Exhibit No.: _____
Issue(s): Prudence of Asbury Retirement
Witness: Frank Graves
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: The Empire District Electric Company
Case Nos.: EO-2022-0040; EO-2022-0193
Date Testimony Prepared: May 2022

Before the Public Service Commission
of the State of Missouri

Surrebuttal Testimony

of

Frank C. Graves

on behalf of

The Empire District Electric Company d/b/a Liberty

May 2022

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THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION
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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Frank C. Graves. My business address is One Beacon Street, Suite 2600, Boston MA, 02108.

Q. Are you the same Frank C. Graves who provided Direct Testimony in Case No. EO-2022-0193 on behalf of The Empire District Electric Company d/b/a Liberty ("Liberty" or "the Company")?

A. Yes.

Q. What is the purpose of your Surrebuttal Testimony in these now consolidated securitization proceedings?

A. In this testimony, I respond to the rebuttal testimonies submitted by Office of Public Counsel (OPC) witnesses Dr. Geoff Marke and John A. Robinett regarding my recommendation that Liberty should be allowed to fully recover through securitization its undepreciated past investment costs at the retired Asbury coal-fired power plant. My testimony here again establishes the prudence of Liberty's decision to retire the Asbury plant. On that issue, I respond to the arguments presented by the OPC and Staff witnesses and demonstrate that those assertions are unsupported and false.

- I address and refute Dr. Marke's claim that full cost recovery of Asbury is not warranted because Liberty's decision to retire the Asbury plant made the plant no longer "used and useful." On that claim, I refute Dr. Marke's claim that "used and useful" should be the governing principle for cost recovery regardless of the

prudence of the decisions on past investments and the recent retirement, and only subject to rare external factors (not even tornadoes).[1]

- I address and respond to Dr. Marke's claim that investors do not need incentives to choose good assets and would get a windfall if paid fully for both the old and new assets. Dr. Marke goes so far as to claim that the Company's rate base is many times larger than the net plant of Asbury, so the benefit for investors is many-fold.[2] Those claims are unfounded and unsupported, and they mischaracterize the cost-recovery basis for beneficial utility investments.
- Next, I respond to Dr. Marke's and Mr. Robinett's claims that customers lost the "promised" benefits of the past investments in Asbury that extended the useful life of the Asbury plant multiple times (to 2035 most recently), and that Liberty is purportedly "gambling with ratepayer money" by virtue of investing in new plants (wind) that are "speculative" in value.[3] This claim is nothing more than rhetorical hyperbole, ignoring the importance and necessity of utilities making investments under uncertainty and is therefore unsupported as a matter of fact and sound policy.
- Further, I respond to Dr. Marke's and Mr. Robinett's accusation that Asbury was essentially run into the ground by Liberty through market-opportunistic actions and unsuccessful operating practices (that involved more cycling and low loading) that adversely affected its efficiency and capacity factor.[4] Again, these statements are simply untrue and uninformed by the fact that the criticized plant operations were beneficial to customers.

[1] Marke Rebuttal at 5, 19, 26-27 and 40.
[2] Marke Rebuttal at 21, 31 and 39-40.
[3] Marke Rebuttal at 21 and 27-28; and Robinett Rebuttal at 2.
[4] Marke Rebuttal at 28 and 30; Robinett Rebuttal at 19-21.

- Likewise, I respond to Dr. Marke's claim that the decision to retire Asbury at the end of 2019 was a bait and switch by Liberty and its shareholders to kill the coal plant and double down on wind investments.[5] Dr. Marke surmises that this was already decided by the new owners (Liberty) before the IRP analyses were conducted and was chosen despite not satisfying the criteria identified for early retirement in the Project Red Balloon due diligence evaluations in 2016. Again, OPC's claim is wholly unfounded.
- I address Dr. Marke's claim that the regulatory compact is "a metaphor not a legally binding contract" and his claim that many courts and PUCs have rejected the argument that a utility is entitled to cost recovery under a regulatory compact.[6]

Q. Please summarize your responses to these opinions presented by OPC witnesses in their rebuttal testimonies.

A. As noted above, I disagree with those opinions and I would further add that the witnesses on each of those issues do not provide compelling legal or factual support. Specifically, my responses are as follows:

- The "used and useful" ("U&U") concept cannot be dressed up as a valid economic principle for the evaluation of fair or efficient cost recovery for remaining past investment costs at a retired generation plant. U&U by itself is simply an indicator of current viability or operability of an asset, providing no information whatsoever about the causes, benefits, responsibilities for or alternatives to the situation. U&U cannot be considered as a principle with appropriate incentives, fairness, or efficient pricing for the purpose of evaluating cost recovery for retiring a plant that became

[5] Marke Rebuttal at 15-16.
[6] Marke Rebuttal at 32-33.

uneconomic compared to lower cost alternatives, even though U&U criteria have been applied elsewhere. At most, observing that an asset is no longer U&U may open the discussion of what, if anything has been imprudent, but not more. Instead, it can and should provoke analysis of why the asset is no longer used for providing service to customers (i.e. whether that was avoidable, controllable or even desirable to have prevented) and how much cost resulted from the retirement of the asset versus costs that would have been incurred if the asset had continued to operate. It is itself a ham-fisted indicator that ignores all those questions, and so its use for sizing or justifying cost disallowances is bad public policy.

- Boiled down, the suggestion that U&U is the sole indicator for cost recovery of Asbury ignores the overriding economic factors necessary to evaluate prudent investments. Just because an investment decision was prudent 10 years ago does not, by definition, mean that it is prudent to keep that investment in operation when current operational and market conditions demonstrate otherwise. But that is exactly what OPC is advocating for Asbury. Adopting OPC's position would create perverse negative incentives to undercompensate utility investments that are inherently made under uncertainty and should be chosen with expected but not guaranteed benefits. There is no promise of future lifespan or annual performance. Indeed, it would be silly to ask for or expect such guarantees, as there is no way a utility can assure them, and if better opportunities come along, customers should want the utility to adopt them, not hide from them. Given the current energy transition (both regulatory and technological), utilities should be empowered to make decisions that will maximize benefits for customers in the face of economic, market, and technology changes.

- In regard to navigating these issues, the regulatory compact is neither pure rhetoric nor just philosophical, but an instructive and applicable concept The regulatory compact is a recognition of the necessary tradeoff of risk and return between customers and utilities if a) utilities are to be granted a natural monopoly b) while having an obligation to serve c) with only cost-based pricing (no special profit margins if things turn out well) and d) while being forced to make efficient choices among assets with a 20-50 year life e) in a highly uncertain and ever changing economic environment. Under these complex and intrinsic circumstances facing utilities and their customers regulatory commissions should encourage and incentivize utilities to make investment decisions based on evolving current circumstances and events rather than forcing a utility to keep assets in service even when there are better and more economic options available. There is no way to assure an outcome of having only always-winning assets in this context, and *ex post* disallowance of the prudent ones if they do not last their full, initially expected life, will per se prevent expected cost recovery at the required cost of capital. <u>That is just math, not an opinion</u>. It is widely established in regulatory precedent and regulatory policy literature, as well as codified in law under both *Hope* and *Bluefield* and thousands of successive applications, that the regulatory process should create an unbiased opportunity for full cost recovery. That mathematically fails under the policies advocated here by OPC.
- Indeed I agree that utilities do not need incentives to "do the right thing" to pursue efficient operations and seek least-cost solutions. An unbiased regulatory policy for cost recovery achieves that. But here, the intervenors are criticizing those very efforts to make the plant more effective and valuable in the market and then to

replace it with lower cost resources. That is the definition of a perverse incentive for utility investment. If a utility's good behavior is criticized or punished by that type of disallowance simply because the utility failed to use up all the book life the asset could have had, that creates a new and perverse disincentive. Such a practice, albeit offered in the name of reducing ratepayer costs and sharing of risks, will not in fact have this desired effect. Instead, it will undermine utility performance and create a disincentive to be as forthcoming as possible with improvements that could otherwise reduce costs at the expense of abandoning some assets before their engineering lives are spent.

- There is no promise of full life benefits from utility resource choices. Put another way, there is no guarantee that a prudent investment will continue to be used and operated for its entire useful life. All investment decisions are made in a snapshot of time subject to changing economic and operational conditions. That inherent uncertainty means that all assets may not be needed over their entire useful lives. Technology in the industry will almost certainly change (improve) over the long life of generation assets. The only promise is to keep trying to be cost effective and efficient, which was honored here by Liberty. In exchange, there is a reciprocal ratepayer promise to allow full cost recovery of prudently incurred plants and efficient resource planning and operating decisions even if such assets are retired before the end of their depreciable life.
- Next, OPC's claims that Asbury's retirement was a result of Liberty running the plant into the ground is completely unsupported. Asbury was not run into the ground, nor was it a willful management decision to make the plant obsolete. The market changed due to external factors beyond Liberty's control, much like Dr.

Marke suggests should be tolerated. For example, while Missouri may not have a strong RPS requirement, many states in SPP and MISO do, and the renewable technology also improved for reasons beyond Liberty's control or predictability. Put simply, Asbury was driven to obsolescence by external factors, not managed to obsolescence by Liberty. The operational changes to enhance its value in the market were an attempt to sustain it (allowing it to operate more flexibly), not eliminate it.

- The criticism that the wind plants are some kind of bait-and-switch is also unfounded, disconnected from the factual history of those plants' selection, and irrelevant to the status of Asbury cost recovery. The wind plants are not substitutes for Asbury, neither in performance nor as a preferred option for investors. Rather, it was found to be prudent to abandon Asbury regardless of wind replacement, and the new wind plants were chosen (found to be economically advantageous) in scenarios both with and without Asbury's retirement. The due diligence analysis in the Project Red Balloon report also endorsed contingent early retirement of Asbury (as early as 2023) subject to possible renewable resource requirements or climate protection policies. Those did not materialize but their economic effects did. It would be silly to bind subsequent evaluations of the plant's economics to earlier analyses.

II. RELEVANT REGULATORY STANDARDS AND CRITERIA FOR COST RECOVERY OF PRUDENT INVESTMENTS

Q. Dr. Marke argues that "used and useful" should be the governing principle for cost recovery, regardless of the prudence of the decisions on past investments and the recent retirement. According to Dr. Marke, Liberty's decision to retire the

Asbury plant made the plant no longer "used and useful", therefore, full cost recovery is not warranted.[7] How do you respond?

A. The "used and useful" ("U&U") standard as proposed by Dr. Marke is inappropriate for many reasons spanning fairness and balancing of interests, past performance, savings from the Asbury decisions, future incentives, and the sheer clumsiness of the U&U standard as a metric for the purpose of evaluating the appropriateness of cost recovery for prudent past investments. As I explained in my testimonies in Case No. ER-2021-0312 (Schedules FCG-1, FCG-2, FCG-3), the "used and useful" concept is invalid as an economic principle for the evaluation of cost recovery for remaining past investment costs at a retired generation plant nor one with appropriate incentives, fairness, or efficient pricing simply because it has been applied elsewhere. In particular, I noted: "Utility regulators and courts have long concluded that a utility may include prudent investments no longer being used to provide service in its rate base as long as the regulator reasonably balances consumers' interest in fair rates against investors' interest in maintaining financial integrity and maintaining a reasonable opportunity to recover a fair return on prudent utility investments."[8]

In the case of Asbury, the proper balancing of interests between customers and shareholders is achieved by allowing cost recovery through securitization: customers receive savings even after paying for the plant's full cost recovery balance, and customers have enjoyed past benefits in excess of costs, to which Asbury's shareholders were not participants. If customers receive significant savings while

[7] Marke Rebuttal at pp. 5, 19-21.
[8] **Surrebuttal Schedule FCG-2** at p. 8.

Liberty is not permitted to fully recoup its outstanding investments, especially because there has been no sharing of unexpected gains, the "balancing of interest test" fails.

In addition, the "used and useful" standard falls short as an economic principle in this case because it is silent on why and to what extent the Asbury plant is no longer economically attractive in the first place or whether retiring and replacing the plant results in net positive benefits. In contrast, the prudence perspective helps shed light on important considerations such as what caused the retirement or a shift in economic value of the Asbury plant, how large the shift is, and whether the retirement and replacement costs are offset by net positive benefits to customers. The U&U standard is very clumsy in relation to the important nuances of such matters, at best making it helpful only for motivating those more careful reviews and policy responses. It is a ham-fisted indicator that can and should provoke analysis of why the asset is no longer used for providing service to customers and how much net cost resulted from the retirement of the asset versus costs if the asset had continued to operate. But ignoring those latter questions about causes, responsibility, and value relative to the next best alternative is bad public policy.

Q. Dr. Marke argues that the "regulatory compact is a metaphor not a 'legally binding' contract" and that many courts and regulators have ruled against the argument that a utility is entitled to cost recovery under a regulatory compact.[9] How do you respond?

A. Nowhere in my testimony did I mention that the regulatory compact is "legally binding", nor did I contend that the regulatory compact *alone* dictates that Liberty is entitled to cost recovery of the Asbury plant. As demonstrated in my Direct testimony,

[9] Marke Rebuttal, pp. 32-33.

Liberty's decisions to invest in the AQCS equipment, and to retire and replace Asbury were all prudent decisions and were anticipated to lead to substantial cost savings to customers at the time. Given this, the regulatory process should create an unbiased opportunity for full recovery, a widely established precedent in regulatory policy literature; it is also codified in law under both *Hope* and *Bluefield* and thousands of successive applications. The policies advocated by intervenors in this case run counter to these legal and regulatory precedents.

It is important to note that the regulatory compact is not pure rhetoric. Utilities are granted a natural monopoly while having an obligation to serve with only cost-based pricing (no special profit margins if things turn out well). At the same time, utilities are forced to make efficient choices among assets with a 20-50 year life in a highly uncertain economic environment. There is no way to assure winning bets only in this context, and *ex-post* disallowance of the prudent investments if they do not last their full, initially expected life, will per se undermine expected cost recovery at the required cost of capital.

Q. What should be the standard for regulatory policymaking for investments made under uncertainty?

A. Incentivizing and rewarding prudent decision-making should be the standard for regulatory policy, especially related to utility investments made on behalf of their customers. As I previously explained, this means "recognizing that prudent planning for resource development by utilities involves the expectation that the investments approved by regulators will be those that are expected to create benefits for ratepayers but also that the utility is not obligated to guarantee those benefits, nor should it be penalized if those benefits are reduced because of changes to factors that are beyond

its control."[10] In fact, it is economically efficient that resources be chosen when there is some possibility they will not be needed over their entire lives. Otherwise, the expected savings would be lost. As I noted, "If the utility makes an extremely risk-averse decision and waits until the chosen asset is essentially risk-free, the expected savings would be foregone. Accordingly, such assets chosen based on expected benefits should not face a punitive response if/when adverse conditions turn out to prevail."[11] Because utility investments are inherently made under uncertainty and should be chosen with expected but not guaranteed benefit, regulators should not put in place economic principles that create performance disincentives for utilities.

Q. Please elaborate.

A. Utilities do not need incentives to "do the right thing" to pursue efficient operations and seek least cost solutions; an unbiased regulatory policy for cost recovery will provide the proper incentives. But here, the intervenors are criticizing those very efforts – to make the plant more effective and valuable in the market, and then to replace it with lower cost resources. If the good behavior is criticized or punished, e.g., because the utility failed to use up all the book life the asset could have had, that creates a disincentive for finding and implementing cost-saving strategies. Going forward, utilities would be discouraged from identifying and pursuing any cost-saving measures for customers because doing so would only invite unwarranted criticisms. Utilities would also be less forthcoming with improvements that could otherwise reduce costs at the expense of abandoning some assets before their engineering lives are spent. This

[10] **Surrebuttal Schedule FCG-2**, p. 14.
[11] **Surrebuttal Schedule FCG-2**, p. 15.

adverse side effect likely would spill over to other Missouri utilities and to credit rating agencies who would understand and be wary of the biased policy.

Q. Is it true that Liberty's customers were promised the full life of the Asbury plant, as Dr. Marke and Mr. Robinett argue[12]?

A. No, not at all. Dr. Marke likens Liberty's decision to retire the Asbury plant to either an airline or an airplane manufacturer backing out of its long-term contract with the other party.[13] He accuses Liberty of backing out of its regulatory obligations by "reversing course and finding a way to increase rate base."[14] His analogy and accusation are nonsensical. To the contrary, Liberty commits to supplying reliable power supply and delivery over an indefinite number of years for unknown amount of load requirements at the least cost with prudent management of risks. Customers are promised reliable electricity service resulting from the cost-effective and efficient management of Liberty's power system. In exchange, the regulators commit to providing a fair opportunity for recovering prudently incurred costs and a return on capital investments. Liberty is not backing out of any of these commitments; rather, it found a lower cost strategy for customers, and it is now asking only for recovery of prudently incurred costs.

Furthermore, customers are not guaranteed that the electricity service must come from certain assets. There is also no promise of future lifespan or annual performance for a certain asset because a utility simply cannot guarantee future events. Liberty did not "promise" to run Asbury until 2035 or any other year, or offer assured lifetime benefits. Liberty evaluated that the AQCS investment would lead to a net

[12] Marke Rebuttal, p. 21; Robinette Rebuttal, p. 2.
[13] Marke Rebuttal, pp. 33-34.
[14] Marke Rebuttal, p. 34.

positive benefit for customers because given the market fundamentals and cost of alternative resources at the time, continued operation of Asbury would be less costly for customers compared to early retirement at the time. Indeed, Liberty's customers did receive benefits from Asbury in the form of cost savings until the time of retirement.

Since then, the outlook for market fundamentals and the cost of alternative resources shifted in a way that made the early retirement attractive and prudent. Put another way, retirement of Asbury was a prudent decision because Liberty was presented with a better option based on changed external factors beyond Liberty's control. That is exactly how the regulatory compact is supposed to work: utility managers and their investors seeking the least cost system for customers, premised on a belief in an unbiased opportunity for full cost recovery (especially when, as here, there are substantial net savings). Technology in the industry will almost certainly change (improve) over the long life of generation assets, and when that occurs, customers should want the utility to adopt new and improved technology and optimize the operation of its generation fleet, instead of avoiding them (by sticking to the same existing resources no matter what). Customers are expected to receive benefits (i.e., cost savings compared to continuing operations) in the future from not operating the Asbury since Liberty found a lower cost option. Had Asbury been sustained, customers would stand to pay more for the plant's increasingly higher costs relative to alternative resources, and would run counter to the Company's mandate to operate a cost-effective and efficient power system.

III. APPROPRIATENESS OF LIBERTY'S DECISION TO RETIRE THE ASBURY PLANT

Q. According to Dr. Marke, "There are no events beyond its management's control that could be said to have induced Liberty to strand its investment in the Asbury power plant." Is his criticism valid?

A. Not at all. Any casual observer of the power industry can enumerate a host of factors that have substantially reduced the economic competitiveness of coal plants in the U.S. in recent years. They include the unexpected and sustained low natural gas prices (up until recently), the drastic decline in renewable energy technology, the lower-than-expected demand for electricity, and the focus on climate change and air quality issues as well as the related stringent regulations on coal-fired power plants. I explain these factors in detail in my direct testimony and in my previous testimony.[15] These developments are beyond the control of Liberty, a single participant in a global market, and there is no reason to believe that the Company could or should have anticipated these events as the most likely scenario at the time.

Q. Dr. Marke suggests that the Asbury plant could have been sold, operated on a seasonal basis, or mothballed.[16] What evidence did he provide to support these alternative scenarios?

A. None whatsoever. In addition, as I explain below, these suggestions do not take into considerations basic economic considerations for the utility and its customers, and do not necessarily lead to higher benefits to customers relative to the retirement scenario.

[15] **Surrebuttal Schedule FCG-2**, pp. 17-18.
[16] Marke Rebuttal, p. 20.

First, the 2019 IRP analysis shows that the Asbury plant was uneconomic to operate both as a regulated plant and as a merchant plant. The present value of revenue requirement savings of retaining Asbury would be less than retiring it. The plant's negative cash flow relative to market prices at the time means that it would not be an attractive option for any merchant investor. Therefore, the likely price to get from a sale would have been zero (and possibly negative due to costs related to decommissioning obligations; see the Direct and Surrebuttal Testimony of Liberty witness Mr. Landoll).

Second, there is no evidence that seasonal operations would result in lower costs than the retirement option. In fact, because Asbury was offered for economic dispatch into the Southwest Power Pool market (instead of operating it as must-run), any savings from a seasonal dispatch compared with year-round economic offering would likely be minimal as described in the Xcel's own analysis[17] that is referenced by Dr. Marke.

Third, mothballing Asbury until "market, policy, or technology changes that would necessitate Asbury running again"[18] would be tantamount to the kind of gamble that Dr. Marke accused Liberty of doing. There is no telling when these changes or events like Storm Uri would occur, and keeping the plant around until these events materialize is hardly an exercise in prudent planning let alone prudent operation. At the same time, Dr. Marke expects shareholders, and not ratepayers, to bear the costs of the mothballed unit. Such an arrangement would impose asymmetric risk on Liberty and its shareholders, who do not share in the benefits of cost savings.

[17] M-19-809 Petition Plan To Offer Generating Resources Into The MISO Market On A Seasonal Basis. Page 10 "As shown above, the change from year-round economic commitment to seasonal commitment results in little impact on total fuel costs."
[18] Marke Rebuttal, p. 20.

Q. Dr. Marke contends that your reliance on the 2019 IRP for the prudency of retiring Asbury omits two "actions" by Liberty that influenced its 2019 IRP preferred plan "outcome": first, Liberty's decision to "gamble in the SPP market" with the new wind plants funded by more than $1 billion in ratepayer –backed capital; and second, Liberty making Asbury less efficient by trying maximize profits from the unit in the SPP market (which directly impacted the unit's average capacity factor).[19] Please respond.

A. Dr. Marke is way off base on both arguments. His first criticism is off target, and irrelevant to the status of Asbury cost recovery. The new 600 MW of new wind resource is not a substitute for Asbury, neither in performance nor in basis for being desired. The new wind plants also do not affect cost savings from the preferred plan in the 2019 IRP, since all alternative plans were assumed to have this resource. It was prudent to abandon Asbury regardless of wind replacement, and the new wind plants were chosen (found to be economically advantageous) in scenarios both with and without Asbury's retirement. Dr. Marke can't overcome those points.

Second, Dr. Marke's claims that findings in the 2019 IRP for savings from retirement were in part driven by the "Charles Rivers-informed Customer Savings Plan" and that "speculative benefits" from retiring Asbury would only materialize if the new wind investments are put forward are both invalid.[20] The Customer Savings Plan produced by Charles River Associates is part of the 2017 Generation Fleet Savings Analysis, not a plan in the 2019 IRP. The 2019 IRP is an updated analysis of savings from retirement with updated assumptions on outlook for market fundamentals and

[19] Marke Rebuttal, pp. 27-28.
[20] Marke Rebuttal, p. 28.

replacement mix/timing of resources. In short, the retirement of Asbury has no connection to the 600 MW of new wind resources.[21]

Q. What about his allegation that Liberty intentionally mismanaged the Asbury plant to inflate the economic attractiveness of the plant's retirement and replacement option?

A. That claim is completely unfounded and either ignores or is oblivious to market conditions and how plants capture value in that context. Dr. Marke makes that claim without a shred of empirical evidence that Asbury's declining performance toward the end of its life was a result of the Company's mismanagement of its assets. As I explained in my direct testimony and in previous testimonies, the market changed exogenously.[22] If it becomes economical to meet demand by relying on a certain new resource (either through adjusting Liberty's generation portfolio or through taking advantage of conditions in the SPP market) to meet demand, then the Company should do just that. Making these adjustments will necessarily and appropriately alter the way some other assets (i.e. Asbury) are utilized. The market changes to enhance its operational value in the market were an attempt to sustain it (allowing it to operate more flexibly), not eliminate it. Those efforts increased the amount of revenue that the plant would earn in SPP, all of which are rebated back to customers for overall rate reductions. Forcing it to operate as a baseload plant would have involved forcing economic losses into everyday operations. Further, the technical efficiency of Asbury does not matter if the plant is uneconomic to operate against the SPP market prices. As

[21] The stochastic risk analysis in the 2019 IRP showed that the retirement of Asbury at the end of 2019 and replacement in future years with new solar and storage resources would have lower costs than the retain Asbury option with a probability of about 90%.
[22] Graves Direct, pp. 28-29 ; **Surrebuttal Schedule FCG-1**, pp. 26-27; **Surrebuttal Schedule FCG-2**, pp. 12-13.

of the time of the 2019 IRP, future SPP prices were expected to be too low for Liberty to cover Asbury's fuel plus O&M costs (and the ash handling capex). In short, the economics of the market was not in favor of operating Asbury in the future – a fact that Dr. Marke doesn't refute with any empirical evidence.

Q. Next, Dr. Marke argues that the benefits to customers are part of a "modeled outcome based on certain assumptions that were highly contested", and that these models and assumptions "have proven to be wholly inaccurate since," and ended up exposing Liberty to high "fuel and purchased power costs during Storm Uri that exceeded the remaining balance of the stranded Asbury asset." How do you respond?

A. As I demonstrate in my direct testimony, the 2019 IRP assumptions were reasonable and consistent with industry outlook at the time. I am not aware of any substantive challenges to specific assumptions in the model. In criticizing the 2019 IRP, Dr. Marke does not offer any specifics on which assumptions were contested, who contested them, what alternative assumptions were proposed instead, and whether the alternative assumptions would have eliminated the savings from retirement. What Dr. Marke does offer is complete speculation.

Regarding Dr. Marke's claim that the assumptions in the 2019 IRP "have proven to be wholly inaccurate since", that is a bad attempt to use a hindsight criticism on the appropriateness of assumptions based on the information available at the time of the study. If the *ex-post* actual values for those assumptions are different than the projections at the time of the study, that's not an appropriate way to evaluate the reasonableness of those assumptions. In addition, Dr. Marke again fails to provide any

specifics. Similarly, it was not known at the time of the 2019 IRP with any certainty whether that unusual gas price spike would occur during a winter storm.

Q. Did the intervenors challenge your conclusion with respect to the prudency of Liberty's decision to invest in the AQCS?

A. Significantly, no. On the contrary, Dr. Marke conceded that the AQCS upgrade was prudent.[23] This is consistent with my review of the decision, and my conclusion that Liberty's AQCS investment at Asbury helped the plant comply with environmental regulations, saving costs for the Company's customers.

Q. Does this conclude your Surrebuttal Testimony at this time?

A. Yes.

[23] Marke Rebuttal, p. 8.

VERIFICATION

I, Frank C. Graves, under penalty of perjury, on this 27th day of May, 2022, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/ Frank C. Graves