EXHIBIT

Exhibit No.:	205P
Issue(s):	Asbury Facility Early Retirement/ Tax Equity Financing Risks
Witness/Type of Exhibit:	Riley/Surrebuttal
Sponsoring Party:	Public Counsel
Case No.:	EO-2018-0092

SURREBUTTAL TESTIMONY

OF

JOHN S. RILEY

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

** **

Denotes Confidential Information that has been redacted

March 13, 2018

PUBLIC VERSION

OPC Exhibit No. 205-9
Date 5-14-18 Reporter A.F.
File No. EO-2018-0092

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of	)	
The Empire District Electric Company	)	Case No. EO-2018-0092
for Approval of Its Customer Savings Plan	)	

AFFIDAVIT OF JOHN S. RILEY

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

John S. Riley, of lawful age and being first duly sworn, deposes and states:

1. My name is John S. Riley. I am a Public Utility Accountant III for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

John S. Riley, C.P.A.
Public Utility Accountant III

Subscribed and sworn to me this 13th day of March 2018.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

JERENE A. BUCKMAN
My Commission Expires
August 23, 2021
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My Commission expires August 23, 2021.

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SURREBUTTAL TESTIMONY

OF

JOHN S. RILEY

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EO-2018-0092

Q. What is your name and what is your business address.

A. John S. Riley, PO Box 2230, Jefferson City, Missouri 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Office of the Public Counsel ("OPC") as a Public Utility Accountant III.

Q. Are you the same John S. Riley who filed rebuttal testimony in this case?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I refute Division of Energy ("DE") witness Martin R. Hymen's complete faith in nearly all aspects of Empire's assertion that the economics of its "Customer Savings Plan" will provide its customers with $100's of millions of savings in their electric bills. I also address Midwest Energy Consumers Group ("MECG") witness Mr. Greg R. Meyer's tax equity partner issue and how his SPP narrative points out a risk that has not been discussed previously.

Q. How has Mr. Hymen defined the Division of Energy's support for Empire's proposal?

A. Mr. Hymen states that DE provides

> general support for The Empire District Electric Company's ("Empire" or "Company") proposed "Customer Savings Plan," as well as to provide recommendations to address some of the economic development impacts of the Customer Savings Plan. DE does not take a position on Empire's requested accounting treatment regarding the Asbury plant or on the use of tax equity financing.[1]

[1] DE witness Hymen rebuttal testimony, p. 6, ll. 3-9.

Q. What do you take issue with regarding DE's support of Empire's proposal?

A. DE supports Empire's plan, but would like to qualify its support by voicing no positions on Empire's proposals to create a regulatory asset and to use a tax equity partner. DE does not question any of the assumptions that Empire injects into its argument to present this proposal as a cheaper alternative to keeping Asbury operational and not building wind farms. The regulatory asset and use of a tax equity partner are two integral parts of Empire's plan. These two parts are vital to Empire's calculations that are its support for the customer savings that DE favors. Basically, DE has thrown its support for "wind" and closed its eyes to the consequences that Empire's customers will have to bear.

ASBURY FACILITY EARLY RETIREMENT

Q. How important is Empire's regulatory asset request when considering whether to support or reject Empire's proposal?

A. The tremendous cost to Empire's retail customers of premature retirement of Asbury cannot be ignored. Early retirement of Asbury places a huge burden around the neck of Empire's customer base. As illustrated in Schedule JSR-R-3 of my rebuttal testimony, an abandoned and unused Asbury will cost the ratepayer $427.6 million over the 30-year amortization period Empire proposes if the Commission allows Empire to recover a return on the regulatory asset Empire seeks for Asbury. Taking no position on this amount of regulatory dead weight is shortsighted. In addition to not taking into account this significant cost, DE did not question any of Empire's assertions that purport to show Asbury is too expensive to keep operating.

Q. Which of Empire's assertions should be questioned?

A. The biggest question mark to any argument concerning a coal generation plant is the price of coal used in the model. Mr. Hymen does not question Empire's plan at all, but Empire's projections of future coal prices should be scrutinized.

Q. What is your understanding of Empire's projected prices of coal it used in its modeling?

A. Empire witness James McMahon has included in his direct testimony a highly confidential four page Appendix 1. Table 3, page 4 of that Appendix lists Empire's coal cost assumptions

for coal fired generating plants in its portfolio. The coal prices are presented as (Nominal $/MMBtu) through 2037. I've included this as page one of my schedule JSR-S-1 to this testimony. Mr. McMahon explains the coal prices on page 18 of attachment JM-2 of his direct testimony as follows:

> ***Coal Price Forecast***
>
> The coal price forecast used for the Asbury, Iatan, and Plum Point facilities were supplied by Empire through 2021. After 2021, annual escalation was based on ABB's average delivered coal price for SPP-KSMO projections. Base coal price projections for Empire's coal units are in Appendix 1. This is an update to the 2016 IRP which relied upon the Energy Information Administration inflation projections

Q. How did OPC evaluate the reasonableness of these projections?

A. To get an understanding of the reasonableness of the coal price projections Empire used, OPC reviewed the U.S. Energy Information Administration's ("EIA") forecasted coal costs. The EIA is predicting lower delivered coal prices through 2035. The EIA Annual Energy Outlook 2018, which has its own modeled prediction through 2050, forecasts prices to be lower throughout the 2037 timeframe.[2] I've included the EIA chart as page 2 of Schedule JSR-S-1. The coal predictions are highlighted.

Q. Are the EIA and Empire projected coal prices significantly different?

A. Not in the first few years but the spread grows wider in the later years when Empire's plan is supposedly providing its greatest benefit. But here is something for the Commission to consider, if coal prices stay suppressed and do not reach the price levels that Empire uses in its model, then the marginal savings it claims from retiring Asbury would be greatly reduced, and may actually increase costs to Empire's customers. In addition, low coal prices would also lower electrical energy market prices which, in turn, would reduce Empire's revenues from wind generation.

[2] https://www.eia.gov/outlooks/aeo/data/browser/#/?id=1-AEO2018&cases=ref2018&sourcekey=0.

Q. How have recent coal prices Empire has paid to fuel Asbury been trending?

A. They appear to be trending down. Empire's year-end fuel reports[3] indicate that the delivered price of coal to Asbury was averaging ** ** in 2014, ** ** in 2015, ** ** in 2016 and ** ** in 2017.[4] Now we can argue projections all day long. In the end, they are all a best estimate, but Empire's actual coal costs are displaying a downward pressure, which is in direct contrast to Empire's projection in its modeling.

Q. Could this downward pressure reverse and coal prices steadily rise?

A. They could, but that would certainly be unlikely. Coal usage has declined for several years, in part because of plant closures and in part due to the low price of the natural gas. Low natural gas prices have made it more economical to use gas-fired generation than coal-fired generation. I do not think anyone is predicting natural gas prices to spike anytime soon, so it would be hard to see coal prices rise rapidly due to new demand.

Q. If coal-fueled generating plants are competing with low-priced, natural gas generating plants, then does it stand to reason that coal transportation charges would be pressured downward to stay competitive?

A. Yes, you would expect railroads to make adjustments to their pricing to stay competitive. An article written by Severin Bornestein, "The Cushion in Coal Markets that Will Make it Harder to Kill," points out this correlation:

> As gas prices have fallen, these coal plants have lost share in electricity markets. But they have not lost as much share as they would have if railroads hadn't lowered coal transportation costs for those very plants most threatened by the declining costs of competing gas-fired plants[5]

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[3] Empire FAC Fuel Reports for 12/2014,12/2015,11/2016,12/2017.
[4] Prices are dollars per MMBtu.
[5] https://energyathaas.wordpress.com/2017/11/27/the-cushion-in-coal-markets-that-will-make-it-harder-to-kill/.

There is a smaller pie for the same number of railroads. So, the point here is that coal producers as well as railroads have a vested interest in keeping coal burning power plants operational by making the cost of the electricity they produce competitive with the cost for low-priced, natural gas power plant to produce electricity.

Making predictions 20 years into the future is a pretty daunting task, however, the EIA is a government agency that constantly updates its predictions and forecasts, and right now it is predicting lower coal prices in the future than Empire's consultant did. Lower coal prices will make a tremendous difference in Empire's modeling.

TAX EQUITY FINANCING RISKS

Q. In his rebuttal testimony MECG witness Greg Meyer provides a general description of Empire's Customer Savings Plan ("CSP") where he addresses tax equity financing and he also provides an overview of how the generation mix within the SPP is changing. Are these separate components interrelated?

A. Yes. Foremost, all the financial risk of Empire's CSP falls on Empire's retail customers, and the tax equity partner is nearly guaranteed to not only recover its investment but make a very healthy return as well. There is a lot of risk to Empire's retail customers that becomes clear as Mr. Meyer explains the shift in generation mix that is developing within the SPP.

Q. What is the shift in generation mix that is developing within the SPP?

A. Mr. Meyer displays table 10 on page 15 of his rebuttal testimony where he lists the types of generation within the SPP by percentage. In 2016 SPP wind generation amounted to 15,072 MW which was 17.5% of the RTO's portfolio. On page 16 in Table 11, Mr. Meyer explains that planned additions to the SPP generation mix will increase wind to 41,238 MW and account for 35.6% of the total generation within the SPP footprint. The tables also reveal that **total generation will increase 34.5%**.

Q. Has anyone in these proceedings stated that there is a shortage of generation within the SPP?

A. Not to my knowledge. As I stated in my rebuttal testimony, this wind project isn't about capacity needs, but about increasing rate base for the sake of enriching shareholders and tax equity partners. This wind project is simply not needed.

Q. How does this increase in wind generation and total generation within the SPP increase the risk to Empire's retail customers?

A. Mr. Meyer points out on page 16 of his rebuttal testimony: "The current levels of wind in the SPP has caused a significant increase in negative prices. Negative prices result when there is more power in the market than is needed to serve the load. Generation that continues to produce power during negative price periods ***actually pay*** the SPP."[6] (Emphasis added)

The reason a company will pay the SPP to accept its generation is to take advantage of production tax credits (PTC). As we now understand, the business model of tax equity financing is that the beneficiary of the PTCs is the tax equity partner. The PTCs offset the tax equity partner's taxable income. The tax equity partner has no real interest in the price at which the energy is sold into the market, its only concern is that energy is being generated so that it qualifies for PTCs.

The risk to Empire's retail customers is that Empire's plan is structured so that they are expected to **absorb** any shortfall in the sale price of the wind generated energy by way of a fixed price hedge.

Q. How is the fixed price hedge calculated and why is there hedging in Empire's plan?

A. The hedging in Empire's plan is the difference between the actual price Empire receives from the SPP market when it sells energy from its wind farm(s) and a predetermined price that Empire, and its tax equity partner(s) view to be the fair value price they expect to receive. As Empire explained in its answer to Staff Data Request 0023:

> a) In the Generation Fleet Savings Analysis, the Low-LCOE Wind Projects are modeled to receive a price of $20.51 per MW-hour,

[6] MECG witness Meyer rebuttal testimony, p. 16, ll. 8-11.

> inflated 2% per annum, for the life of the projects. This price is the Company's estimate of the fair market value of the energy produced and represents the expected market price at which a hedge could be obtained.
> b) Given the use of a 2% inflation factor (as described above), for the Low-LCOE Wind Projects, the hedged price ranges from $20.51 to $24.51 per MW-hour for years 1 to 10 (the years when a hedge will be in place during the period with a tax equity partner).

So, the reality of the transaction is that if the wind project sells power for less than $20.51/MWh[7], Empire will write a check for the difference and send it to the wind project corporation. As Mr. Meyer has pointed out in his testimony, there is a chance that this generation will be sold into the SPP market at a negative price. In the case of a negative price, Empire's retail customers ultimately through their rates will pay for someone to use the energy (the negative SPP price) and pay Empire's tax equity partner(s) the hedge price.

This cost to Empire's retail customers increases in year six when the tax equity partner begins to receive 25% to 50% of the net cash from the wind generation.[8] As Todd Mooney explains in his response to Staff Data Request 0024:

> 3. The fixed price hedge is necessary to minimize the risk of cash distributions from the project to the Tax Equity Partner being less than anticipated due to price risk. If this transpired, the Tax Equity Partner would continue receiving cash distributions from the project for a period longer than the planned 10 years, a term called a "flip date"; something a Tax Equity Partner typically tries to avoid due to regulatory requirements. (Footnote omitted)

Q. Are there other scenarios that could impact the financial feasibility of this project?

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[7] The $ 20.51 is the first year starting point. The price increases each year until year ten where the price is $24.51

[8] The net cash is the earnings from the sale of power to the SPP after all the expenses are paid

A. Yes. As described in the surrebuttal testimony of OPC witness Lena M. Mantle, there is a very real possibility that the SPP will change how it accepts wind generation bids in its markets. There is the real possibility that the SPP may reclassify wind generation as "dispatchable" meaning it will not accept all the wind power that could be generated. If a wind generator is not dispatched, the tax equity partner(s) would not receive any PTCs. The tax equity partner(s) would then collect PTCs over a longer period of time which would increase the cost to Empire's retail customers even more. The tax equity partner(s) may very well be required to remain in the business model well past the ten year deadline.

Q. Would you summarize your testimony?

A. Closing Asbury and asking Empire's retail customers to fund $427.6 million in abandoned asset recovery based on coal price models 20 years down the road is speculative. The over-capacity that the SPP energy markets are facing in the near future that MECG witness Mr. Meyer has pointed out means that Empire will impose even more cost on its retail customers than the cost to build additional wind farms.

Q. Does this conclude your surrebuttal testimony?

A. Yes

Table 3
Base EDE Coal Price Forecast (Nominal $/MMBtu)
Confidential in its entirety

Total Energy Supply, Disposition, and Price Summary

https://www.eia.gov/outlooks/aeo/data/browser/#/?id=1-AEO2018&region=0-0&cases=ref2018&start=2016&end=2050&f=Q&linechart=ref2018-d121317a.3-1-AEO2018&sourcekey=0

Tue Mar 13 2018 08:23:46 GMT-0500 (Central Daylight Time)

Source: U.S. Energy Information Administration

	full name	api key	units	2016	2020	2025	2030	2035	2040	2045	2050	Growth (2017-2050)	
Production		1-AEO2018.2.											
Natural Ga	Total Ener	1-AEO201	quads	3.10176	2.791927	2.66046	2.45539	2.282633	2.010426	1.657906	1.212547	-2.80%	
Other	Total Ener	1-AEO201	quads	0.460552	0.324744	0.255036	0.231864	0.229908	0.228801	0.225831	0.222318	-1.90%	
Total	Total Ener	1-AEO201	quads	25.34782	25.15261	22.78512	21.25954	21.36763	21.24207	20.85195	20.87952	-0.80%	
Prices (2017 dollars pe		1-AEO2018.40.											
Brent Spot	Total Ener	1-AEO201	2017 $/b	44.51	69.96	85.7	92.82	99.87	106.08	110.04	113.56	0.02	
West Texa	Total Ener	1-AEO201	2017 $/b	44.09	66.93	82.5	89.16	95.19	101.19	105.54	109.53	0.02	
Natural Ga	Total Ener	1-AEO201	2017 $/MI	2.57	3.69	4.07	4.26	4.26	4.5	4.71	5.01	0.02	
Coal	Minemou	Total Energy: Real Pric	2017 $/tor	32.98	33.92	34.01	35.05	36.63	38.71	39.07	39.78	0.60%	
Coal	Minemou	Total Energy: Real Pric	2017 $/MI	1.65	1.68	1.69	1.75	1.82	1.91	1.93	1.97	0.60%	
Coal	Delivered	Total Energy: Real Pric	2017 $/MI	2.33	2.38	2.43	2.45	2.5	2.56	2.6	2.63	0.40%	
Electricity	Total Ener	1-AEO201	2017 cents	10.51179	10.92	11.12	11.23	11.22	11.18	11.09	10.98	0	
Prices (nominal dollar		1-AEO2018.51.											
Brent Spot	Total Ener	1-AEO201	nom $/b	43.74	75.1	103.74	125.27	150.43	178.98	208.99	244.06	0.05	
West Texa	Total Ener	1-AEO201	nom $/b	43.33	71.85	99.87	120.33	143.39	170.74	200.44	235.41	0.05	
Natural Ga	Total Ener	1-AEO201	nom $/MI	2.53	3.96	4.93	5.75	6.41	7.59	8.94	10.78	0.04	
Coal	Minemou	Total Energy: Nominal	nom $/ton	32.41	36.41	41.17	47.3	55.17	65.31	74.2	85.5	2.90%	
Coal	Minemou	Total Energy: Nominal	nom $/MI	1.62	1.8	2.05	2.36	2.74	3.22	3.67	4.23	2.90%	
Coal	**Delivered**	**Total Energy: Nomina**	**nom $/MI**	**2.29**	**2.55**	**2.94**	**3.31**	**3.77**	**4.33**	**4.94**	**5.65**	**2.80%**	
Electricity	Total Ener	1-AEO201	nom cents,	10.33	11.72	13.46	15.15	16.9	18.87	21.05	23.59	0.03	