does not afford Big Rivers a viable alternative. Big Rivers' transmission system is neither directly interconnected with East Kentucky nor is Big Rivers indirectly connected to the East Kentucky system by virtue of firm transmission rights across another system. Therefore, there has been no change in the status of any option available to Big Rivers for possible participation in the PJM RTO from those described in its September 2011 update to the Commission. Thus, again in 2012 the only viable options for Big Rivers to continue to satisfy its NERC requirements are continued MISO membership and the stand-alone self-supply plan as described in the CRA Analysis which would require a withdrawal from MISO.

To meet its Contingency Reserve requirements on a stand-alone basis, Big Rivers still requires 417 MW of Contingency Reserve based on the loss of its largest single generating unit, the D.B. Wilson unit 1. The stand-alone option in the CRA Analysis included the assumed supply of 200 MW of Contingency Reserve from the smelters in the form of ten-minute interruptible load plus the addition of a minimum of 200 MW of new peaking generating capacity to the Big Rivers system. The smelters have not agreed to supply the interruptible load service to Big Rivers and the cost of the 200 MW of new peaking generation capacity was shown in the CRA Analysis and continues to be more costly than MISO membership even with the smelter interruptible load service. Without the smelter interruptible load service, the MISO membership cost benefit would be even greater than $32 million over the five year period.

Under the Transmission Owners Agreement with MISO, Big Rivers is required to maintain membership for five years. Big Rivers will have met that obligation by remaining in MISO through the end of 2014. A one year withdrawal notification is required prior to exit. Therefore, the latest date that notice could be given by Big Rivers to MISO is December 2013. Big Rivers would be required to meet its exit fee obligations should it choose to withdraw from MISO. At the end of 2014, those obligations would currently include MISO transmission expansion cost sharing obligations resulting from MTEP/MVP projects approved from 2010 through 2014. An estimate of this exit fee cost obligation is not available from MISO.

Big Rivers' MISO Experience To-Date

Big Rivers has experienced no major issues in the operation of its transmission and generation systems within the MISO market from December 2010 to the present time. Big Rivers has gained a better understanding of the benefits and costs of MISO membership. As expected, the most prominent benefit of joining MISO recognized by Big Rivers has been the ability to meet its NERC Contingency Reserve requirement. Big Rivers is purchasing Contingency Reserve service for its load in the MISO Ancillary Services Market. The cost of the Contingency Reserve ancillary services from MISO for 2011 was $666,000. The cost of the services from MISO from January through July of 2012 is $430,000. The annualized cost is thus projected to be approximately $737,000 (i.e. $430,000 times 12/7). Under the Midwest Contingency Reserve Sharing Group operation in 2009, Big Rivers had to hold back 32 MW of its generation capacity from the market to meet its reserve obligation to the other group members. In 2009 after Big Rivers assumed control of the operation of its generating plants in July, Big Rivers was able to sell 82.6% of its available generating capacity. Beginning in January 2010, Big Rivers purchased Contingency Reserve service from MISO. Thus, Big Rivers has recognized a MISO membership benefit by being able to sell additional energy into the market as a result of purchasing Contingency Reserve services. The financial benefit from these additional energy sales is reflected in the energy sales summary provided in the next paragraph.

Big Rivers sold 90.3% of its available generating capacity in 2011 operating fully integrated into MISO; sold 87.6% of its available generating capacity in 2010 operating only partially integrated into MISO; and sold only 82.6% in 2009 following the termination of the lease of its power plants and prior to MISO membership. Given Big Rivers' annual generation for 2011 of 12.44 million MWhs, this represents approximately 950,000 MWhs in additional sales compared to the pre-MISO rate of 2009 (i.e. 90.3% minus 82.6% times 12.44 million MWhs) and 320,000 MWhs in additional sales compared to the 2010 rate (i.e. 90.3% minus 87.6% times 12.44 million MWhs). Using the Big Rivers' average net margin on market sales of $8.09 per MWh in 2011, these additional energy sales represented an increase in net margins of $7.7 million ($7,700,000) compared to the pre-MISO 2009 sales and $2.6 million ($2,600,000) compared to the 2010 sales . Even with the adverse effects of the national economic downturn, Big Rivers was able in 2010 and 2011 to increase sales of its excess generation. Big Rivers has been able to sell all its excess generation that clears the energy market price versus Big Rivers' opportunity prior to MISO membership to sell generation in blocks during on peak and off peak time periods to other utilities/entities together with some sales into the MISO energy market on a day ahead or real time basis. Even though Big Rivers has been able to increase the volume of sales made, due to significantly depressed market prices, Big Rivers has experienced an extreme reduction in margins made from selling into the market.

Big Rivers has continued to experience minimal adverse effects from transmission congestion at the Big Rivers' transmission system border since joining MISO. While it is difficult to quantify the financial benefit recognized by Big Rivers, the market re-dispatch of generation by MISO to manage transmission congestion has had a positive effect on Big Rivers' ability to both purchase power from and sell power to MISO. During the period from 2007 to 2009, Big Rivers experienced curtailments in power purchases or power sales on at least fifty occasions due to transmission constraints outside of the Big Rivers transmission system. However, since joining MISO, Big Rivers has experienced virtually no congestion related limitations. Thus, MISO membership has continued to be a notable benefit for Big Rivers in terms of favorable transmission operational experiences.

Big Rivers experienced lower than anticipated costs associated with MISO membership in 2011. In the CRA Analysis, it was estimated that the MISO administrative charges would be $5.3 million ($5,300,000) in 2011 and $4.8 million ($4,800,000) in 2012. The actual MISO charges for 2011 were $4.7 million ($4,700,000) some $600,000 less than anticipated. Through July 2012, Big Rivers has paid $2.8 million ($2,800,000) in administrative charges. This represents an annualized cost of approximately $4.8 million ($4,800,000-i.e. $2.8 million times 12/7) in 2012 which is the same as that anticipated in the CRA Analysis. This small projected increase in MISO charges in 2012 compared to 2011 is due to an increase in the smelter load this year above their 2011 level. Big Rivers anticipates that the MISO administrative charges will be somewhat lower in 2013 than those experienced in 2011 and 2012 and will decrease even further in 2014 and 2015 due to cessation of operation of the Century smelter in August 2013.

As Big Rivers has gained additional experience operating in the MISO market, Big Rivers has also realized additional costs exist to serve member load that were not quantified prior to joining MISO. Due to the workings of the MISO market, Big Rivers sells all available generation to MISO and then buys the power needed to serve all its members' load from MISO. Due to congestion and loss charges, there is a fluctuating price differential between the Locational Marginal Price (LMP) Big Rivers is paid for power it sells to MISO and the LMP charged by MISO for power needed to serve Big Rivers' load. Financial Transmission Rights (FTRs) provide a hedging mechanism to offset the congestion cost embedded in the LMP; however, Big Rivers has discovered, through market participation, that losses embedded in the LMP are not hedged in the MISO market. Excess loss collections are refunded to market participants, but the refunds are only a fraction of the total cost of losses experienced in MISO. Big Rivers is working to quantify the magnitude of the LMP differential which is currently believed to be millions of dollars per year. Likewise, Big Rivers is working to quantify all additional costs of MISO participation and will approach the Commission to discuss recovery options when the analyses are complete.

In the CRA Analysis, it was assumed that Big Rivers would have to add staff to meet the additional workload demands associated with operation in the MISO market. Because of the significant decrease in off-system sales margins experienced in 2010, 2011 and 2012 due to the depressed power market, Big Rivers has had to take drastic steps to cut costs to meet the margin requirements specified in its lending agreements. Most notably, Big Rivers has postponed plant outages; however, Big Rivers has also delayed staffing additions to meet its earnings requirements. Big Rivers' annual costs thus far include only $275,000 of the estimated $800,000 cost associated with the internal staffing and equipment additions assumed in the CRA Analysis.

Big Rivers' responsibility for MISO transmission expansion cost sharing in 2011 was zero ($0) for MVP projects and $233,000 for all other MTEP projects. These 2011 MTEP costs were assessed to Big Rivers on transmission reservations from MISO to TVA related to our power marketing efforts to the south outside of the MISO footprint. Through July 2012, Big Rivers has been assessed $340,000 for both MVP and MTEP projects which represents an annualized cost of $583,000 (i.e. $340,000 times 12/7). In 2012, Big Rivers is being assessed its cost sharing responsibilities on five of the seventeen (5 of 17) MVP projects which were approved by the MISO Board in 2010 and 2011. These MVP cost allocations are assessed on transmission reservations for service to Big Rivers' non-grandfathered agreement member load (i.e., both aluminum smelters). The future cost allocations to Big Rivers for these MVP projects are difficult to estimate given that the projects are in the very early stage of development at this time. However, MISO has provided an estimate of the annual cost allocation factors expressed in dollars per MWh of energy withdrawn from the market for serving load for the years 2013 through 2025. Using the MISO cost allocation factors, Big Rivers would anticipate cost sharing obligations for both MVP and MTEP projects of approximately $830,000 in 2013, $916,000 in 2014, and $1.52 million ($1,520,000) in 2015. These cost projections are based upon the cessation of service to the Century smelter in August 2013. They are somewhat higher in 2013 but much lower in 2015 than the cost estimates provided by MISO in 2010.

Conclusion

As stated previously, continued MISO membership is currently the most cost-effective option for meeting Big Rivers' Contingency Reserve requirement. The benefit derived by Big Rivers from MISO membership has continued to be greater than was estimated in the CRA Analysis because (1) Big Rivers' cost under the stand-alone plan has increased since Big Rivers no longer believes that 200 MW of the smelter load can be assumed to be used as interruptible load to fulfill some of the Contingency Reserve requirement; (2) Big Rivers' costs for MISO administrative charges were less than anticipated for 2011, are projected to be at the anticipated level in 2012, and then projected to be less than anticipated in

2013, 2014, and 2015; (3) internal staffing and equipment additional costs have been less than anticipated thus far; (4) the MTEP/MVP cost allocations to Big Rivers appear to be progressing more slowly than that anticipated in 2010; and (5) Big Rivers has realized a benefit from the ability to sell more power into the market than was the case prior to our MISO membership due in part to our ability to purchase Contingency Reserve services from MISO and due to the virtual elimination of transmission constraints. Even though Big Rivers has not fully quantified the additional MISO costs like the LMP differential, Big Rivers does not expect these MISO costs to be of sufficient magnitude to offset the cost benefits derived from MISO membership and thus tip the scale towards the stand-alone self-supply option. Clearly, in the near-term, membership in MISO remains Big Rivers' best option, but Big Rivers will continue to closely evaluate this as well as other options for meeting its Contingency Reserve requirement and monitor costs, benefits, and implications of continued MISO membership for the future. An annual cost/benefit analysis will continue to be performed and supplied to the Commission as required in the approval order.

David G. Crockett

David G. Crockett

Vice President System Operations

Big Rivers Electric Corporation