Exhibit No.:	
Issue(s):	Asbury Securitization
Witness/Type of Exhibit:	Robinett/Rebuttal
Sponsoring Party:	Public Counsel
Case No.:	EO-2022-0193

REBUTTAL TESTIMONY

OF

JOHN A. ROBINETT

Submitted on Behalf of the Office of the Public Counsel

EMPIRE DISTRICT ELECTRIC COMPANY

CASE NOS. EO-2022-0193

** **
Denotes Confidential information that has been redacted

May 13, 2022

PUBLIC

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Petition of The Empire District Electric Company d/b/a Liberty to Obtain a Financial Order the Authorizes the Issuance of Securitized Utility Tariff Bonds for Qualified Extraordinary Costs	)))))	Case No. EO-2022-0040
In the Matter of the Petition of The Empire District Electric Company d/b/a Liberty to Obtain a Financing Order that Authorizes the Issuance of Securitized Utility Tariff Bonds for Energy Transition Costs Related to the Asbury Plant	)))))	Case No. EO-2022-0193

AFFIDAVIT OF JOHN A. ROBINETT

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

John A. Robinett, of lawful age and being first duly sworn, deposes and states:

1. My name is John A. Robinett. I am a Utility Engineering Specialist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal 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 A. Robinett
Utility Engineering Specialist

Subscribed and sworn to me this 13th day of May 2022.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

TIFFANY HILDEBRAND
My Commission Expires
August 8, 2023
Cole County
Commission #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2023.

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REBUTTAL TESTIMONY
OF
JOHN A. ROBINETT
LIBERTY UTILITIES EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. EO-2022-0193

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

A. John A. Robinett, 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 Utility Engineering Specialist.

Q. Have you previously provided testimony before the Missouri Public Service Commission?

A. Yes. Both as a former member of Commission Staff and on behalf of the OPC.

Q. What is your work and educational background?

A. A copy of my work and educational experience is attached to this testimony as Schedule JAR-R-1.

Q. What is the purpose of your rebuttal testimony?

A. I respond to the direct testimonies of Liberty witnesses Shaen T. Rooney, Frank C. Graves, Aaron J. Doll, and Drew W. Landoll relating to Asbury. I provide a more complete history of Liberty's investments at its Asbury facility than the history provided by Liberty consultant Mr. Frank C. Graves.[1] My source for that history is Liberty's depreciation study from Case No. ER-2016-0023. That history supports OPC witness Dr. Geoff Marke's recommended treatment of Liberty's unrecovered investment balance in its retired Asbury Unit 1 generating plant and associated retired facilities. OPC witness Mr. John S. Riley recommends what the

[1] To avoid confusion, I use the name "Liberty" to refer to The Empire District Electric Company before and after the company changed its name to Liberty.[2] OPC witness Lena Mantle describes these unrealized benefits within the context of resource adequacy.

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Commission should do with the Asbury AAO. I provide Liberty's Asbury Unit 1 monthly heat rates based on fuel reports Liberty provided to the Commission. They show the historical efficiency of Asbury Unit 1, and how that efficiency changed as Liberty changed how it operated the unit in 2018.

History of Significant Investments at Asbury

Q. Why is the history of Empire's investments in Asbury important?

A. The history shows the major investments that extended the useful life of Asbury. Simply put, ratepayers did not receive the full value of the assets they were promised and expected.[2] This fact supports OPC witness Dr. Marke's recommendation regarding recovery of Asbury costs.

Q. What is your understanding of the significant investments Empire made at its Asbury generating facility prior to the year 2000?

A. In 1966, Empire spent nearly $70,000 to acquire the 20 acre building site for its new Asbury plant.[3] That plant went on line on June 1, 1970.[4] On June 1, 1973, Empire filed its first rate case after placing Asbury in service, Case No. 17816. Both Staff and Empire utilized the same original cost value of Asbury—$25,907,435—to perform their trended original cost less depreciation studies.[5] Initially Empire fueled Asbury with coal mined nearby. Later Empire switched to less corrosive western coal when it was more economical for Empire to purchase and transport western coal than to continue to use local coal. To do that, in 1989, Empire secured coal purchase and rail contracts for supplying coal to Asbury and

[2] OPC witness Lena Mantle describes these unrealized benefits within the context of resource adequacy.
[3] Belk, Brad: *Celebrating a Century of Service*; Pediment Publishing 2009 pg 106
[4] Id. Pg. 112
[5] Case No. 17816, Staff Schedule 1, and Empire exhibit 22 and 23

the Riverton power plant; the coal contract provided for coal through 2004. Empire also spent approximately $13 million dollars for new rail facilities, burner modifications and coal handling equipment as well as 125 rail cars to transport coal from Wyoming and to prepare Asbury and Riverton for the conversion to Western coal.[6]

Q. What large investments has Empire made at Asbury after 2000?

A. Asbury has had three major investments since 2000. The first occurred in 2008 with the addition of selective catalytic reduction ("SCR"). This project was also contemplated as part of the Experimental Regulatory Plan approved by the Commission in Case No. EO-2005-0263. The SCR project was completed to meet Empire's requirements on NO_X and SO_2 emissions from the Clean Air Interstate Rule ("CAIR") issued by the Environmental Protection Agency on March 10, 2005. Empire's investment in the SCR at Asbury is approximately $31 million (excluding AFUDC).[7]

Q. Did the expected retirement date of the Asbury facility change after Empire installed the SCR in 2008?

A. Yes. The expected retirement date was extended from 2014 prior to the SCR addition, to 2030, a life of 60 years as can be found in the depreciation study performed by Empire consultant Mr. Thomas J. Sullivan in Case No. ER-2011-0004.

Q. What was Empire's second major investment in Asbury after 2000?

A. Empire constructed a new office and maintenance facility in 2012. This construction replaced the original office and maintenance facility that were approximately 40 years old.

[6] Belk, Brad: *Celebrating a Century of Service*; Pediment Publishing 2009 Pg. 130-131
[7] ER-2008-0093, Mertens Direct, Page 6.

Q. Did the expected retirement date of the Asbury facility change after Empire constructed a new office and maintenance facility in 2012?

A. No.

Q. What was Empire's third major investment in Asbury after 2000?

A. Empire installed an Air Quality Control System ("AQCS") in 2014 to meet the requirements of the Mercury Air Toxic Standards ("MATS") and the Clean Air Interstate Rule ("CAIR"). The AQCS project involved installing a scrubber, fabric filter, and a powder activated carbon injection system at Asbury

Q. How much did Empire invest in the AQCS project?

A. Empire's total estimated cost of this project is $122,412,831, which includes $92,540,436, expended through the end of April 2014, excluding AFUDC.[8]

Q. Did the expected retirement date of the Asbury facility change after Empire added the AQCS in 2014-2015?

A. Yes, from 2030 to 2035. Empire's outside depreciation consultant Mr. Sullivan testified on direct in Case No. ER-2016-0023 as follows:

> The retirement dates and resulting lifespan for Asbury 1 has been increase by 5 years, from a 60 year lifespan (in the 2010 Depreciation Study) to a 65 year lifespan. The proposed change to the lifespan for Asbury 1 was recommended in my testimony in Case No. ER-2012-0345; however, the lifespan underlying the current depreciation rates for Asbury is 60 years.[9]

Schedule TJS-2, the depreciation study filed in Case No. ER-2016-0023 describes the emission control additions and the need for future additions to reach the 2035 retirement date.

[8] ER-2014-0351, Mertens Direct, Pages 8-9, Schedule BAM-2.
[9] ER-2016-0023, Sullivan Direct, Page 11.

2016 & 2019 Rate Case values for Asbury

Q. What was your role for Case No. ER-2016-0023?

A. During this case I was still a member of the Commission Staff and was its depreciation expert.

Q. What did the Commission use for the original cost, depreciation, and net cost of Asbury for purposes of setting rates in Case No. ER-2016-0023?

A. While I cannot be certain what the Commission used for purpose of setting rates in this case, its order approving the filed stipulations and agreements approved my recommended depreciation rates and reserve adjustments that were stipulated to by the parties in that case. In the stipulation and agreement a range was provided for return on equity of 9.5 to 9.9. The order approving the stipulation and agreement in Case No. ER-2016-0023 is attached as Schedule JAR-R-2. Based on the Staff accounting schedules filed in Case No. ER-2016-0023, values are as of September 30, 2015, and Asbury's plant-in-service was $284,283,587 for total company. When jurisdictional allocations are applied, Missouri's portion of plant-in-service is $243,899,966. When the depreciation rates are applied to the Missouri jurisdictional plant-in-service, an annual depreciation expense of $11,541,209 is generated. Total company reserves for Asbury was $42,337,569 and Missouri jurisdictional reserves of $35,445,011. Attached to this testimony as Schedule JAR-R-3 is the Staff direct accounting schedules filed in Case No. ER-2016-0023.

Q. Were the original cost, depreciation, and net cost of Asbury disputed in that case?

A. Attached as Schedule JAR-R-4 is the filed list of issues and order of witnesses from Case No. ER-2016-0023. Both depreciation expense and cost of capital were disputed, but were

ultimately settled as part of the stipulation and agreement discussed above. It is important to note that in the 2016 case Asbury was included in rates as used and useful by all parties.

Q. What dates were the rates set in Case No. ER-2016-0023 in effect?

A. The Commission issued its "Order approving Compliance Tariffs" in Case No. ER-2016-0023 on September 6, 2016, with an effective date of rates of September 14, 2016. They remained in effect until new rates from Case No. ER-2019-0374 went into effect on September 16, 2020. The rates from Case No. ER-2019-0374 are still in effect; however, Empire has filed compliance tariff sheets in Case No. ER-2021-0312 bearing a proposed effective date of June 1, 2022.

Q. What did the Commission use for the original cost, depreciation, and net cost of Asbury for purposes of setting rates in Case No. ER-2019-0374?

A. The depreciation rates for the 2019 case continued the use of the approved rates from the 2016 rate case. Commission Staff filed two accounting runs in Case No. ER-2019-0374, the first was direct schedules, which brought plant-in-service and accumulated depreciation reserves through September 30, 2019; this accounting schedule is attached as Schedule JAR-R-5. Total company plant-in-service values from the direct accounting schedules is $287,212,608 for Asbury; when the jurisdictional allocator is applied to the total company plant-in-service the Missouri portion is $241,373,476. The accumulated reserves for Asbury on this Staff direct accounting schedule are total company $83,775,837 with a Missouri jurisdictional value of $70,405,214. Staff of the Commission additionally filed true-up accounting schedules which updated plant-in-service and accumulated depreciation reserve and other expenses out to January 31, 2020. The true-up accounting schedules from

Case No. ER-2019-0374 are attached as Schedule JAR-R-6. This true-up accounting schedule shows Asbury had a plant-in-service total company value of $281,172,836; when the jurisdictional allocator is applied the Missouri portion is $236,297,653. The accumulated reserve collected for Asbury had a total company value of $81,747,323 with a Missouri jurisdictional value of $68,700,450. Based on Staff's true-up accounting schedules Asbury had an annual depreciation expense of $11,179,375 for Missouri Jurisdictional plant-in-service using the depreciation rates from Case No. ER-2016-0023 that were stipulated to remain in effect for the 2019 rate case. It is important to note that all of the annual depreciation expenses that I have presented in this testimony contain plant-in-service of approximately nineteen million dollars of assets that Liberty transferred to the wind projects.

Q. Were the original cost, depreciation, or net cost of Asbury disputed in Case No. ER- 2019-0374?

A. Attached as Schedule JAR-R-7 is the Joint List of Issues filed in Case No. ER-2019-0374. Included in the contested issues were rate of return, capital structure, and, finally, should the retired Asbury unit be included as operating in rates going forward. In its Amended Report and Order at page 38 the Commission authorized a return on equity of 9.25%. The Commission further determined on page 39 that:

> LUCo's adjusted capital structure of 46 percent common equity and 54 percent long-term debt is the appropriate capital structure to use in setting rates in this case.
>
> Based upon its determination related to capital structure, the Commission further finds that the cost of long-term debt should be based on LUCo's consolidated embedded cost of long-term debt of 4.65 percent, because it best aligns with the financial risk embedded in LUCo's capital structure.

Ultimately, the Commission determined that Asbury was to remain in rates, even though the Commission found that it "last generated power in December 2019" and was retired from Liberty's books before hearings were to be held in the 2019 case. Instead, the Commission ordered Liberty to track assets and liabilities related to the facility.

Q. What dates were the rates set in Case No. ER-2019-0374 in effect?

A. As I testified earlier, the tariff rate sheets for Case No. ER-2019-0374 went into effect on September 16, 2020, and as of the date of this filing these rates are still in effect. Liberty has filed compliance tariffs for Case No. ER-2021-0312 with an anticipated effective date of June 1, 2022. So the tracking of amounts for Asbury should be continue at least through May of 2022.

Q. When did Asbury last generate electricity?

A. In the Amended Report and Order at paragraph 290 on page 110 from Case No. ER-2019-0374 the Commission stated, "Asbury last generated power in December of 2019."

Q. Why are you discussing both Case Nos. ER-2016-0023 and ER-2019-0374?

A. In order to get the appropriate ultimate value for Liberty's unrecovered investment in Asbury both cases must be utilized since what Liberty's customers paid in rates for the retired Asbury assets are reflected in each and the rates from both were in effect during different times during the period of January 2020 through May of 2022. In its Amended Report and Order in Case No. ER-2019-0374 at paragraph 302 on page 112 the Commission said:

> Although deferral through an AAO may require customers to wait to receive the benefits of the Asbury retirement in rates, the deferral approach can capture all the savings, including savings that occur prior to when rates will go into effect in this case.

The Commission clearly acknowledges that recovery from customers through the 2016 rates should be captured by the AAO it ordered. The costs, expenses, plant-in-service and accumulated depreciation reserves values related to Asbury differ between the 2016 and 2019 rate cases, so both cases must be used in order to determine the appropriate values for the AAO. Specifically related to depreciation, the 2016 Staff direct accounting schedules have approximately $300,000 more in annual Asbury depreciation expense than the true-up accounting schedules for the 2019 case. My review of Liberty's direct in this case seems to indicate that the depreciation expense adjustment Liberty used was from the 2019 case alone, and not the 2016 and 2019 cases over the AAO period—likely the 29 months of January 2020 to May 2022. Knowing that the 2016 rates were in effect for 9 months of the AAO period and 75% of approximately $300,000 would be $225,000 of additional depreciation accrual that needs to be reflected in the AAO to account for the time and value difference of the 2016 rates being in effect for the AAO.

Q. In its Amended Report and Order in Case No. ER-2019-0374 the Commission repeatedly states that the impacts of the Asbury retirements should be considered in their entirety in the next rate case and not as an isolated adjustment. Did the Commission address them in that next rate case, Case No. ER-2021-0312?

A. No. Liberty, very late in that case, stated its elections to securitize both Storm Uri and its Asbury investment.

Q. Are the Asbury timelines important?

A. Yes. The timelines highlight the major investments that have been made to Asbury that have extended its useful life. The 2008 SCR addition extended the expected life of Asbury to 2030

from 2014 prior to its installation. The 2014 investment in the AQCS was to further extend the expected useful life to 2035. Neither of those expected life dates were achieved by the Asbury facility and rate payers did not and will not receive the full value of these additions. The date of Asbury's final generation predated all of the interveners' testimony rounds in Case No. ER-2019-0374 with the OPC being the only party to recommend revenue requirement adjustments to account for Asbury being retired and no longer used and useful for rates going forward.

Q. Did Liberty present a full history of its investments at Asbury?

A. No.

Q. Is understanding Liberty's capital spend at Asbury over its lifetime important?

A. Yes.

Q. Why?

A. The Commission should be aware that there are additions and retirements that occur over the life of a power plant to maintain the operation of the unit which are referred to in the depreciation world as interim additions and retirements. In addition to those investments, there are large infrequent investments such as those Liberty made over the life of Asbury to meet environmental rules and regulations. Each of these environmental investments was accompanied by an extension to the projected retirement date of the power plant.

Q. Does Liberty consultant Mr. Frank C. Graves present a full historical review of Liberty's investment in Asbury Unit 1 in his direct testimony?

A. No, Mr. Graves primarily focuses on Liberty's 2008 Selective Catalytic Reduction ("SCR") installation investment and 2014 Air Quality Control Systems ("AQCS") addition investment in 2014.

Q. Are those the only years where Liberty added to its investment in Asbury?

A. No. These two investments equate to 62%[10] of Liberty's plant-in-service cost for Asbury at the time Liberty retired Asbury. Liberty made routine additions over the course of Asbury operating life which can been seen in the below graphs.

Q. Why were these investments important?

A. As I previously discussed, the life extension of Asbury related to the SCR 2008 addition moved the projected Asbury Unit 1 retirement date from 2014 to 2030, a projected retirement date which ultimately was not actually achieved. Additionally, the 2014 AQCS investment further extended the projected life of Asbury from 2030 to 2035, a new retirement date which was also not achieved.

Q. Did Liberty's ratepayers realize the full benefit of Liberty's investment in these environmental upgrades of 2008 and 2014?

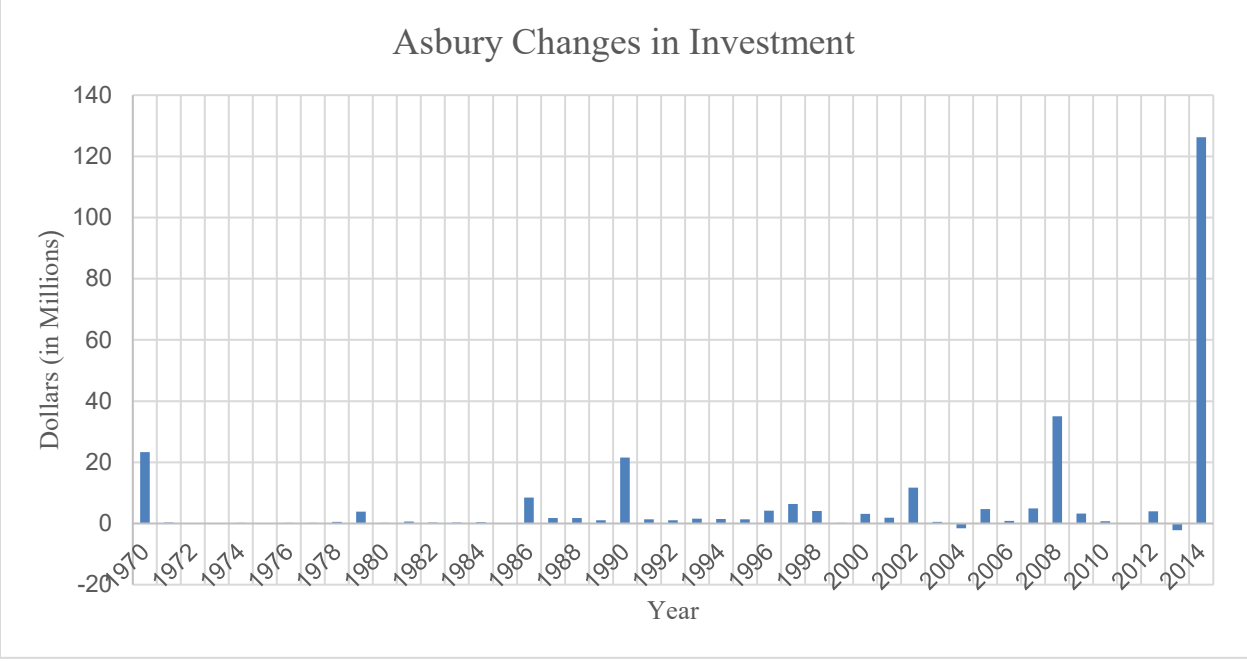
A. No. The SCR investment of 2008 was to extend the projected retirement date from 2014 to 2030, but, ultimately, the coal unit ceased generating electricity in December of 2019, still eleven years short of the 2030 projected retirement date. The 2014 installation of the

[10] Case No EO-2022-00193 Liberty Direct Testimony of witness Frank C. Graves, Table 1 Page 7.

AQCS further extended the projected retirement date from 2030 to 2035. Ultimately, ratepayers only received five years of the projected life and value of the AQCS investment.

Q. What does the following graph labeled, "Asbury Changes in Investment" show?

A. This graph depicts the scale of Liberty's investments and when it made them over the life of Asbury. This graph shows that Liberty made four very large significant investments in that facility. The first is the original cost to build the facility in 1970. The second is the 1989 conversion of the facility to make it capable of burning western coal. The third is the addition of the SCR in 2008, which increased plant in service by approximately 30% based on the investment number from Mr. Graves' Table 1 on page 7 of his direct testimony. The fourth, final, and most significant investment came in 2014 with the addition of the AQCS, an investment that doubled Liberty's plant-in-service investment at Asbury. Data for this graph was sourced from the 2016 depreciation study submitted to the Commission in Case No. ER-2016-0023.

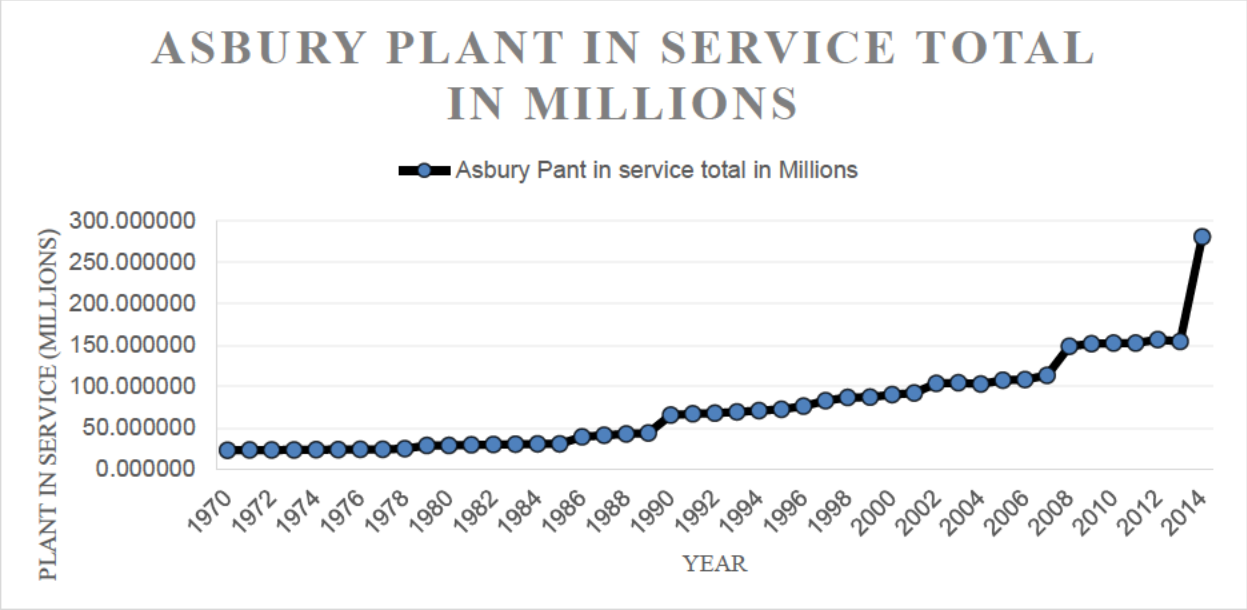


Q. What does the below graph labeled, "Asbury Plant in Service Total in Millions" show?

A. Liberty's investment in Asbury annually over time.

Q. Why did you create this graph?

A. I created this graph to give the Commission a running total of the plant-in-service of Asbury. Data for this graph was pulled from the 2016 depreciation study performed by Black & Veatch on behalf of Liberty in Case No. ER-2016-0023.



Q. Why is the running total of Liberty's investment in Asbury important?

A. This gives the Commission and others that view this graph an understanding that there is continual investment occurring at power plants. This also illustrates when the significant investments are made by a drastic upward change in the slope of the line. When reviewing the above graph it becomes apparent that Liberty significantly increased the plant-in-service balance at Asbury in 2014. The AQCS investment of 2014 doubled Liberty's total 1970-2013 investment in Asbury. Table 1 Current Net Book Value at Asbury found at Page 7 of Mr. Graves' testimony presents original cost and estimated accumulated

depreciation. The table then calculates an estimated net book value which is original cost less the estimated accumulated depreciation reserves of the AQCS, SCR, and all other Asbury equipment. February 29, 2020, is the day before Liberty booked the retirement for accounting purposes and de-committed Asbury from the Southwest Power Pool Market. As of February 29, 2020, the AQCS investment at Asbury was $142 million of a total investment of $283 million. As of February 29, 2020, the AQCS estimated accumulated depreciation reserves at Asbury was $20 million of a total estimated accumulated depreciation reserve of $84 million. The estimated net book value for Asbury AQCS was $122 million, Asbury SCR was $23 million out of a total Asbury estimated book value of $199 million.

Q. Why does this graph end with 2014?

A. I do not have data after 2014. Liberty has changed depreciation consultants since the 2016 depreciation study was performed by Black & Veatch. The current consultant's study no longer contains a page that shows the historical additions and retirements by account for each generating unit as the study by Black & Veatch previously did. This historical additions and retirements page also projected future capital investments that would need to be made by account and year for the facility. The new depreciation consultant's study does not include a schedule that projects future expenditures at the generating facility.

Q. What should the Commission understand about Liberty's historical investments at its Asbury facility?

A. The Commission's take away should be that ratepayers were asked to pay for environmental upgrades that were meant to extend the useful life of the facility. However,

Asbury did not reach the projected useful life that was to occur based on the environmental additions. Ratepayers are being asked to continue to pay for Asbury when they did not receive the full benefit of the upgrades with the significant life extensions that came with them. OPC witness Dr. Geoff Marke is not recommending that the SCR investment should not be recovered, even though ratepayers did not receive the full benefit promised with that expenditure. What Dr. Marke is asking is that what Liberty has not recovered for Asbury not be considered as rate base, and that Liberty not earn a return on it. Dr. Marke additionally recommends that Liberty not recover any more through customer rates for the unrecovered AQCS investment in Asbury.

Q. What is the timeline of events regarding Empire's retirement of Asbury from Empire's last general rate case?

A. Following is a timeline of events for Case No. ER-2019-0374:

- May 29, 2019 Empire filed its notice of intended case filing;
- August 9, 2019 Empire filed a notice that it planned to retire Asbury "no later than June 2020."
- August 14, 2019 Empire filed its rate case that included testimony of Mr. Timothy N. Wilson who testified that Empire planned to retire Asbury "no later than June 2020," and that Empire intended to notify the Southwest Power Pool of its Asbury retirement date the week of August 12, 2019; [11] **

[11] Case No. ER-2019-0374 Empire/Liberty Direct Testimony of Timothy N. Wilson page 7

- _____
  _____
- _____
- _____
  _____
  _ **
- November 13, 2019 Empire filed a notice that it anticipated it would retire Asbury no later than March of 2020; **
- _____ **
- December 9, 2019 OPC filed a motion to include isolated adjustments for the retirement of Asbury;**
- _____
- _____
  _____

[12] Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 2 of 5
Case No. ER-2019-0374 Supplemental Testimony of Aaron J Doll page 5
[13] Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-2 page 1 of 3
[14] Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 2 of 5
[15] Case No. ER-2019-0374 Staff Data Request number 0337
Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 4 of 5
[16] Case No. ER-2019-0374 Staff Data Request number 0333 and Empire's Response
Case No. ER-2019-0374 Staff Data Request number 0338 and Empire's Response
Case No. ER-2019-0374 Staff Supplemental Testimony of Charles T. Poston, PE pages 5-6
Case No. ER-2019-0374 Reply to Testimony Responding to Commission Questions of OPC Witness Lena M Mantle page 2
Case No. Er-2019-0374 OPC Surrebuttal/ True-Up Direct Testimony of John A. Robinett pages 1-2
Case No. ER-2019-0374 OPC Surrebuttal Testimony of John A Robinett Schedule JAR-S-2C page 4
Case No. ER-2019-0374 Staff Data Request Number 0340 and Empire's Response
Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 4 of 5
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Case No. ER-2019-0374 OPC Data Request number 2099 and Empire's Response
[17] Case No. ER-2019-0374 Staff Data Request number 0334 and Empire's Response

- _____ _____ **
- January 15, 2020 All non-utility parties filed direct testimony for revenue requirement
- March 1, 2020 Empire's date for retiring Asbury assets for accounting purposes;
- March 3, 2020 All parties filed rebuttal testimony;
- March 27, 2020 All parties filed surrebuttal and true-up direct testimonies.

Asbury Efficiency

Q. What is the heat rate of a generating unit?

A. The heat rate is a measure of generating station thermal efficiency, generally expressed in Btu per net kilowatt-hour (Btu/kWh). It is computed by dividing the total Btu content of fuel burned for electric generation by the resulting net kilowatt-hours of electricity generated.

Q. What is the importance of heat rate testing?

A. Staff discussed the importance of minimum equipment performance standards in the fuel adjustment clause (FAC) rulemaking case, File No. EX-2006-0472.[19]

> *Concern: Some stakeholders believe that minimum equipment performance standards are needed in these rules.*

[18] Case No. ER-2019-0374 Staff Cost of Service Report Fuel Inventories pages 23-24
Case No. ER-2019-0374 Staff Data Request number 0044 and Empire's Response and attachments
Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 5 of 5
Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-1 page 5 of 5
Case No ER-2019-0374 Supplemental Testimony of Charles T. Poston, PE Schedule CTPsup-2 page 1 of 3

[19] Staff Testimony in Support of and Suggested Changes to 4 CSR 240-3.161 and 4 CSR 240-20.090
EFIS item no. 15 Filed 9/7/2006 Attachment A-9 through A-10

> *Staff Response: Staff agrees that equipment performance standards should be a part of these rules and has included in the proposed rules requirements to develop generating unit efficiency testing and monitoring procedures. Staff will, as a result of receiving this data, have the ability to monitor each electric utilities' power plants in terms of their capability to efficiently convert fuel to electricity. Any observed reductions over time may be an indication of the utility's need to implement programs to improve efficiency. Staff views this as a very important and necessary detail since the efficiency of each electric utility's power plants directly relates to each electric utility's fuel and purchased power costs."*

Any intervening party has the ability to monitor the efficiency performance of the plants over time and can identify changes that may exceed normal wear and tear. Parties can then discuss root causes and means to address the underlying issues.

Q. What is the purpose of the requirement of Commission Rule 20 CSR 4240-20.090(2(A)15.[20] that heat rate tests of no more than 24 months prior to the filing of a rate case?

A. Heat rate tests and results are useful tools for monitoring the generation plant maintenance practices of a utility. While over their lives generating facilities generally become less efficient, sharp changes in the efficiencies may indicate a change in the philosophy followed in maintaining a generating facility, and should draw inquiry of the root causes of those changes. This information is a filing requirement so that the parties can evaluate changes in efficiency output.

[20] 20 CSR 4240-20.090(2)A.15. A level of efficiency for each of the electric utility's generating units determined by the results of heat rate/efficiency tests or monitoring that were conducted or obtained on each of the electric utility's steam generators, including nuclear steam generators, heat recovery steam generators, steam turbines and combustion turbines within twenty-four (24) months preceding the filing of the general rate increase case.
A. The results should be filed in a table format by generating unit type, rated megawatt (MW) output rating, the numerical value of the latest result and the date of the latest result;
B. The electric utility shall provide documentation of the actual test/monitoring procedures. The electric utility may, in lieu of filing the documentation of these procedures with the commission, provide them to the staff, OPC, and to other parties as part of the workpapers it provides in connection with its direct case filing. If the electric utility submits
the results in workpapers, it will provide a statement in its testimony as to where the results can be found in workpapers;

Q. Did Liberty change how it operated Asbury in an attempt to improve Asbury's market performance?

A. Yes. At Page 4 of Mr. Shaen T. Rooney's direct testimony he discusses changes made to improve Asbury's market performance and how Liberty focused on increasing ramp rate, decreasing minimum downtime, reducing minimum runtime, and reducing startup duration.[21] Additionally, Mr. Doll discusses at page 12 of his direct testimony the operating characteristics that Liberty modified at Asbury.

Q. Did any Liberty witness discuss other concerns about how Liberty was operating its Asbury Unit 1?

A. Yes. Mr. Shaen T. Rooney discusses at page 5 of his direct testimony that during the final two years of operation of Asbury the unit experienced a record number of starts, and cycling fatigue became a concern. This is also discussed in the direct testimony of Aaron J. Doll. At. Page 13 of Mr. Doll's direct testimony he provides a historical table of starts for the Asbury unit per year since 2010.

Q. Do the historical heat rate data you reviewed and compiled support Mr. Rooney's stated cycling fatigue concern?

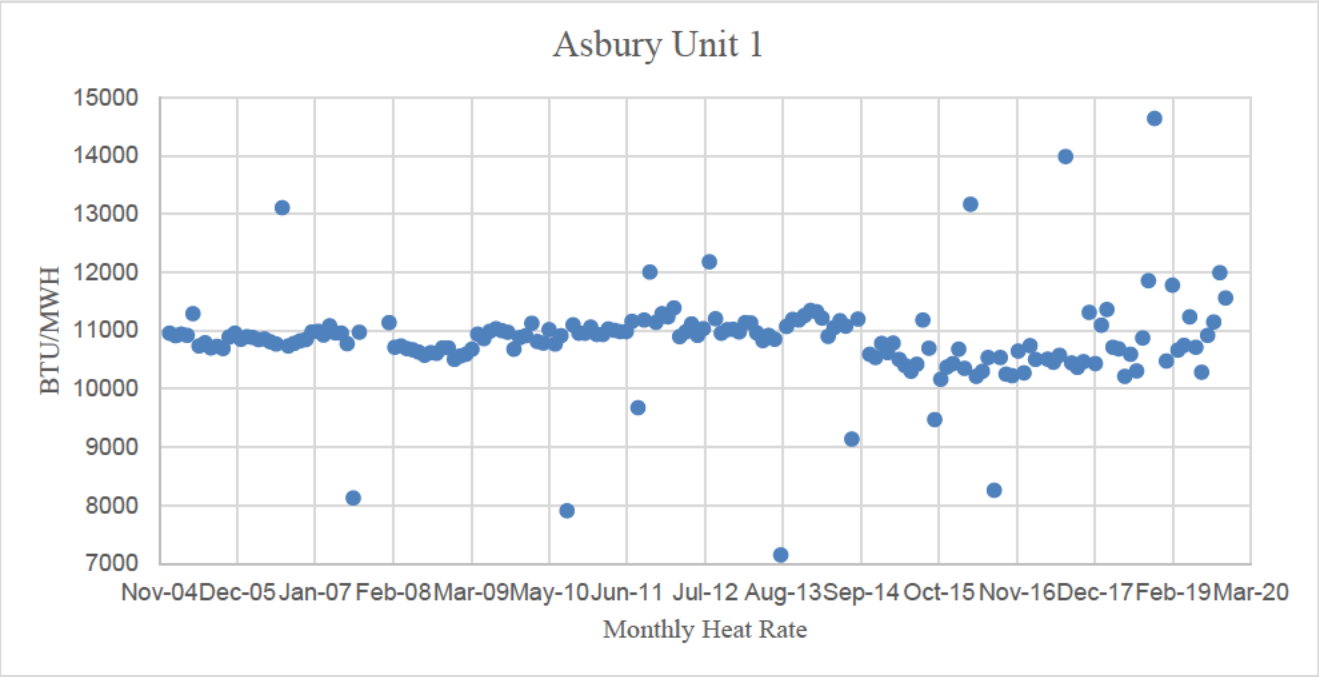
A. I do not know for certain, but the efficiency of Asbury Unit 1 declined starting in 2018 with the change in how Liberty operated the unit. The Commission has data back to January 2005 that has been submitted to the Commission as a non-case related filing for monthly fuel reports as a requirement to Commission rule 20 CSR 4240-3.190. When that data is plotted for Asbury Unit 1 it becomes evident from the graph that starting in 2018 the

[21] EO-2022-0193 Liberty Witness Shaen T. Rooney Direct Testimony page 4 line 18 through page 5 line 4.

Asbury unit's efficiency begins to vary and decrease as its heat rates fluctuated more and increased in value. That graph appears below and is titled, "Asbury Unit 1."

Q. Are there any other conclusions that can be drawn from heat rate data?

A. With the addition in 2014 of the Air Quality Control System ("AQCS") and a turbine upgrade, Asbury Unit 1 became more efficient at creating electricity from coal. The unit remained more efficient than prior to the AQCS addition until the time Liberty decided to operate Asbury differently in an attempt to improve Asbury's market performance.



[22]

[22] December 2019 heat rate data omitted from the graph as number was an extreme outlier (122,121 BTU/KWH) and skewed the scaling of the data dispersion. This heat rate is likely due to scrapping of base mat coal to finish off all usable coal at the facility.

Q. How does this heat rate graph compare with the Net Capacity Factor testimony from Liberty witness Mr. Aaron J. Doll?

A. It doesn't really tie to Mr. Dolls' net capacity factor. Review of Asbury heat rates show improved efficiency over the time frame 2014 through 2017, even as the net capacity factor is decreasing. It is only in 2018 when Liberty makes operational changes in how it ran Asbury that the reduced net capacity factor trends down as Asbury's efficiency declines (increase in heat rate value).

Q. What should the Commission conclude from this observation that Asbury's net capacity factor trended down as it efficiency declined?

A. Asbury was an efficient unit; it only became less efficient when Liberty decided to alter how it historically operated the unit. Liberty in 2018 decided efficiency was less of a concern and adjusted how it operated the unit. The goal was to make Asbury a more quickly dispatchable unit to help follow intermittent generating facilities that drop off or spike in generating. Asbury was not designed to rapidly ramp up and down its generation production. Asbury was not designed to come up to temperature quickly and then rapidly cool back down; it was designed to come on and run for long periods of time and provide stable consistent energy, which is what it did prior to 2018.

Dismantlement Costs

Q. Are there any other costs you would like to discuss briefly?

A. Yes. I would like to address my concerns related to the estimated values of the likely expenditures for dismantlement of the Asbury generating facility Liberty witness Mr. Drew W. Landoll discusses in his direct testimony.

Q. What are your specific concerns related to the cost estimates provided in Mr. Landoll's testimony?

A. Based on my initial review of the cost estimates for the dismantlement of Asbury and ash pond closure, the magnitude and variability of costs Liberty is projecting to spend for the dismantlement of one generating unit is concerning unless the low estimate is achieve from the Black & Veatch study when compared to the actual costs that Evergy Metro and Evergy West expended to dismantle Montrose units 1, 2, and 3 and Sibley units 1, 2, and 3 as disclosed in confidential data request responses I have received and reviewed in their respective pending rate cases, Case Nos. ER-2022-0149 and ER-2022-0150.

Q. Do you have any other concerns related to Asbury decommissioning costs?

A. Yes. During my review of testimony for this case, I went back and reviewed the testimony filed in the Wind CCN case, Case No. EO-2018-0092. I noticed in the Confidential Direct Testimony of Liberty witness James McMahon that the values considered in the customer savings plan and generation fleet savings analysis are much lower on the net value cost of removal less salvage value for the decommissioning than the yet-to-be-finalized phase 2 of the Black & Veatch study attached to Mr. Landoll's direct testimony in this case. Attached as Schedule JAR-R-8C are selected excerpts from Mr. McMahon's direct testimony that identify the decommissioning cost for Asbury to be ** _____ _____ ** These estimates were based on the recent experience Liberty had with the decommissioning of Riverton units 7,8, and 9.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.