BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-7, SUB 1276

In the Matter of:	)	**POST-HEARING BRIEF OF THE**
Duke Energy Carolinas, LLC's	)	**NORTH CAROLINA**
Application to Adjust Retail Base Rates	)	**SUSTAINABLE ENERGY**
and for Performance-Based Regulation,	)	**ASSOCIATION**
and Request for an Accounting Order)	)	
	)	

The North Carolina Sustainable Energy Association ("NCSEA") respectfully submits this post-hearing brief in support of its Partial Proposed Order in the above captioned docket, before the North Carolina Utilities Commission (the "Commission"). NCSEA and its members—comprised of individuals, businesses, and municipal governments and representatives located in North Carolina—collectively have provided substantial value to the Commission and the state. Through advocating for public policies that encourage the responsible technological and market development of renewable energy and energy efficiency, NCSEA has helped foster a more cost-effective and equitable grid that benefits all ratepayers. Among its contributions, NCSEA was actively involved in the negotiations that led to the enactment of House Bill 589 (which required review of the state's net energy metering policies) and House Bill 951 (which necessitates this multi-year rate plan and performance-based regulation).

NCSEA has limited the scope of its participation in this docket to three issues: 1) reviewing the proposed nonresidential net energy metering ("NEM") changes, 2) the timing and manner of securitizing coal-fired generation facilities to be retired, and 3) the manner Duke Energy Carolinas, LLC ("DEC" or the "Company") should be recovering its decommissioning costs. Regarding the NEM changes, NCSEA argues that the

Company has not met its burden to prove the proposed changes, facilitated through tariffs Rider NM and Rider NSC, are nondiscriminatory after an investigation of the costs and benefits. Regarding securitizing coal-fired generation facilities and the recovery of decommissioning costs, NCSEA has solicited the expert analysis of Dr. Lance Kaufman. In both instances, NCSEA contends that DEC's proposals result in practices that minimize benefits and savings to ratepayers while perpetuating inequitable treatment of ratepayers.

Outline of Brief

I. NON-RESIDENTIAL NET METERING 3

1. DEC has submitted insufficient evidence of its investigation of the costs and benefits of customer-sited nonresidential generation. 4
2. Alternatively, should the Commission approve the revised nonresidential NEM riders, NCSEA and its members request the following relief. 7

II. SECURITIZATION 8

1. Significant benefits exist to securitizing coal-fired generation facilities as early as possible. 9
2. Net book value may be determined once a coal-fired generation facility is set to be retired. 10
3. Securitizable "coal plant retirement costs" go beyond merely the impact of accelerating the depreciation of facilities from current retirement dates. .. 14
4. Dr. Kaufman's proposal maximizes ratepayer savings while representing a reasonable interpretation of applicable laws and regulations. 16

III. DEPRECIATION STUDY 19

1. The use of current decommissioning costs is consistent with USOA, systematic and rational, and more equitable than the use of escalated costs 20
2. Alternative average net salvage costs that allow for increased savings 24
3. Dr. Kaufman's assumptions for developing survivor curves better align with industry expectations. 25

IV. CONCLUSION 34

I. NON-RESIDENTIAL NET METERING

North Carolina law recently contemplated changes to the requirements for customer sited generation and net energy metering ("NEM") rates. House Bill 589 ("HB 589"), enacted in 2017, declared that "[e]ach electric public utility shall file for Commission approval revised net metering rates," and that "[t]he rates shall be nondiscriminatory and established only after an investigation of the costs and benefits of customer-sited generation."[1] Any rate or tariff approved by the Commission must "ensure that the net metering retail customer pays its full fixed cost of service."[2] Further, Session Law 2021-165 ("HB 951") required the Commission, among other things, to evaluate and modify existing rates. Accordingly, the Commission opened Docket No. E-100, Sub 180.

In Docket No. E-100, Sub 180, the commission approved revised net metering tariffs for residential customers.[3] However, the Commission's Order Approving Net Metering Tariffs is limited to residential customers. The Commission noted the position of both DEC and the Public Staff that there is a lower risk of cross subsidization for the nonresidential customer class. The Commission also noted that DEC, via a signed Memorandum of Understanding with several stakeholders, "has agreed to work collaboratively with stakeholders on this issue."[4] As such, the Commission determined that it was appropriate to wait and "address the merits of the proposed nonresidential NEM tariffs in Docket Nos. E-2, Sub 1300 and E-7, Sub 1276, and decline[d] to order a separate study."[5]

---

[1] N.C.G.S. § 62-126.4(a)–(b).
[2] *Id.*, § 62-126.4(b).
[3] *See generally,* Order Approving Revised Net Metering Tariffs, Dkt. No. E-100, Sub 180 (May 17, 2023).
[4] *Id.* at 35.
[5] *Id.* at 34–35.

Here, DEC is proposing a new tariff rider for all new nonresidential renewable energy installations using NEM in its service territory, Rider NSC. In its Application, DEC "proposes to freeze Rider NM to new customers as of January 1, 2024, and allow existing NEM customers to continue service under Rider NM until they request service under Rider NSC or until December 31, 2033, at which point all nonresidential NEM customers receiving service under Rider NM will be moved to Rider NSC or another appropriate tariff, as available at that time."[6] The Commission should deny the revised nonresidential Rider NM and Rider NSC as DEC has failed to prove its statutory burden that the proposed revised rates are nondiscriminatory after investigation.

1. <u>DEC has submitted insufficient evidence of its investigation of the costs and benefits of customer-sited nonresidential generation.</u>

Pursuant to section 62-126.4(b), any net metering energy rate shall be nondiscriminatory and established *only* after an investigation of the costs and benefits of customer-sited generation. Here, DEC's sole evidence that the proposed NEM riders for nonresidential customers is nondiscriminatory is that the Company convened a stakeholder process that produced the Comprehensive Rate Design Study ("CRDS").[7] However, the record in the present case does not include substantive discussions of the analysis or results of the CRDS, nor does it include the CRDS, itself. DEC merely discussed, at a high level, the presentations regarding nonresidential NEM that occurred during the CRDS stakeholder process,[8] and the record only includes the CRDS roadmap which "describes the stakeholder engagement framework, CRDS participants, and

[6] Official Tr., Vol. 10, at 103.
[7] *See* Official Tr., Vol. 10, at 102–04, 215–22; Official Tr., Vol. 11, at 14–35; Official Tr., Vol. 15, at 1110.
[8] Official Tr., Vol. 10, at 219–20.

activities."[9] Therefore, the record is insufficient for the Commission to conclude that the proposed revisions to Rider NM and Rider NSC are nondiscriminatory.

Previously, the Commission determined that HB 589 does not prescribe an "'investigation' be in any particular format or us[e] any particular procedure,"[10] the investigation itself is not evidence that DEC's proposed tariff riders are not discriminatory. Further, as discussed above, the Commission also previously determined that the investigation producing the CRDS sufficient for only revised residential NEM tariff riders, and grounded that conclusion based on the materials in the record of Docket No. E-100, Sub 180.[11] Therefore, DEC had to present the costs and benefits of the proposed revisions to Rider NM and Rider NSC in the record of the present case. DEC did not make that presentation, offering insufficient relevant evidence that a reasonable mind might accept as adequate to support the conclusion that the proposed revised NEM tariff riders are nondiscriminatory.[12]

Relevant evidence, in part, should have included descriptions of modeling and modeling methods and techniques demonstrating how DEC determined the costs and benefits of the proposed revisions. The nonresidential NEM customer class is incredibly diverse, accordingly the lack of homogenous load shapes within the customer class makes it more difficult to broadly model the costs and benefits. The nonresidential customer class includes Fortune 500 companies, large industrial and manufacturing

[9] Official Exhibits for Hearing Held in Raleigh, NC on Thurs., Aug. 31, 2023, Vol. 12, CIGFUR III McLawhorn Metz and Nader Direct Cross Exhibit No. 4, at 49.
[10] Order Approving Revised Net Metering Tariffs, Dkt. No. E-100, Sub 180, at 135.
[11] *Id.* at 37 ("[DEC], through its [CRDS] and stakeholder process, properly conducted an investigation of the costs and benefits of customer-sited generation as required by HB 589.").
[12] *See State ex rel. Utils. Comm'n v. Carolina Util. Customers Ass'n, Inc.*, 351 N.C. 223, 230 (2000) (interpreting G.S. § 62-94(b)(5) to define "substantive evidence" and the other standards of evidence supporting Commission decisions).

companies, retail companies ranging from small businesses to grocery stores to big box stores, local government buildings from police stations to water treatment facilities, and nonprofit organizations including hospitals, houses of faith, and providers of affordable housing. Reflecting the complexity of the nonresidential NEM customer class, there are 11 different rate schedules underlying the proposed tariff riders. The Company has failed to demonstrate how it accounted for this incredible diversity in proposing Rider NSC and how the proposed changes will not favor one class instead of another.

Specifically, the evidence offered in response to this query regarding cross subsidies is insufficient. DEC, for example, fails to explain how the proposed changes will affect customers using NEM and taking service through a SGS rate schedule will not be favored compared to customers using NEM and taking service through a LGS rate schedule, or vice versa. The DEC witness merely acknowledges this diversity, and points to DEC's revised time-of-use ("TOU") period and demand charge structures as mitigating forces to potential cross-subsidies.[13] However, the TOU periods and demand charge structures apply generally across the nonresidential customer class. There is no evidence distinguishing how these changes are tailored to eliminate cross subsidies for nonresidential NEM customers specifically. These changes also only apply to customers currently taking service under TOU rates or ones that will in the future. Under DEC's proposed changes, existing customers may continue to be served under Rider NM, and thus use non-TOU rate schedules, into 2033.[14] DEC fails to address why this proposed

[13] Official Tr., Vol. 11, at 29–30 ("the price signals [DEC] designed [are] giving different customers on different tariffs a similar time-of-use structure, and so [DEC] designed those prices to reflect the cost of service. And so,

[14] NCSEA is not challenging the changes to TOU periods and demand charge structures as those changes apply generally across the nonresidential customer class. NCSEA is only challenging the TOU periods and demand charge structures as evidence that 1) DEC's proposed revisions to the NEM tariff riders are

timeline is appropriate or whether there will be a level of cross subsidy among customers until all customers are using Rider NSC in 2033. Similarly, there is no evidence as to how the potential benefits of behind-the-meter renewable energy generation were considered.

The current record in this case does not include the necessary evidence to provide a sufficient basis for the conclusions that DEC's proposal will result in rates that are nondiscriminatory and established after the investigation of the costs and benefits of customer-sited generation. Therefore, Commission must deny the revisions to Rider NM and Rider NSC.

2. <u>Alternatively, should the Commission approve the revised nonresidential NEM riders, NCSEA and its members request the following relief.</u>

Even if the Commission disagrees and determines DEC has proven its burden that the proposed rates are nondiscriminatory, additional equitable relief is appropriate to smooth the implementation of the new nonresidential NEM tariff riders. The Commission should delay the requested January 1, 2024, deadline to implement the proposed tariff riders and require additional stakeholder engagement—including the development of a publicly-accessible bill savings calculator to help customers navigate these changes.

This relief is necessary as providing customers with accurate and timely information is essential for market confidence in the rooftop solar industry. This is especially true regarding nonresidential customers that need to understand the economic basis of a project before moving forward with the investment. It is important to provide companies ample time to accurately model these changes to provide complete

nondiscriminatory and 2) DEC completed an investigation of the costs and benefits of customer-sited generation.

information to potential clients (and North Carolina ratepayers). Considering the complexity of the nonresidential customer class and the highly varied energy usage needs of such customers, accurate customer communications is very important to maintaining consumer confidence. Therefore, good cause exists for the development of an online savings calculator as part of any processes to accurately communicate with nonresidential customers on Rider NSC. Further, good cause exists to require an extended implementation timeline for Rider NSC to protect consumer confidence.

II. SECURITIZATION

When the North Carolina General Assembly enacted Part III, Section 5 of HB 951, directing the Commission to, *inter alia*, develop rules governing the securitization of coal plants retired early to achieve the carbon reduction goals set forth in that legislation, it did so to balance the need of the utility owning the facility to be made whole with the savings that could be attained through securitization to keep rates more affordable for North Carolina ratepayers. In tying securitization to facilities that are "to be retired to achieve the authorized carbon reduction goals set forth in . . . this act," HB 951 implicitly imputes other requirements from the act. This includes the requirement to follow the "least cost path consistent with this section to achieve compliance with the authorized carbon reduction goals."[15] So long as the utility earns a fair return on its full investment for subcritical coal-fired generating facilities over time, the emphasis then becomes accomplishing the greatest amount of savings possible. While total savings depend on many factors (including the timing of capital improvements), simply put, the greater the value that is securitized, the more savings ratepayers realize. Dr. Kaufman's approach

[15] Session Law 2021-165, Part I, Section 1(1).

represents a reasonable interpretation of applicable law that maximizes potential ratepayer savings.

1. <u>Significant benefits exist to securitizing coal-fired generation facilities as early as possible.</u>

Considering the sums involved, the increased savings benefits of securitizing subcritical coal-fired generating facilities as early as possible add up quickly. "The primary benefits of securitization come from reduced cost of equity and tax expense."[16] "Early securitization increases these benefits by 1) increasing the total amount financed through securitization and 2) decreasing the number of years that securitized assets are carried at the utility's cost of capital."[17]

For example, take a utility with a 10% authorized pre-tax cost of capital and 5% debt financing costs owning a $1 million facility with 10 years of remaining useful life but is set to be retired 5 years early. Waiting to determine net book value until that plant retires at the end of Year 5 leaves only $500,000 to be securitized—which reduces the initial annual benefit of securitization from $50,000, had the net book value been determined at Year 1, to $25,000. Further, delaying securitization increases finance costs by $250,000 over the first five years "because the $500,000 that was ultimately securitized was carried at the utility's cost of capital for the five years prior to retirement."[18]

Turning to DEC's system, the actual benefits from securitizing early depend on the financing terms and ultimate timing. However, using some simplifying assumptions, NCSEA Witness Dr. Kaufman calculated "the total net present value of finance savings

[16] Official Tr., Vol. 15, at 1160.
[17] *Id.*
[18] *Id.*

[to be] approximately $71 to $82 million depending on the assumed cost of capital" and assumed cost of debt.[19] Regardless of which estimate is used, there is the potential to realize significant savings for North Carolina ratepayers by determining the value of the facilities to be securitized as early as possible.

2. <u>Net book value may be determined once a coal-fired generation facility is set to be retired.</u>

Both NCSEA's approach and the one agreed to by DEC and the Public Staff, as detailed in their Amended Agreement and Stipulation of Partial Settlement,[20] involve deferring expenses related to currently operating coal facilities so that those expenses may be securitized at a later date. The key difference between these proposals is which expenses are eligible for securitization—or more precisely, when the determination of a facility's net book value can be made. Under HB 951 and the Commission's Order Adopting Rule R8-74 in Docket No. E-100 Sub 177 ("Order Adopting Rule R8-74"), net book value may be determined once a coal facility is *to be retired early*.[21]

With respect to securitization, HB 951 provides that,

> The Utilities Commission is authorized to and shall within 180 days of the effective date of this section, with stakeholder input and participation, establish rules for securitization of costs associated with early retirement of subcritical coal-fired electric generating facilities. With respect to securitization of costs associated with early retirement of subcritical coal-fired electric generating facilities, the Commission shall develop rules to determine costs to be securitized at fifty percent (50%) of the remaining net book value of all subcritical coal-fired electric generating facilities to be retired to achieve the authorized carbon reduction goals set forth in Section 1 of this act, with any remaining non-securitized costs to be recovered through rates. Rules, procedures, obligations, and protections adopted for securitization of costs associated with retirement of subcritical coal-fired generating facilities shall be substantively identical to the provisions of

[19] *Id.* at 1162–63.
[20] *See* Official Ex., Vol. 7., at 97.
[21] R8-74(b)(8)(a) (emphasis added).

> Section 1 of S.L. 2019-244, except with respect to the purposes for which securitization may be used under that section.[22]

Of note, the General Assembly refers to the "net book value of . . . facilities *to be retired* to achieve the authorized carbon reduction goals." (emphasis added).

DEC asserts that the phrase "to be retired" should be limited solely by the subsequent clause "to achieve the authorized carbon reduction goals," such that the combined phrase provides a limit only as to why facilities are retired rather than when.[23] However, this effectively re-writes HB 951's provision to read, "net book value of . . . facilities *retired to achieve* the authorized carbon reduction goals." As DEC Witness Bateman agreed, there is a basic difference between "retired" and "to be retired."[24] "To be retired" includes a temporal element that "retired" does not. When each is inserted into the relevant provision of HB 951 above, DEC's interpretation eliminates this temporal element leaving no distinction at all.

Rules of statutory interpretation provide that when interpreting a statute, one must assume that each word was included intentionally and is not surplusage to the intent of the legislature. These rules also provide that words should be given their plain meaning unless defined elsewhere. In the present case, the phrase "to be retired" provides a distinct meaning from simply "retired" when both are applied to the language of the statute—adding a temporal consideration alongside the substantive limitation DEC emphasizes. The General Assembly chose to use the phrase "to be retired" rather than simply "retired," which must be regarded as intentional. Therefore, the temporal aspect of

[22] S.L. 2021-165, Part III, Section 5.
[23] *See* Official Tr., Vol. 16, at 268, 326–28.
[24] *Id*. at 327.

"to be retired" must also be included alongside the substantive limitation, "to achieve the authorized carbon reduction goals."

Per HB 951's securitization provision above, the Commission opened Docket No. E-100 Sub 177—providing its own interpretation of HB 951's language and requirements. For example, in its Order Adopting Rule R8-74, with respect to the determination of net book value, the Commission declined to adopt a proposal from DEC to revise HB 951's language to read "up to 50%" of net book value being eligible for securitization.[25] The Commission also expressly declined to determine "the correct method for determining the amount of costs eligible for securitization."[26] However, the Commission did define coal plant retirement costs and net book value consistently with HB 951's language. At R8-74(b)(8)(a), coal plant retirement costs are defined to include:

> Fifty percent (50%) of the remaining net book value of all of a public utility's subcritical coal-fired electric generating facilities *retired early or to be retired early* to achieve the authorized carbon reduction goals set forth in Section 1 of House Bill 951 that are appropriate for recovery from existing and future retail customers receiving transmission or distribution service from such public utility.[27]

The Commission's definition provides that securitizable coal plant retirement costs include the net book value of "facilities retired early *or* to be retired early to achieve the authorized carbon reduction goals."[28]

The inclusion of "retired early or *to be* retired early" confirms the understanding, discussed above, that "retired" and "to be retired" are distinct from each other. Like with HB 951, the primary distinction is the added temporal element. Both phrases imply that

---

[25] Order Adopting Rule R8-74, E-100 Sub 177, at 4–5 (Apr. 5, 2022).
[26] *Id.* ("The appropriate amount of coal plant retirement costs to be securitized under HB 951 and the appropriate timing of securitization will be determined based on a fully developed factual record.").
[27] R8-74(b)(8)(a) (emphasis added).
[28] *Id.*

something is being done for a particular purpose (in this case, to achieve carbon reduction goals). However, whereas "retired" implies something has already taken place, "to be retired" implies something that is yet to occur. Consequently, Rule R8-74 allows for the securitization of 50% of the remaining net book value of coal facilities that both *have been* retired early in order to achieve HB951's carbon reduction goals as well as coal facilities that *will be* retired early to achieve those goals but where generation-related operations have not yet ceased. This reading is also supported by other language within Rule R8-74.[29]

Though determining net book value at either time is permissible pursuant to HB 951 and Rule R8-74, there is a clear choice from a public interest and least cost perspective. As discussed in the previous section, the greater the value that is securitized the greater the savings for ratepayers (because the utility's authorized recovery shifts from using the cost of capital rate to the lower cost of debt rate).[30] As a facility is being operated and depreciated, its remaining net book value is decreasing and with it the amount that can be securitized. So while it may be permissible for a utility to wait until a coal facility has been retired to determine net book value, that facility will have operated and depreciated for years longer than necessary—leaving a lower net book value to be securitized.[31] By determining net book value when a facility's retirement timeline is determined, rather than waiting for actual retirement, millions of dollars of additional savings can be realized. Because of this, only one method of determining net book value

[29] *See* R8-74(c)(1)(a) (mandating that financing orders include a "description of the subcritical coal-fired electric generating facilities that the public utility has retired early or proposes to retire early for the purpose of achieving the authorized carbon reduction goals set forth in Section 1 of House Bill 951.").
[30] The cost of debt rate, in this instance, is used as an approximation of the cost of a bond issuance for coal facility securitization purposes.
[31] *See* Official Ex., Vol. 7., at 97; Official Tr., Vol. 15, at 1162–63.

follows HB 951's requirement that compliance follow the least cost path—that is to determine net book value once a facility is determined *to be retired*.

3. <u>Securitizable "coal plant retirement costs" go beyond merely the impact of accelerating the depreciation of facilities from current retirement dates.</u>

The amount that may be securitized is not limited to "the impact of accelerating the depreciation of [DEC]'s subcritical coal plants from the current retirement dates,"[32] as DEC and the Public Staff have proposed. Nowhere in the language of HB 951, the Order Adopting R8-74, or R8-74 is such a limitation included. Considering the sums and potential savings involved for North Carolina ratepayers, now is not the time to read in such a limitation.

HB 951 does provide certain limitations on what costs are eligible for securitization, as discussed above. The facility must be a "subcritical coal-fired electric generating" facility.[33] The facility must also be retiring early for the purpose of achieving HB 951's carbon reduction goals.[34] When addressing the eligibility for securitization of the costs of retiring such facilities early, HB 951 includes two further important limitations: (1) that eligibility is limited to 50% of costs, and (2) that costs are limited to *remaining* net book value. The first of these limitations speaks for itself, the second acts as a barrier against double-recovery for the utility—ensuring that once costs are recovered one way, they are not still eligible for recovery via another, in this case securitization. However, this is where HB 951's language stops. Per the statute, once the remaining net book value of a subcritical coal-fired electric generating facility that is to

[32] Official Ex., Vol. 7., at 97.
[33] S.L. 2021-165, Part III, Section 5.
[34] *Id.*

be retired for carbon reduction purposes is determined, 50% of that value is eligible to be securitized.

The Order Adopting R8-74 likewise provides no such limitation. Rather, the Order carries forward the expressed limitations written into HB 951, as discussed above, while maintaining "the flexibility necessary to include the provisions that were in the Storm Cost Financing Orders along with other beneficial provisions, as the Commission finds reasonable and appropriate."[35] With respect to coal plant retirement costs and the determination of net book value, the Commission found that,

> because rules for review and Commission determination of eligible securitization costs are not included in N.C.G.S. § 62-172, the Commission likewise does not include them in Rule R8-74. Rather, the costs that may be eligible for securitization will be determined in a separate proceeding, [such as] a general rate case.[36]

Rule R8-74 follows the language of the Order, providing neither more limitations on eligible costs nor further guidance on implementation.[37]

Like with the previous discussion, while there may be multiple permissive ways to interpret this language, HB 951's mandate that its carbon reduction goals be accomplished by following the "least cost path"[38] to compliance should be persuasive. With this mandate, the interpretation that yields the greatest savings for North Carolina ratepayers should be preferred over one that results in less savings. Deferring 50% of all depreciation expenses for relevant facilities results in an annual deferral of $84.4 million, while DEC's proposal that is limited to

[35] Order Adopting Rule R8-74, at 8.
[36] *Id.* at 7.
[37] *See* Rule R8-74.
[38] S.L. 2021-165, Part I, Section 1(1).

50% of the accelerated portion of depreciation expenses for relevant facilities only results in a $37.6 million annual deferral.[39]

When applied to the present language, defining securitizable costs to only include "the impact of accelerating the depreciation of [DEC]'s subcritical coal plants from the current retirement dates"[40] unreasonably limits the scope of costs that could be securitized. Neither the language of HB 951 nor Rule R8-74 limits securitizable costs to the impact of accelerating retirement. Rather than interpreting this language narrowly, HB 951's least cost mandate suggests that a more inclusive reading of eligibility for costs to be securitized is more consistent with the intent of the General Assembly—accomplishing carbon reductions while keeping rates affordable to North Carolina ratepayers.

4. <u>Dr. Kaufman's proposal maximizes ratepayer savings while representing a reasonable interpretation of applicable laws and regulations.</u>

Dr. Kaufman's recommendation has two parts: to "[d]efer 50% of DEC's return on rate base associated with subcritical coal-fired electric generating facilities to be retired early, and [to d]efer 50 percent of depreciation expense associated with these plants."[41] This recommendation represents a reasonable interpretation of applicable law that serves to maximize potential savings for ratepayers in line with the clearly delineated goals of HB 951.

The permissibility (and preferability) under North Carolina law of both aspects of Dr. Kaufman's recommendation is discussed in detail in previous sections. In contrast, DEC proposes to read into existing language new limitations to the scope of savings

[39] Official Tr., Vol. 15, at 1166.
[40] Official Ex., Vol. 7., at 97.
[41] Official Tr., Vol. 15, at 1163–64.

available to ratepayers. Though DEC ultimately determines how to actually implement the securitization of coal facilities,[42] the law—and public interest—requires the Commission to acknowledge that DEC's proposal does not represent the least cost path to compliance with HB 951.

The remaining critique of Dr. Kaufman's proposal is the misunderstanding that "current customers, who are benefitting from coal plant generation, will not pay any of the costs of that generation."[43] While that does properly capture at least part of the essence of the cost causation principle, it does not represent Dr. Kaufman's proposal. Dr. Kaufman's recommendation limits deferral to 50% of both return on rate base and depreciation expenses associated with retiring facilities. It also does not include any expenses associated with operations and maintenance ("O&M") of those facilities.[44] Therefore, by definition, it does not propose stopping all recovery of costs from current customers—rendering DEC's critique misplaced.

This misunderstanding is further compounded later within DEC's rebuttal testimony. While DEC claims that he "was not able to provide any examples of where this has been done in response to a discovery request,"[45] the discovery request cited contains the same fundamentally flawed understanding of Dr. Kaufman's proposals as above.[46] The request asks, "[p]lease identify utilities that are permitted to securitize a coal plant's net book value prior to retirement, or have stopped recovery on a coal plant

[42] Order Adopting Rule R8-74, at 4–5, *see generally* Rule R8-74.
[43] *See* Official Tr., Vol. 16, at 268.
[44] Official Tr., Vol. 16, at 323.
[45] Official Tr., Vol. 16, at 268.
[46] Official Ex., Vol. 16, at 364.

while it was still operational in order to inflate the net book value at retirement that could be securitized."[47]

However, Dr. Kaufman's proposal neither stops recovery on a coal plant while it is still operational nor securitizes the net book value of a facility prior to retirement. While Dr. Kaufman's proposal does determine the net book value of a facility prior to retirement, it merely defers 50% of that value to be securitized at a later date (presumably when the facility is actually retired). Because Dr. Kaufman's proposal is only to defer 50% of net book value and for actual securitization to happen at a later date, neither part of the discovery request directly addresses it.

Dr. Kaufman's proposal does not contradict HB 951 and Rule R8-74. Rather, DEC's and the Public Staff's proposal appears as if it may contravene one of the clearest limitations provided under the law—that only 50% of remaining net book value of retiring coal facilities is eligible to be securitized. In the Amended Agreement and Stipulation of Partial Settlement, DEC and the Public Staff agreed to defer "75% of the impact of accelerating the depreciation of the Company's subcritical coal plants from the current retirement dates."[48] Though it is claimed that this preserves the ability to recover 50% of net book value, nowhere is it explained how. What percentage of the remaining net book value is captured by three quarters of the impact of accelerating depreciation from current retirement dates? If it is below 50%, will other expenses be added to the regulatory asset for securitization at the appropriate time? If it is above 50%, how should the remaining value left in the regulatory asset be treated? None of these questions are answered.

---

[47] *Id.*
[48] Official Ex., Vol. 7., at 97, ¶ 3.

Finally, Dr. Kaufman's proposal represents a reasonable balance between HB 951's public policy goals of pursuing carbon reduction, doing so in the least cost manner, and ensuring the utility is made whole for previous investments while remaining financially sound for the future. HB 951 allows the utility's overall return to be decreased on coal assets being retired to pursue carbon reduction goals. However, these assets must be replaced by new, less carbon-intensive facilities as the coal facilities are retired[49]—meaning that the utility will have new assets going into its rate base prior to the retiring coal facilities being securitized. This allows the utility to potentially recover more than before because it is still allowed to recover the costs of the retired coal facilities, just at a lower rate than before, while also recovering at the full return on equity rate for the replacement resources. By maximizing the value to be securitized, Dr. Kaufman's proposal minimizes the potential for utility double recovery, while increasing savings and mitigating rate shock for North Carolina ratepayers—making it the clear choice from a public interest perspective.

III. DEPRECIATION STUDY

Dr. Kaufman's analysis of DEC's 2021 depreciation study addresses concerns with DEC's plan to escalate decommissioning costs, with certain proposed net salvage rates, and with survivor curves used to calculate remaining lives for a number of asset accounts. The Commission is responsible for determining what are proper and adequate charges for depreciation.[50] Because Dr. Kaufman's recommendations follow a rational and systematic process, are consistent with standard accounting and depreciation

[49] This is consistent with what DEC has proposed in both the 2022 Carbon Plan process (E-100 Sub 179) and in 2024 Carbon Plan—Integrated Resource Plan filings (E-100 Sub 190).
[50] N.C. GEN. STAT. § 62-35(c).

practices, present reasonable interpretations of the relevant data and are, on average, more equitable than DEC Witness Spanos' recommendations, it is appropriate for the Commission to accept Dr. Kaufman's proposals to protect ratepayers from unnecessarily inflated depreciation charges.

1. <u>The use of current decommissioning costs is consistent with USOA, systematic and rational, and more equitable than the use of escalated costs.</u>

DEC argues that Dr. Kaufman's proposal to use current decommissioning costs is not consistent with USOA by asserting that it will result in an under recovery of expected costs of removal. However, it is not necessary to escalate decommissioning costs to ensure that DEC is able to fully recover those costs. The relevant authorities provide that decommissioning costs are recoverable by the utility,[51] and escalation is one acceptable method of doing so. Although—as seen by proposals around the country—there are other methods available that more fairly consider inter-generational equity concerns. While each customer theoretically pays an equal share of costs based on their benefit no matter the year, in practice escalation serves to unfairly burden current ratepayers to the benefit of future ratepayers by failing to accurately consider the impacts of inflation.

DEC argues that NCSEA's method of calculating decommissioning costs is not consistent with USOA because it does not account for inflation when calculating depreciation expense, and thus does not result in rates that fully recover the cost of removing an asset. DEC notes that the Uniform System of Accounts ("USOA") provides that, "Net salvage value means the salvage value of property retired less the cost of removal."[52] However, the USOA does not specify how the net salvage value, cost of

[51] Official Tr., Vol. 9, at 237–38, 268–69 (quoting passages from NARUC and USOA manuals).
[52] Official Tr., Vol. 9, at 268.

removal, or decommissioning costs are to be accounted for in depreciation expense, or how depreciation is to be recovered across time.[53] Dr. Kaufman's proposed method of using current depreciation system will ultimately recover the full, escalated amount of cost of removal through depreciation expense, and thus is consistent with the USOA. DEC concedes when noting that under the use of the remaining life method, Dr. Kaufman's recommendation will lead to fully recovered escalated decommissioning costs.[54]

DEC Witness Spanos has sponsored depreciation studies recommending no decommissioning costs be collected from customers, based on the premise that these dollars would be collected from customers in future years once decommissioning costs are more certain.[55] It is inconsistent for DEC Witness Spanos to assert that it is acceptable to collect no decommissioning expense from customers despite virtual guarantee that there will be decommissioning costs, while simultaneously arguing that collecting non-escalated dollars, which is much closer to the expected cost than zero, is unacceptable. DEC's and NCSEA's proposals only affect when decommissioning dollars are collected, not the total amount of decommissioning dollars collected. The Commission must evaluate which approach results in a fairer allocation of costs to customers across time.

DEC's method allocates equal nominal dollars to customers across time while NCSEA's approach allocates equal real dollars to customers across time. While under both approaches each customer theoretically pays an equal share of costs based on their

[53] Spanos was unable to identify language in the USOA specifying how cost of removal is allocated to depreciation expense across time. Official Tr., Vol. 9, at 304 ll. 8-13.
[54] Official Tr., Vol. 9, at 289 ll. 16–21.
[55] *Id.* at 291–292.

benefit no matter the year, in practice, DEC's method of escalation serves to unfairly burden current ratepayers to the benefit of future ratepayers by failing to accurately consider the impacts of inflation.

The USOA further provides that "[c]ost means the amount of money actually paid for property or services."[56] Because net salvage necessarily happens in the future, some amount of estimation is necessary; however, recovery should be based as closely to "the amount of money actually paid" as possible to avoid over- or under-recovery.

The USOA also provides, and DEC agrees, that two customers receiving equal benefit from an asset should pay an equal share of decommissioning costs.[57] DEC interprets this to mean that each customer should pay an equal amount of the decommissioning costs regardless of the year in which they take service (so long as the asset is in operation during that time), and that escalation is necessary to ensure the amount each customer pays collectively covers an estimate of future costs.[58] However, this approach fails to take into account the impact inflation has on customers over time.

DEC's proposal accounts for inflation when estimating future decommissioning costs, but not for customers' contributions towards the recovery of those costs over time. That is, though DEC claims its proposal allows for equal recovery from customers year-over-year, it does not consider the fact that the effective purchasing power of a dollar for a customer in Year 1 is greater than a customer in Year 5, Year 10, or Year 20.[59] A customer paying $100 in 2010 dollars is paying significantly more than a customer paying $100 in 2023 dollars.

---

[56] *Id.* at 269.
[57] *Id.* at 284–85.
[58] *See id.* at 243.
[59] *See id.* at 284–88.

There are other methods to recover decommissioning costs that minimize inter-generational inequities, unlike DEC's proposal, while still abiding by the USOA's provisions. One method only includes interim net salvage and not the terminal component.[60] Another alternative approach was included in proposals in Duke Energy Progress, LLC's recent South Carolina rate case [61] and in Northern Indiana Public Service Company's recent rate case.[62] Dr. Kaufman's recommendation represents another alternative.

Dr. Kaufman's recommendation to disallow the escalation of decommissioning costs is more equitable as it relies on an iterative approach to calculating depreciation costs and net salvage determinations. Rather than estimating future economic conditions and the impacts of future inflation, Dr. Kaufman's recommendation is to periodically update depreciation cost estimates with verifiable data—which likely allows recovery to be much closer to "the amount of money actually paid." From the ratepayer perspective, regular updates also more accurately reflect the effective purchasing power of a ratepayer's dollar at a given time. Consequently, the risk of inequities between customers paying for the same benefit across different years is minimized.

DEC's proposal to escalate decommissioning costs is both an unnecessary and inaccurate method of ensuring full utility recovery of decommissioning costs. In fact, DEC's proposal results in rates that are unjust and unreasonable as it forces today's ratepayers to disproportionally pay for tomorrow's costs of decommissioning utility assets. The periodicity recommended by Dr. Kaufman allows for adjustments to be made

[60] *Id.* at 294–95 (discussing the approach DEC Witness Spanos submitted on behalf of Ameren Missouri in July 2022).
[61] *See id.* at 297–99.
[62] *See id.* at 299.

over time, which in turn allows for greater accuracy when estimating and allocating decommissioning costs. Accordingly, it is within the public interest for the Commission to accept Dr. Kaufman's recommendation.

2. Alternative average net salvage costs that allow for increased savings.

Dr. Kaufman's recommendation regarding net salvage, other than decommissioning, is based upon both recent and long-term net salvage data, as well as overall trends in net salvage.[63] Specifically, Dr. Kaufman recommends a 20-year average net salvage cost be used for the following accounts: Account 31X Steam Production (interim net salvage), Account 34X Other Production (Excluding Solar and Account 343.10), Account 356 Overhead Conductors, Account 373 Street Lighting, Account 390 Structures and Improvements, Accounts 392.XX Transportation Equipment, and Accounts 396.XX Power Operated Equipment. Dr. Kaufman "also recommend[s] that 50 percent of the 20-year average interim net salvage cost be used to calculate net salvage rates for Account 343.10 Other production Prime Movers (Rotatable Parts)."[64]

Table 7 Comparison of 20-year Average Net Salvage and DEC Proposed Net Salvage[65]

	20-Year Average	DEC Proposed	NCSEA Proposed
ACCOUNTS 31X	-15%	-18%	-15%
ACCOUNTS 34X (Interim Excluding 343.10)	35%	-23%	35%
ACCOUNTT 343.10 (Interim)	98%	40%	49%
ACCOUNT 356.00	-31%	-40%	-31%
ACCOUNT 373.00	-6%	-10%	-6%
ACCOUNT 390.00	-6%	-10%	-6%
ACCOUNTS 392.XX	12%	10%	12%
ACCOUNTS 396.XX	22%	10%	22%

[63] Official Tr., Vol. 15, at 1171.
[64] *Id*.
[65] *Id.*

Dr. Kaufman's recommendations provide a better fit for the data pertaining to these accounts than DEC's. Regarding interim net salvage rates for non-solar other production accounts, DEC's proposed rate is -23% for all 34X Accounts except for 343.10 and 40% for 343.10. DEC later corrected the proposed rate for all 34X Accounts except for 343.10 to -5%.[66] This is compared to historic rates of 35% and 98% respectively. While DEC's explanation is that "estimates were based in part on an analysis of historical interim retirement and net salvage data,"[67] DEC does not specifically explain the deviation from the historic data. Where Dr. Kaufman deviated from historic data, for Account 343.10, he did so for a specific reason.[68] The impact of these recommendations reduces the annual depreciation expense by approximately $48.5 million.[69]

3. <u>Dr. Kaufman's assumptions for developing survivor curves better align with industry expectations.</u>

Survivor curves are developed by using a utility's original life tables, based on historical data; which are then extrapolated for a group of assets into a smooth curve.[70] "Iowa survivor curves provide a complete indication of the percentage of assets forecast to survive to each age, and average service lives and remaining lives can be derived from a given Iowa curve in order to calculate depreciation expense."[71] There are two primary methods of analyzing the fit of a smooth curve to the underlying data, visual curve matching and mathematical curve matching.[72] Visual curve matching is simply applying

[66] Official Tr., Vol. 9, at 241.
[67] Official Ex., Vol. 10 Part 2 of 2, at 93.
[68] Official Tr., Vol. 15, at 1172 (explaining that due to the limited historic salvage records for this account, it is more appropriate to select a conservatively low level of salvage for the account.).
[69] *Id.* at 1173.
[70] Official Tr., Vol. 9, at 246.
[71] *Id.*
[72] *Id.*

both the smooth curve and original curve onto the same graph and visually determining how close the match is between them.[73] Mathematical curve matching compares the difference between the smooth curve and original curve across statistically significant points.[74] One method of determining the fit mathematically is called the "residual measure"—the method used by DEC Witness Spanos[75] and Dr. Kaufman.[76] The residual is calculated as the sum of the square of the differential across significant points.[77] The smaller the residuals, the better the fit of the smooth curve to the historical data.[78]

a. Account 344.66—Solar Generators

For Account 344.66 (Solar Generators), Dr. Kaufman proposes a 30-S3 curve while DEC proposes a 25-S2.5 curve with a forced truncation at 30 years.[79] DEC's proposed curve results in more than 75% of interim retirements at each facility's end of life.[80] This is both inconsistent with relevant equipment warranties as well as industry expectations.[81]

Dr. Kaufman's suggested curve is based on time to 20% degradation of solar panels, per academic research.[82] Even though the curve is based on the degradation of solar panels, because panels will likely continue to operate beyond 20% degradation the 30-S3 curve also includes other potential causes of retirement, such the failure or replacement of other components.[83]

---

[73] *Id.* at 247.
[74] *Id.*
[75] *Id.*
[76] *See* Official Tr., Vol. 15, at 1173–80.
[77] Official Tr., Vol. 9, at 304–05.
[78] *Id.* at 247.
[79] *Id.* at 256; Official Tr., Vol. 10, at 38.
[80] Official Tr., Vol 15, at 1174.
[81] *Id.*
[82] *Id.* at 1173.
[83] Official Tr., Vol. 10, at 39.

DEC Witness Spanos testified that both solar panels and racking systems generally have a 25-year standard warranty.[84] These two components make up most of the value associated with Account 344.66.[85] Despite the most valuable components carrying warranties through 25 years, DEC's proposed curve shows fully half of these facilities closing by that time.[86] Though DEC again asserts that this is due to other causes of retirement that Dr. Kaufman's proposal misses, because the 30-S3 curve shows retirements of 25% at year 25 there must be other causes of retirement built in.[87] This is because, if the warranty components should be treated as having a 100 percent survival rate, warranty components will have zero failure related retirements recorded at age 25. Thus, the 25 percent of retirements modeled at year 25 must represent non-failure related retirements.

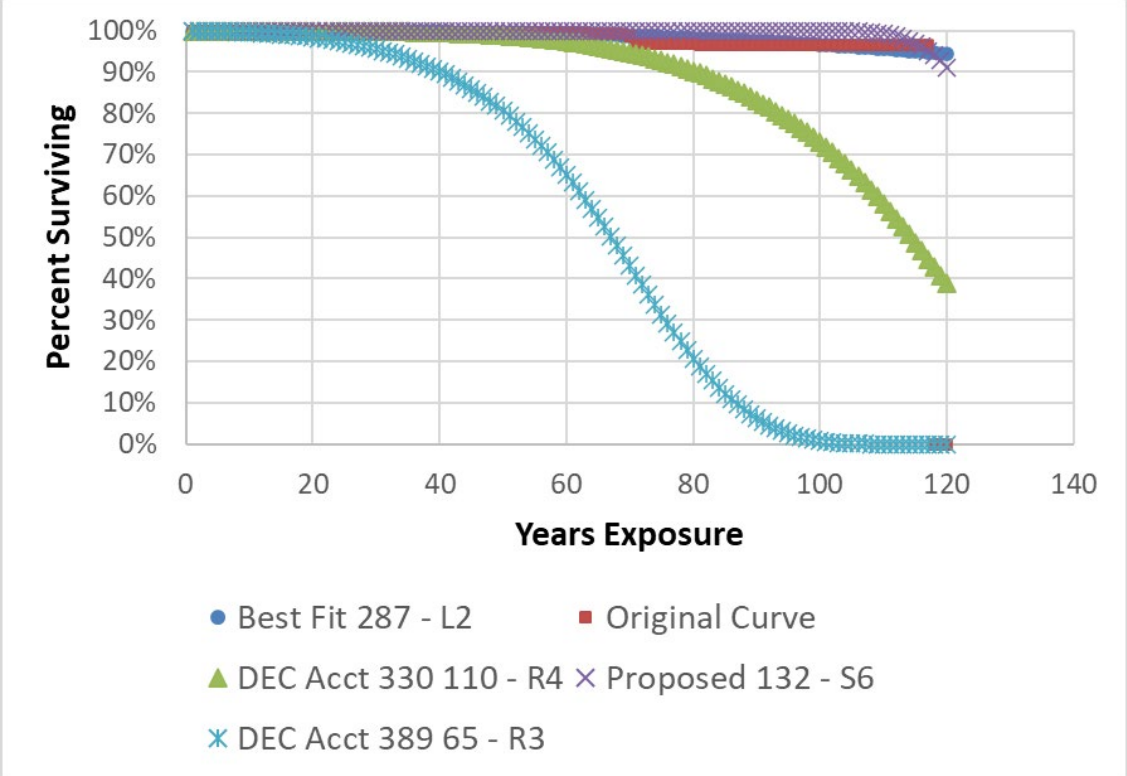
The percent of assets forecasted to survive to age 30 under DEC's proposed retirement curves does not match industry expectations. Despite Account 344.66 consisting primarily of facilities installed on or after 2016,[88] DEC proposes a 35-year depreciable life for future solar assets.[89] Georgia Power, in its 2020 depreciation study, also projected a 35-year life for solar—along with no interim retirements.[90] Overall, Dr. Kaufman's recommendation to utilize a 30-S3 curve provides a better fit to both the underlying data and to industry expectations.

[84] *Id.* at 42–43.
[85] *Id.* at 30–31.
[86] *Id.* at 44; Official Tr., Vol. 9, at 256.
[87] *Id.*
[88] Official Tr., Vol. 15, at 1173.
[89] Official Tr., Vol. 10, at 51–52.
[90] Official Ex., Vol. 10 Part 1 of 2, at 1368.

b. Rights of Way Accounts

Dr. Kaufman recommends using the 132-S6 curve for Rights of Way Accounts 310, 320, 330, 340, 350, 360, 360.2, 389, and 389.2.[91] While the primary cause of retirement for these accounts is abandonment, "rights of way are rarely if ever abandoned."[92] Accordingly, the underlying data and original curve show high rates of survival (above 90%) well past 100 years for each of these accounts.[93] DEC's proposed curves for these accounts all significantly overstate retirements as compared to historical data.

Figure 8 Original and Smoothed Curves for Rights of Way Accounts[94]



[91] Official Tr., Vol 15, at 1172–74.
[92] *Id.* at 1174.
[93] *Id.* at 1175.
[94] *Id.* at 1175.

One reason that rights of way survive for so long is that many may last for multiple lifecycles of associated assets. "[T]here is a correlation between the life of the assets that are associated with the right-of-way and the purpose of the right-of-way . . . [E]ach functional right-of-way should be correlated—not directly related but correlated—to the overall maximum life of the associated assets."[95] A primary reason that survivor curves for rights of way and their associated assets should be correlated but not directly related is that rights of way may continue to be useful after the underlying asset is retired. In fact, DEC "does not expect or plan to abandon all or most of it rights of way at the end of the associated plant's life cycles."[96] That means it is reasonable to expect that more than half of DEC's underlying rights of way are exposed to multiple cycles of associated assets.[97]

As to the length of life of the underlying assets, DEC is "assuming that assets will have a consistent life going forward,"[98] so replacement assets are expected to have similar life cycles as the assets they are replacing. This is inconsistent with the discussion in the previous section regarding the expected life of solar facilities, where DEC expects new facilities to last five years longer than ones installed mostly in the last seven years.[99] Though DEC attributes this to new designs and technological upgrades,[100] the same could be said for many other parts of the utility sector—particularly considering the extended time between the replacement of certain underlying assets such as transmission infrastructure.

---

[95] Official Tr., Vol. 10, at 15.
[96] Official Ex., Vol. 10, at 773.
[97] Official Tr., Vol. 10, at 20–21.
[98] *Id*. at 24.
[99] *See supra* fn. 89-90.
[100] Official Tr., Vol. 10, at 52.

Other utilities have, at times, declined to depreciate rights of way accounts within their own depreciation studies, including two recent studies conducted by DEC Witness Spanos.[101] These include both Amren Missouri[102] and Portland General Electric.[103] Though the co-mingling of land and land rights may play a role, another potential reason is that they simply do not intend to retire these accounts. Considering the underlying retirement data and the fact that most rights of way are expected to survive multiple lifetimes of underlying assets, Dr. Kaufman's recommended 132-S6 curve presents a better match for both data and expectation than do DEC's recommended curves.

c. Account 354—Towers and Fixtures

Dr. Kaufman recommends the 75-R2.5 curve, as compared to the 70-R2.5 curve recommended by DEC Witness Spanos.[104] The historic plant data for Account 354 makes creating a smooth curve over the entire lifecycle virtually impossible—this is "driven by a small number of retirements occurring in age bands where DEC has relatively low plant balances."[105] This forces a tradeoff between a curve that minimizes overall error or one that fits portions of the data well but results in larger error for other portions.[106] Dr. Kaufman's proposed 75-R2.5 curve appropriately balances these considerations by matching the data through year 60 well and de-emphasizing the anomalous data points.

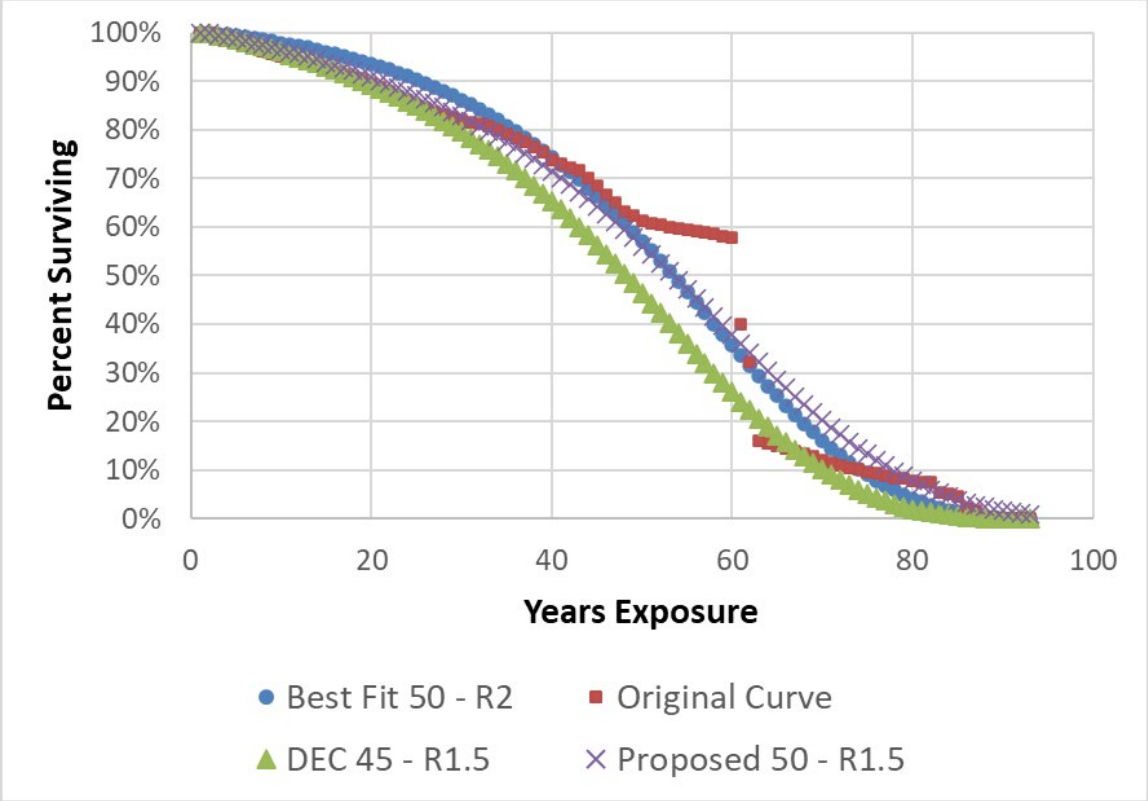
d. Accounts 368 & 368.10—Line Transformers

Unlike with certain other accounts, there is enough underlying historic data for Accounts 368 and 368.10 to create a complete survivor curve, which supports more

[101] *See* Official Tr., Vol. 10, at 26–29.
[102] Official Ex., Vol. 10, at 143.
[103] *Id.* at 839.
[104] Official Tr., Vol. 9, at 253.
[105] Official Tr., Vol 15, at 1175.
[106] *Id.* at 1175–76.

reliance on statistical analysis.[107] Some abnormalities in the data exist however, particularly, between the ages of 50 and 63[108]—as can be seen in Figure 10 of Dr. Kaufman's testimony. Dr. Kaufman recommends using the 50-R1.5 curve that matches the data well for the first 50 years while minimizing error for later years.[109] Whereas DEC's recommended curve, the 45-R1.5 curve, "overestimates retirements across nearly all years and results in a relatively poor fit of the data."[110]

Figure 10 Original and Smoothed Curves for Accounts 368 and 368.10 Line Transformers[111]



Applying statistical analysis to these curves, Dr. Kaufman's recommended curve presents a much better fit to the underlying data. Using the residual measure method as

[107] *Id.* at 1177.
[108] *Id.*
[109] *Id.*
[110] *Id.*
[111] *Id.* at 1178.

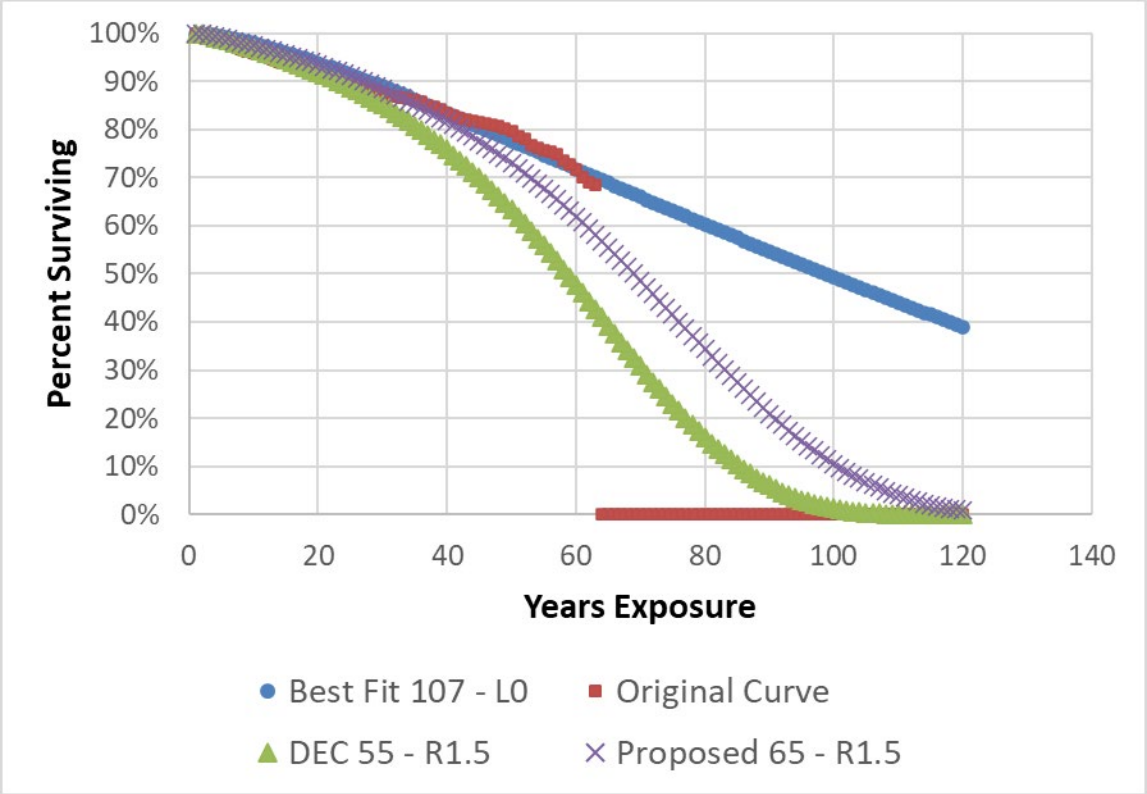
discussed above—where the squared differences between the underlying data and proposed curve across statistically significant data points are added together and can then be compared across curves—Dr. Kaufman's proposed 50-R1.5 curve results in a total of 0.036, as compared to DEC's proposed 45-R1.5 curve which has a total of 0.253.[112] Such a discrepancy is notable when analyzing an Account with significant amounts of underlying data.

e. Account 369—Services

For Account 369, Dr. Kaufman recommends using the 65-R1.5 curve while DEC proposes using the 55-R1.7 curve.[113] The underlying data for Account 369 is limited to a maximum age of 62 years due to limited retirement experience, which may not allow the data to sufficiently estimate the rate of older retirements.[114] DEC's proposed 55-R1.5 curve only matches the data well through age 20, after which it results in "a relatively poor fit."[115] It also overestimates retirements for nearly every year prior to 62.[116] In contrast, Dr. Kaufman's recommended 65-R1.5 curve fits the data well through the first 40 years and only marginally deviates from the data for years 40-62, while also resulting in a similar average age as DEC's proposed curve.[117]

[112] Official Ex., Vol. 10, at 768; Official Tr., Vol. 10, at 57–58.
[113] Official Tr., Vol 15, at 1178.
[114] *Id.*
[115] *Id.*
[116] *Id.* at 1178–79.
[117] *Id.*

Figure 11 Original and Smoothed Curves for Account 369 Services[118]



Like with Accounts 368 and 368.10, there is sufficient underlying data to perform statistical analysis. Comparing residual measures, DEC's 55-R1.5 curve results in 0.248 of squared residuals as compared to Dr. Kaufman's 65-R1.5 curve which results in only 0.039.[119] This is again a notable discrepancy that should be considered.

[118] *Id.* at 1179.
[119] Official Ex., Vol. 10, at 770.

IV. CONCLUSION

NCSEA respectfully requests that the Commission take this brief and partial proposed order into consideration, and that the Commission adopt each of the ordering paragraphs in the partial proposed order.

Respectfully submitted this the 11th day of October, 2023,

/s/ Ethan Blumenthal
Ethan Blumenthal
Regulatory Counsel for NCSEA
N.C. State Bar No. 53388
4800 Six Forks Road, Suite 300
Raleigh, NC 27609
(704) 618-7282
ethan@energync.org

CERTIFICATE OF SERVICE

I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing filing by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

Respectfully submitted this the 11th day of October, 2023,

/s/ Ethan Blumenthal
Ethan Blumenthal
Regulatory Counsel for NCSEA
N.C. State Bar No. 53388
4800 Six Forks Road, Suite 300
Raleigh, NC 27609
(704) 618-7282
ethan@energync.org