BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

REBUTTAL TESTIMONY OF NED W. ALLIS

DOCKET NOS. 160021-EI; 160062-EI

AUGUST 1, 2016

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ned W. Allis. My business address is 207 Senate Ave., Camp Hill, PA 17011.

Q. Did you previously submit testimony in the proceeding?

A. Yes.

Q. Are you sponsoring or co-sponsoring any exhibits as part of your rebuttal testimony?

A. Yes. I am sponsoring the following exhibits:

- NWA-3 – Mass Property Service Lives – Account Specific
- NWA-4 – Mass Property Net Salvage – Account Specific
- NWA-5 – Interrogatory Responses

I am also co-sponsoring Exhibit KO-19, specifically the supplemental schedules included as Attachment 2 to FPL’s Second Notice of Identified Adjustments

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my testimony is to respond to the testimonies of the Office of Public Counsel (“OPC”) witness Jacob Pous, Federal Executive Agencies (“FEA”) witness Brian Andrews and South Florida Hospitals and Healthcare Association (“SFHHA”) witness Lane Kollen. Specifically, I will respond to the portions of their testimony related to depreciation.

Q. Please summarize your rebuttal testimony.

A. My testimony demonstrates that the adjustments proposed for FPL's 2016 Depreciation Study by witnesses Pous, Andrews and Kollen are unfounded and inappropriate. The 2016 Depreciation Study, using either the original 2017 year-end plant and reserve balances or the 2016 year-end plant and reserve balances reflected in FPL's Second Notice of Identified Adjustments, appropriately represents the depreciation rates that should be applied to FPL's plant in service. The depreciation rates proposed in the 2016 Depreciation Study are based on widely accepted depreciation methods, incorporate FPL's actual experience and outlook, and properly balance the interests of current and future generations of customers. In contrast, the proposals by the intervenor witnesses do not meet these standards. Among the most prominent issues that I will explain and address in my rebuttal testimony are:

- Contrary to the implications of intervenor witnesses, the service life and net salvage recommendations in the 2016 Depreciation Study actually result in a significant decrease in depreciation expense of $563 million, when compared to the depreciation rates resulting from the service life and net salvage estimates that were approved in 2009.
- The 2016 Depreciation Study incorporates FPL-specific data and plans in support of the recommended service lives and net salvage. In contrast, the recommendations of the intervenor witnesses are not consistent with FPL's actual experience. OPC's and SFHHA's proposals are most notably flawed in this regard. As an example, both witness Pous and

witness Kollen ignore over $2 billion in historical retirement activity related to the Company's combined cycle power plants.

- In my professional judgment, the recommendations of the intervenor witnesses produce depreciation rates that do not adequately balance the interests of current and future customers. OPC's recommendations are particularly extreme, and result in a decrease of depreciation expense of more than $1 billion when compared to the depreciation rates that result from the currently approved service life and net salvage estimates.
- SFHHA's proposal to reject the 2016 Depreciation Study in its entirety and instead retain the existing depreciation rates is inappropriate and ill-advised. The 2016 Depreciation Study provides clear evidence that, independent of the calculation date used for the study, FPL's service life and net salvage parameters must be updated to incorporate current information. The study also demonstrates that updated plant and reserve balances must be used to calculate updated depreciation rates. Further, the basis for SFHHA's objection – FPL's use of December 31, 2017 balances for the 2016 Depreciation Study – has already been addressed with the depreciation rates provided in FPL's Second Notice of Identified Adjustment filed on June 16, 2016, which provides depreciation rates as of December 31, 2016. SFHHA's proposal to rely on the 2009 depreciation study would hurt current customers. As noted above, the recommended service life and net salvage parameters in the 2016 Depreciation Study reduce depreciation expense by $563 million. Applying depreciation rates

resulting from applying the service life and net salvage estimates approved in 2009 to current balances would increase depreciation expense by much more than the depreciation rates resulting from the 2016 Deprecation Study.

II. RESULTS OF THE 2016 DEPRECIATION STUDY

Q. On page 29 of his testimony, witness Pous states that for the 2016 Depreciation Study "it appears that both the utility and the depreciation analyst are in lock step as it relates to an aggressive depreciation proposal." Please address this accusation.

A. Witness Pous's accusation is simply incorrect, and the facts do not support his contention. Instead, the facts support that the 2016 Depreciation Study is fair, balanced and results in significant reductions to depreciation expense for many types of assets. As I explained in my direct testimony, the increase in depreciation expense is due primarily to the current plant and reserve balances used for the depreciation calculations, and not due to the service life and net salvage estimates in the depreciation study. That is, the increase in depreciation expense is not the result of the proposed changes I have made to lives and net salvage, but is instead the mathematical result of changes in plant and reserve balances since FPL's last depreciation study.

Instead, in the 2016 Depreciation Study I have made a number of recommendations that result in significant decreases in depreciation expense. These include the following:

- I have increased the life span for combined cycle plants from 30 to 40 years, resulting in a decrease in depreciation expense of $114.2 million
- I have changed the net salvage estimate for capital spare parts from 0% to 35%, resulting in a decrease in depreciation expense of $155.8 million.
- I have increased the average service life for capital spare parts from approximately 3.2 years to 9 years, resulting in a decrease in depreciation expense of $291.4 million.
- I have increased the service lives for twenty-one transmission, distribution and general plant accounts. These changes have been somewhat offset by a clear trend in FPL's data to more negative net salvage estimates. The total impact of my transmission, distribution and general plant recommendations is to decrease depreciation by a further $26.7 million.

In total, my recommended changes to service life and net salvage estimates result in a combined decrease in depreciation expense of approximately $563 million when compared to the depreciation rates that would result from the current, Commission-approved service life and net salvage parameters. The service life and net salvage estimates I have recommended therefore result in a substantial decrease in depreciation expense, which cannot by any objective measure be considered "aggressive," as witness Pous inaccurately characterizes them.

Q. You indicated that the increase in depreciation rates is primarily due to the change in plant and reserve balances, not the recommended service lives and net salvage estimates in the 2016 Depreciation Study. Please explain this concept further.

A. Depreciation rates for a given depreciable group can change for a number of reasons. One broad category of reasons for a change in depreciation expense is the estimates made in a depreciation study -- changes to average service lives, survivor curves, estimated retirement dates or net salvage. Changes to these estimates will result in a change in depreciation rates, all else equal. I will refer to the impact of depreciation expense due to these reasons as "changes in lives and net salvage."

However, depreciation rates will also change from study to study even if there are no changes in lives and net salvage. This occurs because plant balances, accumulated depreciation balances, and remaining life spans change from study to study. As a result, if depreciation is calculated at a different point in time, depreciation rates will automatically change with updated plant and accumulated depreciation balances. I will refer to the impact of these factors on depreciation rates to this as the "change in calculation time period."

For the 2016 Depreciation Study, the increase in depreciation expense is due primarily to the change in calculation time period, not the changes in lives and net salvage. In fact, viewed in isolation, the changes in lives and net salvage recommended in the 2016 Depreciation Study result in a significant *reduction* in depreciation expense.

Q. Can you quantify the impact on depreciation rates of the change in calculation time period, as compared to the changes in lives and net salvage?

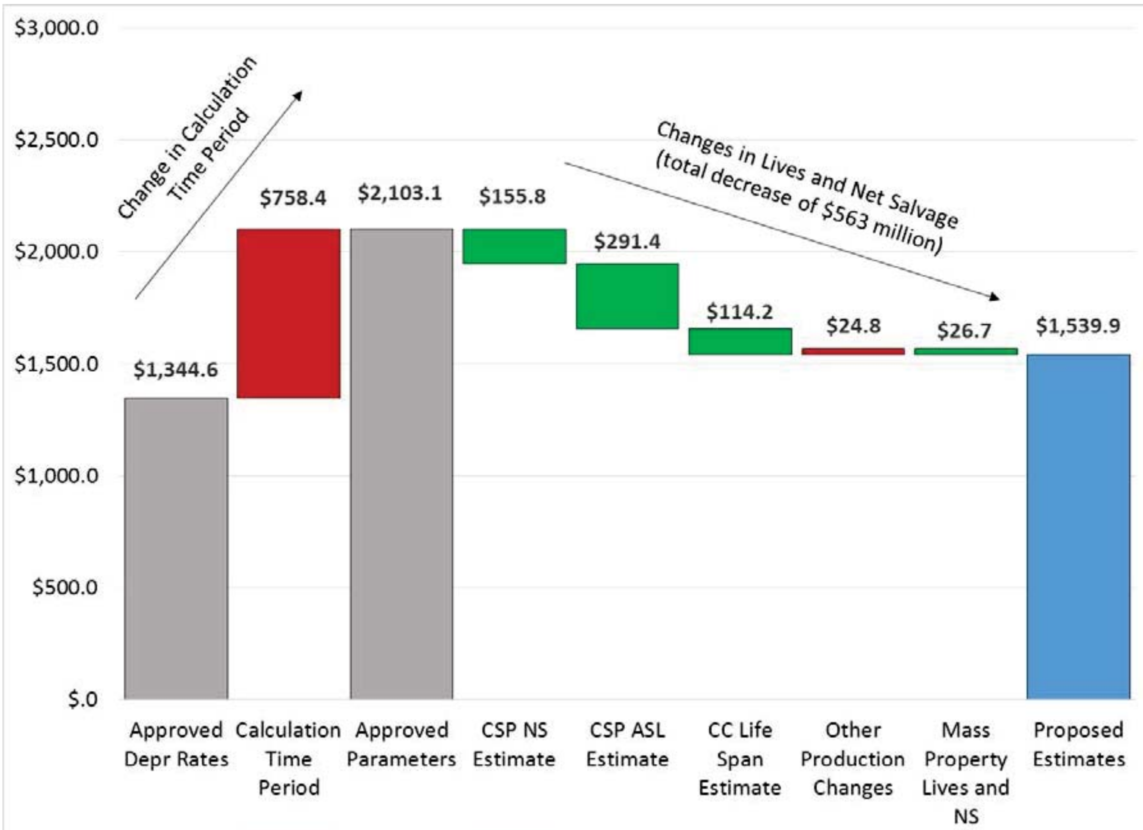
A. Yes. In Docket No. 090130-EI, the Commission approved specific survivor curves, interim retirement rates, life spans and net salvage estimates. Using these parameters, I have calculated the depreciation rates and expense that result if the same approved parameters are applied to the December 31, 2016 balances used for the 2016 Depreciation Study (as updated in FPL's Second Notice of Identified Adjustments provided in Exhibit KO-19).

Q. What is the result of this calculation?

A. The result of this calculation is annual depreciation expense as of December 31, 2016 of $2,103.1 million. This is an increase of approximately $758.4 million over the $1,344.6 million in depreciation expense that would result from simply applying the approved depreciation rates (unadjusted for the change in calculation time period) to the December 31, 2016 plant and reserve balances. That is, the result of the "change in calculation time period" is an increase in depreciation expense of approximately $758.4 million.

In Figure 1 below, I have shown the impact of the "change in calculation time period" on depreciation expense for 2016 balances. I have also shown the impact of the "changes in life and net salvage" resulting from my depreciation study: a reduction of $563 million. To help further illustrate the impact of specific life or net salvage estimates, I have also quantified the impact of certain changes to service lives and net salvage estimates.

Figure 1: Impact on Depreciation Expense of Change in Calculation Time Period and Changes in Life and Net Salvage



Q. What is the primary reason for the increase that occurs due to the change in calculation time period?

A. The increase is due primarily to additions to production plant accounts, which I have explained in more detail in my direct testimony.[1] For example, nuclear production plant represents $150 million of the $758 million increase due to the

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[1] See pages 48 and 49 of my direct testimony for an explanation of how additions to life span property typically results in an increase in depreciation rates.

change in calculation time period. While nuclear plants have an overall 60-year life span, new assets added at the Company's nuclear facilities will have a shorter life than 60 years. As a result, for these accounts and other life span accounts, the depreciation rate tends to increase as new assets are added – otherwise the full cost of these plants would not be recovered.

Q. Given the large increase that occurs automatically from simply recalculating depreciation rates with current balances, what is the actual impact of the service life and net salvage estimates you have recommended in the depreciation study?

A. As noted above, and as can be seen in Figure 1, the actual impact of the changes in estimates proposed in the 2016 Depreciation Study – that is, the changes that actually result from my recommendations as opposed to changes that would occur anyway due to the change in calculation time period – is a significant decrease in depreciation expense of $563 million. It is incorrect and completely misleading to characterize this significant decrease in depreciation expense as an "aggressive depreciation proposal."

III. GENERAL DISCUSSION OF THE DEPRECIATION PROPOSALS

A. OPC'S DEPRECIATION PROPOSALS

Q. How would you characterize OPC's depreciation proposal?

A. OPC's recommendation is nothing short of extreme, in the sense that it consistently underestimates the actual, current cost of depreciation. In Section

II of my testimony, I explained that my service life and net salvage recommendations reduce depreciation expense by approximately $563 million when compared to the depreciation rates resulting from the currently approved depreciation parameters. Witness Pous proposes a further reduction in depreciation expense of $533 million. Combined with the large decrease I have recommended when compared to the depreciation rates resulting from the currently approved service life and net salvage estimates, this means that OPC's service life and net salvage proposals, combined with OPC's proposal regarding the theoretical reserve imbalance, result in a decrease in depreciation expense of over $1 billion. Witness Pous is effectively proposing to cut depreciation expense in half, an obviously extreme outcome owing to its sheer magnitude. Moreover, when one analyzes his recommendations further it is quite clear that they are not supported and are often the result of ignoring the Company's experience and data. For example, witness Pous has:

- Proposed to increase the life span for combined cycle plants significantly, and recommends a life span that is almost 10 years longer than FPL's actual experience.
- Ignored over $2 billion in interim retirements for production plant accounts that have occurred since the last depreciation study.
- Ignored over $2 billion in retirements of capital spare parts.
- Failed to properly calculate interim net salvage for production plant accounts, resulting in an error of approximately $21 million.
- Used the incorrect interim retirement rate for one nuclear account,

resulting in an additional error of approximately $13 million.[2]

- Proposed unusual survivor curve types for mass property that are not representative of the types of property in these accounts. OPC witness Pous's estimates are not consistent with the Company's actual experience. The result of his selection of these types of curves is to artificially reduce depreciation expense and artificially increase the theoretical reserve imbalance.
- For mass property accounts, witness Pous has also proposed net salvage estimates that are significantly less negative than the Company's actual experience – in some cases barely half of what the Company has actually experienced.
- Based on these various inappropriate adjustments, witness Pous has then used the theoretical reserve imbalance resulting from his proposals to further reduce depreciation expense by an additional $231 million by amortizing his calculated reserve imbalance over a 4-year period. This is in stark contrast to the theoretical reserve imbalance resulting from my 2016 Depreciation Study, which indicates that there is actually a minimal theoretical reserve imbalance.

One consistent theme that emerges when reviewing witness Pous's testimony is that he has repeatedly ignored or discarded the Company's actual experience and data. As a result, his recommendations result in depreciation

[2] See OPC's response to FPL's Fifth Request for Production of Documents, No. 17. OPC has included in the response to that request a corrected version of Exhibit JP-1.

expense that is far below what is supported by the Company's actual operations.

Q. In addition to the Company's data, are there other important components of a depreciation study?

A. Yes. In order to properly understand the service life characteristics of the assets included in a depreciation study, it is important to both observe representative portions of the property studied and to meet with personnel from the company in order to gain an understanding of the assets and the outlook for the property studied.

Q. Please provide an example of how site visits and meetings with management are important.

A. One of the larger dollar impact aspects of the current study is related to the Company's combined cycle fleet. I have toured the Company's Turkey Point, Lauderdale, West County, Martin and Riviera Beach combined cycle plants. In addition, I have met with many representatives from FPL who actually operate these facilities. These site visits and meetings have provided a more in depth understanding of the outlook and operations of the facilities.

In addition, I have toured combined cycle facilities in other states. I have also discussed these types of facilities with operators of combined cycle plants in additional states. This experience provides both a deeper understanding of these types of assets at combined cycle facilities as well as an understanding of the differences between facilities in different parts of the country.

Based on these site visits and meetings with FPL representatives, I recognize that the operating environment for FPL's combined cycle plants is harsher than many other locations, in particular due to the impact of salt in the air on components of the plants. The result is that FPL's combined cycle plants may have shorter lives than a plant located in a drier climate such as west Texas. FPL's experience with its Putnam plant, which has recently been retired, provides further justification for this concept. Additionally, while FPL has made investments to mitigate corrosion issues for some components, FPL's harsh operating environment still exists and will continue to impact the Company's fleet of combined cycle plants.

I have also gained an understanding of how the operations of these types of facilities results in a need to replace capital spare parts at regular intervals in order to operate the plants safely and efficiently.

Q. Has OPC witness Pous conducted similar site visits?

A. No. Witness Pous has not toured a single FPL facility for either this study or the previous study, and has never toured an FPL combined cycle facility.[3]

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[3] See OPC's response to FPL's Second Set of Interrogatories No. 34.

B. INTERGENERATIONAL EQUITY AND APPROACH TO DEPRECIATION STUDY

Q. What is "intergenerational equity"?

A. The term "intergenerational equity" as it pertains to depreciation is a term used to describe the concept that customers should pay the cost of the consumption of capital assets from which they receive service, during the period when they are receiving that service. For example, the current generation of customers should not have to pay for depreciation of assets that have already been retired; nor should they pay for depreciation of assets that will not be placed into service for many years. As a corollary, future generations of customers should not have to pay for depreciation of assets from which they did not receive a benefit because current customers did not pay a sufficient amount to cover the cost of their service. Such situations would be described as "intergenerational inequity."

In addition to the concept that customers should not pay for assets from which they do not receive service, it is also desirable from an intergenerational equity standpoint to establish depreciation rates that allocate costs in an equitable manner over the service life of a Company's assets. It is not equitable for customers who receive service early in an asset's life to pay much more than customers who receive service later in that asset's life, nor is it equitable for the opposite to occur. In utility ratemaking, an equitable allocation of costs is generally considered to mean that costs are allocated equally over an asset's service life. This is referred to as the straight-line method of depreciation.

Q. Does witness Pous discuss the concept of intergenerational equity?

A. Yes. For example, he discusses the concept in the introductory section of his testimony on page 8. Witness Pous's various explanations of this concept might present the reader with the incorrect impression that intergenerational inequity can only result from depreciation rates that are too high (whether from service lives that are too short or from net salvage estimates that are too negative). But the opposite is also true. Depreciation rates that are too low – whether due to service lives that are too long, net salvage estimates that are insufficiently negative, or both – also can result in intergenerational inequity. This can both result in future generations paying more for an asset than current customers, but also can result in a situation in which plant will not be fully depreciated when it is retired. In such a situation, customers at the time will have to pay (through capital recovery schedules or other mechanisms) for plant no longer providing service.

Q. Has witness Pous proposed recommendations in this proceeding that will produce intergenerational inequity?

A. Yes. The clearest example is witness Pous's approach and recommendation to the Company's capital spare parts.

Q. Please explain.

A. As I discuss in my direct testimony and have presented in the 2016 Depreciation Study, many of the Company's combined cycle assets referred to as "capital spare parts" have significantly shorter service lives than the other assets at the plants. As I will explain further in Section V.B, this fact is well supported by the Company's actual historical experience and the expectations for the future. It is therefore both appropriate and necessary that these assets should have a shorter service life estimate than the balance of the plant, a fact that has been recognized by the Commission in previous depreciation orders.[4]

Q. Does witness Pous recognize that there should be shorter lives for capital spare parts?

A. No. Witness Pous has instead inappropriately applied the life estimate from a completely different set of assets to capital spare parts. Any reasonable depreciation professional would recognize that this approach is fundamentally flawed. Witness Pous's approach is akin to saying that because the average annual temperature in Miami is 77 degrees, the average annual temperature in Fairbanks, Alaska must also be 77 degrees because both cities are within the United States. Clearly, this is a fallacy, as is witness Pous's life estimate for capital spare parts.

Just as striking, witness Pous also ignores overwhelming evidence of a shorter service life for capital spare parts in the form of FPL's actual historical data.

[4] See Section V.B for further discussion of the estimates for capital spare parts used in previous studies.

Since the last depreciation study, FPL has retired over $1.3 billion of capital spare parts. These are normal retirements that are necessary in order to operate the plants efficiently and safely. Witness Pous has chosen to completely ignore this evidence.

Q. How will witness Pous's proposal for capital spare parts produce intergenerational inequity?

A. As noted above, the Company has retired over $1.3 billion in capital spare parts over the last 7 years (about $190 million per year). The Company will continue to make retirements at a similar level in order to continue to operate these facilities.[5] However, witness Pous's estimate projects that only about $10 million in interim retirements would have occurred per year over the last 7 years. His estimate is therefore far too low on an annual basis. As a result, his proposal guarantees that the most of the costs of the $150 million to $200 million that will retire each year will not be recovered over their service lives. Instead, future customers will have to pay hundreds of millions of dollars for already retired assets – on top of the fact that they will also have to pay for the parts that replace the retired capital spare parts. Witness Pous's proposal would therefore result in intergenerational inequity.

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[5] My estimate in the 2016 Depreciatoin Study is that the annual level of retirements for capital spare parts will occur at a lower rate going forward than in the past for reasons I discuss in more detail in Section V.B. However, the Company also has a larger fleet of combined cycles now than it did seven years ago. Thus, it is reasonable to expect that there will be on average at least $150 million to $200 million retirements of capital spare parts per year.

Q. Witness Pous also makes multiple references in which he states that the Company has "over-collected" from current customers.[6] Do you have any observations regarding the share that current customers have paid?

A. Yes. Witness Pous notes that since the early 2000s customer rates have included a total credit to, or reduction to, depreciation that have totaled approximately $2 billion. This means that current customers – those receiving service since the early 2000s – have paid in the order of $2 billion less than would result from the depreciation rates determined to be equitable and reasonable based on the Commission approved depreciation parameters. While witness Pous's testimony implies that current customers have "overpaid," if anything the opposite is true. By no objective measure should receiving a credit of $2 billion be considered "overpaying."

C. COMPARISONS TO OTHER UTILITIES

Q. In support of his recommendations, does witness Pous rely excessively on comparisons to service life and net salvage estimates for other electric utilities?

A. Yes, he does. Witness Pous makes a number of such comparisons, citing industry averages in support of his service life estimates[7] and net salvage estimates.[8] Indeed, because witness Pous's approach is generally to deviate

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[6] See for example the direct testimony of Jacob Pous, page 19, lines 5 through 6 and page 43, lines 12 through14.

[7] See for example page 80, lines 22 through 23 of the direct testimony of Jacob Pous.

[8] See for example page 171, lines 5 through 6 of the direct testimony of Jacob Pous.

from the Company's actual historical data, comparisons to industry are one of the primary quantitative bases for many of witness Pous's proposals.

Q. Is it reasonable to use industry comparisons in the manner in which witness Pous does?

A. No, it is not. Industry comparisons should not be used as a substitute for Company-specific data. Further, witness Pous's use of industry comparisons is particularly inappropriate because he provides no evidence that the companies to which he makes comparisons are in any way similar to FPL. Comparing companies without establishing similar operating conditions, climates, accounting policies and other factors can, and often will, produce inappropriate results.

Q. What does witness Pous use for most of his industry comparisons?

A. Witness Pous uses a listing of average service life, survivor curve and net salvage estimates that my firm, Gannett Fleming, has made for other utilities. This was provided in discovery.[9] Witness Pous uses this document to make references to both service life and net salvage estimates for other utilities.[10] As noted above, specific uses of this industry information for witness Pous include comparisons of FPL estimates to industry averages of average service life or net salvage estimates made for other utilities.

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[9] See Attachment 1 of FPL's response to OPC's First Request for Production of Documents No. 41. I note that although this information was provided to witness Pous in discovery, he also makes reference to similar industry databases provided in discovery in other cases.

[10] See for example pages 80, 89, 95, 119, 187, and 189 of the direct testimony of Jacob Pous.

Q. For service lives, should FPL be expected to have similar average service lives to other utilities or to an industry average?

A. No. To the contrary, for many types of assets FPL should be expected to have shorter service lives than other utilities. FPL's service territory is hot, humid and located in a coastal region that experiences frequent storms. Based on these factors, it should be expected that assets would experience much higher rates of corrosion (e.g., for transformers or conductor) or deterioration (e.g., for wood poles) than would be experienced by most other utilities.

Further, retirements also occur for many types of assets due to capacity reasons (e.g., a line needs to be replaced to increase capacity). Capacity is in part a function of population growth. FPL's service territory has experienced (and is likely to continue to experience) a higher rate of growth than many other regions of the country. This is another reason why one should expect FPL to have shorter service lives than many other utilities. Additionally, based on my experience visiting and observing utility property and discussing management approaches for many utilities across the country, FPL in general has a more proactive approach to replacing assets than many utilities. This has the obvious benefits of a more robust and reliable electric system, but can in general result in somewhat shorter overall service lives than would be the case for a company whose mode of operations is "run to failure."

By making comparisons to average and median values of the average service life estimates for other utilities, witness Pous inappropriately compares "apples to oranges." For example, the industry database to which witness Pous refers includes many utilities in much drier climates and that experience lower population growth, such as northern Nevada. A reasonable expectation is that service lives would be longer in those regions than they are for FPL.

Q. Is it well understood in the depreciation field that industry comparisons should not be used in the manner that witness Pous has used them?

A. Yes. In fact, witness Pous has said so himself. For example, in a recent case for Oklahoma Gas & Electric, witness Pous testified as follows:

> Q. Are typical industry estimates an appropriate or adequate basis for ignoring or significantly discounting statistical results based on Company specific information?
>
> A. No, not in this case. Industry range should only be used for confirmational purposes when adequate and credible utility specific data is available, as is the situation in this case as it relates to life analysis. Absent other meaningful support, values based on Company specific data that are reasonably within or near industry ranges should be given significant credence.[11]

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[11] Oklahoma Docket PUD 201500273, direct testimony of Jacob Pous, page 59, lines 13 through 21. (Emphasis added)

Q. Is "adequate and credible utility specific data" available for FPL?

A. Yes. In fact, FPL has an extensive and well-documented database available for the depreciation study, far better than the data that was available for the Oklahoma Gas & Electric case cited above.[12] Thus, if witness Pous were consistent and objective in his approach to estimating service lives, he would not rely on industry ranges, much less industry averages, as the primary support for his estimates for FPL.

Q. Witness Pous also makes comparisons to other utilities for net salvage. Are there similar concerns with these industry comparisons?

A. Yes. Similar to service lives, net salvage can vary across the country and from utility to utility. A large portion of FPL's service territory is located in urban or developed areas. It is more expensive to do work in these areas, as factors such as work requirements and traffic control add to the expense of replacing or removing assets. For example, municipalities may require work during off-peak hours, which can add to the cost of projects. Similarly, communities in FPL's service territory may have more stringent requirements to repair streets or landscaping subsequent to completing work, which can add to removal costs. Additionally, environmental and other requirements may be higher in more populated or coastal parts of the country, which can also increase removal costs.

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[12] For example, while FPL has data available from 1941 through 2014, for the Oklahoma Gas and Electric accounts challenged by witness Pous, data was only available from 1997 through 2014.

Given all of these considerations, it is not reasonable to directly compare FPL's net salvage estimates to those in more rural or less densely populated areas of the country. Similar to witness Pous's statement above regarding service lives, if a utility has sufficient data for the net salvage analyses then industry averages or ranges are not appropriate as a basis for net salvage estimates.

Q. If you compare FPL's net salvage estimates to other utilities that have a more similar operating environment, are FPL's net salvage estimates in line with these types of facilities?

A. Yes. In fact, for many accounts witness Pous has actually estimated more negative net salvage estimates for other comparable utilities than the estimates I have made for FPL. As an example, two accounts for which witness Pous makes industry comparisons are for distribution poles and distribution overhead conductors and devices. Estimates for these types of assets for utilities such as Southern California Edison ("SCE") and Pacific Gas & Electric ("PG&E") are more negative for these accounts than the estimates I have made for FPL. Not only are the estimates currently used for these utilities more negative, but also witness Pous has testified on depreciation for both PG&E and SCE. His estimates in those cases for Accounts 364 and 365 were either the same as or more negative than the estimates I have made for FPL.

The service areas for these utilities all include large metropolitan and developed areas and are located within proximity to the coast. They therefore provide more reasonable comparisons than witness Pous's reliance on simple industry averages, and support that FPL's net salvage estimates are consistent with other comparable utilities and that FPL's data provides a reasonable basis for net salvage estimates.

D. SUPPORT FOR THE DEPRECIATION STUDY

Q. Beginning on page 19 of his testimony, witness Pous argues that you have not sufficiently supported your depreciation study. Please address his claims.

A. Witness Pous devotes about twelve pages of his testimony to criticizing the study for what he alleges is a lack of support. The problem as it relates to FPL's 2016 Depreciation Study is that his criticisms do not accurately describe what is actually included in the depreciation study, much less what has been provided in numerous discovery responses.

Q. Are there any critical components of the 2016 Depreciation Study that are missing from witness Pous's discussion?

A. Yes. Throughout his discussion, witness Pous consistently neglects to mention the Company's actual historical data, which – consistent with widely accepted depreciation practices - form the primary statistical support for the depreciation study. This is a critical component, and is particularly important when reviewing the actual estimates witness Pous recommends. Indeed, for most of the estimates he makes, he deviates from the Company's actual experience and from what is actually supported by the Company's data.

Q. Is your approach to the 2016 Depreciation Study consistent with widely accepted practices in the field of depreciation?

A. Yes. For the estimation of service lives, I have used the widely accepted retirement rate method and have analyzed the historical data and selected survivor curves in a manner consistent with classic depreciation theory. In contrast, as I explain in Section VI.B.ii, witness Pous's approach to curve fitting is not consistent with accepted practices and he ignores significant portions of the historical data.

Similarly, for the estimation of net salvage (which is discussed further in Section VII of my rebuttal testimony), I have followed widely accepted practices for the analysis of historical data. I have also provided additional supporting information explaining trends in the data and reasons for the estimates I have made. Witness Pous's approach is instead to ignore the historical data. Despite clear trends and support for more negative net salvage, he does not propose a more negative estimate than the currently approved estimate for a single account for which he has recommended an adjustment.

Q. Witness Pous criticizes what he refers to as your "underlying threshold assumption" for your net salvage proposals and claims that this assumption is not valid. Please address his claim.

A. What witness Pous refers to as an "underlying threshold assumption"[13] is actually the industry standard method for estimating net salvage. Any implication that I have not used accepted depreciation practices is simply incorrect. While witness Pous's discussion is intended to provide support for his decision to ignore the Company's actual historical data, as I will explain in Section VII and in Exhibit NWA-4, his various rationalizations and analyses do not provide support to ignore the data and are often incorrect.

I should also be clear that witness Pous's criticisms and overall approach to the net salvage analysis is not consistent with the standard approach in the industry; nor is it supported by authoritative depreciation texts. For example, the National Association of Regulatory Utility Commissioners in its 1996 publication *Public Utility Depreciation Practices* (referred to as the "NARUC Manual"), explains that

> "[m]ost analysts are of the opinion that reasonable salvage and cost of removal estimates and forecasts can be made by trending experience and applying informed judgment," and that "in any case it would not be economically justifiable for any

[13] See page 23 of the direct testimony of Jacob Pous.

> utility, regardless of size, to produce indepth salvage forecasts for all categories of plant."[14]

Again, I would like to make clear that I have investigated the historical data to determine whether past experience is a reasonable predictor of the future. That is, I have incorporated more information than "simply trending experience and applying informed judgment." This information has been provided in discovery[15] and has been discussed in the narratives explaining my estimates provided in Parts X and XI of Exhibit NWA-1. In order to gain a better understanding of FPL's assets and operations, I have also met with FPL representatives who are knowledgeable of the Company's property. Notes from these meetings have also been provided in discovery.[16]

I should further note that witness Pous's criticisms of the use of the word "judgment"[17] are not an accurate description of what has been presented in FPL's 2016 Depreciation Study and in responses to discovery. In addition to the historical data presented in the study, Parts X and XI of Exhibit NWA-1 present 136 pages of explanations of the service life and net salvage estimate for every account and generating station. I have also provided further explanations of my estimates in discovery.

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[14] NARUC Manual, pp. 159-160.
[15] See FPL's response to OPC's First Set of Interrogatories No. 51 provided in Exhibit NWA-5.
[16] See Attachments 1 and 2 to FPL's response to OPC's First Request for Production of Documents No. 38.
[17] See for example page 21, lines 2 through 3 of the direct testimony of Jacob Pous.

IV. LIFE SPANS

Q. What is "life span" property?

A. Life span property is a depreciation term used to refer to facilities such as power plants for which all components of the assets at the site will be retired concurrently. For example, when a power plant reaches the end of its useful life all assets at the facility will be retired at the same time. This may include structures that were originally constructed with the facility as well as assets such as pumps or motors that may be relatively new.

The retirement of the entire facility is referred to as a "terminal retirement" or a "final retirement." Additionally, in order to operate the facility, many assets will need to be replaced throughout the life of the plant. Retirements such as these that occur prior to the final retirement are referred to as "interim retirements."

Q. How is depreciation determined for life span property?

A. In order to properly determine depreciation rates and expense for life span property, one must make estimates of both final retirements and interim retirements. This is referred to as the "life span method." Final retirements are typically estimated for each production plant or generating unit by determining the most likely date at which the facility will retire. This date is referred to as an "economic recovery date," a "final retirement date" or a "probable retirement date." A related concept is the "life span" of the facility, which is the period of time from the original installation of the facility to the final retirement date of the facility. Thus, if a power plant is constructed in 1990 and retires in 2030, it will have a 40-year life span.

It should be noted that the life span of a facility is different from the average service life of the facility. The average service life of the facility is normally shorter than the life span, for two reasons. One is that any additions that occur subsequent to the original installation of the facility will have a shorter life than the original additions. For example, for a facility with a final retirement date of 2030, assets installed in 2010 will have a shorter life than those installed in 1990. The second reason is there will typically be interim retirements that occur throughout the life of the facility. These interim retirements are most commonly and most accurately estimated using survivor curves, similar to the approach for mass property.

Once estimates of both final retirement dates and interim retirements are determined (as well as net salvage for each type of retirements), these estimates are combined to develop overall depreciation rates. For FPL, these depreciation rates have been determined for each account for each production plant unit.

Q. Do all parties agree with the use of the life span method?

A. Yes. While OPC and SFHHA propose changes to some of the estimates made in the 2016 Depreciation Study, each has used the life span method. FEA has not proposed any changes to the estimates in the study for life span accounts.

Q. What changes have been proposed by OPC and SFHHA?

A. Both have recommended different life span estimates for certain types of facilities. Both have also recommended different estimates for interim retirements.

In this section, I will discuss the proposed changes to life span estimates made by OPC and SFHHA and explain why each is inappropriate. In Section V, I will explain why their interim retirement estimates are inappropriate, which is in no small part due to the fact that each has elected to ignore over two billion dollars of retirements from FPL's actual historical experience.

Q. Has FPL retired any of its power plants in recent years?

A. Yes. As I discuss in my direct testimony, FPL has retired a number of power plants. These include steam-fired power plants as well as the two units at the Putnam combined cycle plant.

Q. What are some of the lessons learned from FPL's experience with these plants?

A. In addition to providing evidence of the life spans FPL's plants have actually experienced, the retirements of these plants illustrate one of the primary causes of the final retirement of power plants. Specifically, a power plant is often retired as the result of an economic decision. As a plant ages and becomes more expensive to operate, and as new technologies become more efficient and economical relative to existing generation, it eventually becomes economical to replace the existing plant. The retired plant may be able to physically operate for a longer period of time, but it would be more costly option to keep the plant in service.

Thus, the process of estimating the life spans of the Company's power plants is not to determine how long a plant could physically last, but instead estimating when the economic decision will be to replace the plant with newer generation. Fortunately, for FPL the Company has experience replacing its facilities in recent years that provides evidence as to the overall economic life spans of the Company's facilities.

Q. What are the specific changes to life span estimates that each party has proposed?

A. OPC has proposed a 45-year life span for the Company's combined cycle facilities. For coal-fired facilities, SFHHA has proposed a 63-year life span for Scherer and a 65-year life span for the St. Johns River Power Park ("SJRPP").

Q. What are the current, Commission approved life spans for these facilities?

A. The currently approved life span estimate for combined cycle facilities is 30 years. OPC has therefore proposed to increase this life span estimate by 15 years, or 50%. The currently approved life span estimate for coal-fired generation is 50 years. SFHHA has proposed to increase this life span by 13 years for Scherer and 15 years for SJRPP.

Q. How do your estimates for these types of plants compare to the currently approved estimates?

A. For reasons set forth in my direct testimony, I have recommended an increase in the life span for combined cycle facilities to 40 years. Thus, I have already recommended a fairly significant increase in the life span for combined cycle facilities. A further increase, as proposed by OPC, is both inappropriate and is inconsistent with the Company's actual experience operating these facilities.

For coal-fired production facilities, I have proposed to continue to use the 50-year life span previously approved by the Commission. Given the industry-wide outlook for coal, it is reasonable to continue to use the previously approved estimate. Witness Kollen's proposal to significantly increase the life span by 15 years is particularly inexplicable given the fact that the outlook for coal-fired generation is worse today than it was in 2009 when the Commission approved a 50-year life span for these facilities.

I will explain the specific reasons why OPC's recommended life span for combined cycle plants should be rejected in the following section. I will then briefly discuss SFHHA's proposal for coal-fired generation. However, because SFHHA's witness Kollen's proposal is related to both depreciation and dismantlement, and because many of his comments related to FPL's operating agreements with the co-owners of Scherer and SJRPP, FPL witness Ferguson will address SFHHA's proposal for the life spans of coal-fired generation in more detail in his rebuttal testimony.

A. COMBINED CYCLE

Q. What are the life span estimates for combined cycle facilities?

A. The currently approved estimate is for a 30-year life span. I have recommended an increase to a 40 year life span. OPC has recommended an increase to a 45-year life span.

Q. Please explain the reason for your recommendation to increase the life span for combined cycle production?

A. As I discuss in my direct testimony,[18] the Company has made significant investments in its combined cycle fleet. These investments have both helped to mitigate corrosion of certain components and have increased the efficiency of the plants. For both reasons, these investments have improved the economics of operating the facilities and a longer life span is now attainable.

Q. Witness Pous has proposed to increase the life span for these facilities even further. Do you agree with his recommendation?

A. No. A longer 45-year life span is neither realistic nor appropriate. FPL's experience indicates a much shorter life span than 45 years. I should also note that although witness Pous notes two examples of combined cycle plants with

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[18] Direct testimony of Ned W. Allis, page 30, lines 5 through13.

45-year life spans, there are also many estimates for combined cycle facilities in the 35 to 40-year range. Additionally, FPL's operating environment and operating profile provides reason to expect that, if anything, FPL's combined cycle fleet will have shorter life spans than others in the industry.

Q. Has FPL retired any combined cycle plants?

A. Yes. As I discuss on pages 30 through 31 of my direct testimony, FPL retired the Putnam facility in 2014. The actual experienced life spans of the two units at Putnam were 36 and 37 years. These life spans are therefore much shorter than witness Pous's proposed 45-year life span. They are also somewhat shorter than the 40-year life span I have proposed.

Q. In his discussion of his estimated life spans does witness Pous mention FPL's actual experience with Putnam?

A. No.

Q. You indicated that FPL has made significant investments to its current fleet. Did FPL also make significant investments to the Putnam facility?

A. Yes. There were significant investments made to Putnam in the early 1990s, which included the replacement of the heat recovery steam generators.[19] Absent these investments Putnam likely would have had an even shorter service life.

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[19] See Attachment 1 to OPC's First Request to Production of Documents No. 38, page 42.

Q. What was FPL's operating experience with Putnam?

A. As has been provided in discovery,[20] FPL's experience was that as the plant aged it became both more expensive to operate and less available to provide power. At the same time, newer combined cycle facilities became more efficient. Eventually the combination of these factors meant that it was more economical to replace Putnam's generation than to continue to operate the plant.

Q. What does OPC witness Pous provide as support for his estimated life spans?

A. Despite the fact that he has proposed to increase the life span by 50% over the approved life span, witness Pous actually provides little evidence in support of his proposal. He claims that, despite the significant increase in life span FPL has proposed compared to the Commission approved 30-year estimate, that a 40-year life span is still somehow "artificially short."[21] He argues that "standard economic theory" supports a longer life span and supports this claim by presenting a discussion of a trend towards increasing life spans for steam production facilities.[22] As I will explain, witness Pous's discussion of the economics of combined cycle facilities is incorrect, and his discussion of a trend towards increasing life spans is misleading and incomplete. Specifically, his discussion omits the more recent trend to shorter life spans and the fact that many power plants have retired earlier than estimated.

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[20] See Attachment 3 to OPC's First Request to Production of Documents No. 38.
[21] Direct testimony of Jacob Pous page 49, lines 10-11.
[22] See pages 50 through 51 of the direct testimony of Jacob Pous.

Witness Pous also cites two combined cycle facilities in other parts of the country for which a 45-year life span was estimated. As I will explain, these two facilities are much less relevant to FPL than FPL's actual experience, as these plants are located in regions of the country that is quite different from FPL's service territory.

Q. Please respond to witness Pous's discussion on page 49 of his testimony, in which he states that "standard economic theory" dictates that "large capital investments should be operated to maximum levels in order to deliver the economic worth that such facilities are capable of obtaining."

A. Witness Pous's discussion of what he refers to as "standard economic theory" is incorrect and is inconsistent with FPL's actual experience and operations of its facilities. Specifically, his implication is that a facility should be operated for as long as possible, apparently without any consideration of alternative forms of generation (e.g., more economical replacement generation) that may be less expensive.

It is fundamentally incorrect that the economics of operating a fleet of power plants dictates that these facilities should be operated for as long as is possible. Witness Pous's statement to this effect ignores the fact that in addition to the initial capital investment, there are significant costs – including fuel, maintenance and major capital investments – required to operate a plant throughout its life. While operating a plant as long as possible may maximize the initial capital investment, it is very often not economical once these other costs are considered. This is particularly true because, as was the case with Putnam, the cost trend of operating a plant tends to increase over time. As a result, the economical option is often to replace an older, less efficient plant with a newer, more efficient plant.

Q. What has FPL's actual experience been with regard to the economics of its power plants?

A. FPL's actual experience demonstrates quite clearly that it has been more economical to replace older, less efficient power plants with newer facilities. As witness Pous himself notes,[23] FPL has retired a number of steam-fired power plants since the last depreciation study. It would have been possible from a physical standpoint to operate these plants for a longer period of time, thereby operating the plants to "maximum levels" in witness Pous's words. However, it would not have been economical to do so because these plants had become more expensive than the alternative of replacing them with newer, more efficient facilities. The same is true of the Putnam combined cycle facility. While it may have been possible to operate the plant longer from a physical standpoint, it was not economical to do so and it was more economical to retire the facility and construct newer, more efficient combined cycles.

Thus, FPL's actual experience makes clear that witness Pous's has stood "standard economic theory" on its head. It does not make economic sense to

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[23] Direct testimony of Jacob Pous, page 49, lines 14 through 15.

operate a power plant for as long as possible – this is often an expensive way to produce power. Instead, it is often more economical to replace older, less efficient and less available generation with newer technology.

Q. On pages 50 and 51 of his testimony, witness Pous describes what he refers to as the "expansion of life spans" in the industry for steam-fired, nuclear, hydroelectric simple cycle and other production power plants. Please address his discussion.

A. Witness Pous's presentation is intended to give the impression that because life span estimates trended longer over time for steam-fired power plants, the same will be true for all types of facilities. However, his discussion omits important details about the capital expenditures required to attain longer life spans for steam-fired power plants. He also conspicuously omits the experience from recent years, in which the opposite trend has occurred and many power plants have retired earlier than expected – resulting in significant levels of unrecovered costs in many cases.

Q. Please explain further.

A. Witness Pous states that "[i]n the last several years utilities and regulators are recognizing that 50 and 60-year life spans are more appropriate for steam-fired generation."[24] This statement is only partially true at best, and the trend in life spans for steam-fired power plants is certainly not increasing. While the life spans of many steam-fired power plants may have been estimated at 50 or 60 years, witness Pous omits the fact that many facilities were recently

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[24] Direct testimony of Jacob Pous, page 50, line 23 to page 51, line 2.

retired earlier than expected and many more such early retirements are planned.

What actually occurred is that life span estimates for many facilities had been pushed out too far. The result has been many power plants have retired prior to being fully depreciated (this situation is made worse by the fact that for many plants, there had also not been adequate recovery of dismantlement costs), leaving unrecovered costs to be paid by customers that do not receive service from the retired plants.

Q. In support of his estimate, witness Pous mentions two combined cycle facilities for which a 45-year life span was estimated. Please address these facilities.

A. Witness Pous cites combined cycle facilities for Oklahoma Gas & Electric and for El Paso Electric Company for which a 45-year life span was used. In Section III.C I have explained that these two utilities operate in a less harsh environment and have different operating profiles than FPL. It would therefore be reasonable to expect that FPL would have a shorter life span for combined cycles than those operated in Texas or Oklahoma. Further, other utilities use the same or shorter life spans than FPL. For example, Nevada Power uses a 35-year life span and Pacific Gas & Electric uses a 30-year life span.

Thus, comparisons to other utilities does not support witness Pous's 45-year life span estimate over my 40-year life span estimate. More important though is that, as I have explained, FPL has actual experience retiring combined cycle units at life spans much shorter than his proposed 45-year estimate.

Q. Witness Pous also discusses FPL's mitigation of corrosion issues with certain components. Is corrosion still a concern for FPL's plants as compared to those in other parts of the country?

A. Yes. While FPL is addressing corrosion issues wherever possible, this does not mean that FPL's harsh operating environment has disappeared. Witness Pous's statement that "FPL is already addressing the corrosion issue identified as a problem associated with operating in a harsh environment"[25] is not an accurate characterization FPL's operating environment. FPL has addressed corrosion issues that impacted some components, primarily capital spare parts, and had resulted in earlier than expected retirements of these components and as a result contributed to a shorter life span for the Company's combined cycle plants. After addressing these issues, a longer 40-year life span is attainable. However, this does not mean that the harsh operating environment no longer impacts components at FPL's combined cycle plants. The Company's combined cycle plants continue to operate in a harsh environment, which will impact the lives of many of the components of its plants. This will also impact the cost of operating the facilities as they age and parts corrode and need to be replaced. For these reasons, FPL should be expected to – if

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[25] Direct testimony of Jacob Pous, page 52, lines 4 through 5.

anything – have a shorter life span for combined cycles than those of other utilities.

B. COAL-FIRED PRODUCTION

Q. Please address witness Kollen's proposal for the life spans of coal fired power plants.

A. As noted earlier, for the 2016 Depreciation Study I have recommended to continue to use the 50-year life span estimated previously adopted by the Commission. Given that the outlook for coal-fired generation is even less favorable today than was the case in 2009 when the 50-year life span was established, it would not be appropriate to increase the life span further. FPL witness Ferguson addresses the life spans of coal-fired power plants in more detail in his rebuttal testimony.

V. INTERIM RETIREMENTS AND CAPITAL SPARE PARTS

Q. What are the issues related to interim retirements in this case?

A. There are two issues. One relates to the method used to estimate interim retirements. OPC witness Pous argues against the widely accepted method I have used for estimating interim retirements based on survivor curves. I will explain that not only are his criticisms unfounded, but that witness Pous has not even bothered to perform a study using the Company's current data to make estimates using his favored method. Instead, he has simply used the same estimates that were approved 7 years ago – and are now 7 years out of date. As a result, witness Pous has ignored more than $2 billion in interim retirements that have occurred since the last depreciation study.

The second issue relates to capital spare parts. Witnesses Pous and Kollen have made recommendations that in effect ignore the extensive historical activity related to capital spare parts. Specifically, the Company has made over $2 billion in interim retirements for capital spare parts and has made approximately $1.3 billion in retirements for these assets in the last 7 years alone. Further, an understanding of the types of assets included in the proposed capital spare parts subaccount makes clear that the Company will continue to experience high levels of retirements of these types of assets. Both witnesses Pous and Kollen have proposed to use estimates of interim retirements based on a completely different set of assets and have therefore ignored the data related to capital spare parts. This produces unreasonable results. For example, OPC's proposal for capital spare parts implies an expectation that these assets would have an average service life that is approximately 1,250% longer than the Company has actually experienced for these assets.

Q. Have either OPC or SFHHA proposed estimates of interim retirements based on current, FPL account-specific data?

A. No. I would like to make clear that FPL is the only party in this case that has recommended estimates of interim retirements based on a study of currently available data. Estimates in FPL's 2016 Depreciation Study are based on the analysis of historical data through the most recent year available (i.e., 2014), while the interveners' estimates are not. For all accounts except capital spare parts, witness Pous has simply used the approved estimates from the 2009 Depreciation Study, and therefore he has not incorporated the data from the last 7 years subsequent to that study. Further, he has inappropriately used the estimate from an entirely different group of assets and applied them to capital spare parts. He therefore does not incorporate any data related to FPL's capital spare parts. Witness Kollen has not challenged most of my estimates, but similar to witness Pous has used the estimate from an entirely different group of assets and applied them to capital spare parts.

Thus, the only estimates that are based on current, Company-specific and account-specific data are those set forth in FPL's 2016 Depreciation Study. This alone should cast serious doubt on OPC's and SFHHA's proposals.

Q. How will you address the issues related to interim retirements?

A. There are multiple issues with both OPC's and SFHHA's proposals as they relate to interim retirements. I will first address the method of estimating interim retirements, and explain that the widely accepted method I have used is more appropriate than that of OPC. I will then specifically discuss capital spare parts, as the recommendations of both OPC and SFHHA are particularly inappropriate for these assets. I then discuss the impact of interim retirement estimates on the net salvage for production plant. Neither witness Pous nor witness Kollen has adjusted the overall composite net salvage estimates for production plants to account for their changes in net salvage. The result is that both have erroneously understated depreciation expense. Finally, I will address two other issues related to interim retirements – the allocation of accumulated depreciation for the new subaccount for capital spare parts and the appropriateness and necessity of including estimates of interim retirements for the Okeechobee combined cycle plant.

A. INTERIM RETIREMENT METHOD

Q. Please explain the method you have used to estimate interim retirements.

A. To estimate interim retirements, I have used survivor curves based in part on the statistical analysis of historical interim retirements. These are referred to as interim survivor curves. The use of interim survivor curves is a widely accepted method to estimate interim retirements for life span property. It is also considered to be the most accurate approach.

Q. Does witness Pous agree that interim retirements should be estimated and incorporated into depreciation rates for life span property?

A. Generally, yes. Witness Pous's normal practice is to include an estimate for interim retirements, and he does include estimates of interim retirements for his recommendations in this case. However, he did not update the analysis to incorporate more recent data.

Q. Witness Pous has not recommended estimates based on current data available?

A. No, he has not. He has instead proposed to continue using the currently approved interim retirement rates, with the notable exception that he completely ignores both the approved estimate and the actual history of interim retirements for capital spare parts. That is, not only is he recommending a less accurate methodology, but he also failed to update his estimates from a study performed 7 years ago to incorporate current information.

Q. Has the Company experienced interim retirements subsequent to the last depreciation study?

A. Yes. For the historical data that has been recorded since the last study (i.e., from 2008 to 2014), the Company has experienced over $2 billion in interim retirements. By opting to simply use the existing interim retirement estimates witness Pous has therefore ignored over $2 billion in interim retirements.

Q. Please explain the difference between your proposed method for accounting for interim retirements and the method proposed by OPC.

A. In the 2016 Depreciation Study, I have utilized the proposed retirement date for each generating unit. In addition, I have estimated an Iowa-type survivor curve for each production plant account, which takes into account the fact that some of the property at these plants will be retired before the final date of retirement. Witness Pous also proposes using the life span method and adjusting for interim retirements. However, instead of using an Iowa curve with a distinct retirement dispersion pattern that matches the type of property in each plant account, he estimates an "interim retirement rate" and adjusts the remaining life for each generating unit within each plant account based on this interim retirement rate.

Q. How is this method different from using an interim survivor curve?

A. Although he claims there to be a difference, in actuality witness Pous simply uses an approximation of my method. That is, he also effectively selects a curve that represents interim retirement activity for each account. The difference is that instead of selecting a curve with variable retirement dispersion pattern, such as the Iowa R, S or L type curves that I have proposed, witness Pous has instead chosen a curve that assumes a constant level of interim retirements each year. As I will explain, this is an unrealistic assumption.

Q. On pages 54 through 59 witness Pous discusses his concerns with your method. Are his concerns valid?

A. No, they are not. Witness Pous's main criticism of my approach, both in this case and in FPL's previous depreciation case, is that the use of actuarial analysis for interim retirements is inappropriate. For example, he states that "[a]ctuarial analyses are normally performed on more homogeneous-type investments that are not generally dependent on one another, such as poles or wires. In particular, the varying types of investments within each of the major production plant accounts do not reasonably lend themselves to actuarial analyses."[26] As I will show, this criticism is unfounded. Not only are actuarial analyses of interim retirements widely accepted in the utility industry and supported by authoritative depreciation texts, but the source that witness Pous claimed to "sponsor"[27] his approach in FPL's previous case specifically states that an actuarial analysis is the more accurate method.

I should note that many of witness Pous's specific criticisms are related to capital spare parts, which I will address in more detail in the next section. In this section, I will address his criticisms that relate to the method used to estimate interim retirements.

Q. Do you agree with witness Pous's assertion that actuarial analysis is not appropriate for production plant accounts?

A. No, I do not. The use of Iowa curves for interim retirements for this type of property has been widely accepted in the U.S. and Canada and is supported by authoritative depreciation texts.

Q. Does witness Pous cite any sources that recognize his methodology for interim retirements?

A. No, in this proceeding he does not. However, in other proceedings in which both witness Pous and Gannett Fleming have testified, including FPL's 2009 case, he asserted that two sources recognize his methodology. He previously purported that his method is "sponsored by the California Public Utilities Commission in its publication entitled 'Determination of Straight-Line

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[26] Direct testimony of Jacob Pous, page 54, lines 18 through 22.
[27] See page 65 of witness Pous's direct testimony in Docket No. 090130-EI.

Remaining Life Depreciation Accruals Standard Practice U-4."[28] He has also testified that the NARUC Manual recognizes his methodology.[29]

Q. Do either of these sources support witness Pous's contention that your method is inappropriate for life span property?

A. No, they do not. In fact, the opposite is true. Standard Practice U-4, which witness Pous has claimed "sponsors" his approach, makes it clear that my method is in fact superior to his method. The method witness Pous employs is presented on page 28 of Standard Practice U-4. The actual passage reads as follows (for brevity the description of the calculations has been excluded):

> Interim retirements and additions include such items as changes within a building or changes at an electrical generating station not altering the basic structures, etc. <u>As an approximation</u> the assumption can be made that future annual interim retirements will occur at a consistent ratio to the present plant balance…<u>In more accurate applications, this correction may be developed from an actuarial analysis of mortality data for the interim retirements.</u> (Emphasis added).

Witness Pous's main source for his methodology clearly states not only that his method is an "approximation," but also the method I have proposed to develop interim survivor curves (i.e., from actuarial analysis of interim retirements) is "more accurate." In 1961, when Standard Practice U-4 was written, there may have been a need to rely on an approximation that was

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[28] See page 65 of witness Pous's direct testimony in Docket No. 090130-EI.
[29] See page 42 of the direct testimony of Jacob Pous in Docket No. 090130-EI.

simpler from a computational standpoint. However, today with the help of modern computer software these computational considerations are not an issue any longer.

Q. Does the NARUC Manual recognize your method?

A. Yes. According to NARUC, developing an observed life table from historical data, which "can be fitted to generalize life curves, e.g., Iowa curves or curves based on the Gompertz-Makeham formula,"[30] and using the fitted curve to account for interim retirements is appropriate for life span property. This is precisely the method I have employed.

Q. Witness Pous also states that your method was "challenged and not accepted in the last rate case" for FPL.[31] Please address this claim.

A. Witness Pous is actually referring to Docket No. 090130-EI. While it is true that the Commission adopted the methodology proposed by witness Pous, it did not reject my methodology. To the contrary, the Commission specifically noted "that both FPL's method and OPC's method are industry accepted practices."[32] In other words, the Commission accepted that my method was appropriate, but instead opted to use a different method for its own depreciation calculations. It should also be noted that the Commission specifically stated that it "agrees with FPL's criticism that OPC's use of a

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[30] NARUC Manual, page 153.
[31] Direct testimony of Jacob Pous, page 54, lines 3 through 6.
[32] Order No. PSC-10-0153-FOF-EI, page 31.

constant retirement rate assumes that retirements in the future will mirror those of the past."[33]

Q. Has witness Pous challenged your methodology for interim retirements in any other jurisdictions?

A. Yes. One example is a similar challenge to this methodology in Nevada in the 2004 rate proceeding of Sierra Pacific Power Company (Docket No. 05-10004). The Commission agreed with Gannett Fleming in that case and specifically agreed with Gannett's industry-established method of calculating interim retirements in its Order for Dockets No. 05-10003 & 05-10004. Specifically, the Order states:

> "The Commission is convinced that Sierra's [my] proposed methodology for calculating interim retirements is adequate and widely accepted in the industry. The Commission accepts Sierra's approach to calculating interim retirements."[34]

Gannett Fleming has also proposed the same approach for interim retirements in the vast majority of depreciation studies for which there are life span accounts. To the best of my knowledge, this approach has been accepted or acknowledged to be appropriate in each of the jurisdictions where interim retirements are used for the life span method.

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[33] Ibid.

[34] Nevada Public Utilities Commission Order, Docket Nos. 05-10003 & 05-10004 at page 85.

Q. Witness Pous claims that because the property in production plant accounts is not homogeneous, using an interim survivor curve to estimate interim retirements is inappropriate. Is this concern valid?

A. No. Witness Pous is incorrect. Property in these accounts is grouped according to the Uniform System of Accounts, just as is the case for transmission, distribution and general plant property. Witness Pous has not objected to Iowa survivor curves for transmission, distribution or general plant accounts, despite the fact that some Transmission and Distribution plant accounts, such as Accounts 353 and 362 - Station Equipment (which include assets as diverse as transformers and digital relays) also do not include homogenous-type investments. Indeed, witness Pous has made his own recommendation for Accounts 353 and 362 using actuarial analyses even though the assets in this account are not homogeneous.

It is also important to recognize that the actuarial life analysis I have used for interim survivor curves is only related to interim retirements. Final retirements are instead based on estimates of the retirement date for an entire generating unit. The assets in production plant accounts subject to interim retirements are therefore more homogeneous than witness Pous's testimony suggests.

Q. Could you provide an example to illustrate the difference between witness Pous's proposal and the Company's proposal?

A. Yes. The difference is perhaps best illustrated by drawing an analogy between using the life span technique for power plants and using the life span technique for a car. This is the same analogy witness Pous uses on pages 52 and 53 of his testimony to explain the concept of interim retirements. A typical car might have a service life of 10 years, and during the life of the car various components will have to be replaced such as batteries, tires, etc. Thus, the car itself will have a life span of 10 years, the actual average service life of the car will be shorter once you take into account the interim retirements that occur due to the replacing each of the components.

Q. In this example, how would witness Pous estimate the interim retirements that a car would experience?

A. Using witness Pous's method of adjusting for interim retirements, one would estimate the percentage of the car's cost that would be retired each year and adjust the average service life based on this estimate.

Q. Does this method accurately estimate interim activity?

A. No. His method would not produce an accurate method for the life of the car; nor does it for production plant accounts. As car owners know from their own experience, a method that forecasts the same amount of retirements in each year does not accurately reflect of how car repairs are spread out over the life of a car. Reality dictates that there will likely be few retirements in the early years of the car's life, but as the car and its components age, the level of retirements increase. So, while in the first few years only minor items will need to be replaced, as the car gets older the owner will have to replace the tires, the brakes and possibly even major items such as the transmission. These items are all more expensive, so it is clear that retirements will increase in the later stages of the life of the car. The pattern of retirements throughout the life of the car is referred to as the "dispersion pattern."

Q. Does witness Pous's proposal account for a dispersion pattern reflecting the fact that interim retirements tend to increase as property gets older?

A. No.

Q. Does your interim survivor curve method take into account this sort of retirement dispersion?

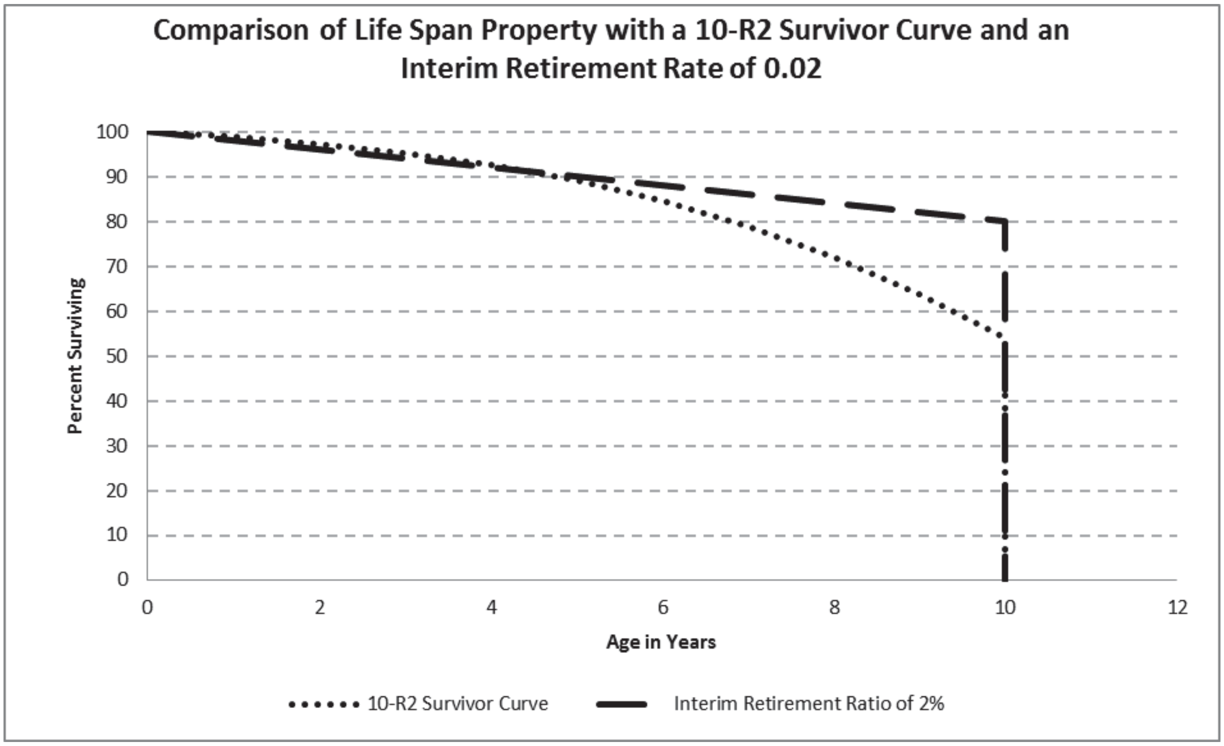
A. Yes, it does. Instead of assuming a constant level of interim retirements, one should use the Company's method and estimate these interim retirements with a survivor curve that better mirrors actual interim retirement experience taking into account the dispersion pattern. This is exactly what I have done in the depreciation study.

Q. Can you use the example of a car to help explain the difference between the two methods and your criticism of witness Pous's method?

A. Figure 2 below, graphically shows the results of using these two methods. The dashed line illustrates witness Pous's method assuming an interim retirement rate of 0.02, which means that 2% of the original cost of the car will be retired each year. The dotted line illustrates the company's method using a 10-R2 survivor curve. As the graph illustrates, witness Pous's method results in a constant level of retirements for each year until the final retirement at age 10. As discussed earlier, this is not an accurate estimate of actual replacement expenditures throughout the life of the car. Instead, the 10-R2 curve is a better reflection of actual interim retirements. There are very few retirements in the early years but retirements increase as more expensive parts need to be replaced.

The average service life for each estimate is the area under the curve. As expected, in each case the average service life is less than 10 years. However, each method leads to different results. The average service life using witness Pous's method is 9 years, but using the Company's method and a 10-R2 survivor curve results in a more accurate average service life of 8.5 years. For FPL's property the impact of witness Pous's proposal is even more pronounced. As I will discuss in the next section, his recommendations understate interim retirements by more than $100 million per year.

Figure 2



As discussed previously, witness Pous's method fails to account for an increase in retirements as the property ages (e.g., brakes on a car). Thus, the average service life resulting from his method is too long, as it assumes that the level of interim retirements for the final 5 years of the life of the car will be the same as for the first five. This is of course an unreasonable assumption. Witness Pous's estimates in this proceeding apply the same unreasonable assumption to FPL's power plants.

Q. Are there other issues with witness Pous's proposed method for interim retirements?

A. Yes. Witness Pous has not explained or provided calculations supporting how the theoretical reserve is calculated using his method. He also did not do so in

Docket No. 090130-EI. As FPL witness Clarke explained in that case, witness Pous incorrectly excluded his estimated interim retirement rates from his theoretical reserve calculations.[35] Witness Pous has not rectified this issue in the instant proceeding, as he has not even bothered to calculate the theoretical reserve for production plant. He further declined to explain how the theoretical reserve is calculated when using his method in discovery.[36]

Q. Please address witness Pous's criticism regarding what he calls the "level of change in life spans between studies."[37]

A. This concept actually supports the opposite conclusion of the one witness Pous makes. Namely, an increase in life spans supports that my method is more appropriate than witness Pous's. Consider again the car example. If a car were to remain in service for 20 years instead of 10 years, then it would require much more significant investments. Indeed, even the engine and other major components may need to be replaced. Thus, this concept is more supportive of using interim survivor curves than witness Pous's method, because interim survivor curves recognize dispersion. The same is true of power plants. To operate plant longer, more components will need to be replaced, which favors my method as being more appropriate. Witness Pous instead doubles down on his erroneous assumption – significantly increasing the life for capital spare parts while proposing an even longer life span for combined cycle plants.

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[35] See the direct testimony of C. Richard Clarke in Docket No. 090130-EI, page 73, lines 5 through 9.
[36] See OPC's response to FPL's First Set of Interrogatories, No. 4.
[37] Direct testimony of Jacob Pous, page 58, lines 5 through 6.

Q. Please address witness Pous's concern regarding "the change in historical data between studies."[38]

A. Witness Pous references plant balances for capital spare parts and argues that we have presented changes in historical data therefore, without historical consistency, the study is flawed. His testimony is an attempt to get the Commission to discount the improved analysis in the instant case on the basis that if it is different, it must be wrong. In an effort to be sure we delivered as much insight as possible into the capital spare parts recommendation, FPL and Gannet Fleming spent considerable time investigating and analyzing the historical data for capital spare parts to better distinguish the capital spares assets from those that should be in the balance of plant. As a result, this study refines the historical data for capital spare parts. I should note that witness Pous also makes a similar generalization with regard to changes to interim survivor curves between studies. Again, he has no argument on the merits – he rejects the study simply because it has changed.

It is important in each depreciation study to update the results with current information. I have done so with the data for capital spare parts and with interim retirements in general. In stark contrast is the recommendation of witness Pous in this case, which is to simply ignore the data from the past 7 years and continue to use the stale results from the Company's previous study.

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[38] Direct testimony of Jacob Pous, page 58, lines 17 through18.

Q. What is your conclusion in regards to estimates of interim retirements for production plant?

A. The interim survivor curve estimates I have proposed in the 2016 Depreciation Study are based on widely accepted methods for life span property. This methodology is supported by authoritative depreciation texts and has been accepted by jurisdictions across the United States and Canada. In contrast, witness Pous has proposed a methodology that is merely an approximation of the use of Iowa curves for interim survivor curves, and he has not even updated his estimates based on current data. His proposals are less accurate, fail to incorporate any informed judgment, produce unusual results, and are based on unrealistic assumptions for this type of property. As a result, his estimates should be rejected by the Commission.

In the next section, I will address the most significant issue related to OPC's proposal for interim retirements, which is OPC witness Pous's proposal for capital spare parts.

B. INTERIM RETIREMENTS FOR CAPITAL SPARE PARTS

Q. What is a "capital spare part" for the Company's combined cycle fleet of power plants?

A. As I explain on page 34 of my direct testimony, the term "capital spare part" is used to describe types of assets associated with the combustion turbines of combined cycle plants that typically have a shorter life than the overall facility. Capital spare parts include assets such as turbine blades, rotor blades and transition nozzles that are removed from the plant and either refurbished or retired at regular intervals.

Q. Please explain further the life cycle of these types of assets.

A. Combined cycle plants are highly efficient machines that require regular maintenance and capital expenditures in order to operate reliably and efficiently. The manufacturers of these types of plants recommend regular outage intervals at which the plants are serviced. During these outages, many assets are replaced. At the time of replacement, FPL retires the asset and records salvage that is associated with either refurbishing or scrapping the asset.

Q. How often do these outage intervals occur?

A. The outage intervals for combined cycle plants are specified to occur based on the number of operating hours and the number of starts for the plant (i.e., the number of times the plant is turned off and turned back on). For example, in Docket No. 160088-EI, FPL witness Kennedy has provided the combustion turbine outage schedules for FPL plants using Mitsubishi technology. As can be seen in Exhibit RRK-1 of witness Kennedy's rebuttal testimony in Docket No. 160088-EI, inspections and outages are typically scheduled to occur at the following intervals:

- 12,000 hours – combustor inspection
- 24,000 hours – turbine inspection
- 48,000 hours – major inspection

Similarly, other equipment manufacturers, along with FPL equipment fleet teams, have service hour based recommendations. At each of these intervals, various capital spare parts are inspected and replaced as needed, and many replacements of components typically occur for the turbine inspection and major inspection. Because a typical combined cycle plant operates for around 8,000 hours per year, it is therefore normal and to be expected that there will be the retirements of many capital spare parts after about 3 years and more retirements after about 6 years (i.e., for a major inspection and for a hot gas path inspection).

Q. Does the Company's historical data support that retirements of capital spare parts occur at these ages?

A. Yes. The Company has a large fleet of modern combined cycles and has data that extends back as far as 1993 for its current fleet of combined cycle plants. These data were used for the statistical analyses for the depreciation study, and demonstrate exactly what one would expect based on the operating characteristics described above. Figure 3 below graphs the percentage of capital spare parts that have historically survived to a given age. For example, the graph shows approximately 70% surviving at age 3.5. This means that approximately 30% of capital spare parts have historically retired by this age. Again, this is consistent with what should be expected given the operation of these units, as the turbine inspection occurs at 24,000 operating hours. Figure 3 further shows that there have been many retirements of these assets in the three to 6-year range, just as would be expected based on the operation of these units. Figure 4, which follows Figure 3, shows that the 6.5-L0 survivor curve represents a very good fit of the representative data points for capital spare parts.

Figure 3: Historical Data for Capital Spare Parts

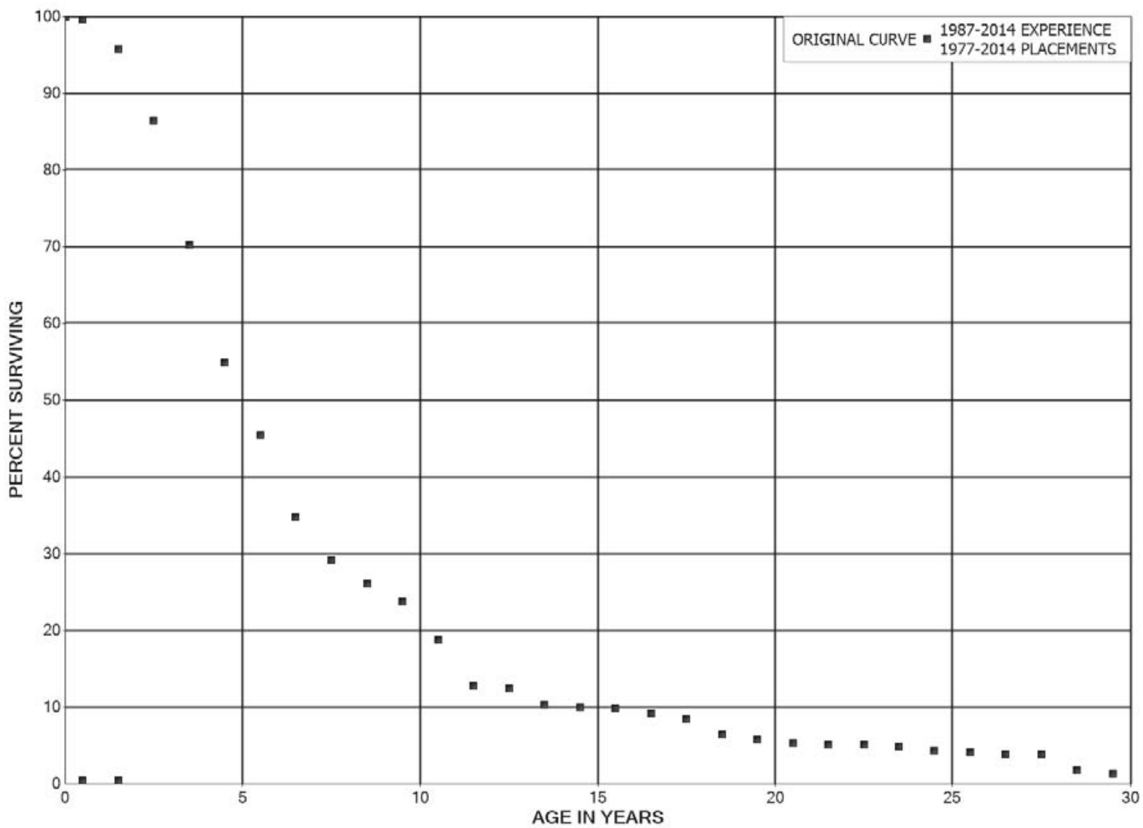
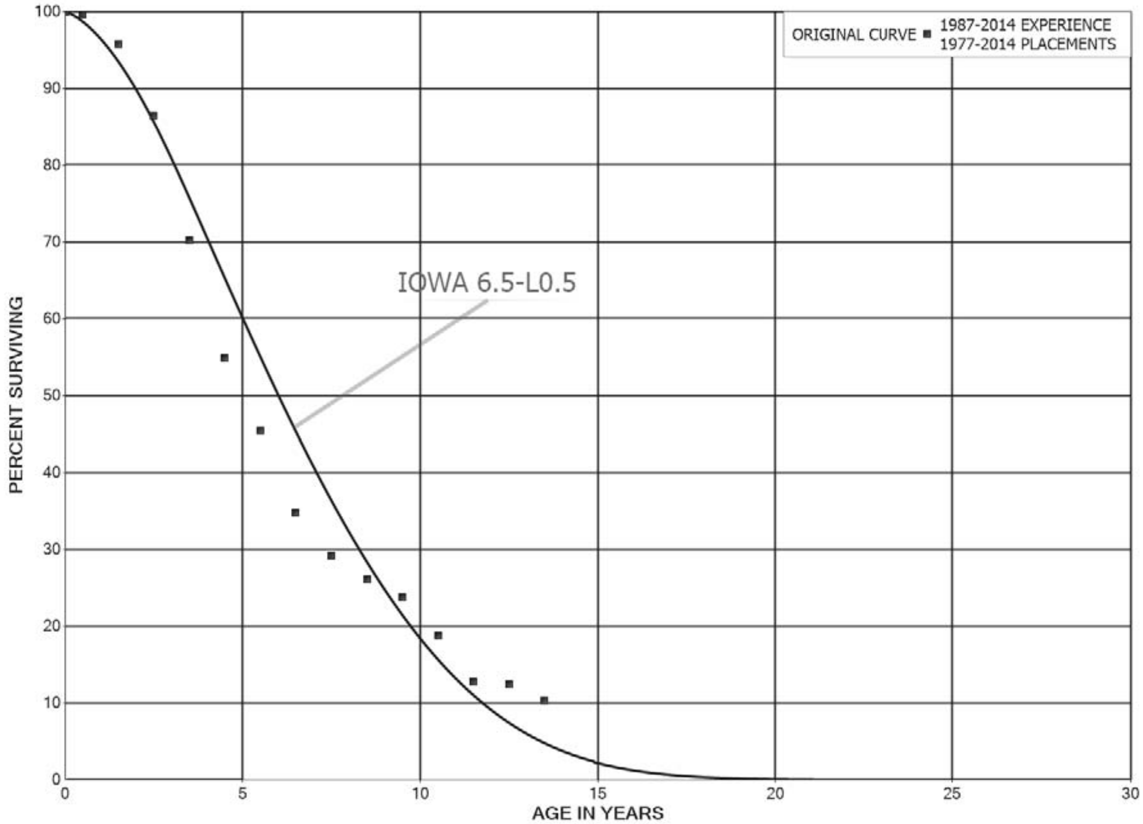


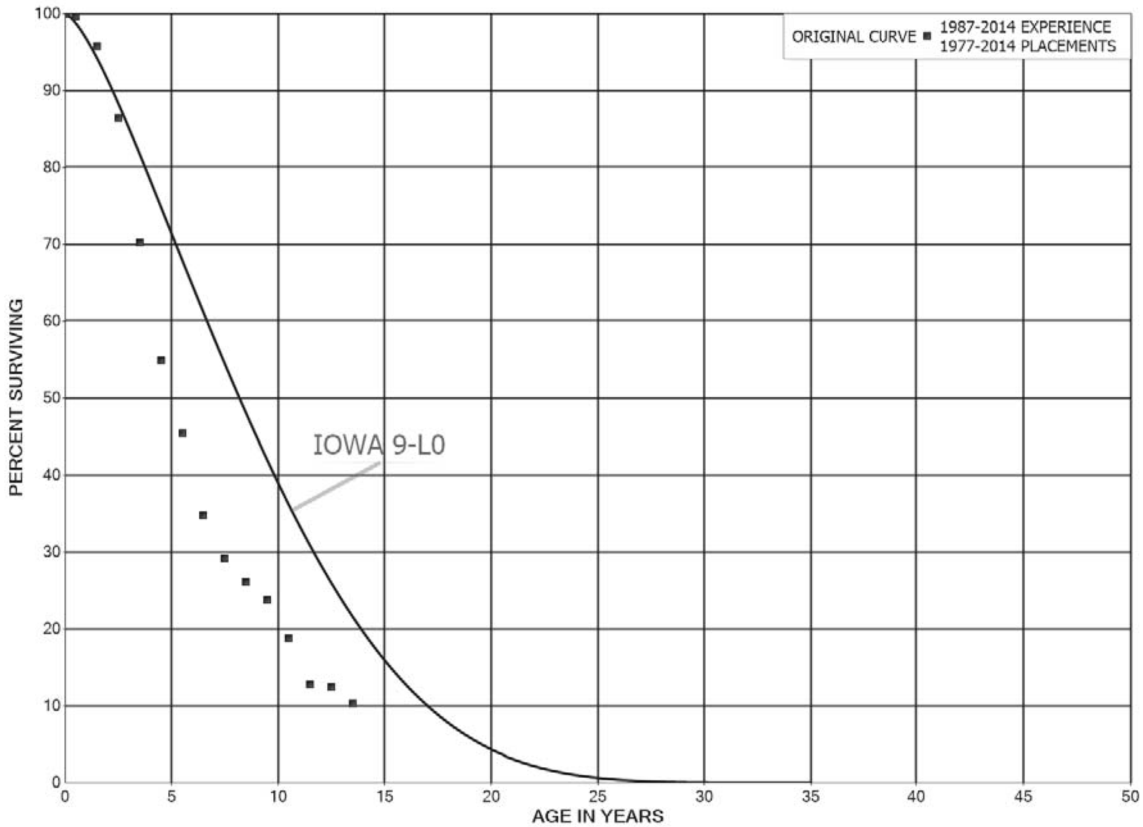
Figure 4: Historical Best Fitting Survivor Curve for Capital Spare Parts



Q. In light of this historical data, did you estimate a 6.5-year average service life for capital spare parts?

A. No. For my estimates, I incorporated other factors than just the statistical analysis, and in particular have incorporated the operations and outlook for capital spare parts. As discussed on pages 693 and 694 of Exhibit NWA-1, based both on upgrades FPL has made to more robust capital spare parts and on the expected operating hours for FPL's combined cycle fleet, I have recommended to increase the average service life by about 30% compared to what the Company has historically experienced.[39] The 9-L0 survivor curve I have estimated is shown below. As the chart illustrates, my estimate is for a longer service life than FPL has actually experienced historically.

Figure 5: 2016 Depreciation Study Estimate for Capital Spare Parts



[39] See the discussion of the estimate for capital spare parts on pages 693 and 694 of Exhibit NWA-1. I have also provided workpapers supporting this estimate in confidential Attachment 4 provided in FPL's response to OPC's First Request for Production of Documents No. 38.

Q. You have explained the support and reasons for the 9-L0 survivor curve, and have demonstrated that the Company's actual experience supports a relatively short life for capital spare parts. Have previous depreciation studies recognized a shorter life for capital spare parts?

A. Yes. In the 2009 Depreciation Study, FPL proposed a 5-year average service life for capital spare parts. In that case, the Commission Staff performed their own analysis and the Commission adopted Staff's 0.1565 interim retirement rate, which corresponds to an average service life of about 3.2 years. The currently approved depreciation rates therefore incorporate a shorter life for capital spare parts.

In the 2005 Depreciation Study, FPL had proposed average service lives for each account for each generating unit that were based on estimates for each component of the plant. In that study, the lives for capital spare parts were also much shorter than the overall life of the plant. For example, transition nozzles were estimated to have a 5-year life and turbine blades were estimated to have a 7 or 8-year life.[40] The estimates from the 2005 Study for production plant were adopted by the Commission in a settlement. Thus, shorter lives for capital spare parts for combined cycle plants have been approved and used since at least 2005.

[40] See for example pages 3 and 4 of 12 of Schedule V for Martin Combined Cycle – CC Unit 3 of Volume 5 of the 2005 Depreciation Study.

Q. Both witness Pous and witness Kollen allege that your proposal for a separate subaccount for capital spare parts "increases" depreciation expense. Please address this claim.

A. This claim is completely false and neither witness Kollen nor Pous offer any evidence or calculations to support their claim. By contrast, Figure 1 in Section II demonstrates that my estimates for capital spare parts significantly decrease depreciation expense by approximately $450 million. It should also be noted that the currently approved estimates are based on witness Pous's interim retirement rate methodology, and thus the use of my more appropriate interim survivor curves actually results in a significant decrease compared to estimates based on witness Pous's preferred methodology.

Q. What have OPC and SFHHA proposed for capital spare parts?

A. Both have proposed to use the estimates from the other assets in Account 343 for capital spare parts. That is, both propose that the Commission inappropriately ignore data demonstrating more than $2 billion of historical capital spare parts retirements and instead apply estimates derived from an entirely different set of assets with much longer lives.

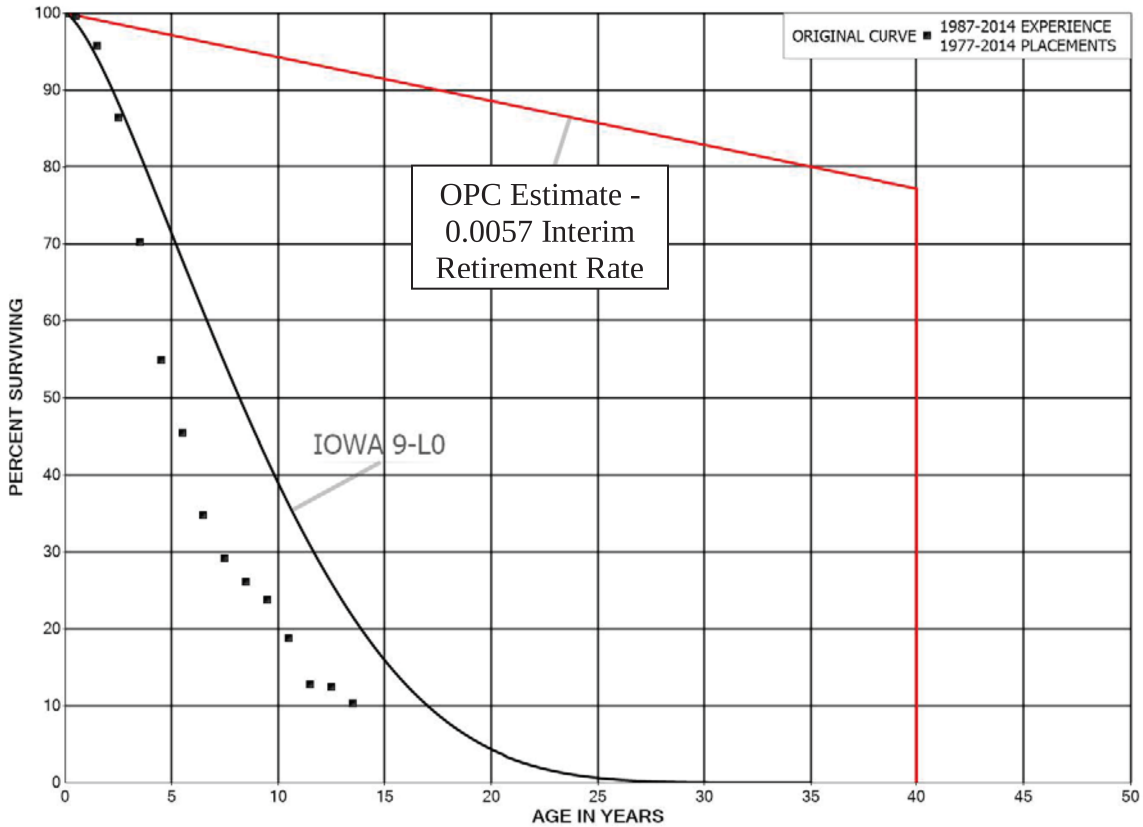
Q. You have demonstrated that witness Pous and witness Kollen's allegations are false. What would be the consequence of adopting their recommendations?

A. The result of both witness Pous and witness Kollen's recommendations for capital spare parts is to artificially reduce depreciation expense to a level far below what is actually supported by the historical data. As a result, the costs of capital spare parts will not be recovered over their service lives. Instead, customers will have to pay for these assets after they are retired.

Q. To further illustrate the results of their proposals, please provide a comparison of OPC or SFHHA's estimate for capital spare parts to the Company's actual experience.

A. Figure 6 below compares my estimate and that of witness Pous (who has estimated that FPL will retire 0.57% of its capital spare parts per year) to FPL's actual experience. The figure demonstrates quite clearly that witness Pous's estimate is completely divorced from the reality of FPL's actual operations. The curve labeled as "OPC Estimate" is radically different from the Company's actual data, which is shown as the black squares in the chart. This provides convincing evidence that witness Pous's recommendation is not at all consistent with FPL's actual experience operating combined cycle power plants.

Figure 6: Comparison of FPL and OPC Estimates to Historical Data for Capital Spare Parts



Q. Is there any other evidence that OPC's estimate is inappropriate?

A. Yes. One way to test the reasonableness of an estimate is to compare the retirements that would be predicted by the estimate to the Company's actual experience. For example, for the 7 years of data available since the 2009 Depreciation Study (i.e., from 2008-2014) the Company has made approximately $1.3 billion in retirements for capital spare parts. This is actual, historical evidence of the level of retirements that typically occurs for this account.

Q. What would witness Pous's estimate predict for this time period?

A. Again, witness Pous's estimate is a 0.0057 interim retirement rate, which predicts that 0.57% of the account will retire each year. If this rate is applied to the 2014 balance for combined cycle capital spare parts of $1.8 billion, then the resulting prediction based on witness Pous's estimate would be that the Company would retire around $10.4 million per year. Thus, witness Pous's estimate would have predicted that the Company would have only retired about $73 million of capital spare parts over the most recent 7 years,[41] which is only about 5.5% of the Company's actual experienced retirements of $1.3 billion. Witness Pous's prediction was therefore off by a factor of 18.[42]

Q. Would you please respond to specific criticisms of your estimate for capital spare parts on pages 56 and 57 of witness Pous's testimony?

A. Yes. Witness Pous's criticisms only serve to demonstrate that he does not understand the Company's operations. First, he states, "[a] more realistic view of the information would recognize the dramatic changes in the dollar level of exposures from age 0 and age 7, and the dramatic levels of retirements between ages 0.5 and 5.5."[43] I have already explained that the levels of retirements are appropriate and consistent with an understanding of the Company's capital spare parts. The level of exposures (effectively the balance of investment that has historically been in service at a given age)

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[41] This calculation is actually quite generous to witness Pous. The Company had fewer combined cycle plants in 2008 and therefore witness Pous's estimate would have actually projected fewer retirements for the 2008-2014 timeframe.
[42] $1.3 billion divided by $73 million is 17.8.
[43] Direct testimony of Jacob Pous, page 56, lines 17 through 19.

makes perfect sense as well. The Company added the West County, Riviera Beach and Cape Canaveral combined cycle plants in the six most recent years for which the historical data were available (i.e., from 2009 to 2014). Because all of these plants have reached age zero, but none have reached age 7, and because capital spare parts should be expected to experience a number of retirements between age 0 and age 7, it should be expected that the dollar level of exposures will drop considerably from age 0 to age 7.

Witness Pous also states that "given the fact that FPL's depreciation studies are separated by a 7-year period (2007-2014), an experienced depreciation analyst would recognize the statistical instability of the historical results and not rely on such relationships of being predictive of the future without significant and meaningful support."[44] Witness Pous does not explain what he means by the "statistical instability of the historical results," but his desire to disbelieve the historical data does not render it inaccurate. Indeed, the statistical analysis for capital spare parts has been fairly stable from study to study. In the 2009 Depreciation Study the statistical indications were for a 5-year average service life and in the current study the statistical indications are for a 6.5-year average service life – both are similar. Further, I analyzed numerous experience and placement bands, and each resulted in similar statistical indications. I should also note that witness Pous's discussion of $140 million that retires within a year of being purchased also does not

[44] Direct testimony of Jacob Pous, page 56, lines 19-23.

provide a reason to doubt the historical data. The $140 million he cites is for retirements that occur between 0.5 years and 1.5 years. This should not be considered abnormal. It is both a relatively small amount when compared to the over $3 billion in exposures for this age and is also consistent with the 12,000 hour combustor inspection, which would occur at about one and a half years of age. Further, as demonstrated above, the full account has experienced an average life of about 6.5 years, and therefore capital spare parts assets are not expense items (which would be in service for less than a year).

Finally, witness Pous notes my comments regarding the upgrade of components to newer, more robust capital spare parts. I have already explained in detail, and supported, that the result of these upgrades should be a service life about 30% longer than what the Company has historically experienced. Witness Pous's estimate is for capital spare parts to have a service life that is about 1,250% longer[45] than the Company has actually experienced. This is clearly unreasonable, especially because witness Pous has provided no analysis or support for such a large deviation from the Company's actual experience.

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[45] Witness Pous's estimate of a 0.0057 interim retirement rate corresponds to an average service life of capital spare parts of approximately 87.7 years. This is 13.5 times (or 1,250% longer than) the experienced average service life of 6.5 years.

Q. What has witness Kollen proposed?

A. Witness Kollen has proposed to use the remaining life calculated for Account 343 Prime Movers – General and apply this remaining life to Account 343.2 Prime Movers – Capital Spare Parts. This is incorrect on a number of levels. First, just as witness Pous does, witness Kollen completely ignores the historical data specific to capital spare parts, and instead uses the estimates for a completely different set of assets. Second, he does not even calculate the remaining life for capital spare parts based on these (incorrect) estimates. He instead uses the remaining lives calculated for a completely different set of assets.

Q. Would you please address witness Kollen's criticisms of your capital spare parts recommendations?

A. Yes. Witness Kollen first states, "the shorter lives of certain components are already addressed in the average service lives and retirement survivor curves reflected in the present depreciation rates."[46] While this may be true of many of the existing depreciation rates,[47] it is most certainly not true of witness Kollen's estimates. His proposal therefore does not meet this criterion. Witness Kollen then states that "the interim net salvage is already addressed in the net salvage rates reflected in the present depreciation rates."[48] This is also incorrect, as the existing depreciation rates do not include a separate interim net salvage estimate for capital spare parts.

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[46] Direct testimony of Lane Kollen, page 25, lines 18 through 20.
[47] The currently approved depreciation rates for West County, Cape Canaveral, Riviera, and Port Everglades do not include estimates for capital spare parts.
[48] Direct testimony of Lane Kollen, page 25, lines 20 through 21.

Witness Kollen then states that "the depreciation study fails to properly separate the historical data between the two new subaccounts. Instead, it assumes that the historic interim retirements and net salvage that have applied generally will continue to apply to account 343 *General*, which is incorrect, and assumes that a different and more aggressive interim retirement curve and different net salvage apply for account 343.2 *Capital Spare Parts*, which is also incorrect due to the Company's accounting for Capital Spare Parts, which overstates both parameters."[49] Witness Kollen is completely incorrect in his assessment. I have separated both the historical life analysis and the historical net salvage analysis data into the two separate subaccounts and have studied both subaccounts separately based on the Company's actual experience for each subaccount. This can be seen quite clearly in the statistical life analysis for the two accounts presented on pages 183 through 188 of Exhibit NWA-1 and in the statistical net salvage analysis presented on pages 327 through 331 of Exhibit NWA-1. The two subaccounts correctly have different survivor curve and net salvage estimates because they have historically experienced and will continue to experience different survivor curve and different net salvage characteristics. Further, as I have explained in detail, my estimate for capital spare parts reflects that future service lives will be longer than the Company has historically experienced. This estimate is certainly not "aggressive," and in fact, the opposite is true.

[49] Direct testimony of Lane Kollen, pages 25 through 26.

Q. What do you conclude regarding witness Pous and Kollen's proposals for depreciating capital spare parts?

A. The proposals by both OPC and SFHHA are perhaps the most inappropriate recommendation either party makes. One cannot simply ignore over $2 billion in historical activity in order to artificially reduce depreciation expense – which is exactly what both witness Pous and witness Kollen have done. In contrast, my estimates for capital spare parts are most appropriate for these assets, and take into consideration both the historical experience and the outlook for capital spare parts.

Further, as I have demonstrated in this testimony, in my direct testimony, and in the 2016 Depreciation Study, capital spare parts have significantly different service lives than the other assets in Account 343. For this reason, it is most appropriate to create a separate subaccount for capital spare parts.

C. INTERIM NET SALVAGE

Q. Witnesses Pous and Kollen have both proposed to change interim retirement estimates for certain accounts. Have they correctly adjusted the net salvage estimates for production plants to incorporate these changes to interim retirements?

A. No. I have explained that their estimates of interim retirements are inappropriate. However, even if one were to accept their flawed estimates both have made errors in their calculations. Neither witness has adjusted the net salvage for production plant to account for their interim retirement estimates.

Q. Please explain this error.

A. As I have discussed on page 44 of Exhibit NWA-1, the net salvage included for production plant in the depreciation study is only for interim retirements and not final retirements.[50] Thus, the net salvage percentages in the depreciation study for production plant accounts must be adjusted so as to apply only to interim retirements. For example, if the net salvage estimate for interim retirements is negative 10%, and 20% of the assets in the account are estimated to be retired as interim retirements, then the net salvage estimate that should be used in the depreciation calculations to be applied to the entire account is negative 2% (negative 10% multiplied by 20%). If instead 50% of the assets are estimated to be retired as interim retirements, then the net salvage used for the depreciation calculations will be different – namely, negative 5% and not negative 2%.

Q. Do either witness Pous or witness Kollen recognize this fact?

A. No. Neither makes the appropriate adjustment in their recommendations. This is most egregious as it relates to capital spare parts.

Q. How does this concept relate to capital spare parts?

A. By ignoring this concept, both have significantly - and erroneously - reduced depreciation expense. The Company experiences positive salvage for capital

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[50] I should note that because dismantlement for FPL is handled through a different recovery mechanism, there is no final net salvage for FPL's production plants. For studies in which dismantlement is included in depreciation rates, then the final net salvage estimate must also be included in this calculation.

parts. When the parts are removed from the plant they are either refurbished or scrapped, and in either case the Company records gross salvage. The estimate in the study for interim retirements is positive 35%. Neither witness Pous nor witness Kollen disputes this estimate in their testimony.

Because the positive 35% estimate applies only to interim retirements, it must be adjusted in order to develop a net salvage percentage that applies to the entire plant balance. I have done so in the 2016 Depreciation Study, and my calculations are presented on page 302 of Exhibit NWA-1.

Q. Has either witness Pous or witness Kollen adjusted the interim net salvage estimates so as to only apply to interim retirements?

A. No. Instead they have inappropriately continued to apply the 35% net salvage estimate to the entire capital spare parts subaccount despite the fact that they both estimate that only a fraction of the balance of capital spare parts will be retired as interim retirements. For example, based on witness Pous's estimate of interim retirements for capital spare parts he forecasts that approximately 19% of the account will be retired as interim retirements. The 35% interim net salvage estimate should therefore only be applied to 19% of the account, and witness Pous should have adjusted his net salvage estimate to 7% to be used for his depreciation calculations. As can be seen quite clearly on Exhibit JP-1, he fails to do so.

Q. What is the result of this error?

A. The result of this significant oversight is an artificial reduction in depreciation expense of $21 million. Thus, witness Pous compounds his inappropriate decision to ignore over a billion dollars in interim retirements by failing to properly consider the impact on net salvage. Witness Kollen makes a similar mistake.

D. ALLOCATION OF ACCUMULATED DEPRECIATION FOR A NEW CAPITAL SPARE PARTS SUBACCOUNT

Q. Please explain the allocation of accumulated depreciation for new subaccounts.

A. Because FPL has not historically had a subaccount for capital spare parts, it has maintained accumulated depreciation (also referred to as the "book reserve") at the account level for Account 343. For the recommended new capital spare parts subaccount, there is therefore the need to allocate the book reserve between capital spare parts and non-capital spare parts. The standard method in the industry for doing so is to use the theoretical reserve for each subaccount to allocate the book reserve. I have used this approach for both capital spare parts and for the separation of distribution poles into wood and concrete subaccounts.

Q. What has SFHHA proposed?

A. SFHHA witness Kollen has proposed to use the plant balance instead of theoretical reserve. This is an inappropriate method because it fails to recognize that accumulated depreciation is a function of age. That is, a brand new asset will have less accumulated depreciation than a 20-year old asset, all else equal, regardless of its plant balance.

Q. Do authoritative depreciation texts support that the theoretical reserve is an appropriate method of allocating the book reserve?

A. Yes. Page 188 of the NARUC Manual states:

> Theoretical reserve studies also have been conducted for the purpose of allocating an existing reserve among operating units or accounts.

Q. Please explain why witness Kollen's approach is incorrect.

A. The main issue with witness Kollen's approach is that it does not take into consideration the age of the assets when allocating the reserve. Because the reserve is a function of age, this must be considered when allocating the book reserve.

This issue with witness Kollen's approach can easily be explained with a simple example. Consider an account that has two units, each with an original cost of $100. Both units have a 20-year life. One unit is 10 years old and the other is brand new (i.e., 0 years old). The accumulated depreciation for the account is $50. Using witness Kollen's method, the book reserve would be allocated equally to the two units, because each represents one half of the plant balance for the account. This would of course be incorrect – the brand new asset should have a reserve balance of $0 because it is brand new and therefore has experienced no depreciation. The 10-year old asset should have a reserve balance of $50.

Q. Would using the theoretical reserve correct this approach?

A. Yes. Using the same example, the theoretical reserve for the brand new asset is $0, and the theoretical reserve for the 10-year old asset is $50. Thus, an allocation in proportion to the theoretical reserve would correct the issue with witness Kollen's approach.

Q. Witness Kollen states that your method of allocation results "results in an excessive allocation of the depreciation reserve to subaccount 343, which has a longer service life, and an inadequate allocation to subaccount 343.2, which has a shorter service life."[51] Please address this claim.

A. First, I should be clear that any implication by witness Kollen that there was an attempt to increase depreciation expense based on an allocation methodology is simply incorrect. As explained above, I have used the industry standard method of allocating the book reserve to subaccounts. Second, I have explained that witness Kollen's proposed alternative is fundamentally incorrect and inappropriate. Finally, if anything my method actually results in allocating too much of the depreciation reserve to Account 343.2. If one were to retrospectively construct the book reserve for each account by applying historical depreciation rates to the respective subaccount plant balances, then the result would be a lower book reserve for capital spare parts than the result of my methodology.

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[51] Direct testimony of Lane Kollen, page 27, lines 9-11.

For example, for West County Unit 1 the book reserve is a negative amount for Account 343.[52] This is due to retirements of capital spare parts, not retirements for the other types of assets in the account. Thus, a retrospective method of allocating the book reserve would assign a negative book reserve to capital spare parts and a positive book reserve to the rest of Account 343. The book reserve would therefore be lower for capital spare parts than occurred based on my allocation method, which would increase depreciation expense because the life of capital spare parts is shorter than for the other assets in the account. As a result, my method actually produces lower depreciation expense than the alternative.

E. OKEECHOBEE DEPRECIATION RATES

Q. What has FPL recommended for the Okeechobee combined cycle plant?

A. As discussed on page 11 of FPL witness Ferguson's direct testimony, FPL proposes to use the depreciation rates for the Port Everglades combined cycle plant as a proxy for the depreciation rates for Okeechobee. This represents a 3.66% composite depreciation rate using the depreciation rates calculated as of December 31, 2016 that have been provided in FPL's Second Notice of Identified Adjustments. By using Port Everglades as a proxy, the depreciation rates for Okeechobee properly incorporate estimates of interim retirements and interim net salvage.

[52] See page 62 of Exhibit NWA-1.

Q. What has SFHHA proposed?

A. SFHHA witness Kollen has proposed to assume that the Okeechobee plant will experience no interim retirements and has simply recommended a 2.50% depreciation rate based on the 40-year life span for combined cycle facilities.

Q. Witness Kollen states that "the Okeechobee depreciation rate should reflect a service life of 40 years."[53] Do FPL's recommended depreciation rates for Okeechobee reflect a service life of 40 years?

A. FPL's recommended depreciation rates reflect a life span of 40 years. They also correctly reflect the impact of interim retirements, which means that the overall average service life for all assets at the plant will be less than 40 years.

Q. Will Okeechobee experience interim retirements?

A. Yes. As has been the case with all of FPL's combined cycle plants, various components of the Okeechobee plant will need to be replaced in order to operate the plant reliably and efficiently. In order to determine equitable and fair depreciation rates, estimates of interim retirements therefore must be incorporated into the depreciation rates for Okeechobee.

Q. What would be the consequence of not including interim retirements in the depreciation rates for Okeechobee as witness Kollen has proposed?

A. The result would be that assets retired as interim retirements would not be recovered over their service life. This would be particularly true for capital spare parts.

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[53] Direct testimony of Lane Kollen, page 66, lines 16-17.

VI. MASS PROPERTY SERVICE LIFE ESTIMATES

A. INTRODUCTION

Q. What is mass property?

A. The term "mass property" refers to accounts such as poles or substation equipment for which assets are continually added and replaced. Mass property contrasts with life span property, which as I explained in Section IV is property for which all assets at a facility will be retired concurrently. The Company's transmission, distribution and general plant accounts are mass property accounts.

Q. How are service lives estimated for mass property?

A. A mass property account is typically a group of assets for which there will be a range of service lives. For example, some poles will retire at early ages (for example, if hit by a car) and some will survive for much longer. The range of lives for a group of assets is referred to as the "dispersion" of lives or dispersion of retirements. Service lives are estimated for mass property accounts using established survivor curves, which provide an estimate of both an average service life and a dispersion of lives around the average. This concept is discussed in more detail in Part II of Exhibit NWA-1.

Q. In general, how do your estimated average service lives compare to the current, Commission-approved estimates?

A. For mass property accounts, I have proposed to increase the average service lives for 21 accounts, retain the currently approved average service life for 11 accounts, and to reduce the average service life for 1 account. Because all else equal a longer average service life results in lower depreciation expense, my service life estimates result in a decrease in depreciation expense when compared to the Commission approved estimates.

Q. Please summarize the survivor curve estimates proposed by each party in the case.

A. Table 1 below provides a summary of the currently approved, FPL proposed, OPC proposed and FEA proposed survivor curves for each account for which OPC or FEA has recommended a different estimate than my estimate. The table shows the average service life as well as the Iowa survivor curve type. For example, a 40-R1 survivor curve has a 40-year average service life and a dispersion pattern consistent with the R1 survivor curve type.

Table 1: Comparison of Approved, FPL, OPC and FEA Survivor Curve Estimates for Mass Property Accounts

Account		Approved	FPL	OPC	FEA
350.2	Easements	75-S4	75-S4	100-R4	75-S4
353	Station Equipment	40-R1.5	40-R1	44-L1	40-R1
353.1	Station Equipment – Step-Up Transformers	35-R2	30-R1	38-R1	30-R1
354	Towers and Fixtures	52-R5	60-R4	70-R4	60-R4
355	Poles and Fixtures	44-R2	50-R2	55-S0	50-R2
356	Overhead Conductors and Devices	47-R1.5	51-R1	55-S0	51-R1
362	Station Equipment	43-R1.5	45-R1.5	48-S0.5	51-S0.5
364.1	Poles, Towers and Fixtures - Wood	39-R2	40-R2	44-R2.5	40-R2
364.2	Poles, Towers and Fixtures - Concrete	39-R2	50-R1.5	56-S0	50-R1.5
365	Overhead Conductors and Devices	41-S0	48-R1	53-R1	57-R1
367.6	Underground Conductors and Devices – Duct System	38-S0	42-S0	46-L0.5	42-S0
367.7	Underground Conductors and Devices – Direct Buried	35-R2	35-R2	45-L1	35-R2
369.1	Services – Overhead	48-R1	53-R1	53-R1	56-R1.5
373	Street Lighting and Signal Systems	30-R0.5	35-O1	39-L0	35-O1
392.3	Heavy Trucks	12-S3	12-S3	13-S3	12-S3

As can be seen in the table, for the 15 accounts that have been challenged by an intervenor witness, I have increased the average service lives for ten (when compared to the currently approved estimates). For four of the accounts challenged I have recommended to keep the average service life unchanged. For one account (Account 353.01), I have decreased the average service life consistent with the Company’s experience and outlook for that account. The overall result has been to reduce depreciation expense for these accounts, as a result of the increases in average service life.

Q. What have OPC and FEA proposed?

A. For each adjustment they have made, they have recommended to increase the average service life when compared to both the approved estimate and to my estimate.

Q. You have discussed the changes in average service lives. Have you also changed the survivor curve types?

A. For some accounts I have, and for others I have retained the existing Iowa curve types. In general most of my changes in curve types have been relatively minor (e.g., a R1.5 to R1).

Q. Have OPC or FEA changed curve types from the Commission approved estimates?

A. Yes. OPC in particular proposes significant changes in curve types for many accounts. Indeed, it is the change in curve type that is the primary reason for witness Pous's proposed increase in average service lives for many accounts. As I will explain, for many accounts he has used curve types that are not typically used for the assets in these accounts. The curve types he has selected, such as L-type curves, are not common for most types of mass property accounts because they indicate dispersion patterns that are not a good reflection mortality characteristics of the property studied. As a result of these changes in curve types, witness Pous has artificially increased the average service lives for many accounts.

Q. How will you address the mass property service life estimates from each party?

A. I will first explain the process for the statistical life analysis – that is, for fitting survivor curves to the Company's data. This will include a general discussion of the process, a discussion of the issues with witness Pous's approach to curve fitting, a discussion of the problems with the types of curves witness Pous has selected for many accounts, and issues related to the selection of bands. I will then explain the life estimation portion of determining service lives and how the statistical analysis is combined with other information to determine the proper service life.

Finally, for each account for which OPC or FEA has proposed a different service life estimate I will provide an explanation as to why FPL's proposed estimates are most reasonable and most appropriate. This discussion is provided as Exhibit NWA-3 to my rebuttal testimony.

B. STATISTICAL LIFE ANALYSIS

i. Introduction

Q. Please explain the process for the statistical life analysis.

A. All parties in this proceeding agree with the use of a statistical analysis based on aged retirements known as the retirement rate method for assets in the transmission, distribution, and general classes of plant. I have described this method on pages 16 through 25 of my direct testimony and in Part II of

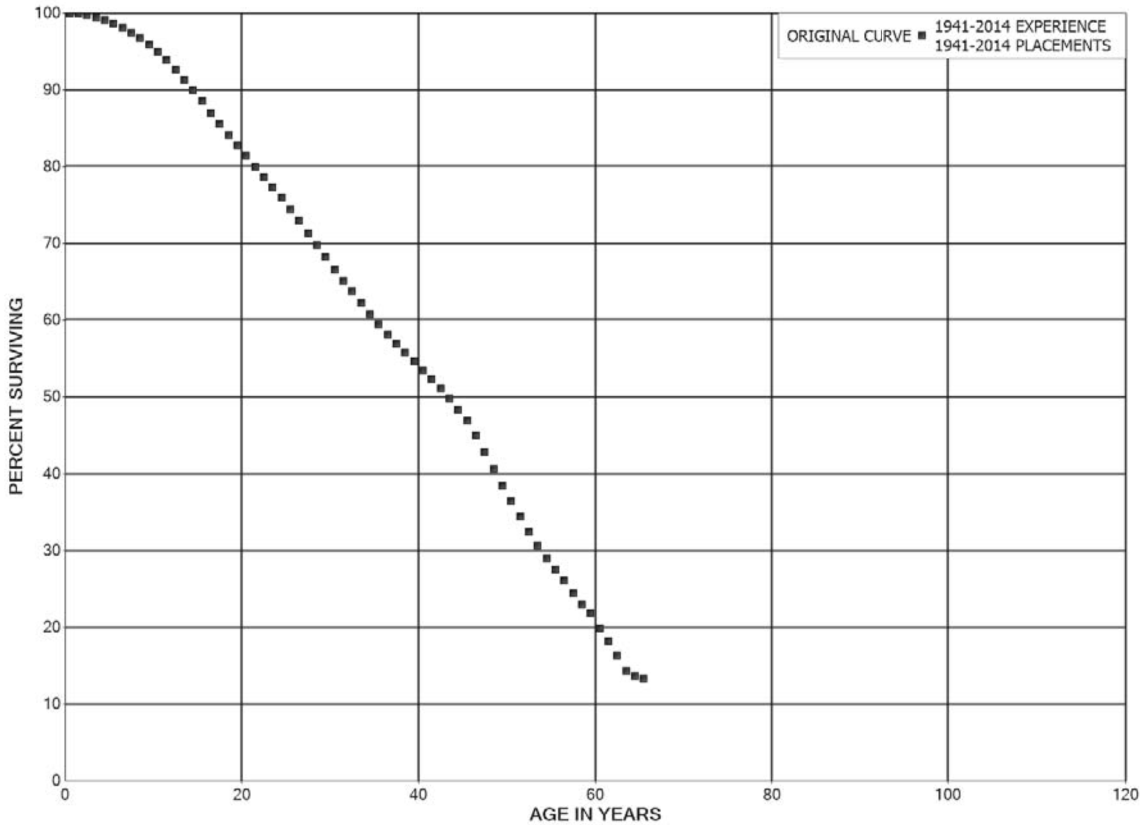
Exhibit NWA-1. When using the retirement rate method, original life tables are developed from the Company's historical accounting data. The original life tables provide an indication of the percentage of assets that have historically survived to each age for which data is available.

Q. Please provide an example of this analysis for an FPL account.

A. As an example, I will use Account 367.6 Underground Conductors and Devices – Duct System. The original life table for the overall experience band for this account can be found on pages 254 and 255 of Exhibit NWA-1. The table develops the percentage of installations that have historically survived to each age (the age is shown in the left-most column of the table and the percent surviving is shown in the right-most column).

I have presented all of the data points from the original life table for this account in Figure 7 below. The graph shows the percentage of assets that have historically survived to each age. The percent surviving from the life table is shown on the Y-Axis and the age is shown on the X-Axis. For example, the chart shows that the original life table indicates that about half of the assets have historically survived to about age 40, and that by age 60 only about 20% have survived.

Figure 7: Historical Data for Account 367.6 Underground Conductors and Devices - Duct System

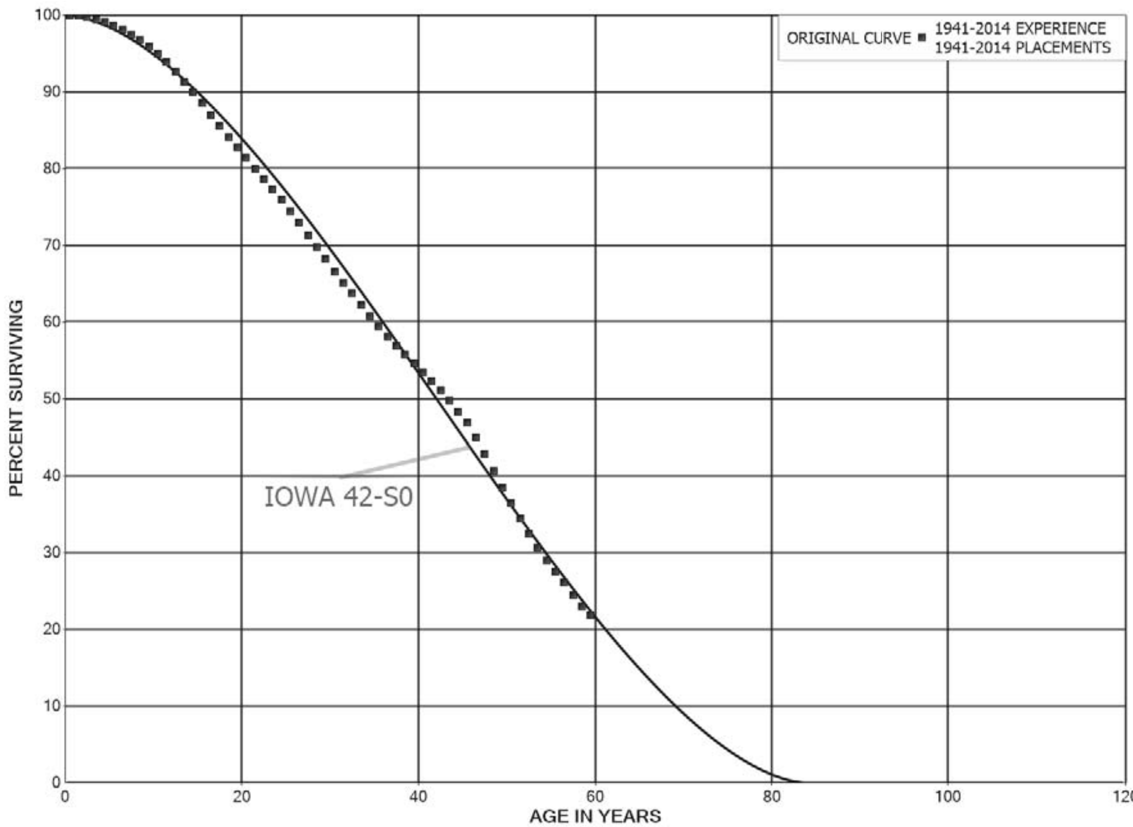


Q. How are original life tables used to forecast service lives?

A. Iowa survivor curves can be fit to the original life tables developed from the Company's actual experience. 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.

Curve fitting or curve matching of Iowa curves to an original life table can be performed either visually or mathematically. Figure 8 below provides a comparison of the 42-S0 survivor curve to the original data.[54] The 42-S0 survivor curve is the estimate I have recommended in the 2016 Depreciation Study, and the chart below is the same as presented on page 253 of Exhibit NWA-1.

Figure 8: Comparison of FPL Estimate and Historical Data for Account 367.6 Underground Conductors and Devices - Duct System



Q. What is "visual curve matching"?

A. For visual curve matching, smooth survivor curves (normally Iowa survivor curves) are charted on the same graph as the original curve. By graphing the

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[54] For reasons I will explain, I have not shown every data point in the original life table for Figure 8.

curves on the same graph, one can visually make a determination as to how close of a match the smooth curve is to the original curve.

Q. What is "mathematical curve matching"?

A. When performing mathematical curve matching, the difference between the smooth survivor curve and the original survivor curve is compared mathematically. This matching is typically performed using computer software. For mathematical curve matching I have used a measure of fit called the "residual measure."[55] A lower residual measure indicates a better mathematical fit of the data (and a residual measure of 0.00 would indicate that every data point perfectly matches the fitted Iowa curve).

Q. Is the 42-S0 survivor curve a good match to the historical data?

A. Yes. As can be seen in Figure 8 above, the line shown for the 42-S0 survivor curve is close to the original life table for each age. It is therefore a good visual fit of the data. It is also an excellent mathematical fit of the data, and has a residual measure of 0.71.

Q. In Figure 8, you have not plotted all of the data points from the original life table. Please explain.

A. The data points in an original life table are not all based on the same level of historical activity. For example, as can be seen on pages 254 and 255 of Exhibit NWA-1, for this account the level of investment that has been in

[55] The residual measure is based on the sum of squared difference between the original and smooth curve, which is a widely accepted statistical technique. The residual measure I have used normalizes the sum of squared differences for the number of data points included in the fitting process, and is equal to the square root of the total sum of the squares of differences between points on the original and smooth curves divided by the number of data points.

service for each age (referred to as "Exposures" and shown in the second column of the original life table) varies from over $1 billion to less than $10,000. The different data points therefore have different statistical significance and should not be given the same consideration in the curve fitting process. In part due to this reason,[56] some data points therefore should be emphasized less than others and some should be excluded entirely. Figure 8 only includes data points based on $1 million or more in exposures. For the types of assets in this account – underground conductors and related devices - $1 million of assets represents fairly large number of assets and is a significant enough level of exposures to be included in the analysis for this account.

Q. For both visual and mathematical curve matching, can the selection of data points impact the results of the analysis?

A. Yes, it can. It is important to determine which data points from the original survivor curve should be included in the analysis, and which should be emphasized more than others. Depending on the data points included, the curve fitting process can yield different results. As I explain in the next section, for many accounts witness Pous has excluded too many data points, which has resulted in inappropriate survivor curves.

[56] There are other factors to consider as well, such as trends in the data and the level of retirements.

ii. OPC Witness Pous's Curve Fitting Approach Is Inappropriate

Q. Witness Pous claims that your estimates are often "not the best fitting results for the actuarial analyses, even when the final proposal established in the life estimation phase of the study is based on actuarial results."[57] Is this true?

A. No. Witness Pous's assertion is the result of the fact that he has continued to use an inappropriate approach to curve fitting, in which he excludes important information from both the Company's historical data and from the actual curves he has selected. He makes this claim despite the fact that in FPL's previous depreciation study the Commission confirmed that my approach to curve fitting is more appropriate.

Q. Has witness Pous explained his approach to curve fitting in this proceeding?

A. No. However, a review of his presentation in his testimony makes clear that he continues to inappropriately use the same approach that he used in FPL's previous depreciation case.

Q. Please explain.

A. In Docket No. 090130-EI witness Pous stated that he emphasized the earlier data points in the analysis and excluded many later – but relevant ages. For example, witness Pous stated that "matching the 'head' of the observed life table is more important than matching the 'tail.'"[58] Further, from a review of the presentations of survivor curves in his testimony in both Docket No.

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[57] Direct testimony of Jacob Pous, page 64, lines 11-13.
[58] Docket No. 090130-EI, direct testimony of Jacob Pous, page 99, lines 21-23.

090130-EI and in this case, it is clear that witness Pous ignored far more than just the "tail" of the survivor curve and instead has excluded important information about the survivor curve for each account.

Q. Did the Commission adopt witness Pous's approach to curve matching?

A. No. The Commission correctly adopted Gannett Fleming and FPL's approach, stating:

> The disagreement on curve fitting between FPL and OPC only serves to emphasize the need for judgment. Based on the evidence, we believe that FPL's method of curve estimation, as described in the record, is appropriate because it relied on visual and mathematical curve fitting, as well as classic depreciation theory.[59]

Q. Have you used the same general approach as adopted by the Commission in Docket No. 090130-EI?

A. Yes.

Q. Has witness Pous?

A. No. Witness Pous continues to use the same approach he used in Docket No. 090130-EI.

Q. Please explain the consequences of witness Pous continuing to use an inappropriate approach to curve matching.

A. A good example is Account 367.6, which I have discussed above. Witness Pous makes the statement that "[f]rom a purely mechanical life analysis standpoint, my recommendation of a 46L0.5 life-curve combination is a

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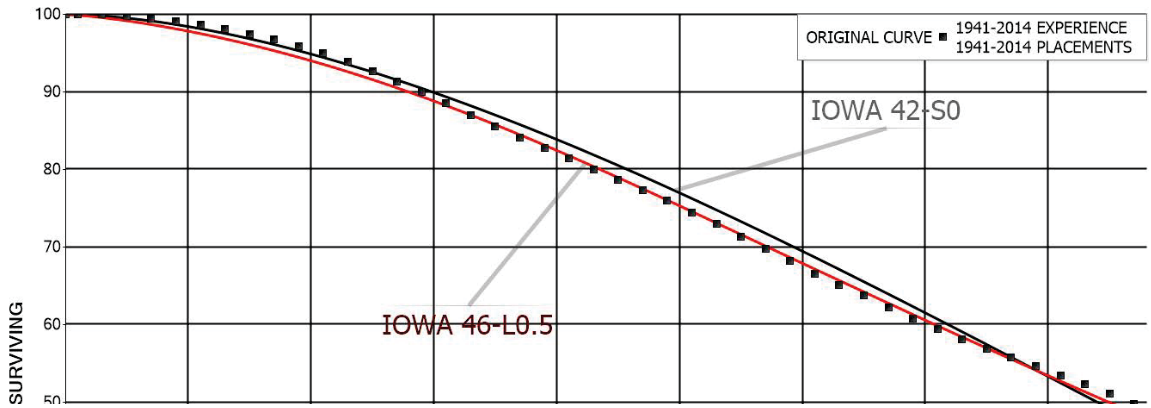
[59] Order No. PSC-10-0153-FOF-EI, page 60.

similar but superior fit to the meaningful portion of the actuarially derived OLT than is witness Allis' proposal."[60] Witness Pous then presents a graph similar to what I show in Figure 9 below.

Figure 9: OPC's Presentation of Survivor Curves for Account 367.6 Underground Conductors and Devices - Duct System



When one compares this graph to Figure 8, it is quite clear that witness Pous's presentation excludes a significant amount of information. The last data point shown in Figure 9 above is for age 43.5 (each of the vertical lines in the graph represents 5 years of age). Witness Pous therefore shows no ages beyond age 44 and no percent surviving values below age 50%. As I will explain, this is a misleading presentation that obscures two important details – 1) that his estimate is an inferior fit to the data than mine; and 2) that his estimate projects unrealistic lives for many assets that are directly contradicted by the Company's actual experience.

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[60] Direct testimony of Jacob Pous, page 119, line 22 to page 120 line 1.

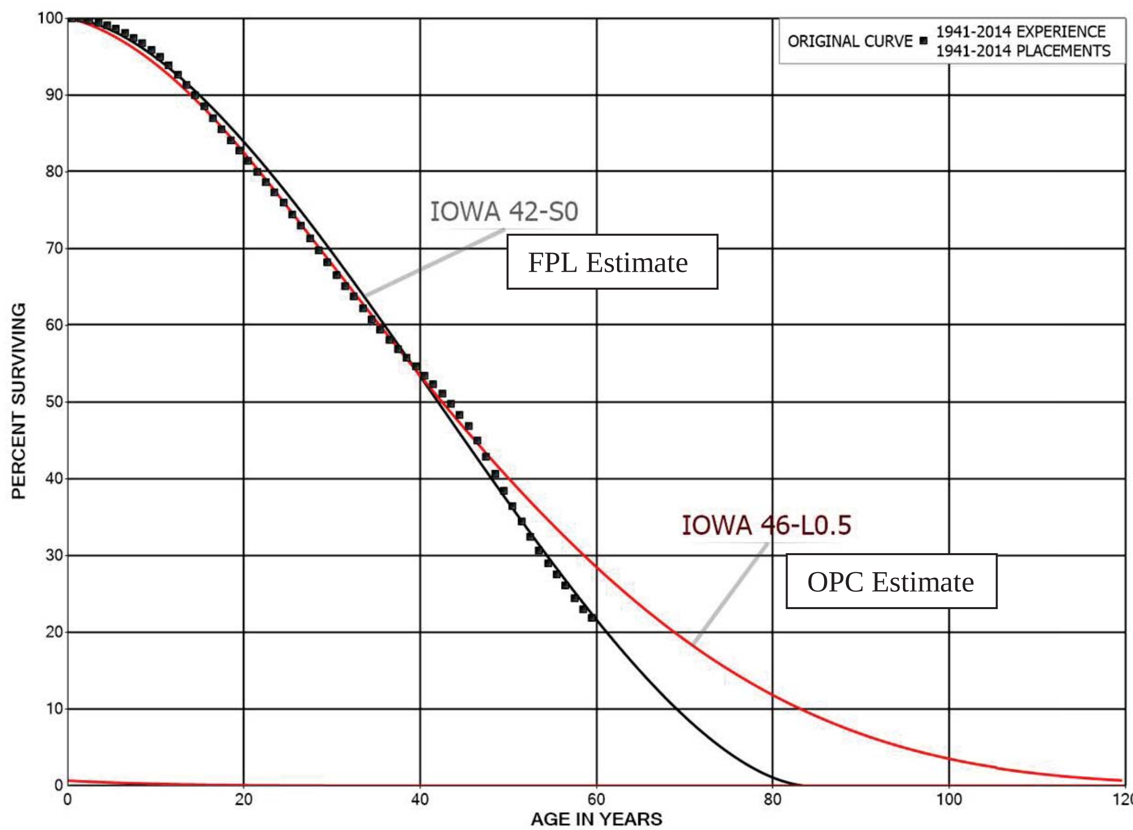
Q. Why do you say that witness Pous's presentation is misleading?

A. Witness Pous's presentation is misleading because it excludes relevant data points from the historical data. It also fails to show the actual difference between my estimate and his. By obscuring this information, he hides the fact that his estimate results in unrealistically long lives for many of the assets in this account.

Q. Please provide a better comparison of your estimate and that of witness Pous with the Company's historical data.

A. A better comparison is presented in Figure 10 below.

Figure 10: Comparison of FPL and OPC Estimates to Historical Data for Account 367.6 Underground Conductors and Devices - Duct System



Q. How do FPL's and OPC's estimates compare in Figure 10?

A. There are two main observations to make from a comparison of these estimates. First, witness Pous's estimate is an inferior fit of the data shown in Figure 10 when compared to mine. This is particularly true for data points from approximately age 50 through age 60, which fall between about 40% and 20% surviving. As I will explain, classic depreciation theory supports that these are important data points that should not be excluded from the statistical analysis for this account. Witness Pous has hidden this difference in his presentation in his testimony.

The second observation is related to the difference between the two Iowa curves (the curves labeled IOWA 42-S0, which is my estimate, and IOWA 46-L0.5, which is witness Pous's estimate). As can be seen in the graph, the two curves are very similar through about age 44 (i.e., the ages witness Pous actually shows in his graph). However, the curves begin to deviate significantly after age 44. Specifically, witness Pous's curve remains elevated above my estimate for all remaining ages and eventually extends beyond 120 years of age.

Both of these observations are hidden by witness Pous's presentation in his testimony. Yet both are critical to properly interpreting the data and selecting the best survivor curve.

Q. Your first observation is that your estimate is a much better fit than witness Pous's for ages 50 to 60. Should witness Pous have excluded these data points?

A. No. As I noted above, these data points are based on at least $1 million in exposures, and therefore are based on data that is statistically robust enough to be included in the life analysis. Just as important, because these data points range from about 40% to 20% surviving they fall within the most representative portion of the survivor curve. Witness Pous therefore should not have excluded these data points

Q. Please explain.

A. As the Commission recognized in Docket No. 090130-EI, the portion of the curve from 80% to 20% surviving is most representative of the survivor characteristics for a life table. That is, contrary to witness Pous's assertion in previous cases, the academic literature on survivor curves indicates that the most representative portion of the survivor curve is the middle portion of the curve, generally the portion between 80% and 20% surviving. This is because the middle portion of the curve is where the majority of retirements occur. There are relatively few retirements at the "head" of the curve, and relatively few at the "tail."

In the development of survivor curves in Bulletin 125 of the Iowa Engineering Experiment Station, Robley Winfrey (who developed the Iowa Survivor curves) provides analysis showing that when performing curve fitting, the emphasis should be placed not on the first 20% of the curve or the last 20%, but rather on the information in the middle years. Mr. Winfrey's analysis is based on the probable error involved in fitting a smooth survivor curve to an observed life table with varying percentages surviving. He concludes:

> When survivor curves are to be classified according to the 18 types and the probable average life to be determined, it is recommended that more weight be given to the middle portion of the survivor curve, say that between 80 and 20 percent surviving, than to the forepart or extreme lower end of the curve. This inner section is the result of greater numbers of retirements and also it covers the period of most likely the normal operation of the property.[61]

Q. Please address your second observation, regarding the difference between the two survivor curves shown in Figure 10.

A. As noted above, the primary difference between my 42-S0 survivor curve estimate and witness Pous's 46-L0.5 survivor curve estimate is that witness Pous's survivor curve projects a much lower rate of retirements beyond age 50. This can be seen by the fact that his estimate declines to 0% surviving at a much slower rate than my estimate. He also projects that many assets will have much longer lives.

[61] Bulletin 125, Iowa Engineering Experiment Station, Winfrey, Robley, 1935, page 91.

Q. Does the data support this projection made by witness Pous?

A. No. The data shown in Figure 10 only extends to about 60 years of age. The portion of the survivor curve beyond this age is therefore an extrapolation of the data, as both witness Pous and I have not considered the data beyond age 60 to be meaningful. That is, the significant decline in the rate of retirements projected by witness Pous is not based on actual data. I should also note that witness Pous is actually extrapolating a larger portion of the curve than I have done, since he excludes data beyond about age 44.

Q. Is the portion of the curve extrapolated by witness Pous reasonable?

A. No. As can be seen in Figure 10, for the last data point on the graph (age 59.5) the percent surviving is approximately 20%. Thus, FPL's actual data indicates that approximately 80% of the account retires by age 60. My estimate extrapolates a trend in which retirements continue at a similar rate to what has actually occurred based on FPL's data. In contrast, witness Pous has extrapolated a completely different pattern of retirements. His estimate extrapolates that some of the remaining assets will be in service for 120 years or more, as his curve extends beyond 120 years of age. This is not a reasonable projection as FPL's actual data indicates that most of the assets in this account will retire by age 60. Further, there is no experience in the data of assets lasting longer than 73 years. Yet witness Pous projects that some of the remaining assets will live for 120 years.

Q. Can you explain further why witness Pous's estimate is unrealistic?

A. For this account, as with many accounts, witness Pous has selected L type survivor curves. L type curves are not common for most types of utility property, and for good reason. L type curves have "long tails," such as can be seen in Figure 10. This means that a portion of the assets live much longer than the average service life – for lower mode L curves, some assets will survive more than three times the average service life. Very few types of transmission and distribution plant have this characteristic.

This is not a reasonable expectation for the assets in this account, in particular for assets in Florida. As underground conductor ages, the cable will deteriorate and corrode over time. This is particularly true for FPL, as salt water and a high water table will impact these types of cable more so than in other drier climates. For this reason, the expectation should be that retirements will tend to increase with age. Witness Pous has projected the opposite. As Figure 10 shows, his 46-L0.5 survivor curve results in a significant slowing in retirements for older ages.

Q. What can you conclude about witness Pous's curve fitting approach?

A. As I have demonstrated in this section, witness Pous's approach is inappropriate and is not consistent with the Commission's order in Docket No. 090130-EI. Further, witness Pous has for this account selected an unusual and unrealistic Iowa survivor curve that only serves to artificially extend the average service life and reduce depreciation expense. As I will explain in the next section, witness Pous has taken a similar approach for many other accounts, changing the curve type to unusual and unrealistic L type curves. Thus, even when his estimate and mine are similar fits to the data, his estimate is not appropriate for the assets studied.

iii. OPC Witness Pous Has Artificially Extended Service Lives by Selecting Uncommon Curve Types

Q. In the previous section, you explained how witness Pous artificially increased the service life by selecting a low mode L type curve. Has he made similar adjustments for other accounts?

A. Yes. A review of witness Pous's estimate for Account 367.6 shown in Figure 10 above illustrates how his changes are due at least in part to a change in the type of survivor curve. The same is true for other accounts. For example, he has changed to L type curves for four accounts and to an S0 type curve for three accounts. In each of these instances witness Pous has changed the curve types from those last approved by the Commission as well as from what I have proposed.

Q. Are these changes in curve types appropriate?

A. No. This is especially true because, as I will explain in the account specific discussion in Exhibit NWA-3, for these accounts a more common and realistic curve type usually represents a similar or better fit of the historical data.

Q. Why are witness Pous's selected curve types are unrealistic for FPL's property?

A. The reason is that for many types of assets, the level of retirements should be expected to increase with age. For example, as many types of assets age they tend to corrode or deteriorate, which leads to an increasing probability of retirement due to failure or proactive replacement. R type curves exhibit this type of retirement pattern, as do higher mode S type curves. Lower mode S type curves tend to have a fairly constant level of retirement. L type curves project a decreasing level of retirements as assets get older.

For most types of assets, R type curves or S type curves are far more realistic than L type curves based on the forces of retirement that act upon the assets. I would expect this to particularly be the case in Florida, which as I have explained has a harsh environment for many types of assets due to factors such as heat, humidity and salt in the air.

Q. Are the curve types that witness Pous recommends for these accounts consistent with curve types typically made for other utilities?

A. No. This is a point that witness Pous has acknowledged in his testimony.[62] As further support for this concept, the industry database witness Pous has relied on (which is based on estimates made by Gannett Fleming for other electric utilities) confirms that the curve types I have selected are generally much more common than the curve types he has used.

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[62] For example, on page 122 of his testimony witness Pous acknowledges that the L0.5 curve he has selected for Account 367.6 is "not common."

Q. How do the curve types that witness Pous has recommended for these accounts compare to those you have recommended?

A. For accounts in which witness Pous has recommended L type curves, R and S type curves are typically more common. Additionally, for the accounts in which he has changed the curve type from an R type curve to a low mode S type curves, R type curves are more common.

Q. What is the result of these changes in curve types made by witness Pous?

A. The result is similar to the example I provided in the previous section for Account 367.6. By changing the curve type, witness Pous is extending the portion of the curve extrapolated beyond the Company's data. That is, he is projecting a longer "tail" to the survivor curve. Because both the average service life and the average remaining life are calculated as the area under the survivor curve, the result of changing the curve type is that witness Pous projects artificially long service lives and lower depreciation expense. It also has the result of artificially creating a larger theoretical reserve imbalance.

Q. What can you conclude regarding the curve types witness Pous has selected?

A. It is important as part of the judgment process of estimating service lives to consider the assets studied and the forces of retirements acting upon these assets. Proper consideration of these factors means that an R type curve is often the better estimate than a low mode S type curve or L type curve – even if they are similar fits of the historical data. As I have explained, in many cases witness Pous has selected unrealistic and unusual curve types for the assets studied. This provides another reason why his estimates are not reasonable for these accounts.

iv. Selection of Bands

Q. Please explain the term "band" as it is used for life analysis.

A. The term band generally refers to the range of years of historical data that are included when developing an original life table. The term "experience band" refers to the range of transaction years for data included in an original life table. The term "placement band" refers to the range of vintage years included in an original life table.

Q. How does the selection of bands impact the life analysis process?

A. Typically for a depreciation study multiple bands will be analyzed and considered for each account. For example, for most accounts I have analyzed the "overall band," meaning a band with all years of data available, as well as more recent experience and placement bands (e.g., the most recent 20 or 30-year bands). The overall band incorporates the largest sample size because it incorporates all of the data available. It also typically incorporates the period of time closest to the life cycle of the assets studied. More recent bands can help to identify trends that may have changed over time, and if analyzed carefully they can provide insight about changes to the mortality characteristics of the property studied. However, they are also based on a smaller sample size and a shorter time period – often only a fraction of the average service life and a smaller fraction of the full life cycle of the property studied. For this reason shorter bands can overemphasize trends and overreact to short term, but non-recurring activity.

Q. Is there a difference between your approach and those of the intervenors?

A. Yes, at least for some accounts. For the three accounts for which FEA witness Andrews proposes adjustments, he has relied on the most recent 20-year experience band. Witness Pous likewise has also relied on or significantly emphasized more recent bands for some of his recommendations.

Q. Both have criticized you for failing to recognize trends towards longer service lives.[63] Are their criticisms valid?

A. No. As noted previously, I have increased the average service lives for ten of the fifteen accounts challenged by either witness Andrews or witness Pous. These include the accounts for which either witness Andrews or witness Pous claim I have not recognized trends. Thus, I have indeed recognized trends towards longer service lives. What I have not done is overemphasize short term changes that can be the result of the natural variability in annual activity.

Q. Do you agree with witness Andrews and witness Pous's approach to rely on more recent bands?

A. No. Both have relied on bands that contain too short a period of experience to be relied on for the final survivor curve estimate. For example, witness Andrews relies on a 20-year experience band, with activity that has occurred from 1995 through 2014. Twenty years is, in my judgment, too short a period of time to rely on when a longer historical record is available. The accounts

[63] See for example page 105, lines 19-21 of the direct testimony of Jacob Pous and page 13, lines 20-21 of the direct testimony of Brian Andrews.

for which witness Andrews has proposed an adjustment to the recommended service life have average service lives of 40 or more years, which means that a portion of the accounts will remain in service for 70 or 80 years, if not longer. A 20-year period therefore is only a fraction of this overall life cycle, and as a result is not statistically robust enough of a period of time to be relied on for the final estimate. Further, a more recent band only observes a portion of the life cycle of different ranges of vintages. That is, for each vintage of property the retirements experienced in a 20-year band only range for 20 years. A 20-year band therefore does not include a full life cycle – or even close to a full life cycle – of any vintage.

Q. Are there any reasons to expect that using only the most recent 20 years of activity may not be appropriate for FPL?

A. Yes. In real-world utility operations the level of capital spending (and therefore the level of retirements) for a single group of assets can vary over time, increasing in some years and decreasing in others. This is the result of changing capital budget cycles (e.g., the Company may focus capital dollars on new power plants for some years and then target transmission or distribution lines in other years), as well as external factors such as the overall state of the economy. As noted above, witness Andrews, and to a lesser extent witness Pous, have both relied on the most recent 20-year experience band, which includes transactions recorded from 1995 through 2014. However, this period of time includes unusual events that are unlikely to reoccur – at least with the same frequency as has happened in the last 20 years.

One is the recession in the late 2000s. While recessions will occur periodically over the full life cycle of utility property, it is unlikely that there will be many recurrences of a recession as severe as the recent "Great Recession." Florida was especially hard hit by this recession. Another occurrence that may not be recurring was in the late 1990s. As the Company's data shows, there was a pronounced decline in both additions and retirements for many accounts.

Q. What is the impact of these events on the most recent 20-year experience band?

A. An event such as the Great Recession is unlikely to occur again with much frequency, and at a minimum will be less frequent than in the last 20 years. By relying on a 20-year band, witness Andrews and witness Pous have given undue consideration to an event such as this.

Q. Please provide an example to demonstrate the impact on the most recent 20-year experience band?

A. As a part of the depreciation study, it is common to review the historical levels of additions and retirements. In my workpapers, I have provided a review of this information.[64] For many of FPL's accounts, there is a drop in the overall level of both additions and retirements in the mid to late 1990s.

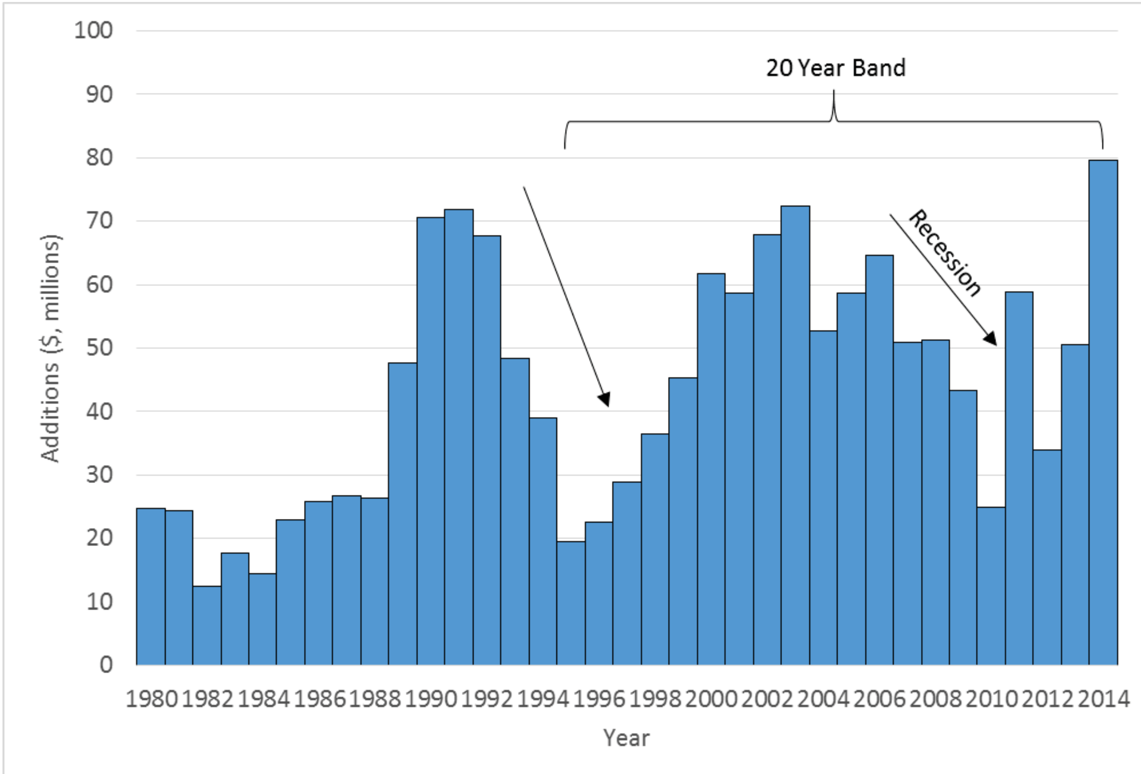
[64] See the response to OPC's First Request for Production of Documents No. 2.

Similarly, in the late 2000s there is also a drop in both types of activity, corresponding with the Great Recession.

Figure 11 below provides a graph of annual additions for Account 362 Station Equipment. This is one of the accounts for which witness Andrews relies on a 20-year experience band, ranging from 1995 through 2014. One item to note from this figure is that activity varies over time. This is consistent with my comments above regarding capital spending cycles.

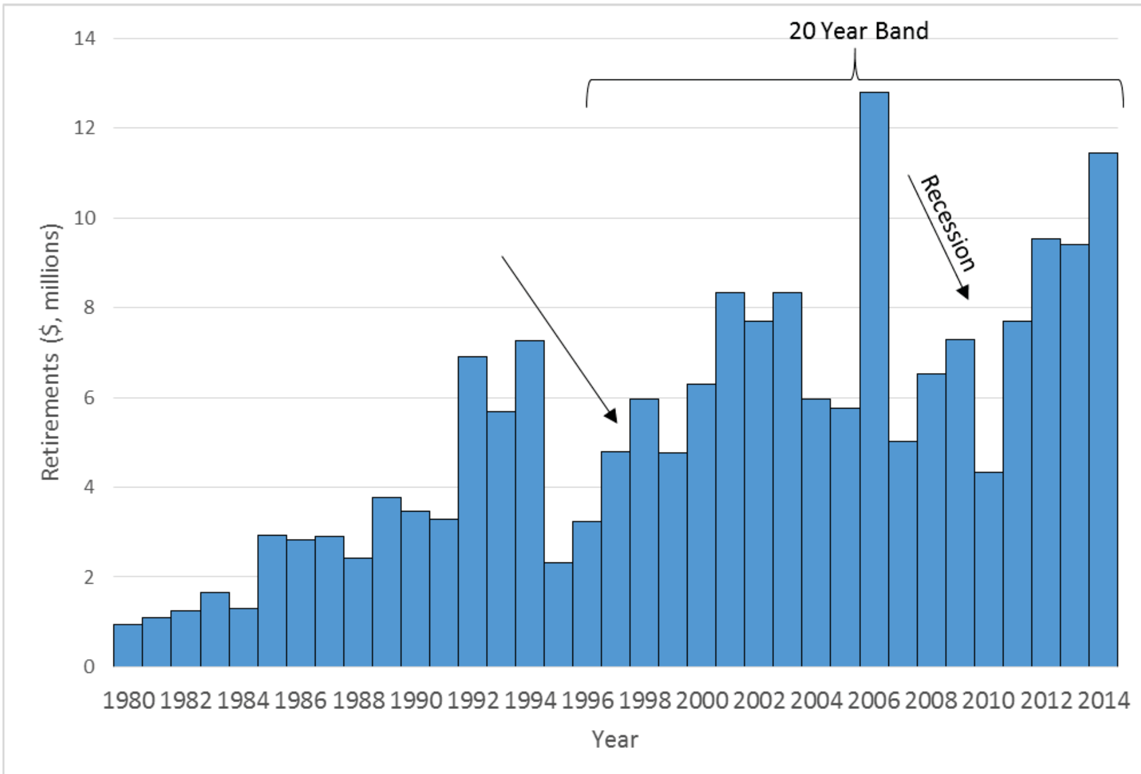
Additionally, as the figure illustrates, there is a noticeable decline in additions in both the mid-1990s and in the late 2000s. The figure also shows the range of years included in the most recent 20-year experience bands. This shows that the most recent 20-year band, which includes data from 1995 through 2014, includes two periods that have lower levels of activity. This confirms my statement above that the most recent 20-year band over-emphasizes what are likely to be unusual events.

Figure 11: Annual Additions for Account 362 Station Equipment



A similar pattern of activity can be seen in the retirements for this account, which are presented in Figure 12 below.

Figure 12: Annual Retirements for Account 362 Station Equipment



Q. Do other accounts exhibit a similar pattern?

A. Yes. For each of the accounts for which witness Andrews has recommended an adjustment to the service life there is a similar pattern of additions and retirements.

Q. Do you have any other comments regarding the selection of bands?

A. Yes. The overall approach to the selection of bands should be applied consistently. That is, one should not select shorter bands only when they increase the average service life, but not use shorter bands when they would support a shorter service life. I have used a consistent approach. For the reasons set forth above, I have generally relied on the overall band unless there are specific reasons to deviate from the longer range of experience.

OPC witness Pous, in contrast, appears to use shorter bands when they support a longer service life, but gives much less emphasis to shorter bands when they would support a shorter service life. For example, for Account 367.7, which contains direct buried underground conductors, more recent placement bands indicate a shorter service life than the overall band. Yet witness Pous has proposed to increase the average service life by 10 years for this account. Additionally, for Account 367.6, which contains underground conductors that are not direct buried, witness Pous proposes a longer service life than indicated by the data, which he justifies by arguing that newer cable will have a longer service life. Yet his expectation is not supported by the data – more recent placement bands indicate similar service lives as those indicated by the overall band.

Q. Witness Andrews cites two depreciation texts in support of his decision to rely on the most recent 20-year bands. Please address his discussion.

A. I should first note that one of the quotes, from NARUC, is more supportive of my approach than that of witness Andrews. The NARUC Manual states:

> In general, historical data used to forecast future retirements should not contain events that are either anomalous or unlikely to recur.[65]

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[65] NARUC Manual, page 112.

As noted above, witness Andrews's approach gives too much emphasis to events such as the Great Recession and the decline of activity in the 1990s, which are not likely to recur (at least not with the same frequency as in the most recent 20-year experience band).

Additionally, a closer look at the passage cited by witness Andrews from Wolf and Fitch reveals that the authors' criticism of the overall band is more focused on placement bands, not experience bands. Although he has relied on a shorter experience band, Witness Andrews has relied on the overall placement band for each account. Specifically, the second portion of the section of Wolf and Fitch cited by witness Andrews reads:

> Each individual retirement ratio is based on a different group of property. The first retirement ratio will include observations from all vintages and the second retirement ratio from all but the most recent. This pattern continues until the final point is based on observations from only one vintage. It is difficult to figure out the exact meaning of the overall band, and, in spite of the fact it does include all the data points, it should be given limited significance.[66]

Thus, a more detailed reading of this passage reveals that the discussion of the overall band is related to vintages, not transaction years. I have explained

[66] Frank Wolf and Chester Fitch, *Depreciation Systems*, 1994, pages 186-187. (Emphasis added)

above why I believe the overall band is in fact appropriate to use for FPL. However, because placement bands, not experience bands, are associated with vintages, this passage from *Depreciation Systems* is in fact not supportive of witness Andrews's approach.

Q. Please explain.

A. Again, witness Andrews's approach is to use the overall placement band, but only a 20-year experience band. His approach therefore actually compounds the criticism of the overall band made in *Depreciation Systems*. Because the 20-year experience band only contains 20 years of history for each vintage, it incorporates only a fraction of the life cycle for each vintage – and incorporates the full history of no vintages except those installed within the past 20 years. As a result, the most recent 20-year experience band is even more "difficult to interpret" than the overall band, because it is effectively pieced together from relatively small portions of the experience for each vintage.

C. RELEVANT CONSIDERATIONS IN LIFE ESTIMATION

Q. Should the service life estimates be based only on the statistical analysis?

A. No. The process of estimating service life should also take into consideration other factors regarding the outlook of the Company's assets. These factors include specific information based on Company plans and the operation of the electric system, as well as general knowledge about the property studied. Both witness Pous and I agree with this concept. However, there are important differences in his approach. As I explain in the account specific discussion provided in Exhibit NWA-3, his approach in this case is to typically focus only on factors that he argues will increase the service life, while giving little to no consideration to factors that would have the opposite effect. Additionally, many of the statements he makes in support of his proposals are in fact incorrect.

Q. Please provide an example as to how information external from the statistical analysis should be interpreted.

A. One example that witness Pous discusses for multiple accounts is the Company's pole inspection program, which has been in place for about a decade. For the pole inspection program, each pole on FPL's system is inspected and tested on a periodic basis. If a pole fails (e.g., has deteriorated to the point that it does not have adequate strength), one of two main options are available. If the deterioration is not too pronounced, then there may be options to treat the pole or add structural support to the pole and it will not need to be retired. However, if the deterioration is more significant, particularly for older poles, the pole will be retired.

Witness Pous's opinion is that the pole inspection program will simply increase the service lives of the Company's poles. This is a one-sided approach to interpreting the impact of the pole inspection program, as he emphasizes the portion of the program that has the effect of increasing the life of poles but de-emphasizes the portion that would have the effect of decreasing the life of poles.

Q. When both factors are considered, what do you expect to be the impact of the pole inspection program over time?

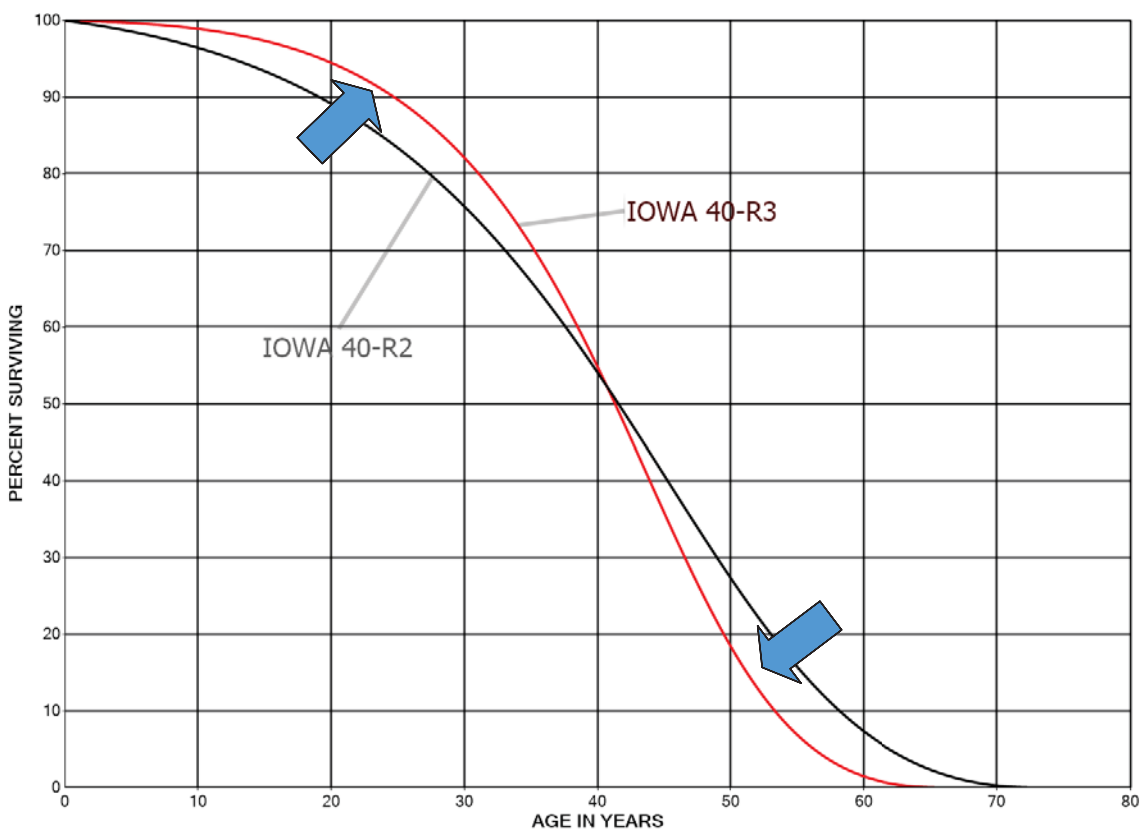
A. I expect that the pole inspection program will both reduce retirements at early ages while increasing retirements of assets at older ages compared to a situation in which the program did not exist. Prior to a pole inspection program, older deteriorated poles would typically not be retired until they failed because poles were not inspected on as regular of a basis. As a result, some poles may have remained in service for a long time. With the inspection program, these poles will be identified earlier and replaced proactively. This has obvious benefits for reliability, but does not necessarily result in an increase in life as witness Pous suggests. Instead, it will decrease the life for many poles. For these reasons, the actual impact of the pole inspection program may be that it will impact the mode of the curve more than the average service life.

Q. Please explain further what you mean by impacting the mode of the survivor curve?

A. The term "mode" is used to describe the general dispersion pattern of the survivor curve. Effectively, the mode describes the steepness of a survivor curve. For a curve with a lower mode, retirements are more spread out – fewer occur relatively close to the average service life. This produces a fairly flat survivor curve. For a higher mode curve, a higher percentage of retirements will occur relatively close to the average service life. This produces a steeper survivor curve.

As an example, two survivor curves are shown below, both with a 40-year average service life. The curve labeled 40-R2 has a lower mode than the curve labeled 40-R3. For the lower mode curve there are a higher rate of retirements earlier in the assets' lives (as can be seen by the 40-R2 being below the 40-R3 through about age 40), but a lower rate later in the assets' lives. Further, older assets remain in service a bit longer for the 40-R2 than the 40-R3, as the 40-R2 curve declines to 0% surviving at a later age.

Figure 13: Comparison of Higher Mode R3 Curve to Lower Mode R2 Curve with Average Service Life of 40 Years



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Q. Please explain further how you expect the pole inspection to impact the mode of the survivor curve.

A. The two arrows shown in Figure 13 above show how the pole inspection program should be expected to impact the lives of FPL's poles. The top arrow illustrates the impact of factors such as pole treatment, which can have the effect of reducing the rate of retirements for earlier ages. The bottom arrow represents the impact of the inspection program on older assets. Older assets are more likely to be retired if they fail the inspection, both because older assets are more likely to be deteriorated and because it is less economical to repair an older pole that is close to the end of its useful life. Thus, the overall impact of the inspection program is likely to have the impact of increasing the mode of the survivor curve.

Q. Why do you emphasize here the impact on the mode of the curve?

A. For both transmission poles and concrete distribution poles, witness Pous has proposed the opposite of what one should expect for the result of the pole inspection program. His recommendation is to decrease the mode of the curve for both of these accounts. I note that he did increase the mode for wood distribution poles, but as I will explain in Exhibit NWA-3 he has improperly fit his curve to the historical data. A better fit actually produces a very similar average service life to my estimate (and a shorter remaining life).

Q. Does storm hardening also have an impact on the life of poles?

A. Yes. In addition to the fairly obvious fact that storm hardening (which is expected to continue for some time) increases the number of retirements of poles, storm hardening will also interact with the pole inspection program to impact the life of poles. The result is that the bottom arrow on the graph – the impact of increased retirements of older assets – is likely to be more pronounced.

Q. Please explain.

A. As FPL constructs a stronger, more resilient system through its storm hardening program, one result is a lower tolerance for older, weaker poles. By this I mean that because the standard is now for a stronger pole than was the case prior to storm hardening, the result will be that older, weaker poles are more likely to be replaced now and in the future than was the case in the past. This factor will have the result of increasing the rate of retirements of older poles.

Q. Have you explained these concepts previously?

A. Yes. OPC asked discovery questions regarding the impact of both storm hardening and pole inspections on the service lives of poles. I have explained these concepts in the responses to these interrogatories.[67]

D. ACCOUNT SPECIFIC

Q. Do you also have specific responses to the estimates made by witness Pous and witness Andrews?

A. Yes. Exhibit NWA-3 provides a discussion of each account for which either OPC or FEA has proposed a different survivor curve estimate than what has

[67] See FPL's responses to OPC's Tenth Set of Interrogatories No. 253 and 256 provided in Exhibit NWA-5.

been recommended in the 2016 Depreciation Study. The discussion in Exhibit NWA-3 responds to specific assertions made by OPC or FEA and also includes graphical comparisons of recommended survivor curves. These discussions explain in more detail why FPL's proposed survivor curves are the most appropriate estimates for each account.

VII. MASS PROPERTY NET SALVAGE ESTIMATES

A. INTRODUCTION

Q. What is mass property net salvage?

A. Net salvage as used in depreciation is defined as gross salvage less cost of removal. When an asset is retired it may have scrap or reuse value, which is gross salvage. There is also a cost to retire the asset. For example, the retirement of a distribution pole typically requires a multiple person crew and heavy equipment to remove the pole from the ground and cut the pole for disposal. There may also be disposal costs for the pole. All of these costs associated with the retirement are cost of removal.

Most types of utility property typically experience negative net salvage, meaning that cost of removal exceeds gross salvage. This is true of many of FPL's assets. FPL's actual experience demonstrates that for many types of transmission and distribution assets there are significant costs to retire the assets and that these costs generally exceed any gross salvage value.

Q. How is net salvage estimated?

A. Net salvage is expressed as a percentage of the original cost retired. For example, if an account has a net salvage estimate of negative 50%, then a $1,000 asset would be expected to, on average, cost $500 to retire, net of any gross salvage. Similar to the service life estimates described in Section VI, net salvage estimates are based on a combination of statistical analysis of historical data as well as informed judgment that incorporates other factors.

Q. How is the statistical analysis performed?

A. The statistical analysis is performed by comparing historical cost of removal and gross salvage to historical retirements as recorded in a utility's property records. By analyzing both annual activity and longer and shorter term averages of the experienced net salvage expressed as a percent of retirements, these data provide a statistical basis for estimates of net salvage.

Q. In general, how do your net salvage estimates compare to the current, Commission-approved estimates?

A. For twelve mass property accounts I have recommended a more negative (or less positive) net salvage estimate. For fifteen accounts, I have recommended the same net salvage estimate as is currently approved. For five accounts, I have recommended a less negative net salvage estimate. In light of the trend to more negative net salvage for many accounts, my recommendations represent a balanced approach. Some estimates produce higher depreciation expense and some produce lower depreciation expense. Either way, my estimates are supported by the Company's actual historical data.

Q. Please summarize the net salvage estimates of each party.

A. The only intervenor witness who has challenged my net salvage estimates is OPC witness Pous. A summary of the currently approved net salvage estimates as well as my estimates and those of witness Pous are summarized in the table below. The table also summarizes the statistical analysis of the Company's historical data, and shows the overall average net salvage experienced by FPL for the full range of available data as well as the most recent 5-year average of net salvage experienced by FPL. That is, the table provides a comparison of the net salvage estimates to the Company's actual experience.

Table 2: Comparison of Approved, FPL and OPC Net Salvage Estimates with Historical Net Salvage Data

Account		Approved Estimate	FPL Estimate	OPC Estimate	1986-2014 Experience	Most Recent 5-Year Experience
353	Station Equipment	(2)	(2)	0	(1)	0
354	Towers and Fixtures	(15)	(25)	(15)	(50)	(69)
355	Poles and Fixtures	(50)	(50)	(40)	(55)	(45)
356	Overhead Conductors and Devices	(50)	(55)	(45)	(57)	(59)
362	Station Equipment	(10)	(10)	(5)	(10)	(8)
364.1	Poles, Towers and Fixtures - Wood	(60)	(100)	(60)	(116)	(179)
364.2	Poles, Towers and Fixtures - Concrete	(60)	(100)	(60)	(116)	(179)
365	Overhead Conductors and Devices	(60)	(80)	(60)	(76)	(108)
367.6	Underground Conductors and Devices – Duct System	0	(5)	0	(6)	(10)
369.1	Overhead Services	(85)	(125)	(85)	(133)	(104)
370	Meters	(30)	(30)	(20)	(20)	(25)
370.1	Meters – AMI	(30)	(30)	(20)	(38)	(38)
390	Structures and Improvements	(5)	(10)	10	(11)	(15)

Q. How do the currently approved net salvage estimates compare to the Company's actual experience?

A. As can be seen in the table above, for many accounts the currently approved estimates are much less negative than the Company's actual experience. For example, for Accounts 364.1 and 364.2 (wood and concrete poles, which were studied together for the net salvage analysis), the Company's actual experienced net salvage for the full range of data available was negative 116% net salvage. More recent experience has been even more negative, and the Company has experienced negative 179% net salvage in the last 5 years. However, the currently approved estimate for these accounts is only negative 60% - almost half the overall average and about a third of the Company's more recent experience. Thus, it should be quite clear that the Company's actual experience is supportive of a more negative net salvage estimate than the currently approved estimate.

Q. Is there more data available for the current study than was available when the current estimates were determined?

A. Yes. For the current study there are seven additional years of data available for the statistical net salvage analysis. For many accounts the additional data provides further support for the fact that more negative net salvage estimates are appropriate. That is, just based on the data alone the case for more negative net salvage estimates is stronger for the 2016 Depreciation Study than the 2009 Depreciation Study because more data is available.

Q. Please discuss how your estimates compare to the Company's data.

A. My estimates are generally consistent with the Company's historical data, and for some accounts are actually quite conservative when compared to the historical data. For example, for Accounts 364.1 and 364.2 I have estimated a negative 100% net salvage estimate. This is less negative than the overall average of negative 116% and much less negative than the more recent average of negative 176%. Further, for those accounts for which my estimates are different from the Company's data I have explained and supported the reasons why in Part XI of Exhibit NWA-1.

Q. How do witness Pous's estimates compare to the Company's historical data?

A. Out of the thirteen accounts for which witness Pous has recommended different net salvage estimates than mine, he has proposed less negative estimates than the currently approved estimates for seven. He has proposed to keep the approved net salvage estimates for the other six. He has not proposed a more negative net salvage estimate for a single one of these accounts, despite the fact that the data indicates more negative estimates for many accounts.

Indeed, for many accounts witness Pous's estimates are much less negative than the Company's actual experience. Further, his estimates often fail to recognize trends in the data or even move in the opposite direction of clearly established trends. For example, for Accounts 364.1 and 364.2, despite the data providing a clear indication of more negative net salvage, witness Pous has proposed no change to the currently approved estimate.

B. FPL'S HISTORICAL DATA

Q. In general, what are the reasons provided by witness Pous for proposing different estimates from those you have made and the fact that his estimates deviate significantly for the historical data?

A. While witness Pous devotes a number of pages to criticizing the methods and support for my estimates, a detailed review of his testimony reveals that he actually provides very little in terms of actual, supported evidence for his estimates. Thus, the most clear contrast between my estimates and his are that mine are supported by actual, FPL-specific data and widely accepted methods for estimating net salvage, whereas witness Pous's estimates are instead primarily supported by speculative justifications for ignoring the Company's actual experience.

Q. Please explain.

A. Once one gets past the general criticisms he makes – which I will explain are unfounded – a review of his discussions of the actual estimates for each account reveals that there is in fact little support for his decision to propose estimates that are often very different from what is actually indicated by the data. While he claims that his estimates are based "upon data, assumptions, and rationales that I develop and support in detail",[68] his estimates have very

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[68] Direct testimony of Jacob Pous, page 11, lines 18-19.

little support from the Company's data. Instead his actual support is typically the result of either cherry-picking individual years of activity that support less negative estimates while ignoring more meaningful overall trends, or simply ignoring the results of the statistical analysis altogether by offering a variety of rationalizations for disregarding FPL's actual experience. As I will show, his justifications are rarely supported by actual analysis and are often incorrect. Further, to the extent he has provided calculations or analyses that he purports to support his overall approach of ignoring the Company's data, a more detailed review of his arguments reveal that his analysis is often incorrect.

Q. Witness Pous criticizes your approach for what he refers to as relying on "mechanical averaging" or "simplistic averaging."[69] Please address these criticisms.

A. I should first make clear that witness Pous has mischaracterized what I have actually done. While the analysis of averages was appropriately considered in my estimates, contrary to witness Pous's implication there was much more involved in my net salvage estimates than "simplistic averaging." I have investigated the historical data, determined the causes and reasons for trends, met with knowledgeable FPL personnel to understand historical and future practices, and observed actual FPL property, including a pole replacement project. Thus, any assertion that I have only relied on mechanical averaging is simply incorrect.

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[69] See for example page 138, lines 6-9 and page 164, lines 16-17 of the direct testimony of Jacob Pous.

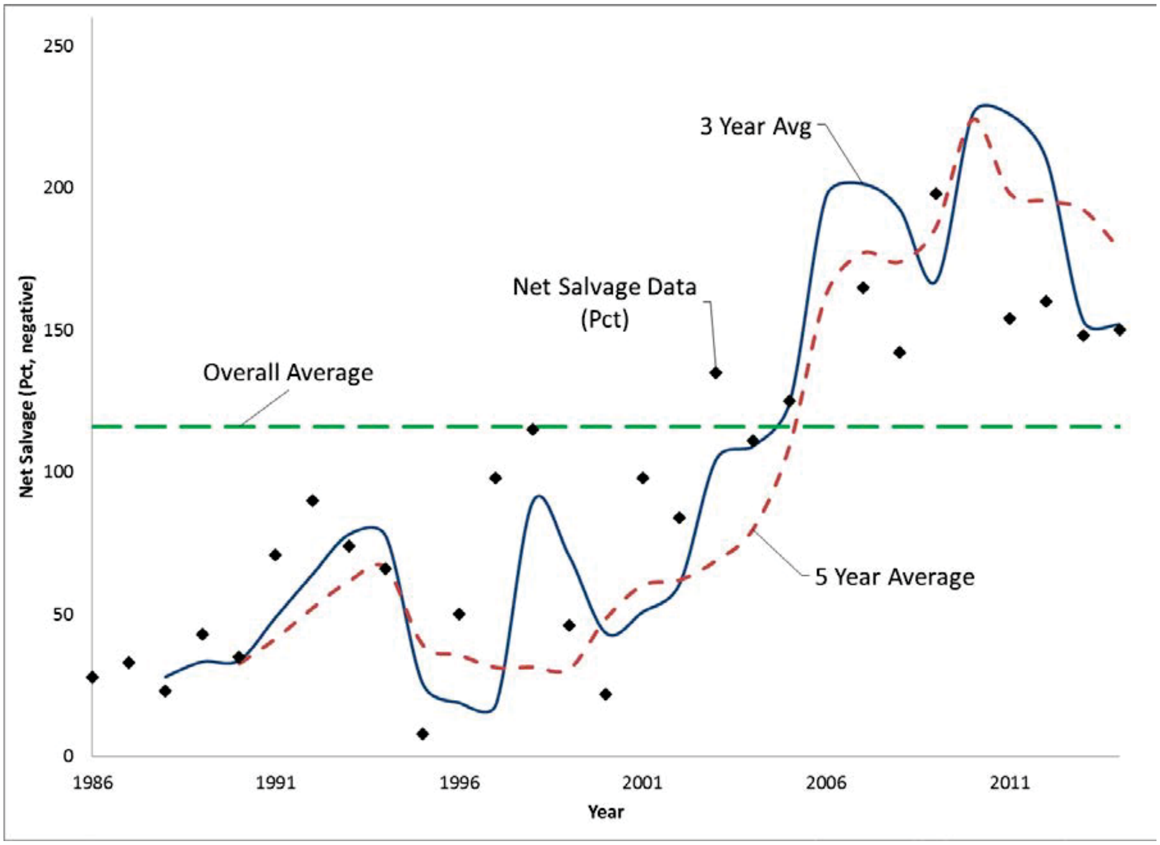
Moreover, while witness Pous disparages the use of averages for net salvage analyses, he is in fact disparaging what depreciation professionals widely consider to be the proper method of estimating net salvage. Further, much of witness Pous's analysis is instead to cherry-pick individual years of data, which he claims without any actual support to be more indicative of the future experience for a given account. For example, he may speculate – without actual support – that individual years may represent "economies of scale" or "emergency replacements," when in fact differences between years are just the result of timing differences or the natural variation between the work performed in different years.

Q. Why are averages of years of historical net salvage experience used instead of individual years?

A. Averages of years are used in the net salvage analysis because they tend to smooth fluctuations that naturally occur in the data. As an example, Figure 14 below provides a graph of the net salvage data for Accounts 364.1 and 364.2[70]. The black diamonds in the chart show the net salvage percentages that have occurred for each year in which the data is available. These tend to show an overall increasing trend, but are fairly volatile and vary from year to year. Further, because different levels of work are performed in each year, the dollar values from which these percentages are derived also vary from year to year.

[70] Please note that for the purposes of illustrating the net salvage data graphically, I have changed the sign of the net salvage for this and other charts. That is, negative net salvage percentages are shown as positive in these charts. The actual net salvage percentage would look exactly the same, except would be "upside down" when compared to the charts in my testimony.

Figure 14: Historical Net Salvage Data for Accounts 364.1 and 364.2 Poles Towers and Fixtures



Moving 3-year averages are shown in the blue line on the chart. These smooth the fluctuations in the individual years. However, there is still some degree of volatility in the 3-year averages, because 3 years is still a relatively short period of time when compared to the full range of data available (from 1986 through 2014).

The dashed red line shows moving 5-year averages of the same data. Although there is still some volatility in the 5-year averages, because they are based on longer time periods the 5-year averages provide a smoother trend in the data. The 5-year averages also make clear that there is a pronounced trend to more negative net salvage in the historical data over the past 20 years.

Finally, I have graphed the overall level of net salvage for this account, which is negative 116%. This is shown in the green dashed line in the chart. The overall average includes all of the data in the analysis and therefore provides the largest available sample size. However, it does not provide any indications of trends.

Further, I should note that witness Pous makes a variety of references to concepts such as the "mix of investment" reflected in the historical data.[71] The use of averages actually alleviates this concern. By averaging the experience that has occurred over almost three decades, the overall average net salvage incorporates a wide range of types of projects and mixes of investments.

Q. You indicated the term "sample size." How much activity is reflected in the Company's historical data for these accounts?

A. The historical data for this account includes $131 million in retirements that have occurred from 1986 through 2014. Given that these are the retirements of poles that are often decades old, the data incorporates the actual experience for a very large number of poles. For many of the accounts that are challenged by witness Pous, the data incorporates a similar, if not higher level

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[71] See for example page 175, lines 1-5 and page 176, lines 17-20 of the direct testimony of Jacob Pous.

of retirements. This provides a reason to be confident in the ability of the data to provide a meaningful basis for net salvage estimates. Indeed, FPL has much more historical data than many other utilities, due in part to the fact that FPL is a bigger company. For this reason, FPL's data should be considered more reliable than is the case with many other utilities.

Q. Do authoritative depreciation texts support the use of averages as opposed to the analysis of individual years?

A. Yes. The NARUC Manual explains that "it is common to look at data for bands of years," and these bands should be "broad enough so a fairly smooth trend can be detected." The NARUC Manual also notes that there can be timing differences in the historical data (i.e., cost of removal and retirements can be recorded in different calendar years), stating that "the impact of this timing mismatch can be largely negated by analyzing a band of years."[72] Wolf and Fitch's *Depreciation Systems* also explain that "statistics based on a single year are often erratic, making an underlying pattern difficult to detect" and that the process of using moving averages "smooths the pattern of the ratios."[73]

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[72] The NARUC Manual, page 159.
[73] *Depreciation Systems*, W.C. Fitch and Frank. K. Wolf, 1994, page 261.

Q. You have indicated that the Company's actual experience supports your estimates. Please provide an example of how the Company's data supports your estimate.

A. Consider again Accounts 364.1 and 364.2 (wood and concrete distribution poles). In Figure 14 above I provided a chart of the historical net salvage data.

Q. What does this chart demonstrate regarding FPL's actual experience?

A. The chart makes quite clear that the negative net salvage has trended towards a more negative level for many years. This can be seen clearly by the 3-year averages and 5-year averages, which show a consistent trend to more negative net salvage over the past 20 years.

Q. You have demonstrated a trend in the data towards more negative net salvage. Have you investigated the causes of this trend?

A. Yes, I have. I met multiple times with FPL representatives who are knowledgeable with the operations of the Company. The trend exhibited in the data is consistent with their experience, and they have consistently explained the reasons for increasing cost of removal.[74] Further, the experience for FPL is consistent with what I have seen for other utilities.

Q. Please compare FPL's actual experience as shown in Figure 14 with the net salvage estimates.

A. Yes. In Figure 15 below I have added to the chart the currently approved estimate of negative 60%, my estimate and witness Pous's estimate.

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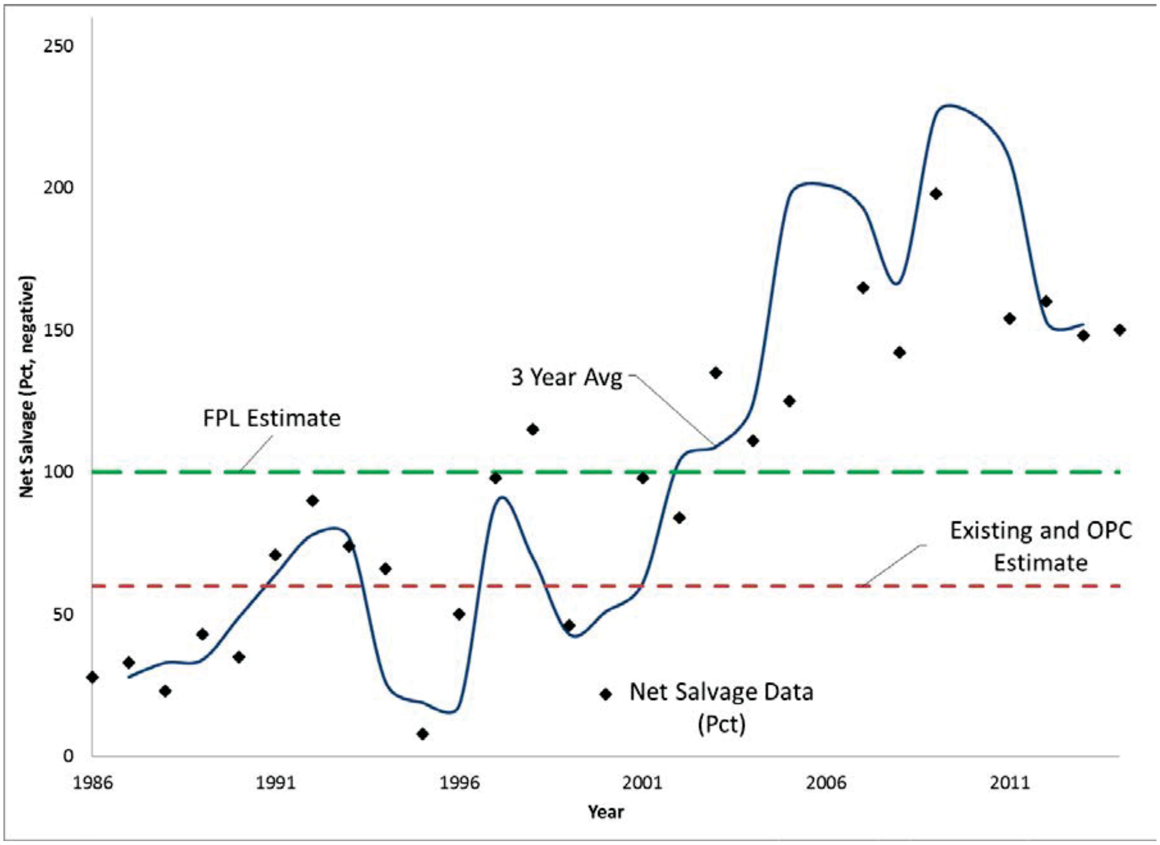
[74] The reasons for the trend of increasing removal costs is discussed in more detail in the next section.

Figure 15: Comparison of Existing, FPL Proposed and OPC Proposed Net Salvage Estimates with Historical Data for Accounts 364.1 and 364.2 Poles, Towers and Fixtures



Q. What can you conclude based on this data?

A. The data provides a clear indication that an estimate more negative than the currently approved negative 60% estimate is appropriate. Indeed, the 3-year moving averages have not been at the level of the currently approved negative 60% net salvage estimate since the early 2000s. I have recognized this trend, the causes of which have been explained and verified, by recommending a more negative net salvage estimate of negative 100%. However, this is still a conservative estimate in that it is less negative than the overall average of negative 116% and the even more negative more recent experience.

Q. What is witness Pous's response to the trend that can clearly be seen in the data?

A. His response for this account is to not change the estimate at all. Despite the clear trend in the data, witness Pous has elected to ignore it. While he provides a variety of rationalizations for his decision to completely ignore the data, his reasons do not stand up to scrutiny.

Q. Is there data available to test witness Pous's theories as to why the cost of removal should be lower than indicated by the data?

A. Yes. As I will explain, witness Pous made many of the same arguments to ignore the data 7 years ago for the 2009 Depreciation Study, when as an example he predicted that economies of scale would result in decreasing costs of removal. With seven more years of experience we now can test his justifications in the previous case. For example, FPL has undergone a large scale replacement project for this account for its storm hardening program – that is, precisely the kind of program that might produce economies of scale. The result was not a significant decrease in cost of removal. Instead, since the implementation of the storm hardening program cost of removal has remained high and net salvage has been much more negative than my conservative estimate. Given that we now have evidence that the predictions he made in the last case do not produce his expected results, there is little reason to believe witness Pous's justifications for ignoring the data in the instant case.

C. REASONS FOR INCREASING REMOVAL COSTS

Q. Have you investigated the reasons for increasing removal costs?

A. Yes. As I explained in both my Direct Testimony[75] and in Exhibit NWA-1,[76] there are a number of reasons why removal costs have increased. The Company has also performed additional analyses of the reasons for increasing costs. Additionally, as FPL witness Miranda explains, the Company has also made efforts to mitigate costs when possible.

Q. Why have removal costs increased?

A. There are multiple, and sometimes inter-related, reasons for increasing removal costs. Many of these reasons are outside of the Company's control. Environmental rules have increased removal costs. As an example, disposal requirements for treated wood poles have increased, increasing the cost to dispose of wood poles (and therefore increasing removal costs). Permitting requirements have become more restrictive and burdensome, which increases costs.[77] As an example, municipalities or counties may require work to only be performed at certain hours of the day, increasing project costs. Another example is the requirements for restoring the site after a pole is removed. Municipalities have required restoration of sidewalks or landscaping, which increases removal costs. Increasing requirements for traffic control has also added to costs.

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[75] See pages 38 through 40 of my direct testimony.
[76] See for example pages 728 and 729 of Exhibit NWA-1.
[77] Note that "permitting requirements" does not necessarily mean the cost of permits, but instead can mean the actual work requirements dictated by the permit.

In addition to these factors, labor costs in general tend to increase over time. The impact of labor costs can be compounded by various other work requirements – as work requirements have increased, both the number of hours required to complete a project and the hourly costs have increased as well.

Given all of these factors, the experience of FPL's operating and management personnel confirm what has been apparent in the Company's data for some time. However, I should again emphasize that FPL's data is quite clear that, for example, cost of removal has increased significantly for poles over the past 20 years. These various factors, confirmed by FPL personnel knowledgeable of the assets, add additional support and explanation for what we already know has occurred based on the data.

D. OPC'S REASONS FOR IGNORING THE DATA ARE INCORRECT

Q. You indicated that witness Pous provides a number of rationalizations or "analyses" that he claims to support effectively ignoring standard methods of estimating net salvage. Please discuss.

A. As discussed in the previous sections, witness Pous's estimate are not consistent with FPL's actual data. In order to attempt to support his estimates, he has instead provided a variety of rationalizations for ignoring the results of the statistical net salvage analysis. In general, his justifications often do not stand up to scrutiny.

Q. Please provide an example of a problem with the reasons witness Pous provides to ignore the data.

A. One example provided by witness Pous is related to hurricane retirements. For example, for Account 365 Overhead Conductors and Devices he effectively argues that the experience related to hurricane retirements provides a more reasonable indication of the future net salvage for this account than the Company's data related to normal transactions. He states:

> It defies credibility to recognize that the Company can retire and remove millions of linear feet of conductor under hurricane circumstances at a cost rate of 59%, but wants the Commission to believe that the a net 100% cost rate is "conservative" because it was obtained from a simplistic averaging of the overall historical database.[78]

In other words, witness Pous ignores the overall results of the statistical analysis based on the extensive data available for normal retirements and instead bases his proposal on the experience for hurricane related retirements.

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[78] Direct testimony of Jacob Pous, page 178, lines 5-8.

Q. Is witness Pous's assertion that "retirement activity under hurricane-related conditions would have to be some of the more costly activity that the utility could perform"[79] correct?

A. No. While the factors he lists to support his opinion that hurricane-related activity would be more costly may impact the overall cost to restore power after a hurricane, this does not mean that cost of removal will necessarily be higher. Indeed, it is logical to expect the opposite to be true. The effort involved to remove conductor after a hurricane would typically be less than under normal conditions. After a hurricane the wires are often already on the ground and do not need to be removed from poles. That is, the hurricane does most of the work removing the assets in this account. Further, for hurricane work there are often not the same traffic control costs or permitting requirements, which would offset many of the factors discussed by witness Pous.

Q. Given these considerations, would it be appropriate to ignore the data for normal retirements and instead rely on the experience for hurricane related retirements?

A. Of course not. In OPC witness Pous's analysis for this account he has relied on the experience for hurricane retirements and then applied this experience to the entire account – ignoring the extensive data available for normal retirements that are much more indicative to the level of cost of removal that will be incurred for the vast majority of the Company's overhead conductor.

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[79] Direct testimony of Jacob Pous, page 178, lines 1-2.

Witness Pous's approach is in no way an acceptable method for estimating net salvage, particularly when the Company has an extensive database of normal retirement activity.

Q. Please provide an example of an issue with the types of analyses witness Pous has performed in support of his recommendation to ignore the historical data.

A. An example is presented on page 156 of witness Pous's testimony, in which he performed an analysis that he claims implies that concrete transmission poles have lower cost of removal than wood transmission poles. Witness Pous did not actually provide this analysis in his testimony or his workpapers, but did eventually provide the details behind his analysis in discovery.[80] As I will explain in the more detailed discussion for this account, a more detailed review of his analysis reveals that the data supports the opposite conclusion he has made. Concrete poles have historically had a higher – not lower – cost of removal percentage than wood poles, as can be seen in Table 3 below.

Table 3: Historical Cost of Removal Percentage for Account 355 Transmission Poles by Pole Type

		Cost of Removal	
Type	**Retirements**	**Amount**	**Pct.**
Wood	9,133,688	9,332,312	102%
Concrete	7,574,259	10,285,176	136%

[80] See OPC's Response to FPL's Second Set of Interrogatories No. 40.

Q. Does witness Pous also use comparisons to the estimates for other utilities to support ignoring the historical data?

A. Yes. For example he states:

> Mr. Allis makes no meaningful attempt to explain why the historical values relied upon sometimes produce negative net salvage values that are the most negative or among the most negative in the industry.[81]

This comment is incorrect on multiple levels. First, and again, I have investigated the data in a meaningful manner. However, witness Pous's premise that FPL's cost of removal is "unusually high" is incorrect. I have discussed in Section III.B reasons that his comparisons of net salvage estimates to those of many other utilities are inappropriate. I should again point out that witness Pous has actually recommended net salvage estimates that are as or more negative than mine in other jurisdictions. For example, witness Pous devotes a large portion of his discussions to Accounts 364.1, 364.2 and Account 365. I have demonstrated that FPL's data supports my estimate for Accounts 364.1 and 364.2, and the same is true of Account 365. I have estimated negative 100% for Accounts 364.1 and 364.2 and negative 80% for Account 365. In recent cases in California for SCE and PG&E, witness Pous proposed net salvage estimates that were similar or more negative estimates than mine. For Account 364 (which were not separated by pole type for either SCE or PG&E), witness Pous recommended an estimate of negative 132% for SCE and negative 100% for PG&E. For Account 365

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[81] Direct testimony of Jacob Pous, page 135, lines 16-18.

he recommended estimates of negative 85% for SCE and negative 110% for PG&E.

Thus, because his estimates for more comparable utilities were as negative as or more negative than my estimates for FPL for these accounts, witness Pous should recognize that the estimates for FPL are not "unusually high."

Q. Witness Pous also presents various discussions regarding the dollar impact of your proposal. Please address these criticisms.

A. Witness Pous presents various calculations of the dollar level of net salvage that result from my estimates. For example, for Account 365 Overhead Conductors and Devices he states on page 132 of his direct testimony that "the Company's proposed net salvage figure would result in approximately $1.8 billion of depreciation expense over the life of the investment above the recovery of the original $2.2 billion investment."

This and similar statements made elsewhere by witness Pous are what I would refer to as "misleading through large numbers." They are particularly misleading because, as an example, for the same account witness Pous has proposed a net salvage estimate that corresponds to well over $1 billion over the life of the investment.

Q. Please explain this concept further.

A. FPL is a very large company, and owns a large number of assets. It will therefore cost a lot of money to remove these assets. For example, the

Company has a plant balance of almost $1.8 billion for distribution poles (wood and concrete).[82] It should be expected that it will cost a significant amount to remove these assets over the next 100 years (which is roughly the amount of time my estimates forecast the last of these poles to be retired).

Further, for many of the numbers witness Pous cites he compares the net salvage estimates I have made to what would result from zero net salvage. This is a completely irrelevant comparison – no one estimates zero net salvage, including witness Pous. Indeed, his net salvage estimates predict approximately $5 billion in net salvage costs for transmission and distribution plant accounts.

Finally, FPL's data makes clear that the Company will incur significant costs to retire its assets. For the period of available data (from 1986 through 2014), the Company has expended over $880 million to remove transmission and distribution assets. Given that in the future the Company will have to retire many more assets than it has over the last 29 years, and that these assets will cost more to remove over the next 100 years than they did in the past 29 years, it is perfectly reasonable to expect that FPL will experience billions of dollars in net salvage over the remaining lives of its assets.

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[82] FPL's Second Notice of Identified Adjustment, Appendix 2.

E. CONSIDERATION OF ECONOMIES OF SCALE IN NET SALVAGE ANALYSIS

Q. What is the concept of economies of scale?

A. Economies of scale is a concept by which an increase in production (or an increase in the amount of activity) will result in a decreasing cost on a per unit basis. For example, when the Company replaced all of its existing meters with AMI meters, there were economies of scale in that costs such as travel time were reduced on a per unit basis because every meter on a street could be replaced at the same time. Similarly, if FPL were to replace every pole on a street, the per-unit cost might be cheaper than if only a handful of poles were replaced.

Q. Have you considered this concept in your net salvage analysis?

A. Yes. I have also recognized that witness Pous has significantly overstated the impact of this concept.

Q. What argument does witness Pous make regarding the concept of economies of scale?

A. Witness Pous makes the same argument he has made in many jurisdictions for many years that economies of scale will dramatically reduce the cost of removal for many accounts. For example, for transmission poles he speculates that because FPL will retire more poles in the future then "this increase in annual retirements must by necessity reflect economies of scale to be gained in the future when larger numbers of poles are retired in close proximity to each other compared to the removal of one or a few poles at a time as is more realistically reflected in the historical data."[83]

Q. Is witness Pous's argument regarding economies of scale reasonable?

A. No. Instead he significantly overstates any impact that would occur due to economies of scale. It is highly unlikely that for most of its assets FPL will have a program similar to its meter replacement program, in which significant economies would be realized. Just because more retirements will occur in the future does not mean that there will be economies of scale. For example, retiring six transformers at six different substations rather than two transformers at two substations will not result in any economies of scale. Indeed, the amount of retirements has increased over time and net salvage for many accounts has trended more negative – the opposite of what witness Pous would predict.

Further, as mentioned above, witness Pous has made similar arguments about economies of scale for many years. In fact, he made essentially the same argument in FPL's last depreciation case.[84] In the time since that depreciation study, we now have actual data to test witness Pous's hypothesis. The actual data since the 2009 Depreciation Study does not support what witness Pous claims.

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[83] Direct testimony of Jacob Pous, page 167, line 22, to page 168, line 2.

[84] See pages 146 and 147 of the direct testimony of Jacob Pous in Docket No. 090130-EI.

Q. Has FPL implemented any programs since the last case that would result in economies of scale?

A. Yes. FPL has implemented a large scale storm hardening program, as the Commission is well aware. For this program, FPL has replaced a large number of transmission and distribution poles. Further, these projects have typically involved replacing most, if not all, poles along a line. Thus, any potential economies of scale have been achieved with the storm hardening program. This therefore provides actual data to test witness Pous's theory.

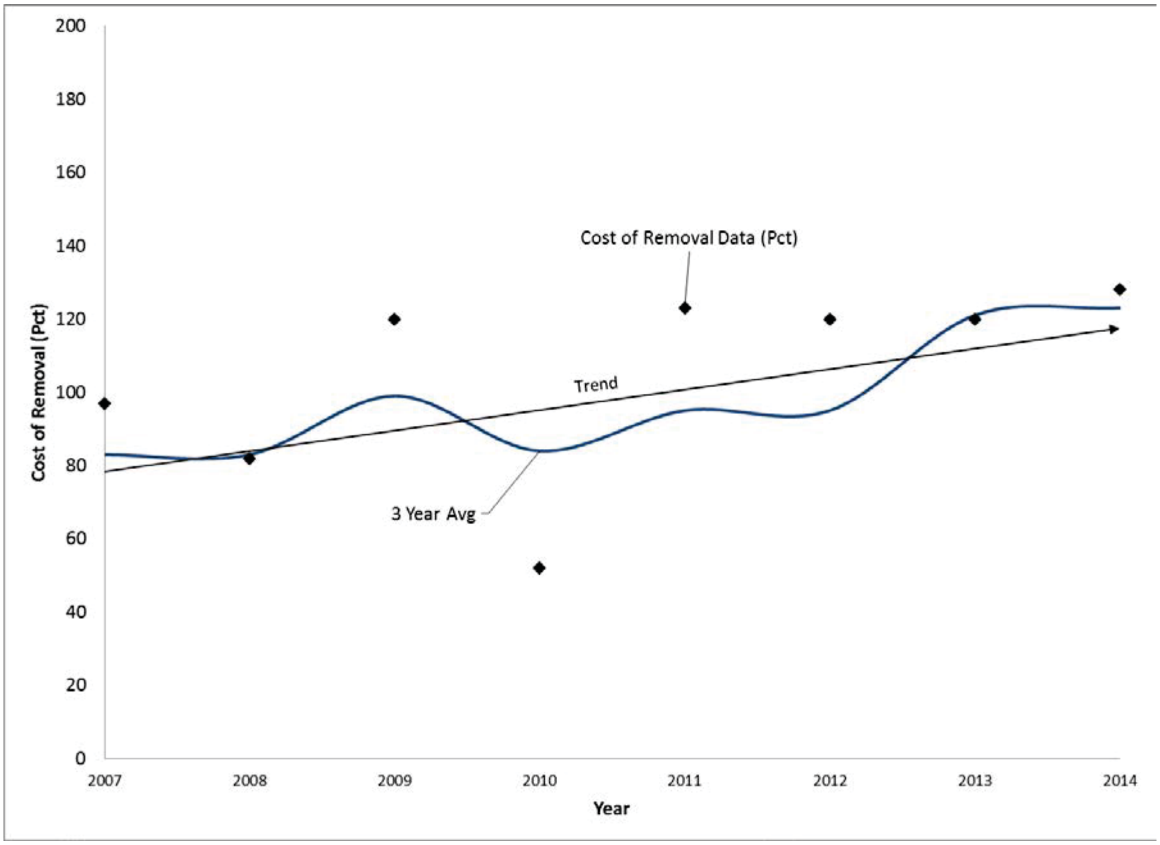
Q. Has cost of removal declined significantly as witness Pous predicted in 2009?

A. No. For example, for Account 355 (transmission poles), cost of removal percentages have increased. Thus, there has not been a dramatic decline in cost of removal on either a total or a per unit basis as witness Pous has predicted.

Q. Please explain.

A. For example, as noted above witness Pous discusses economies of scale for transmission poles. I have graphed the annual and 3-year average cost of removal percentages from 2007 through 2014 for Account 355 (transmission poles). The data shows the opposite of what witness Pous has predicted. Cost of removal has increased, not decreased.

Figure 16: Cost of Removal for Account 355 Poles and Fixtures Subsequent to Implementation of Storm Hardening Program



Similarly, previously in Figure 14 I showed the net salvage data for distribution poles. Subsequent to the storm hardening program, net salvage has remained much more negative than the overall average and much more negative than my estimate. Witness Pous's predictions of dramatic reductions in removal costs due to economies of scale have therefore failed to materialize.

Q. Are there other factors related to storm hardening work that have tended to offset economies of scale?

A. Yes. For example, the increase in the volume of work has impacted labor costs, in particular for contractors. These cost increases have offsets gains that might have occurred from economies of scale. Additionally, work requirements can be more significant for large-scale projects than smaller projects, which also offsets any gains from economies of scale. For example, requirements for a project along a major road that takes many weeks or months to complete will often have stricter requirements than a project to replace only a few poles that may only take a few days. Municipalities have a higher tolerance for a lane of traffic being closed for a day or two, but will have less tolerance for a lane of traffic being closed for a month. Thus, the requirements for a larger project can include higher traffic control costs and are also more likely to require work to be done at off-peak hours. Both increase costs.

Q. What can you conclude regarding witness Pous's arguments regarding economies of scale?

A. Witness Pous has used this argument to effectively ignore the results of the statistical analysis of FPL's historical data. As I have explained, and as FPL's actual experience demonstrates, the impact of witness Pous's concept of economies of scale is exaggerated. Instead, the Company's data provides a reasonable basis for estimating future net salvage.

F. WITNESS POUS'S FALSE ALLEGATIONS OF MANIPULATING THE DATA

Q. What does witness Pous claim regarding adjustments to the historical data?

A. Witness Pous makes a false allegation that I have "manipulated" the historical data. What I have actually done is to review the Company's historical data and remove transactions that are abnormal or non-recurring. This is a common and appropriate practice for depreciation studies. It is also the same practice that was used in the previous depreciation study and was accepted by the Commission as appropriate. It would be inappropriate to include the transactions that have been excluded because they would skew the analysis and result in incorrect net salvage estimates.

Q. What types of transactions have been excluded?

A. Consistent with prior, Commission-approved practices for FPL I have removed reimbursed retirements that are not expected to recur. I have also removed hurricane retirements, which are relatively rare events and for which FPL has a separate recovery mechanism. These are the two primary types of transactions that witness Pous incorrectly argues to be "manipulation."

I have also removed other abnormal events that are not expected to recur. Examples include early failures of transformers, nuclear uprate retirements, and sales of buildings prior to the end of their useful life. I have also excluded final retirements of power plants from the analyses of interim retirements.

Q. Have you used a consistent approach for both the service life and net salvage analysis?

A. Yes. For example, the reimbursed retirements and hurricane retirements that were excluded were removed from both the service life and net salvage analyses.

Q. Has witness Pous used a consistent approach?

A. No. He adjusts the net salvage data for these non-recurring transactions in order to support less negative net salvage and therefore lower depreciation expense. But he does not do the same for life analysis, which would result in shorter service lives and therefore higher depreciation expense.

Q. You indicated that the Commission had previously approved your approach to adjusting the data for these types of transactions. Please explain.

A. Witness Pous made very similar arguments in Docket No. 090130-EI, which the Commission correctly did not consider persuasive. Specifically the Commission stated:

> In our opinion, it is reasonable to remove data related to nonrecurring events, such as hurricane effects and nonrecurring reimbursed retirements, from the analysis because the data can skew the results of the analysis. At the same time, we feel it is reasonable to include recurring data.[85]

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[85] Order No. PSC-10-0153-FOF-EI, page 60.

The Commission further affirmed they agreed with FPL's approach to these types of transactions, later stating:

> As discussed above, we believe that FPL's approach with regard to reimbursed retirements and the effects of hurricanes is reasonable.[86]

And again:

> We believe that FPL's removal of nonrecurring reimbursed retirements and hurricane data is appropriate; otherwise, this data might skew the results.[87]

There are similar statements throughout the order.[88] It should be quite clear that the Commission agreed with FPL's approach and did not find witness Pous's arguments convincing.

Q. Have you used the same approach for these transactions as was used in the 2009 Depreciation Study?

A. Yes.

Q. Has witness Pous provided any new arguments that would suggest this approach is no longer appropriate?

A. No.

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[86] Order No. PSC-10-0153-FOF-EI, page 64.
[87] Ibid.
[88] See for example pages 65, 67, 68 and 69 of Order No. PSC-10-0153-FOF-EI.

Q. Much of witness Pous's criticism is related to reimbursed retirements. Is your approach consistent with authoritative depreciation texts?

A. Yes. On page 31 of the NARUC Manual, in the section titled "Depreciation Study Data" NARUC states:

> A reimbursement is a retirement of property for which the company is compensated at the time of retirement through insurance because of the occurrence of a covered incident, or by public authority, customer, or other party as a result of negotiations wherein the property will be removed or relocated for the convenience of the entity desiring the retirement. In the case of insured losses, the payment received may be different from the original cost of the equipment. Thus, treating the reimbursement as normal gross salvage data in studies may give results that are not typical of the account as a whole because the insurance payment is not a characteristic of the account in general. Therefore, such retirements and the corresponding salvage should either both be included or excluded from the depreciation study. The accounting for removals should be analyzed to identify the apportionment of monies received among an offset to new construction, gross salvage, and cost of removal.

The removal of reimbursed amounts from the historical service life and net salvage database is also consistent with *Depreciation Systems*. For example, on pages 16 and 17 of Wolf and Fitch's Depreciation Systems, in the Chapter on "Data" the authors explain reimbursed retirements:

> Reimbursed retirement – code 1. A reimbursed retirement is one for which the company is fully compensated at the time of retirement, usually because the retirement occurred earlier than normal as the result of an unusual event. Compensation may be from insurance, from the party who damaged the utility by causing the retirement, or from an individual or public authority who desired or required the relocation or abandonment of the retired property. Usually reimbursed retirements should not be included in analysis to estimate the life and salvage of property whose original investment is recovered through depreciation accruals.

Q. Can you explain how reimbursed retirements would skew the net salvage data?

A. Yes. Consider for example in witness Pous's discussion of reimbursed retirements, in which he states:

> Mr. Allis excluded $86.4 million of reimbursed retirements and $70 million of positive net salvage, which corresponds to an 81% level of positive net salvage.[89]

Witness Pous clarified in discovery that the numbers cited above were incorrect, and the historical reimbursed retirements actually experienced

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[89] Direct testimony of Jacob Pous, page 144, lines 12-13.

positive net salvage of 90%.[90] A level of 90% positive net salvage would mean that when FPL retires its assets, it would receive from a third party 90% of the original cost of these assets. As I would expect any experienced analyst to recognize, there is no way that FPL will be routinely paid by a third party for 90% of the cost of its assets. To the extent there will be reimbursements in the future they will only be a tiny fraction of the actual costs FPL will incur to retire its assets.

FPL has approximately $1.8 billion of distribution poles. If the 90% positive salvage were at all a reasonable predictor of the future, this would mean FPL would receive more than to $1.6 billion in payments from a third party to remove its poles. Quite clearly, FPL will not recover this amount from third parties to remove its poles. To the contrary, FPL will not be compensated at all for the removal of the vast majority of its poles. Indeed, as witness Pous notes, the total amount of salvage for reimbursed retirements removed from the database is $90 million[91] – for all accounts. This is only about 6% of the $1.6 billion implied by a 90% positive salvage amount only for only a single account. Further, the $90 million amount is the total in salvage for reimbursed retirements for the past 29 years, and as the Commission noted includes large projects such as the Metrorail line that are obviously non-recurring.

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[90] See OPC's response to FPL's Sixth Set of Interrogatories No. 59.
[91] Witness Pous clarified that the $70 million in the quote above should actually be $90 million.

Thus, it should be quite clear that reimbursed retirements are not likely to recur, at least not to anywhere near the frequency as they are represented in the historical activity. As a result, their inclusion would heavily skew the results of the net salvage analysis and would be inappropriate.

Q. Witness Pous also criticizes the Company's accounting for reimbursed retirements. Is his discussion accurate?

A. No. I should first note that his statement that the Company contends that it should categorize "amounts received from third parties" as "a contribution in aid of construction"[92] is incorrect. The Company has historically recorded a portion of amounts received from third parties to salvage, as evidenced by the mere fact that there is a disagreement related to the exclusion of many of these transactions from the net salvage data.

Additionally, it is both logical and consistent with the Uniform System of Accounts, the portion of the NARUC Manual cited above, and with the NARUC interpretation cited by witness Pous on page 145 of his testimony that if money received from a third party is related to the construction of a new asset then it should be recorded as a contribution in aid of construction and be recorded as an offset of the addition of that new asset.

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[92] Direct testimony of Jacob Pous, page 144, line 21 to page 143, line 3.

G. ACCOUNT SPECIFIC

Q. Do you also have specific responses to the estimates made by witness Pous?

A. Yes. Similar to for service lives, I have provided a discussion of each account for which OPC has proposed a different net salvage estimate than what has been recommended in the 2016 Depreciation Study. This discussion is provided in Exhibit NWA-4 and explains in more detail why FPL's proposed net salvage estimates are the most appropriate estimates for each account.

VIII. THEORETICAL RESERVE IMBALANCE

Q. What is the theoretical reserve imbalance calculated in the 2016 Depreciation Study?

A. As noted in my direct testimony, and acknowledged by OPC, the theoretical reserve imbalance ("TRI") resulting from the 2016 Depreciation Study is negative $99 million (a negative TRI is also sometimes referred to as a "reserve deficit") as of December 31, 2017.[93] If the TRI is instead calculated as of December 31, 2016 the estimates in the 2016 Depreciation Study produce a TRI of a positive $80 million. At either calculation date, the theoretical reserve imbalance is very small, as evidenced by the fact that both amounts are less than 1% of the theoretical reserve and by the fact that in the

[93] Direct testimony of Ned W. Allis, page 53, lines 16-17.

span of one year (i.e., from 2016 to 2017) the TRI changes from a positive to a negative amount.

Q. What have you proposed regarding the TRI?

A. As noted in my Direct Testimony, I recommend the use of remaining life depreciation rates based on the remaining life technique. No adjustments to the reserve are needed, especially for small imbalances, and an amortization of the reserve imbalance over a shorter period would be inappropriate. If the Commission uses the December 31, 2016 balances provided in FPL's Second Notice of Identified Adjustment my recommendation is the same.

Q. What has witness Pous proposed?

A. Witness Pous proposes a reduction in depreciation expense of approximately $231 million based on what he calculates to be the TRI for only a portion of FPL's assets. Again, as I noted above, the actual TRI is in fact very small. In order to artificially inflate the TRI on which to base a significant reduction in depreciation expense, witness Pous does the following:

- First, he completely ignores the TRI for production plant, which accounts for over half of the Company's plant in service. Production plant actually has a large negative TRI.
- Next, he makes a number of adjustments to service lives and net salvage for transmission, distribution and general plant accounts which artificially increase the TRI. Previously in my rebuttal testimony, I have explained in detail why these adjustments would be inappropriate.

- Then, he uses the calculated TRI based on his estimates for only transmission, distribution and general plant as the basis for his conclusion that there is a large positive TRI (also referred to as a "reserve surplus") of approximately $1.5 billion.
- Finally, he recommends that a portion of this artificial TRI be amortized over 4 years, as a $231 million reduction to depreciation expense.

By ignoring the portion of the Company's assets that have a large negative reserve imbalance, and only focusing on the portion that has a positive reserve imbalance, witness Pous is clearly taking a results-driven approach as opposed to a systematic and rational approach to depreciation. Further, as I have explained in detail throughout my testimony, his recommended service lives and net salvage are inappropriate. Thus, there is in fact a minimal TRI and witness Pous's proposed adjustment is inappropriate.

Q. In Docket No. 090130-EI, did witness Pous recommend an adjustment based on the TRI?

A. Yes, he did.

Q. Was his adjustment based on the TRI that he calculated based on his estimates in that case?

A. No. His recommendation was based on the TRI calculated in FPL's depreciation study in that case. This is an important distinction. In the 2009 case all parties, including FPL, had calculated a fairly sizeable positive TRI. In contrast, in the current case the 2016 Depreciation Study I have conducted results in a very small TRI. Only by artificially inflating the TRI can witness Pous justify his proposal to accelerate its amortization.

Q. How will you address witness Pous's recommendation related to the TRI?

A. While I disagree with witness Pous's proposal and much of his testimony on a conceptual basis, and in general believe that the remaining life technique is the proper approach for reserve imbalances, there is little need to address these concepts in my rebuttal testimony. This is because witness Pous's proposal is based entirely on the inappropriate adjustments he has made to service life and net salvage estimates, as well as the fact that he has completely ignored the negative TRI for production plant.

For this reason, my testimony on this issue will focus on 1) explaining the various problems with witness Pous's calculations; 2) explaining why it is inappropriate to cherry pick portions of the TRI for which to make adjustments; and 3) correct the record in regards to a number of inaccurate statements and citations witness Pous makes in his testimony. However, to the extent I have not addressed various statements in witness Pous's testimony does not mean that they are correct or that I agree with them.

Q. Please first explain the TRI for production plant.

A. In the 2016 Depreciation Study the TRI calculated for production plant is negative $738 million.[94]

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[94] See page 114 of Exhibit NWA-1. I should note that for this discussion I will use 2017 balances in order to be consistent with witness Pous's testimony. However, the discussion is similar when using 2016 balnaces.

Q. Has witness Pous calculated a TRI for production plant?

A. No. In fact, he has not even explained how a theoretical reserve would be calculated using his method for estimating interim retirements.

Q. Witness Pous states that "[t]he surplus reserve would be even higher were I to incorporate the impact of my production plant recommendations."[95] Is this true?

A. There is no way to know whether this is correct, because witness Pous has not even calculated a TRI for production plant based on his estimates. Indeed, he has declined to even explain how a theoretical reserve would be calculated when using his proposed method for interim retirements.[96] However, I have estimated the resulting TRI from his production plant recommendations and determined that his recommendations still result in a negative TRI for production plant.

Q. Would it be appropriate to only consider the transmission, distribution and general plant theoretical reserve imbalances and ignore production plant?

A. Absolutely not. It is inappropriate and clearly results driven for witness Pous to cherry pick certain functions of plant to use as the basis of a TRI amortization with the goal of reducing depreciation expense.

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[95] Direct testimony of Jacob Pous, page 11, lines 20-22.
[96] See OPC's response to FPL's Second Set of Interrogatories, No. 25.

Q. Has witness Pous proposed to amortize the entire transmission, distribution and general plant TRI that he calculates in this case?

A. No. Witness Pous has proposed to amortize the portion of the TRI that exceeds 10% of the theoretical reserve.

Q. Has witness Pous based his calculation of 10% of the theoretical reserve on the full theoretical reserve for all of the Company's depreciable assets?

A. No. In addition to the fact that he has not bothered to calculate a theoretical reserve imbalance for production plant, he has also overstated the percentage value of the TRI by excluding production plant. When he calculates 10% of the theoretical reserve he only uses the transmission, distribution and general plant theoretical reserve. He therefore significantly understates the denominator to be used when determining the percentage of the theoretical reserve in that he ignores half of the Company's investment (i.e., production plant). Including production plant would make the TRI a significantly smaller percentage of the theoretical reserve and would result in a significantly smaller amortization than witness Pous's proposal.

Q. In support of his use of a 10% threshold witness Pous states that "Mr. Allis has testified regarding addressing a reserve imbalance in a New York case based on a 10% threshold of the theoretical reserve level."[97] Please address this claim.

A. Witness Pous has mischaracterized my testimony in New York. The case cited is for Consolidated Edison Company of New York. First, I should be clear that the 10% threshold was calculated for the whole Company. It did not cherry-pick functions of plant as witness Pous does. Second, my recommendation in that case was to recover the TRI for Consolidated Edison over the remaining life, not over a 4-year period as witness Pous proposes.

Third, I should be clear that New York uses whole life depreciation rates, not remaining life depreciation rates. This is an important distinction that I will explain in more detail. Fourth, New York has for many years established a 10% threshold to address theoretical reserve imbalances. While the study I performed in New York was consistent with this New York-specific practice, I explained in my testimony for Consolidated Edison that it was not a typical practice in the industry and that the remaining life technique was a better approach.

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[97] Direct testimony of Jacob Pous, page 44, lines 3-5.

Q. Witness Pous also cites another jurisdiction in which a 5% criterion is used. Is the experience of this jurisdiction applicable to FPL?

A. No. The jurisdiction referenced by witness Pous is Alberta, Canada. Alberta also uses whole life depreciation rates. Therefore its approach is not applicable to FPL for which remaining life depreciation rates are used.

Q. You used the term "whole life depreciation rates" when discussing your testimony in New York and the practice in Alberta. Please explain this concept further.

A. When the whole life technique is used, there is no consideration of the book reserve when calculating depreciation rates. Instead, depreciation rates for an account are simply calculated using the estimated average service life and net salvage estimate. For this reason, whole life depreciation rates will not recover the full cost of the Company's assets without a TRI adjustment. This is in contrast to the much more widely used remaining life technique, which ensures the full recovery – no more, no less.

Because an adjustment based on the theoretical reserve is necessary when using the whole life technique in order to ensure full recovery but is not needed under the remaining life technique, any reasonable depreciation professional would know that it makes little sense to compare practices in a state that uses whole life depreciation rates with those in a state such as Florida that uses remaining life depreciation rates.

IX. FPL'S SECOND NOTICE OF IDENTIFIED ADJUSTMENTS

Q. Please explain FPL's Second Notice of Identified Adjustments as it relates to the 2016 Depreciation Study.

A. For FPL's Second Notice of Identified Adjustments, which was filed on June 16, 2016, the calculated depreciation rates and accruals were updated to reflect estimated December 31, 2016 plant and reserve balances instead of the estimated December 31, 2017 plant balances originally used in the 2016 Depreciation Study.

Q. Did this change in calculation date impact any of the service life or net salvage estimates in the 2016 Depreciation Study?

A. No. The service life and net salvage estimates are the same. All that was changed was the calculation date and the corresponding plant and reserve balances.[98]

Q. Why did FPL provide these updated depreciation calculations based on 2016 plant and reserve balances?

A. Based on discovery from Staff and other parties, it appeared that the use of 2017 plant and reserve balances instead of 2016 balances was a point of concern for other parties. In particular, because the December 31, 2017 originally filed in the 2016 Depreciation Study is subsequent to the January 1, 2017 implementation date of the proposed depreciation rates, FPL's

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[98] I should note that changing the calculation date changes the calculation of composite net salvage percents for production plant, which can result in slight changes to the composite net salvage percents used for the depreciation calculations. However, this does not result in a change of estimates, but instead automatically occurs with a change in the calculation date.

understanding was that other parties were concerned that the use of December 31, 2017 balances may not be consistent with FPSC Rule 25.6.0436(4)(d) Depreciation, Florida Administrative Code ("F.A.C.").

Q. Why did you use December 31, 2017 plant and reserve balances in the originally filed 2016 Depreciation Study?

A. In preparing the 2016 Depreciation Study, we faced a challenging circumstance: FPL is replacing a number of assets through the end of 2017 for which the new assets are expected to have a longer service life than those that they are replacing. This is true for both concrete transmission and distribution poles and the Company's capital spare parts for its combined cycle fleet, but is most pronounced for capital spare parts. Specifically, FPL's upgrade to the GE 7FA.05 components is scheduled to be completed by the end of 2017, and a large portion of the GE 7FA.05 components will be added in 2017 – that is, subsequent to the January 1, 2017 effective date of the depreciation study.

This presents a situation in which a number of assets will be retired within a year of the effective date of the proposed depreciation rates and will be replaced with assets that will have longer service lives. For this reason, in my judgment it was appropriate to use December 31, 2017 balances so that the calculated service lives would be most representative of the plant that would actually be in service by the end of the test year.

Q. On page 23 of his testimony SFHHA witness Kollen recommends that the Commission reject the 2016 Depreciation Study and continue to use the current depreciation rates because that Study original used December 31, 2017 balances. Do you agree?

A. No. First, as I have explained, the Company filed depreciation rates based on December 31, 2016 in its Second Notice of Identified Adjustment on June 16, 2016. These depreciation rates alleviate any criticism witness Kollen makes. Second, it would clearly be inappropriate to continue to use the currently approved depreciation rates. As the 2016 Depreciation Study demonstrates, the approved depreciation rates are no longer appropriate – whether calculated with 2016 or 2017 balances.

I should again make clear that even if there were no changes to the service life and net salvage estimates, the depreciation rates would still change when calculated based on more recent balances than the December 31, 2009 balances used to calculate the currently approved depreciation rates. As I demonstrated on Figure 1 in Section II of my rebuttal testimony, the depreciation expense based on the service life and net salvage estimates approved in 2009 updated to the recent plant balances would be $563.3 million higher than the results of my 2016 Depreciation Study. Thus, if one were to apply witness Kollen's proposal in a manner that adequately reflected the reality of FPL's current plant in service instead of arbitrarily freezing things in time as of 2009, the result would be a very large additional depreciation expense that customers would have to bear.

Q. Witness Kollen claims that "[a] new comprehensive depreciation study would have to be performed using plant, accumulated depreciation, and related net salvage, as of the effective date of the new rates, or January 1, 2017" in order overcome the use of December 31, 2017 plant balances. Please address this criticism.

A. While witness Kollen does not define what he means by "comprehensive depreciation study," he is incorrect that calculating depreciation rates using 2016 instead of 2017 plant and reserve balances would require a comprehensive change to the entire study. The change from 2017 to 2016 balances, which was provided to all interveners with all supporting workpapers on June 16, 2016, does not result in changes to any of the service or net salvage estimates in the 2016 Depreciation Study. Instead, it is simply a change to the mathematical calculations of depreciation rates using these estimates, which the interveners had ample opportunity to confirm. In short, the Commission has everything it needs to set depreciation rates based on December 31, 2016 plant and reserve balances.

Q. Does this conclude your rebuttal testimony?

A. Yes.

i. Account 350.2 Land Rights

The currently approved survivor curve for this account is the 75-S4. There have been few retirements and therefore there is limited data for the statistical analysis for this account. I have recommended to continue to use the approved estimate. OPC Witness Pous has recommended to increase the average service life by 25 years and has proposed the 100-R4 survivor curve.

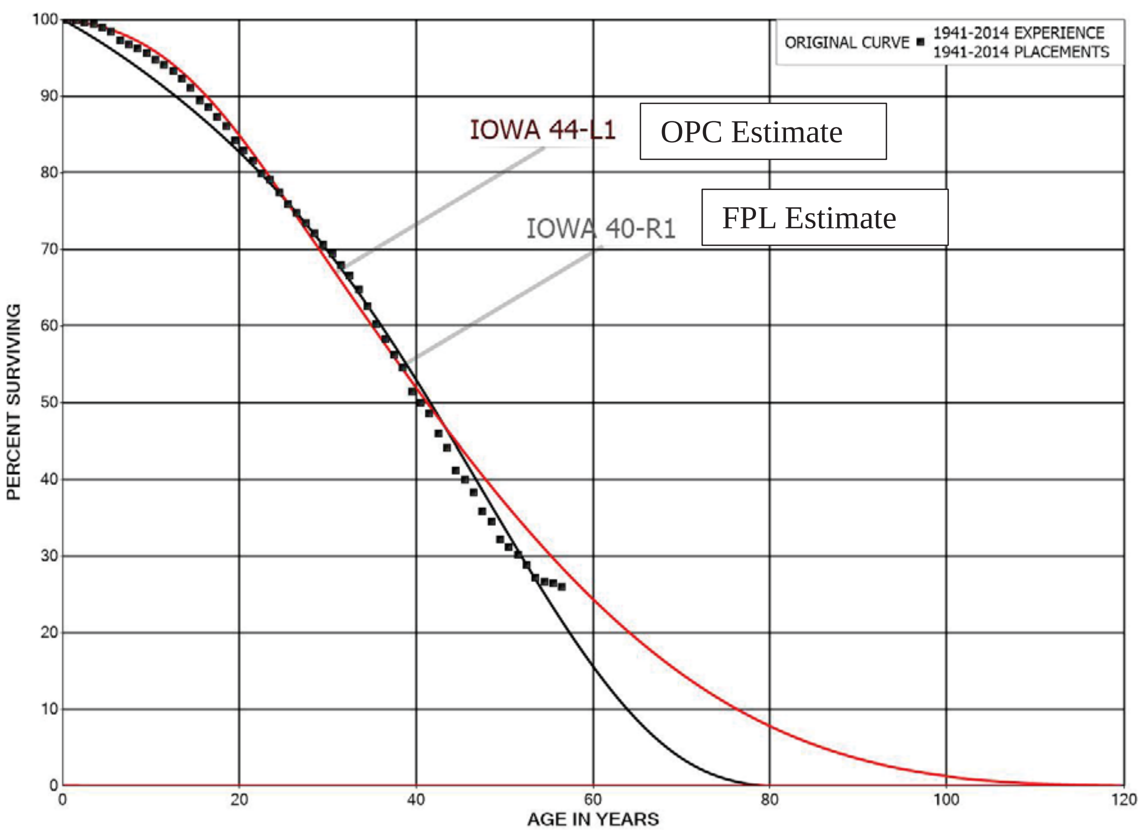
Witness Pous's arguments in this case are very similar to those he made in Docket No. 090130-EI. His proposal was not adopted by the Commission in that case. Further, because the data does not provide definitive results, the statistical analysis does not support his estimate over the approved estimate. The upper end of the industry range of estimates is 80 years, based on the Gannett Fleming industry database Witness Pous has cited in his testimony. Further, as I have explained in Section III.C, many of FPL's assets have shorter service lives than other utilities. It therefore does not make sense to have a much longer average service life for this account than the typical industry range for other utilities.

ii. Account 353 Station Equipment

The currently approved estimate for this account is the 40-R1.5 survivor curve. I have recommended the 40-R1 survivor curve, which has the same average service life as the currently approved estimate, but a slightly different curve shape. OPC Witness Pous has recommended the 44-L1 survivor curve.

Figure 1 below provides a comparison of each estimate to the representative data points. While witness Pous's estimate (shown in red in Figure 1) is a somewhat better fit of the historical data for early years, my estimate (shown in black) is a superior fit for the more important portion of the curve from 80% surviving to 20% surviving. In particular, the biggest difference between OPC's estimate and both my estimate and the historical data occurs beginning at about age 45. OPC's estimate begins to deviate from the data and forecasts a lower rate of retirements for these ages than the Company has actually experienced. Further, these ages are when many of the larger dollar items in this account, such as transformers and circuit breakers, will retire. It therefore makes sense to expect a higher level of retirements from age 30 through age 60. OPC's estimate predicts the opposite.

Figure 1



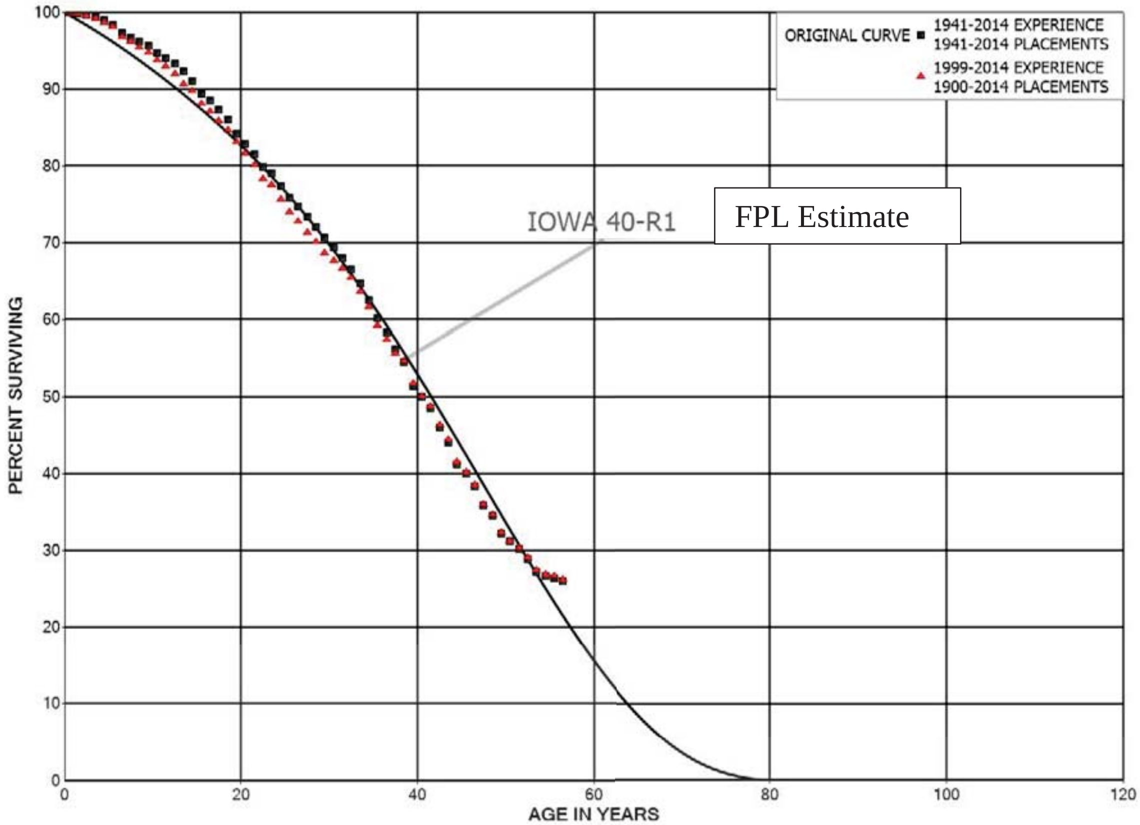
OPC's estimate is also not a common curve type for this account. OPC has proposed an L1 curve type. In the industry database witness Pous cites throughout his testimony there is only one L-type curve (of any mode) used for this account – out of a population of close to 80. The vast majority of estimates are R-type curves, and there are some S-type curves. L-type curves are rarely used for this account is for the reasons I explained above. Retirements of the larger dollar assets tend to occur in the 30 to 60 year range, and tend to accelerate as they approach 60 years of age because these types of assets reach the end of their useful lives. This retirement pattern is consistent with the retirement pattern shown in the 40-R1 survivor curve in Figure 1. It is not consistent with the 44-L1 estimate witness Pous has made.

In addition to his presentation of the statistical results, witness Pous cites additional information in support of his estimate. On pages 77 and 78 of his testimony he cites the testimony of my colleague John Spanos. However, the cited testimony does not actually support OPC's 44-L1 curve. I agree with Mr. Spanos's comments in general that the survivor pattern projected by similar fitting survivor curves should be considered in order to assess the best estimate. As I explained above, these considerations support my estimate and not the L1 curve selected by witness Pous. I also will note that FPL's data generally results in more complete indications of survivor curves than was the case in the Massachusetts case cited by witness Pous. FPL's data therefore provides a better indication of the survivor curve, which as can be seen in Figure 1 demonstrates that my estimate is a superior fit to OPC's.

Witness Pous also presents a discussion on page 75 of his testimony with regard to what he calls the "variance in the types of investments in this account." Actuarial analysis was developed in part to address the issues witness Pous discusses. The fact that transformers are a smaller portion of historical retirements than the current investment balance is not surprising and does not affect the actuarial results as he implies it does. The data points in an original life table are developed by comparing retirements to the balances in service at each age. Thus, components that retire at earlier ages such as lightning arrestors are compared to a very large balance at earlier ages and have a limited impact on the life table. Retirements of transformers that occur at later ages are compared to the balances that survive to those ages. Indeed, if anything witness Pous's discussion supports my estimate over the survivor curve he has selected. As larger dollar items such as transformers age and reach the end of their useful lives they will be need to be replaced. Again, this will typically occur in the 30 to 60 year range and the level of retirements will increase with age. For this reason, as transformers age and are retired with more frequency the result should be a retirement pattern that is more similar to the R1 curve that I have estimated than the L1 estimated by witness Pous.

Witness Pous also argues that the impact of the removal of PCB's would increase the service life. I should first point out that the removal of PCB's did not always result in retirements, as in many cases in order to address PCB issues FPL removed oil from transformers and circuit breakers but the assets remained in service. Second, the implication in witness Pous' testimony that "many transformers were retired early" is not necessarily correct. Transformers that had PCB oil were often older assets. Finally, the data does not support witness Pous's conclusion. The removal of PCB's was completed in 1998. Figure 2 below compares an experience band with data subsequent to 1998 to the overall band and my estimate. The 1999-2014 experience band (shown in red in the graph) actually indicates a somewhat shorter life than the overall band and my estimate.

Figure 2



Witness Pous also discusses the impact of tighter design tolerances on the life of transformers. This concept is one that I have discussed with engineers not only at FPL but with many other utilities around the country, and this concept supported by experts on transformers across the country. Decades ago, when materials were less expensive and manufacturing technology did not allow for the precision in designs available today, transformers and other assets were designed with more materials. Today transformers can be designed with "tighter tolerances" and do not need the same extent of material. This has the obvious benefit of reducing the cost of transformers (which are expensive equipment), but can also impact the life of transformers.

One impact of tighter design tolerances could be an overall shorter average service life, although I have not decreased the service life for this account related to this concept. However, where tighter design tolerances are likely to have the most impact is for later ages beyond the design life of this equipment. While many older transformers were able to be pushed well beyond the design life, this will likely occur less frequently for newer transformers. As a result, the most pronounced impact will be for later ages where the rates of retirement will likely be higher than was the case for older transformers. Thus, this concept favors a higher mode curve than a lower mode curve and an R curve over an L curve. This provides another reason that the R1 curve type is a better selection than the L1 curve type used by witness Pous.

Witness Pous also states that "actual evidence provided by FPL demonstrates that it has investment in transformers that exceed 74 years of service."[1] However, his statement is incorrect, at least as it refers to the large dollar types of transformers that are the subject of witness Pous's discussion on pages 78 and 79 of his testimony. Referring to witness Pous's source for this statement,[2] the investments in transformers that "exceed 74 years of service" are potential transformers, not autotransformers. Further, the "investment" to which he refers is very small - there is only about $39,000 of investment that exceeds age 74. Potential transformers are a different type of asset from the larger transformers witness Pous discusses, and potential transformers are a relatively small dollar component of this account. The large dollar assets that witness Pous is actually referring to in his discussion are autotransformers, not potential transformers. FPL does not have investment in this account for autotransformers that exceeds 74 years of age. Instead, almost all of these types of assets are 50 years of age or less. Thus, a review of the "actual evidence" cited by witness Pous does not support his estimate and is more supportive of my estimate.

Finally, on page 74 of his testimony witness Pous also discusses the impact of a retirement that occurred at age 5.5. However, because the exposures are very large at this age (over $1 billion), the retirements at this age, which were in part due to warranty transactions, has a minimal impact on the original life table. I should also note that witness Pous has not incorporated this activity consistently for both the life and net salvage analyses. While he raises the issue here for life analysis, he gives undue consideration to this activity in the net salvage analysis. I have considered the impact of this transaction in both the life and net salvage analyses.

[1] Direct Testimony of Jacob Pous, p. 79, lines 8-9.

[2] Attachment 1 of FPL's response to OPC's First Set of Interrogatories No. 69 provided in Exhibit NWA-5.

iii. Account 353.01 Station Equipment – Step Up Transformers

The currently approved estimate for this account is the 35-R2. I have recommended a decrease in the average service life for this account. I have recommended the 30-R1 survivor curve. This is well supported by the historical data, which actually indicates an even shorter service life. A decrease in service life also makes sense because the life spans of the Company's power plants are on average shorter than was the case for the 2009 Depreciation Study. One of the main causes of retirements for step-up transformers, which are located at the Company's power plants, is the retirement of the power plant. The Company has retired a number of steam-fire power plants in recent years, which had life spans that were on average approximately 50 years. The combined cycle plants that have replaced these facilities have life spans of 40 years. It is therefore reasonable to expect a shorter life for step up transformers.

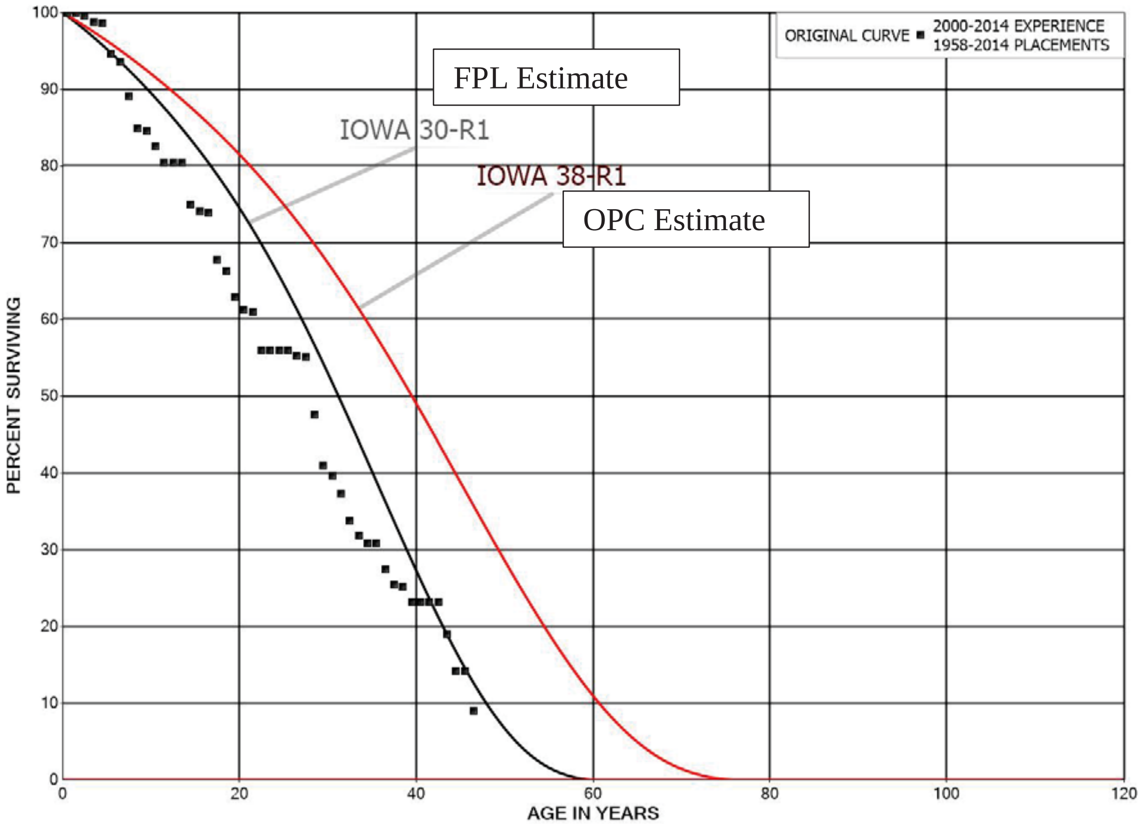
However, it is important to point out that not all retirements of these assets occur due to the retirement of power plants. Step-up transformers, which are critical components and are typically run to full capacity, are often replaced prior to the end of the life of the power plant. For example, FPL has replaced all of the step-up transformers at its nuclear power plants.

Despite the fact that both the data and other considerations indicate that a shorter life is appropriate, witness Pous has proposed to increase the average service life for this account. He has proposed the 38-R1 survivor curve. While witness Pous states that his estimate is "based on recognition of both the type of asset at issue for this subaccount as well as the key driver of useful life,"[3] he provides little support for deviating from the data. Further, not only is his estimate inconsistent with the data but it makes little sense based on what witness Pous calls "key driver of the useful life" – the life spans of the facilities where the Company's step-up transformers are located.

I should first note that witness Pous does not even show a chart of his estimate in his testimony. Had he done so, it would become quite clear that his estimate makes little sense. I have provided a comparison of my estimate (shown in black) and his (shown in red) to the historical data in Figure 3 below.

[3] Direct Testimony of Jacob Pous, p. 82, lines 6-7.

Figure 3



The first observation one can make from the chart is that OPC's estimate is a very poor fit of the historical data. However, it is also clear that witness Pous's estimate does not even match the justification he sets forth in his testimony. As can be seen in the chart, witness Pous's estimated survivor curve extends beyond 60 years of age. The longest life span for any of the Company's power plants is 60 years. As a result, the survivor curve for this account should not predict that any assets will remain in service for more than 60 years. Further, the step-up transformers the Company's nuclear plants (the only plants with 60 year life spans) have already been replaced. The step up transformers at these plants will therefore have an average life that is no longer than 30 years.[4] Witness Pous's estimate is therefore inconsistent with reality – none of the Company's step-up transformers will have lives of 50 years or more.[5]

As can be seen in the graph, witness Pous's estimate extends to about 70 years of age. This alone should be disqualifying – at a minimum, the survivor curve for this account should not predict any

[4] This is because there will be at least two transformers over the 60 year life spans of the nuclear plants. As a result the average lives of step up transformers at these sites cannot exceed 30 years.

[5] 50 years is the longest life span for any non-nuclear plant.

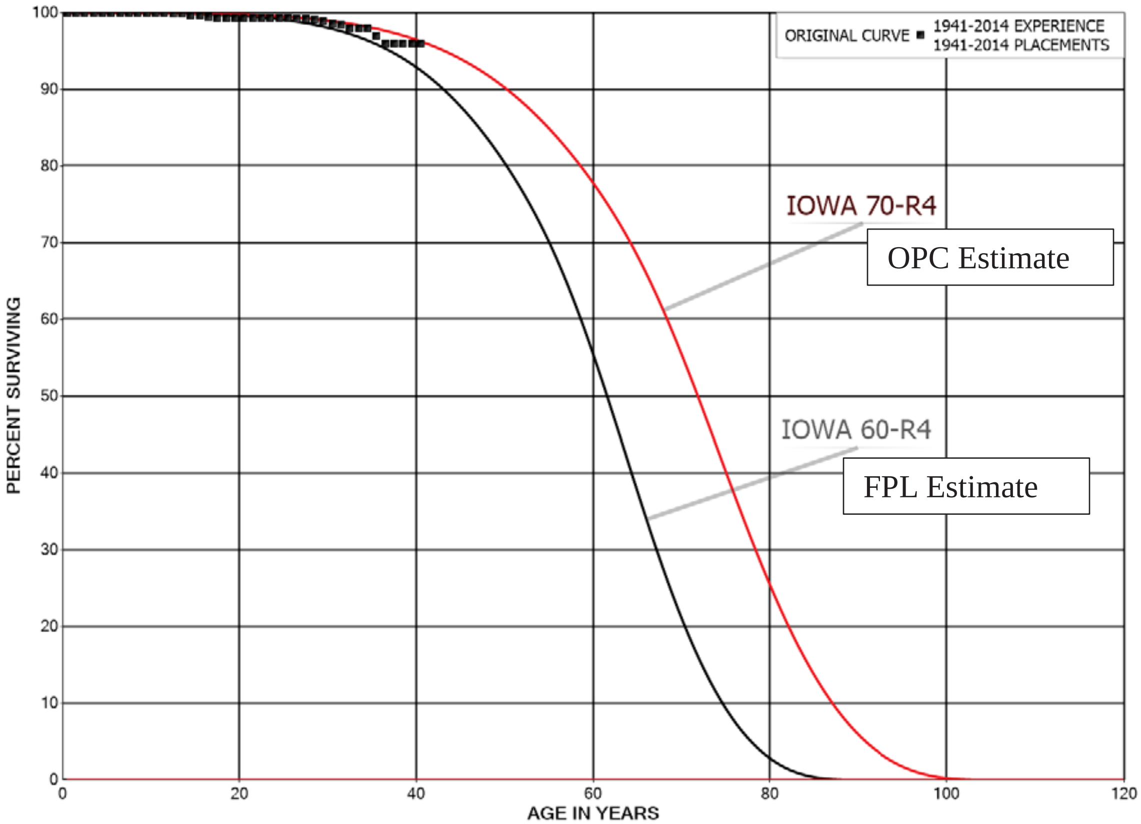
assets to last longer than 60 years. Further, his estimate projects that around 30% of the assets will remain in service for longer than 50 years. This is also illogical, especially given that many of the step up transformers at the Company's nuclear plants have already been replaced. Given that step up transformers are critical assets it would be unreasonable to run such a large number for 50 years or more.

iv. Account 354 Towers and Fixtures

The currently approved estimate for this account is the 52-R4 survivor curve. I have recommended an increase in the average service life to the 60-R4 survivor curve. Most of the assets in this account are relatively new when compared to the overall life cycle of transmission towers. Over 99% of the assets have been installed since 1974. As would be expected given the age of the assets, there have been relatively few retirements in the account and therefore the statistical analysis does not provide conclusive results. OPC has recommended a 70-R4 survivor curve for this account. The primary bases of witness Pous's estimate is the statistical analysis as well as a comparison to estimates for other utilities. He also makes a comment related to the mix of investment in the account.

Given that almost all of the assets in this account are younger than the average service life I have proposed (and much younger what witness Pous has proposed), the historical data should not be expected to provide definitive indications for this account. Witness Pous therefore relies too much on the statistical analysis. Further, witness Pous's analysis is improper. In the chart he presents on page 86 of his testimony, he includes a number of data points that should not be considered given the size of the exposures. As I noted above, more than 99% of the account was added since 1974. For this reason, the data beyond age 40.5 in the original life table provides limited value in the statistical life analysis. In Figure 4 below I provide a comparison of our estimates based on the representative data points (i.e., those through age 40.5). As can be seen in the chart, none of the data points extend below 80% surviving. Both curves are similar fits of the limited data, as might be expected given that the data is not definitive due to the age of the assets in the account. However, my estimate (shown in black) does a better job of incorporating the retirements that have occurred from age 30 through age 40.

Figure 4



Witness Pous also uses comparisons to estimates of other utilities to support his estimate for this account. However, when properly considered, such comparisons to the industry do not support his estimate over mine. Both the 60-R4 and the 70-R4 estimates are within the typical industry range of 50 to 75 years. However, his average service life estimate for this account of 70 years would be near the upper end of the industry range. As I have explained in Section III.C, due to the harsher conditions in Florida than many other parts of the country, FPL should be expected to have service lives on the shorter end of the industry range. This is true for metal transmission towers. Additionally, FPL's transmission towers are typically steel tubular towers on concrete caisson foundations. This may differ from many other utilities for which steel lattice towers are more common. As a result, a direct comparison to the average service lives for transmission towers for other utilities would not be as meaningful. Given all of these considerations, my estimated 60 year average service life is therefore more consistent with industry comparisons than witness Pous's estimate once the specifics of FPL's assets are considered.

Witness Pous also discusses the "mix of investment" in this account on page 85 of his testimony, and specifically discusses foundations. He states that "foundations are normally assumed to have very long life expectations."[6] Witness Pous's implication appears to be that foundations would last much longer than the actual towers that are set upon these foundations. I would not necessarily expect this to be the case. When a tower is retired the foundation will typically be retired as well. This is true if the tower is replaced with another structure on the same footprint as well as if the transmission line were retired because it was no longer required (i.e., if it were replaced with a new line elsewhere on the system).

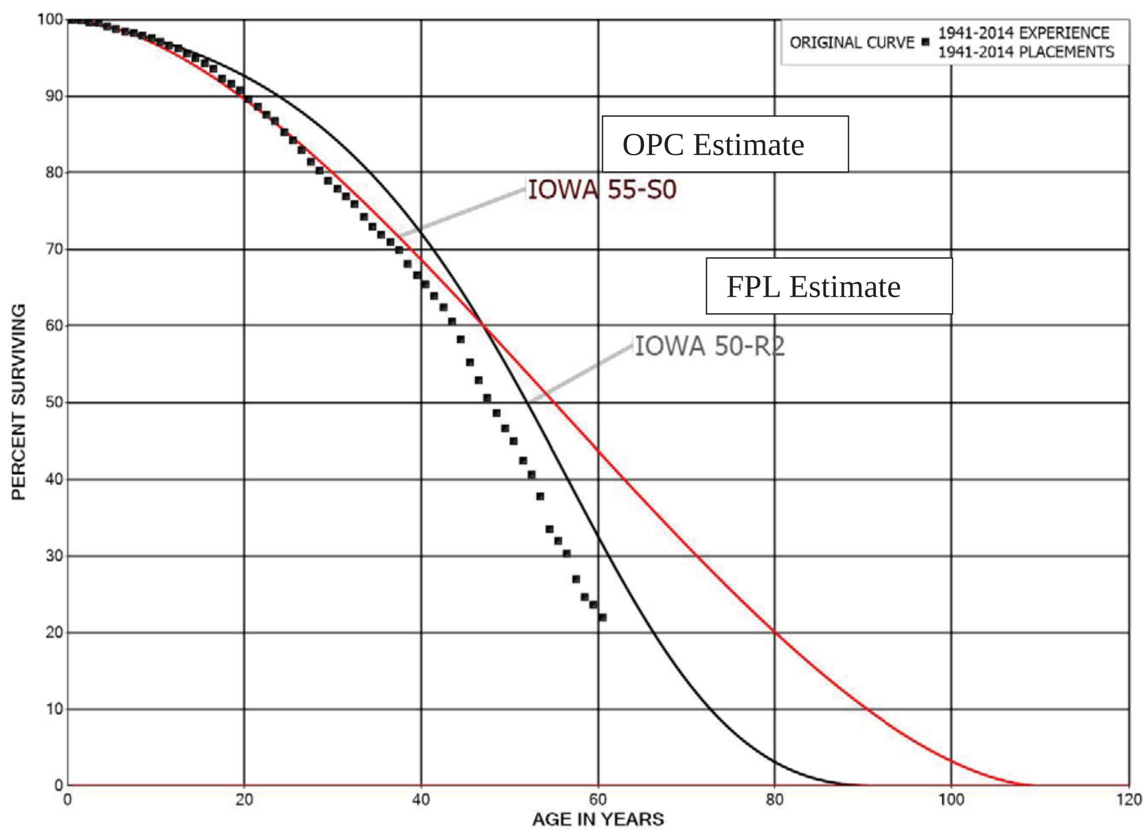
[6] Direct Testimony of Jacob Pous, p. 85, line 13.

v. Account 355 Poles and Fixtures

The currently approved estimate for this account is the 44-R2. I have recommended the 50-R2 survivor curve. This estimate is longer than indicated by the historical data, which takes into consideration that the mix of investment in this account has changed and that most transmission poles are now concrete. OPC has proposed the 55-S0 survivor curve. Witness Pous' estimate has an average service life that is more than ten years longer than the Company's actual experience for this account. While the increase in the percentage of this account that is concrete poles may support a somewhat longer service life than the Company has experienced historically, OPC's recommendation is too significant of a change.

Figure 5 below provides a comparison of my estimate (shown in black) and OPC's estimate (shown in red) to the historical data. Both are elevated above the historical data, and therefore both my estimate and OPC's estimate expect a longer service life than has occurred historically due to longer life expectations for concrete poles. The main difference between our estimates, which can also be seen in the figure, is that OPC has estimated a lower mode curve than has occurred historically, which increases the average service life. As I will explain, OPC's expectation is not reasonable for the assets in this account.

Figure 5



First, I should point out when one analyzes the vintages that are primarily comprised of concrete poles, the data does not support a dramatically longer service life for concrete poles; nor does it support a much lower mode curve. For example, in Figure 6 below I compare the 1985 through 2014 placement band (shown in green in Figure 6) with the overall band. The data for placements from 1985 through 2014 is generally comprised of a high percentage of newer concrete poles than wood poles. As can be seen in the figure, this placement band supports neither a significantly longer life nor a much lower mode when compared to the overall experience band. The concept can also be seen in Figure 7, which follows. The 40-R2 survivor curve, which actually has a shorter average service life than the best fitting curve from the overall band, is a very good fit of the available data for 1985 through 2014 vintages.

Figure 6

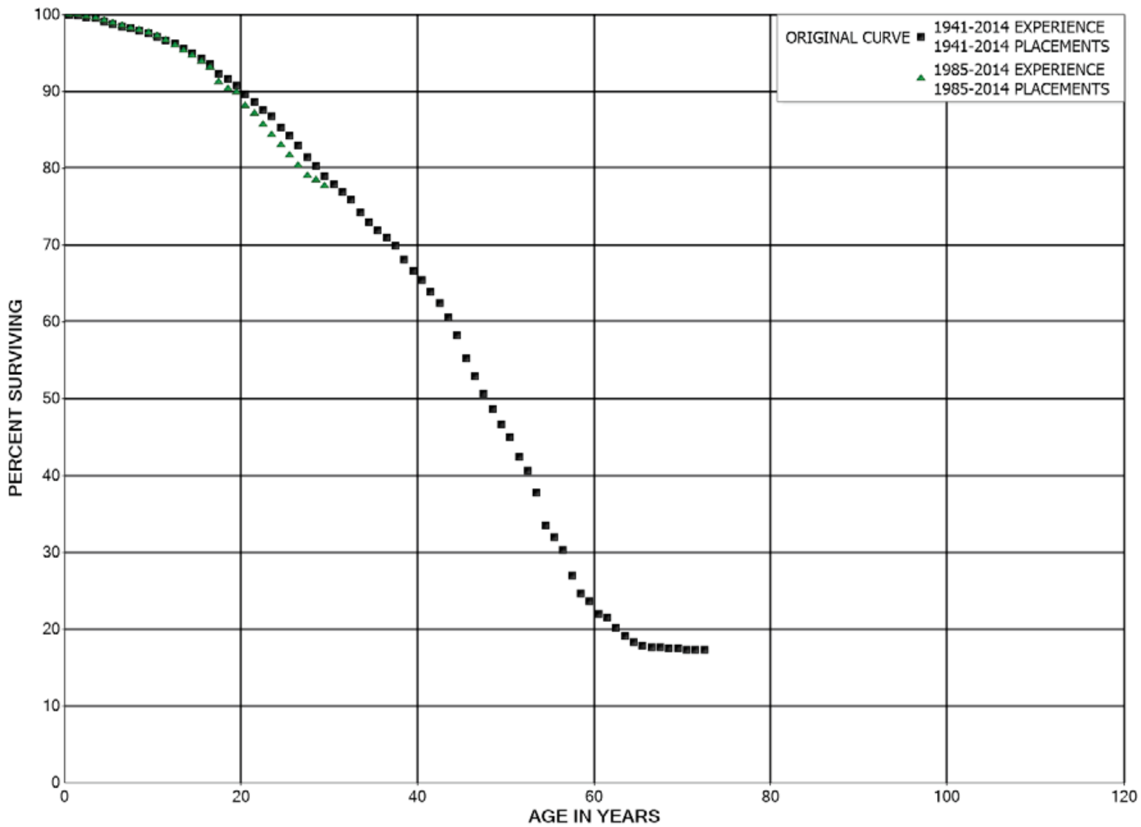
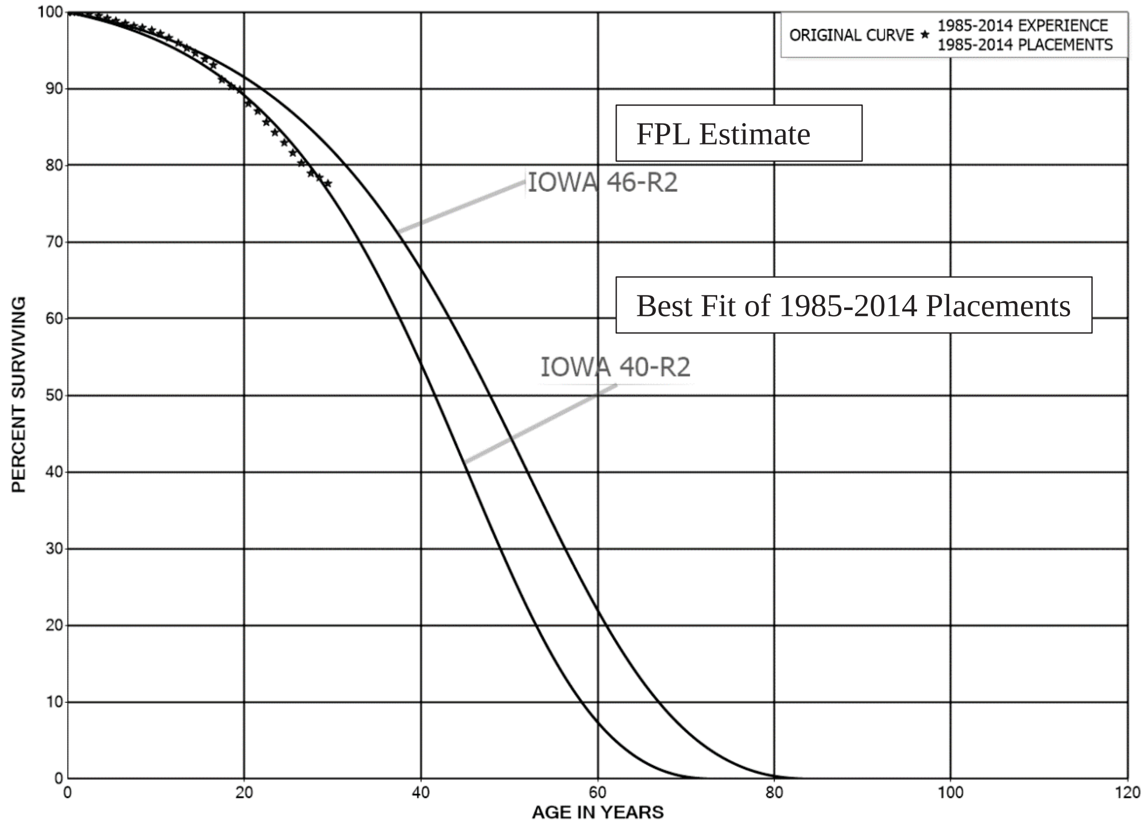


Figure 7



Witness Pous also references the pole inspection program on page 93 of his testimony. I have discussed the impact of the pole inspection program on the service life of poles in Section VI.C of my rebuttal testimony. I have explained that one likely impact of the pole inspection program is a higher mode curve. I should also point out that while the formal inspection program began in 2006, FPL had inspected transmission poles for many years prior to that date. Further, because there are not necessarily the same remediation options for concrete poles than wood poles (e.g., concrete poles cannot be treated in the way wood poles can), the pole inspection program may have the impact of both increasing the mode without lengthening the average service life. OPC has recommended a much lower mode curve than both my estimate and the approved estimate. This recommendation does not actually make sense in light of the pole inspection program.

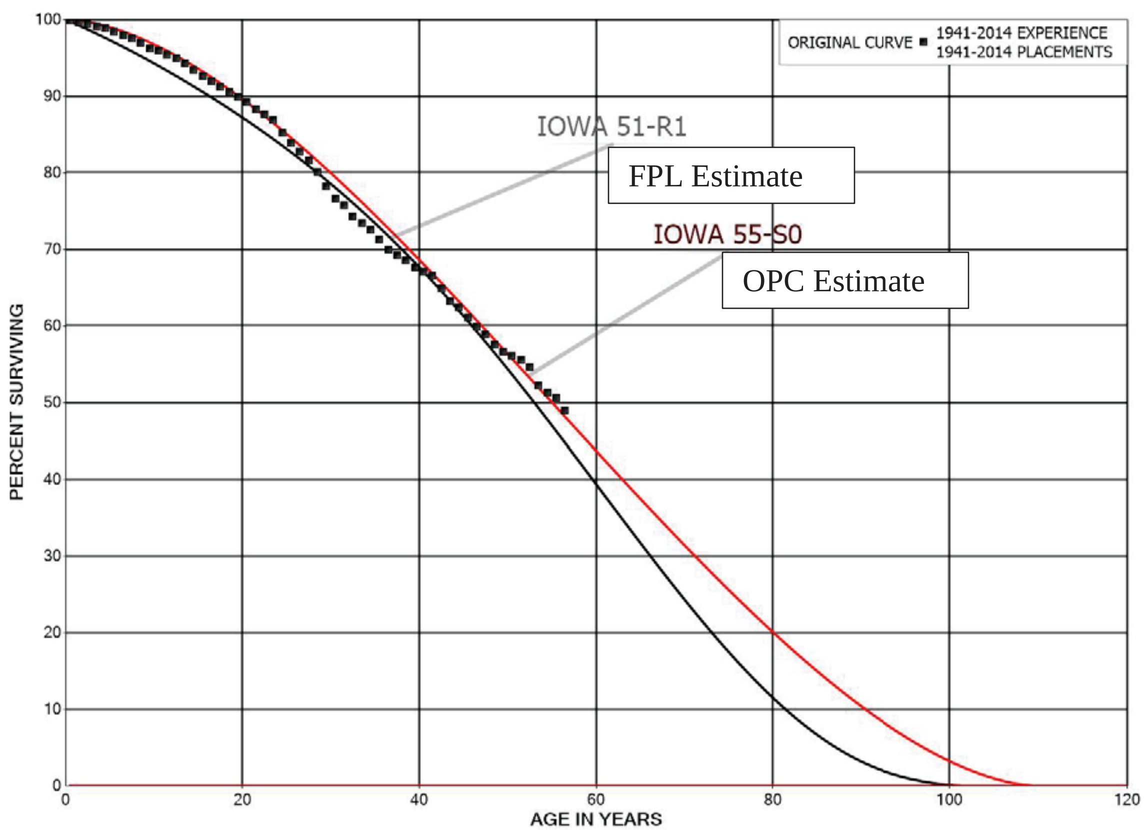
On pages 89 and 90 of his testimony witness Pous criticizes my estimate for not recognizing what he calls the "more normal service life relationship between transmission and distribution poles." I first note that I do recognize that it is often the case that distribution poles have a shorter service life than transmission poles. This actually is the case for FPL once one considers that wood poles have a shorter life than transmission poles. However, FPL's concrete distribution poles historically have not had a shorter life than transmission poles. Witness Pous offers no reason why the historical relationship would not be the same in the future. His argument is made even more bizarre by the fact that his estimate for concrete distribution poles is actually longer than for transmission poles. Thus, any criticisms he makes on the relationship of transmission and distribution poles are actually more applicable to his estimates than they are to mine.

vi. Account 356 Overhead Conductors and Devices

The currently approved estimate for this account is the 47-R1.5 survivor curve. I have recommended the 51-R1 survivor curve, which represents a longer average service life than the currently approved estimate and a moderate change to the curve type. Witness Pous recommends the 55-S0 survivor curve, which represents an even larger increase in the average service life and a more significant change in curve type to a lower mode S-type curve. As with many accounts, the primary driver of witness Pous's recommendation is that he has changed the mode of the curve to a lower mode curve type. As I will explain, his change in curve type is not reasonable for the type of property studied.

Figure 8 below provides a comparison of my estimate (shown in black), OPC's estimate (shown in red) and the Company's historical data. Both curves are relatively similar, and as can be seen in the figure the main differences occur after about age 50 and become more pronounced beyond age 60 (i.e., beyond the end of the data shown in the graph). As a result, the primary difference between the two estimates occurs beyond the end of the data in Figure 8. The primary difference is therefore due to differences in how witness Pous and I extrapolate the historical data.

Figure 8



As I have discussed for many accounts, R type curves generally predict an increasing level of retirements with age. In contrast, the S0 type curve used by witness Pous is a fairly straight line and therefore predicts a constant to somewhat declining level of retirements beyond age 60. The expectation implied by the S0 curve type is not as reasonable for this account as is the dispersion pattern for R type curves such as the R1 curve I have used. As I discuss on page 715 of Exhibit NWA-1, two of the causes of retirements for the conductor in this account are for capacity reasons and due to damage and failure, often as the result of metal fatigue that occurs due to wind loading. The need to upgrade conductor for capacity reasons tends to increase in probability with age, and therefore favors an R type curve over an S0 curve. Similarly, the probability of the need to replace conductor due to damage or failure tends to increase with age. Further, as I also discuss on page 715 of Exhibit NWA-1, the storm hardening program could have the result of increasing the probability of these latter types of retirements for older ages. This is because with stronger structures (i.e., poles and towers), more of the force of winds and storms[7] is transferred to the conductor. Over time, this will produce more metal fatigue for conductor and could increase the probability of retirements for this reason.

For these reasons, an R1 survivor curve type is more reasonable than the S0 curve type that witness Pous has selected. It is also true that R type curves are much more common for this account in the industry than the S0 curve type witness Pous has selected. Based on the industry data witness Pous cites in his testimony, almost all estimates for this account are based on R type curves. Further, most are actually for a higher mode than the R1 curve type I have used, which further supports the concepts I have discussed above. The S0 curve type was not used for any of the studies included in the industry database that witness Pous has cited.

Witness Pous also provides a number of reasons that he claims will result in longer lives for this account. In general, he does not present valid reasons for his decision to select an uncommon curve type. His discussion of the impact of the storm hardening program, in which he argues that the result of the storm hardening program could result in longer lives for conductor, is incorrect. Witness Pous states that "[t]o the extent transmission poles were knocked down due to severe winds in the past, those events may also have resulted in retirement of transmission overhead conductors in certain instances. To the extent transmission towers and poles are now being constructed to withstand greater storm forces, then that particular aspect of retirements attributable to overhead conductors should also diminish since fewer towers and poles will be knocked over during storms."[8] There are multiple problems with this statement. First, hurricane retirements have been excluded from the life analysis. Thus, the scenario witness Pous describes has no impact on the life analysis. Second, he is also wrong that hurricanes or strong storms are likely to result in fewer retirements of conductor. Hurricane strength winds are still

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[7] Note that winds and storms does not necessarily mean hurricanes and major storms, but also the long term impact of more normal storms and weather such as thunderstorms.

[8] Direct Testimony of Jacob Pous, p. 99, lines 8-13.

likely to result in retirements of conductor, no matter the type of pole to which they are affixed. Instead, as I discuss above the more likely impact of the storm hardening program is that the strength of winds will have more of an impact on conductor now than in the past, due to increased stress on conductor over time.

Witness Pous also argues that the force of retirement due to upgrading lines will be less likely in the future because the Company has a "sizeable dollar level of investment in higher voltage transmission lines."[9] However, FPL has had higher voltage transmission lines for many years. The impact of having higher voltage lines on capacity retirements is therefore incorporated into the historical data. Witness Pous provides no evidence that the future will be any different. He also discusses the impact of installing dampers on the system. However, as witness Pous notes, dampers have been installed since 1974. The impact of dampers is therefore also already incorporated into the historical data.

[9] Direct Testimony of Jacob Pous, p. 99, lines 16-17.

vii. Account 362 Station Equipment

The currently approved estimate for this account is the 43-R1.5 survivor curve. I have recommended the 45-R1.5 survivor curve, which recognizes a moderate trend in the data towards a longer service life. OPC has proposed the 48-S0.5 survivor curve. As with many accounts, OPC Witness Pous's estimate is primarily due to a change to a lower mode curve. FEA has also recommended an adjustment to the survivor curve for this account and has proposed the 51-S0.5 survivor curve. Similar to OPC, FEA witness Andrews's estimate is also due in part to a change to a lower mode curve. In addition, witness Andrews's change in estimate is due to his reliance on the most recent 20 year experience band. I have addressed the issues with witness Andrews's approach in Section VI.B.iv of my rebuttal testimony and will not repeat that discussion here.

Figure 9 below shows a comparison of my estimate (shown in black) and that of OPC (shown in red) to the overall band. This presents a better illustration of the two estimates than witness Pous's graph shown on page 105 of his testimony, in which he omits a large portion of each curve. Both curves are similar through about age 50. The portion of the curve through about age 50 is the portion of the curve for which representative data is available. As the chart below illustrates, the biggest difference between the two curves is what both witness Pous and I project beyond the data (i.e., beyond about age 50 after the black squares stop on the graph). The 45-R1.5 represents a more reasonable projection beyond the end of the data in Figure 9 for the same reasons I have discussed for Account 353 in Section ii of this exhibit. Retirements of the larger dollar items in the account such as transformers and circuit breakers should be expected to increase in frequency as they age, consistent with the R1.5 curve type.

Figure 9

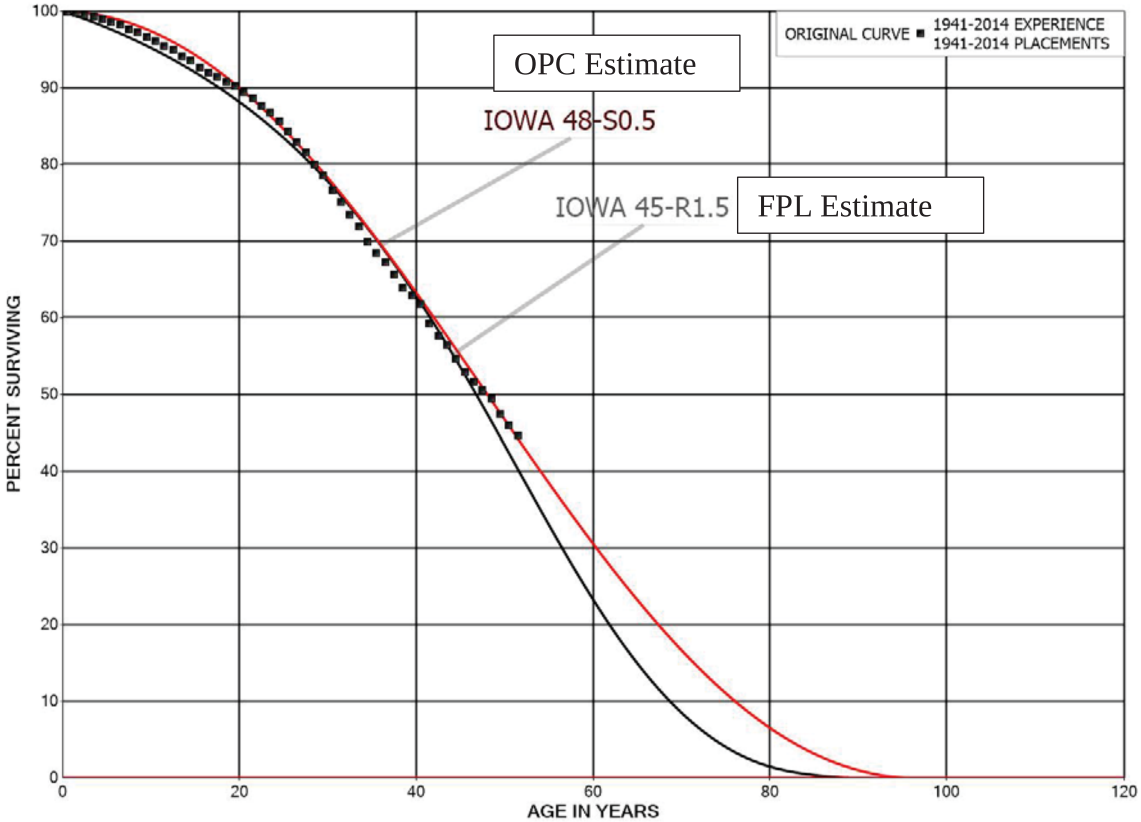
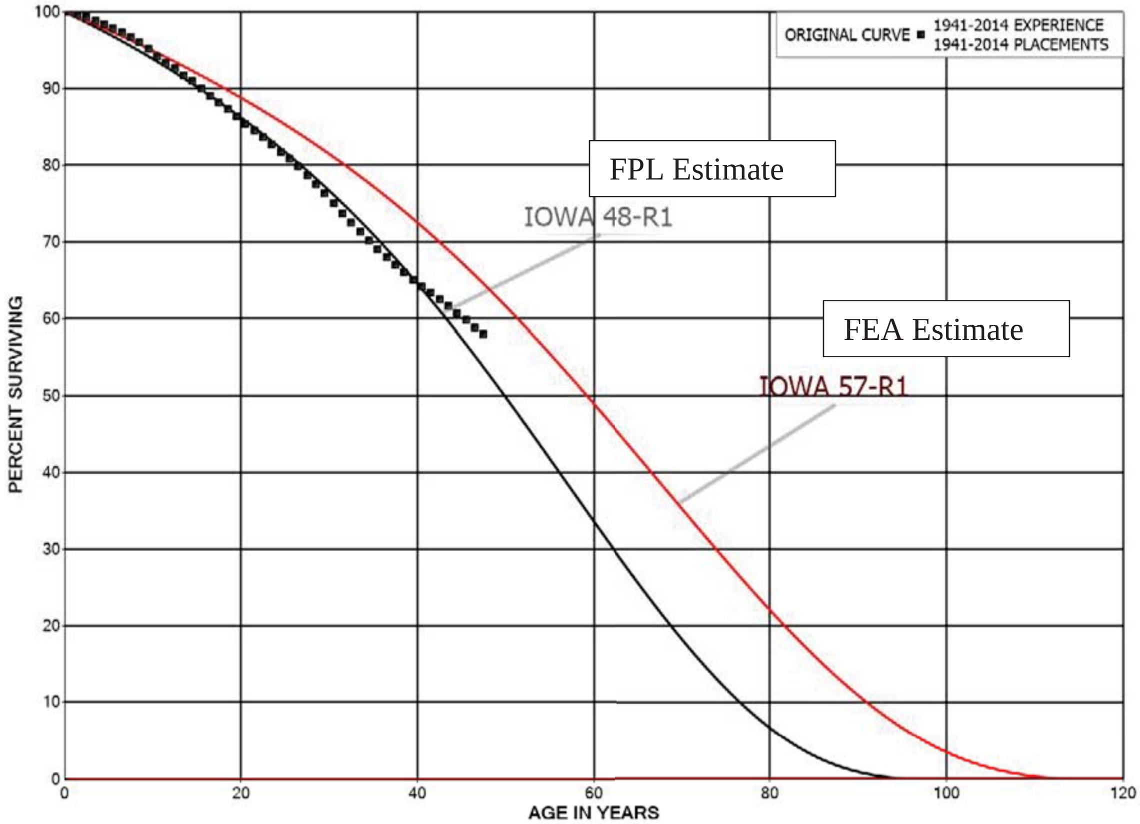

ORIGINAL CURVE ■ 1941-2014 EXPERIENCE
1941-2014 PLACEMENTS
OPC Estimate
IOWA 48-S0.5
IOWA 45-R1.5
FPL Estimate
PERCENT SURVIVING
AGE IN YEARS
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
120

Figure 10 below provides a similar comparison of my estimate (shown in black) and that of FEA (shown in red) with the overall band. As the chart shows, FEA's estimate is a poor fit of the overall band.

Figure 10



The S0.5 survivor curve selected by both OPC and FEA is not as common of a curve type as the R1.5 I have used in the 2016 Depreciation Study. Referring to the industry database witness Pous cites in his testimony, one can see that while S0.5 curves have occasionally been used for this account, R1.5 curves are much more common by about a 5 to 1 margin. Further, R type curves in general are far more common than S type curves. As was discussed for Account 353 Station Equipment, the larger dollar assets in the account such as transformers and circuit breakers will tend to retire in the middle portion of the curve. For this reason, it is reasonable to expect an increasing level of retirements in the middle portion of the curve (say from 30 to 60 years), which is consistent with the R type curves.

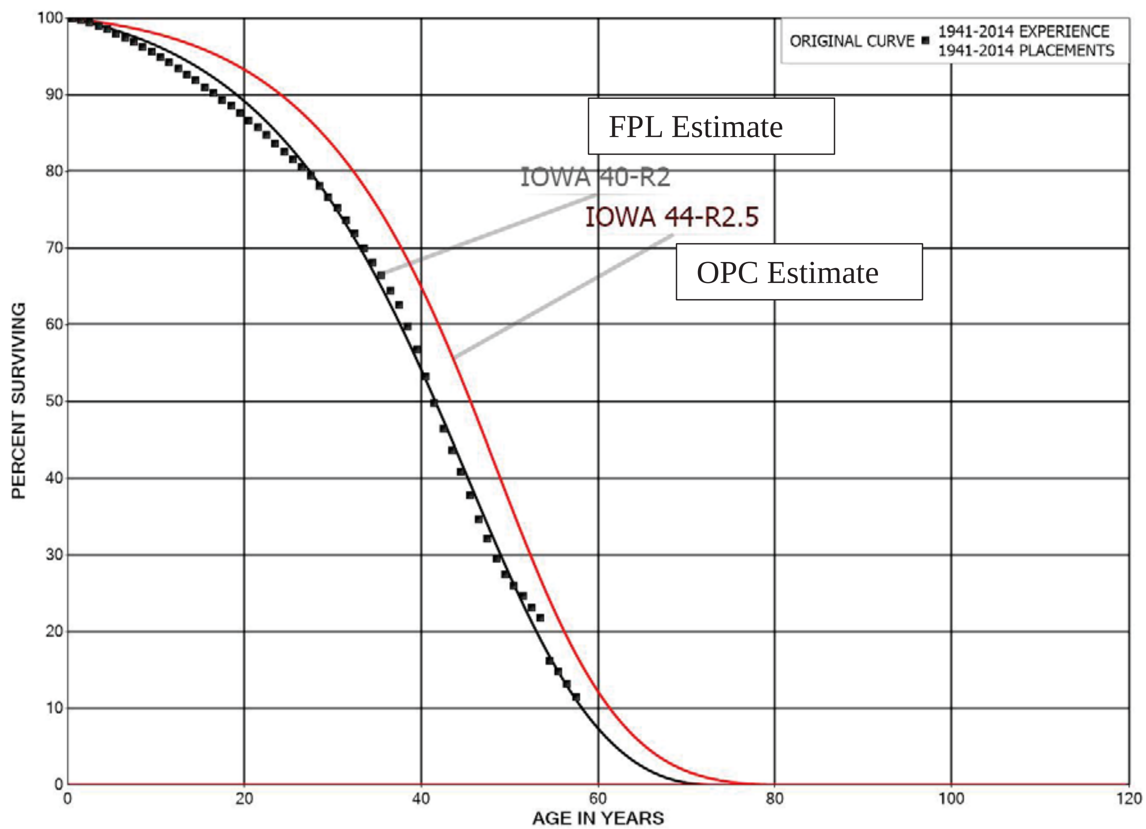
Witness Pous also discusses the impact of tighter design tolerances on the life of transformers. I have addressed his comments on this topic in the discussion for Account 353 in Section ii of this exhibit. The same concepts apply to this account. The concept of tighter design tolerances favors a higher mode curve than a lower mode curve, and provides another reason that the R1.5 curve type is a better selection than the S0.5 curve type used by both witness Pous and witness Andrews

viii. Account 364.1 Poles, Towers and Fixtures – Wood

Prior to the 2016 Depreciation Study, wood and concrete poles were studied together. The currently approved estimate for both types of poles is the 39-R2 survivor curve. Because wood poles have historically had a shorter service life on average than concrete poles, this implies that the currently approved average service life for wood poles is somewhat shorter than 39 years. For the 2016 Depreciation Study, I have proposed to sub-divide wood and concrete poles into separate subaccounts. For this account, which includes wood poles, I have proposed the 40-R2 survivor curve. This represents a moderate increase over the existing service life. OPC's proposal is to increase the service life to the 44-R2.5 survivor curve. OPC's estimate is a poor fit of the historical data, both for the overall experience and for the more recent experience OPC witness Pous relies on. OPC's estimate also represents a fairly sizeable increase in light of the Company's ongoing storm hardening program in which wood poles will be replaced at higher rates than was the case historically.

I have provided a comparison of my estimate (shown in black) and OPC's estimate (shown in red) to the overall experience band in Figure 11 below. As the chart illustrates, my estimate is a much better fit of the overall band.

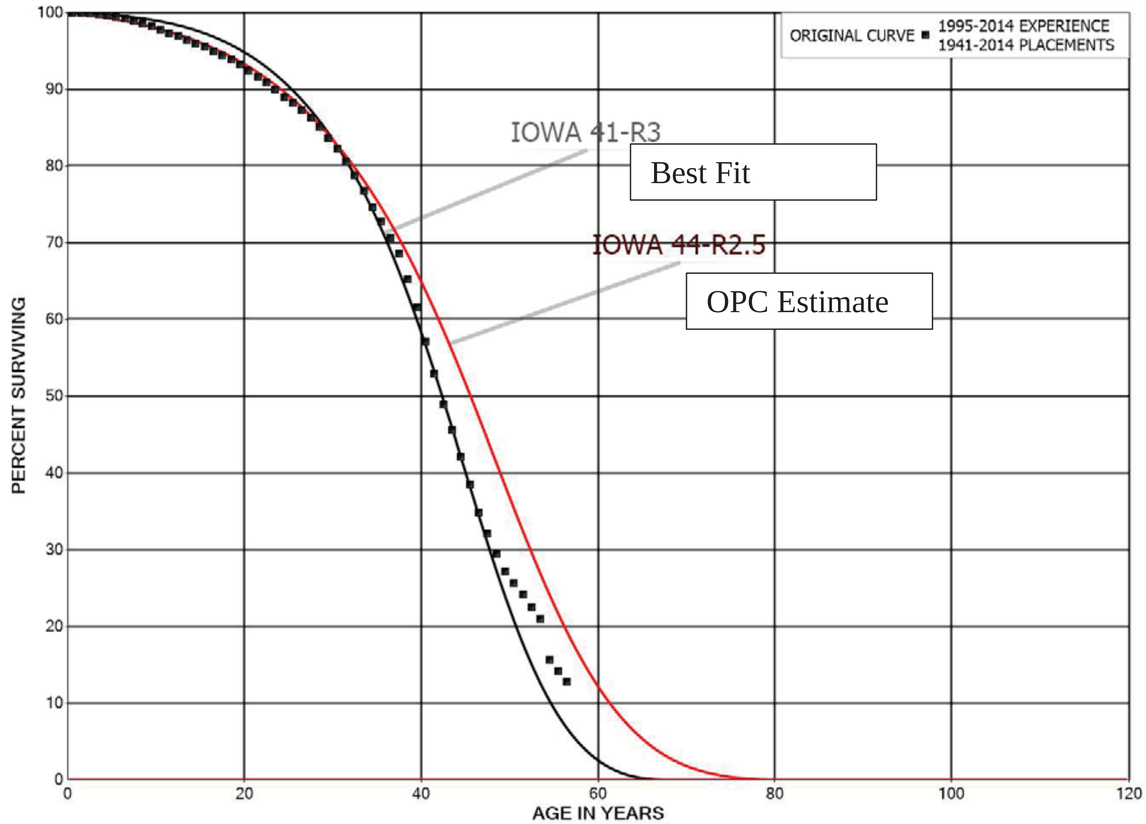
Figure 11



While witness Pous makes a handful of general statements in his discussion of this account, the only actual evidence he presents in support of his proposal is to use a more recent experience band instead of the overall experience band. His implication on pages 107 and 108 is that I did not consider the analyses of more recent experience bands. This is incorrect. I did consider more recent bands for this account. However, unlike witness Pous, when I considered these bands I used proper curve fitting techniques that did not ignore the most meaningful portion of the survivor curve.

When proper curve fitting techniques are used, more recent bands provide similar statistical indications to the estimate I have proposed. For example, Figure 12 below presents the 1995-2014 experience band relied on by witness Pous. The graph also shows in red the 44-R2.5 survivor curve recommended by witness Pous. In contrast to witness Pous's estimate, I have also presented a graph of the 41-R3 survivor curve (shown in black), which is a much better fit of the data. The chart illustrates that witness Pous's estimate is a similarly poor a fit for the more recent experience band as it is for the overall experience band. I should also note that the 43-R2.5 survivor curve witness Pous shows in his graph on page 110 of his testimony, but did not select as his final estimate, is also a poor fit of the historical data. The 41-R3, which has a similar average service life to the estimate that I recommend, is a superior fit of the data. In particular it is a much better fit for the most meaningful portion of the curve from 80% to 20% surviving. I should note that while I did not select the 41-R3 survivor curve, it would actually produce a shorter remaining life and somewhat higher depreciation expense than the 40-R2 survivor curve I have estimated.

Figure 12



Witness Pous also claims that I "skipped the life estimation phase"[10] for this account. This is untrue. I have explained the life estimation phase on pages 727 and 728 of Exhibit NWA and have specifically explained the impacts of the pole inspection and storm hardening program in the responses to discovery.[11] I have explained that information external to the statistical analysis supports that, if anything, the service life should be shorter in the future than represented by the historical data. The first and most meaningful piece of information is the storm hardening program. Since the program's inception, the Company's focus has been on replacing wood poles on feeder lines, which is ongoing. The Company then plans to move to replacing wood poles on many lateral lines. Storm hardening is planned to continue through at least 2024. Thus, the expectation should be that a higher level of retirements will continue for some time and the result will be that, if anything, the service life for this account will decline. Further, the impact of storm hardening should at a minimum offset any other factors witness Pous discusses that may result in a longer life.

[10] Direct Testimony of Jacob Pous, p. 107, line 14.

[11] See FPL's responses to OPC's Tenth Set of Interrogatories No. 253 provided in Exhibit NWA-5.

The second piece of information to consider is the pole inspection program. I have discussed the impact of the pole inspection program in Section VI.C of my rebuttal testimony. Indeed, the fact that more recent bands show higher mode curves for this account supports the concepts I set forth in that section. Further, as I explained, combined with standards for a stronger and resilient system, it is quite possible that the pole inspection program will result in more retirements and a shorter average service than occurred in the past.

Finally, witness Pous discusses "changing chemical treatments for wood poles."[12] I should first note that FPL has treated poles for many years, and so the impact of using treated poles is already incorporated into the data. This certainly does not provide a reason to ignore the most meaningful portion of the survivor curve, as witness Pous choses to do. Further, I should note that newer types of pole treatments do not necessarily result in longer lives than older types of pole treatment. For example, one reason pole treatments have changed over time is for environmental reasons. Newer treatments may be more environmentally friendly but do not necessarily result in an appreciably longer life (and the opposite could in fact be true).

[12] Direct Testimony of Jacob Pous, p. 107, line 18.

ix. Account 364.2 Poles, Towers and Fixtures - Concrete

Similar to Account 364.1, the approved estimate for the assets in this account was estimated for both wood and concrete poles. The approved estimate is the 39-R2 survivor curve. I have recommended the 50-R1.5 survivor curve. This estimate is for a longer service life than the Company has historically experienced for concrete poles, which is due in part to the expectation that the current investment in this account will experience a somewhat longer service life than has occurred historically due to newer concrete poles being stronger. As noted in my Direct Testimony, my estimate is for an average service life that is six years longer than the historical average service life for this account based on FPL's actual experience.

OPC has proposed the 56-S0 survivor curve. This estimate is more than ten years longer than the Company's actual experience for this type of assets. As with many accounts, OPC's estimate is primarily the result of lowering the mode of the curve. OPC's only real support for lowering the mode for this account is an analysis of a more recent placement band. As I will explain, OPC's analysis does not actually provide support for witness Pous's conclusion.

I should first point out that the best fitting curve for the overall band is the 44-R1.5 survivor curve. This can be seen in Figure 13 below. The chart also shows more recent placement bands (the 1975-2014 placement band is shown in green and the 1985-2014 placement band is shown in blue). The available data for more recent placement bands indicate a somewhat longer average service life, although these bands also indicate a somewhat higher mode curve. A comparison of more recent bands to the overall band can also be seen in the figure below.

Figure 13

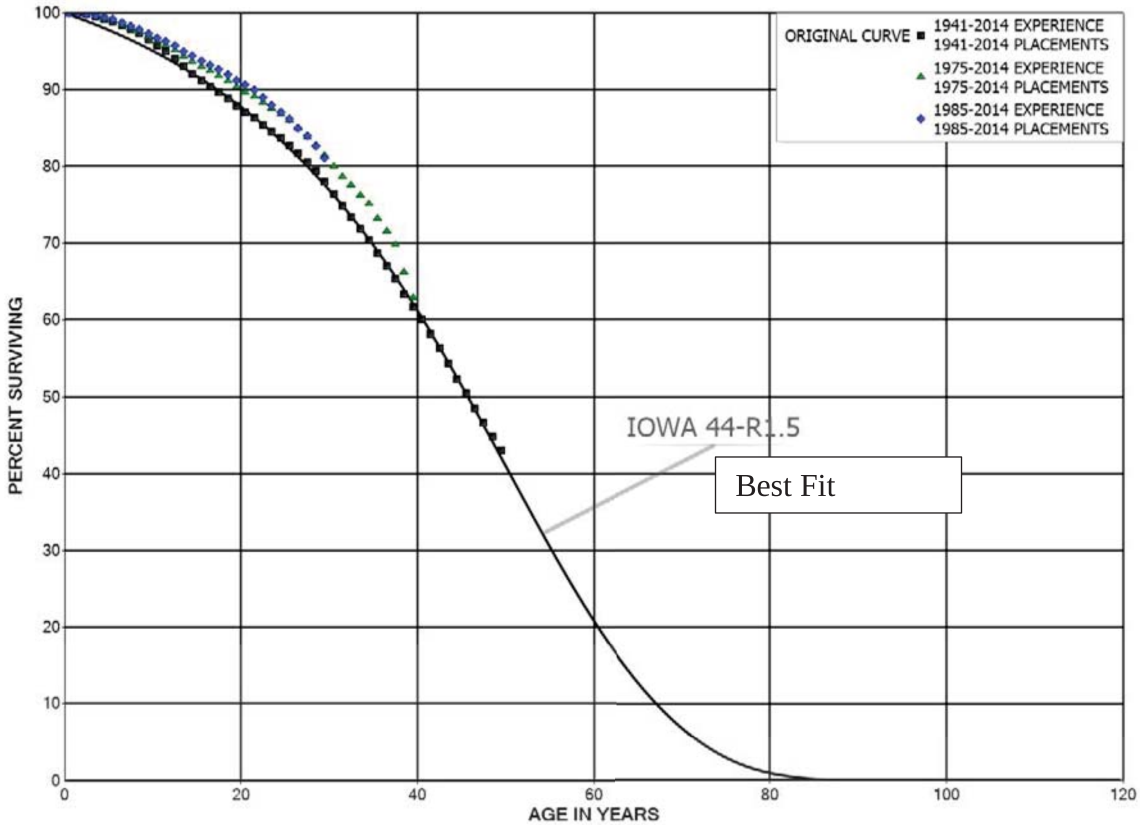
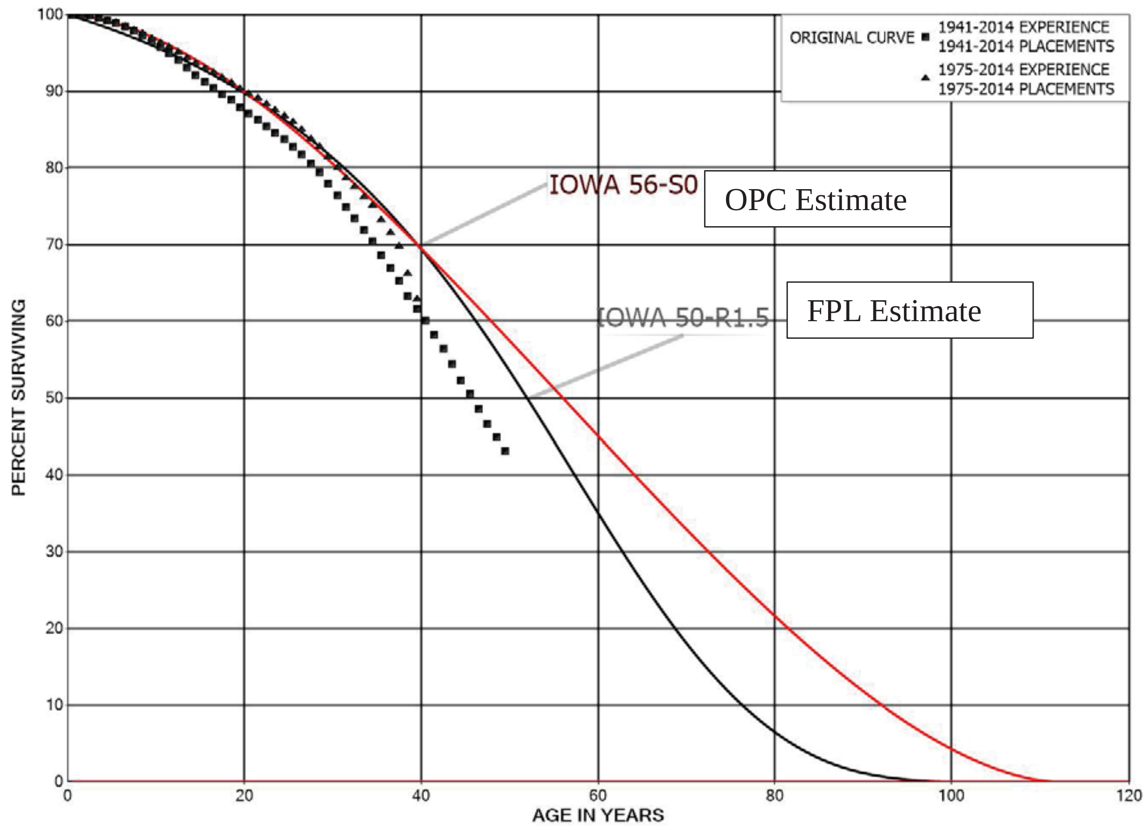

ORIGINAL CURVE
1941-2014 EXPERIENCE
1941-2014 PLACEMENTS
1975-2014 EXPERIENCE
1975-2014 PLACEMENTS
1985-2014 EXPERIENCE
1985-2014 PLACEMENTS
IOWA 44-R1.5
Best Fit
PERCENT SURVIVING
AGE IN YEARS
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
120

Figure 14 below provides a comparison of my estimate (shown in black) and OPC's estimate (shown in red) to the overall band as well as the 1975-2014 placement band (as can be seen in Figure 13 above the 1985-2014 placement band is similar to the 1975-2014 placement band, but includes fewer data points).

Figure 14

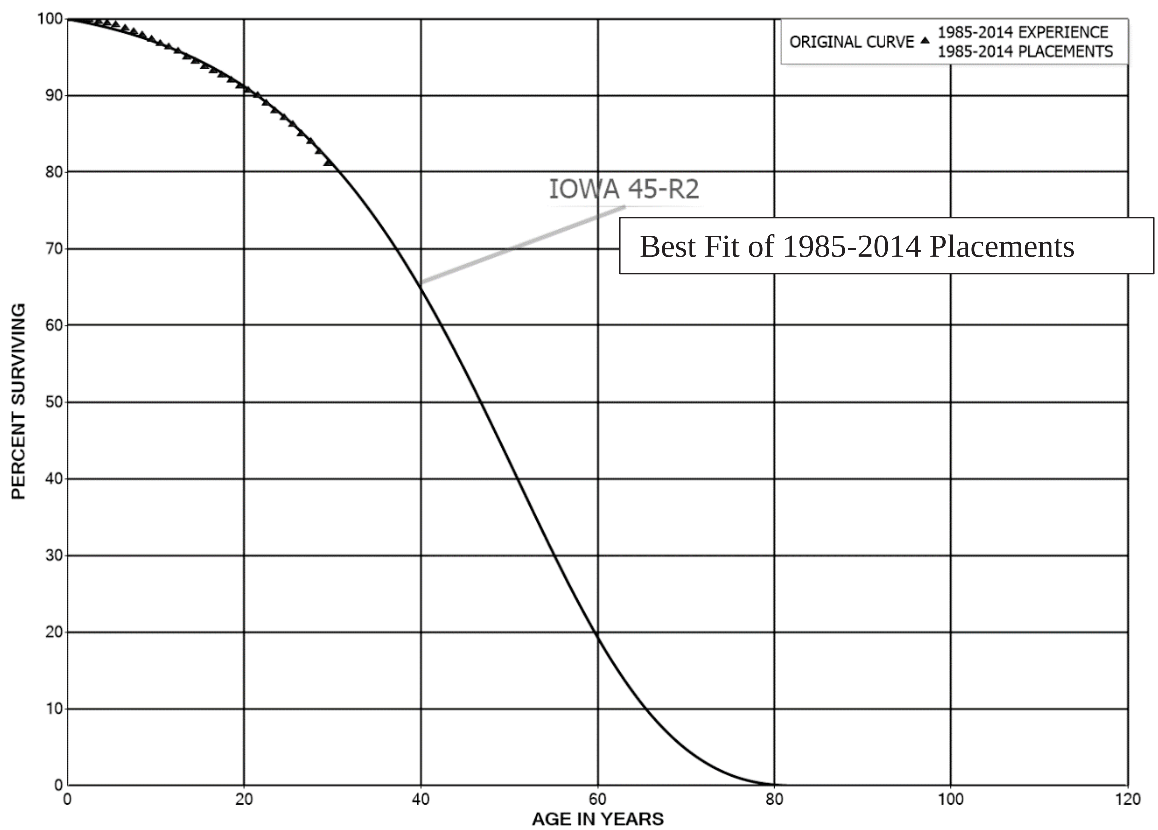


As can be seen in the graph, both my estimate and that of witness Pous predict a longer service life than FPL has historically experienced, since both of our curves are above the historical data on the graph. Further, both of our estimates give more consideration to more recent placement bands, which can be seen by the fact that both estimates are closer to the more recent placement bands. As can be seen in Figure 14, the main difference is that witness Pous projects a slower rate of retirements beyond age 40. This is the result of his selection of a lower mode curve. Importantly, he has selected a lower mode curve than what the Company has experienced historically.

A lower more curve should not be considered to be reasonable for this account. First, the Company has not historically experienced a low mode curve for this account. Second, witness Pous notes the pole inspection program on page 113 of his testimony. As I have explained in Section VI.C, of my rebuttal testimony, the pole inspection program should result in a higher – not lower – mode curve. Finally, witness Pous's analysis of more recent placement bands does not support his selection of a lower mode curve. If anything more recent placement bands support the opposite. Witness Pous's estimate is based primarily on the 1985-2014 placement band. However, as with most of his presentations of survivor curves in his testimony, the chart he shows on page 113 of his testimony omits a significant amount of information. In fact, for this account witness Pous does not present any information below 80% surviving.

In fact, the 1985-2014 placement band does not support witness Pous's selection of a lower mode curve. In fact, the best fitting curve has a slightly higher mode than my estimate (and therefore a higher mode than OPC's estimate), as can be seen in Figure 15 below.

Figure 15



Witness Pous provides little other support for his estimate. He provides a comparison to industry averages, which I have explained is not meaningful given the different operating environment for FPL than for many other utilities. He also compares the maximum lives of his estimate and my estimate. I disagree with his assessment that a maximum life longer than 100 years is reasonable. Given the Company's approach to storm hardening, I would not expect poles that are older than 100 years of age to be of sufficient strength and reliability from a storm hardening perspective – particularly in light of the harsh conditions in FPL's service territory.

x. Account 365 Overhead Conductors and Devices

The currently approved estimate for this account is the 41-S0 survivor curve. The historical data indicates a longer service life than the approved estimate. I have estimated the 48-R1 survivor curve, which incorporates the trend to a longer service life and represents an increase in average service life of seven years. My estimate also represents a change in the mode of the curve. The R1 curve I have selected is a good fit of the representative data points for the historical data. However, it is also more reasonable for the assets in this account. The existing S0 survivor curve projects a fairly constant level of retirements as the assets in the account age, whereas the R1 projects an increasing level of retirements with age. Given the harsh operating environment in FPL's service territory, corrosion and stress on conductor due to exposure to winds and storms should be expected to increase the probability of retirement with age. The R1 survivor curve is therefore a better representation of these forces of retirements.

OPC has proposed the 53-R1 survivor curve for this account. FEA has proposed the 51-R1 survivor curve. OPC's estimate is therefore for an increase in average service life of twelve years when compared to the approved estimate. FEA's estimate is an increase in average service life of ten years. I should note both OPC and FEA have also proposed the same R1 type survivor curve that I have recommended.

One of the bases of OPC and FEA's proposals is their reliance on shorter bands. I have explained the problems with their approach in Section VI.B.iv of my rebuttal testimony. Neither party has provided a compelling explanation as to why to deviate from the overall band. As a result both have over-emphasized short-term experience that may not be representative of the future. Further, as I have explained on page 731 Exhibit NWA-1 and discussed further for Account 355 in Section v of this Exhibit, while the impact of the storm hardening is unknown at the present time, it could result in a shorter life for conductor due to increased stress on wires. This provides another reason for caution in terms of both increasing the life too much and in over-relying on recent bands.

Figure 16 below provides a comparison of OPC's estimate (shown in red) and my estimate (shown in black) to the overall band. As can be seen in the chart, my estimate is a much better fit. Similarly, Figure 17, which follows, compares my estimate (shown in black) and FEA's estimate (shown in red) to the overall band. Again, my estimate is the better fit.

Figure 16

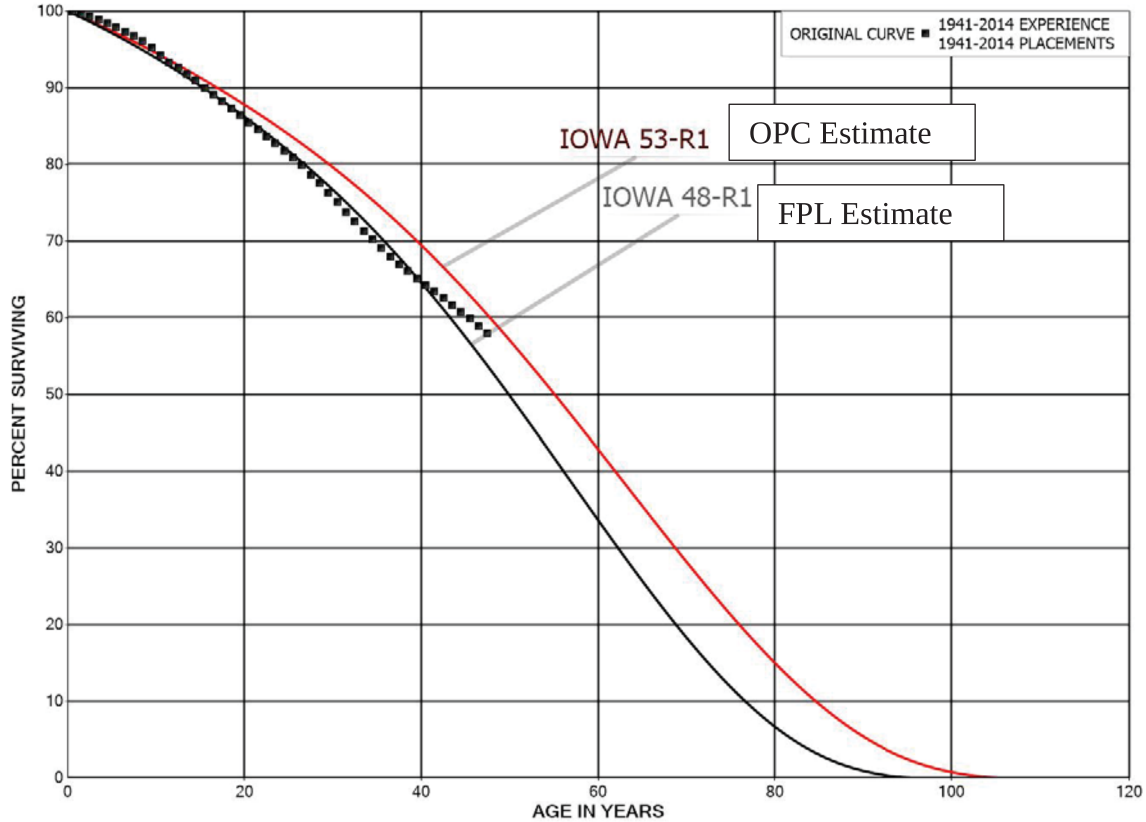
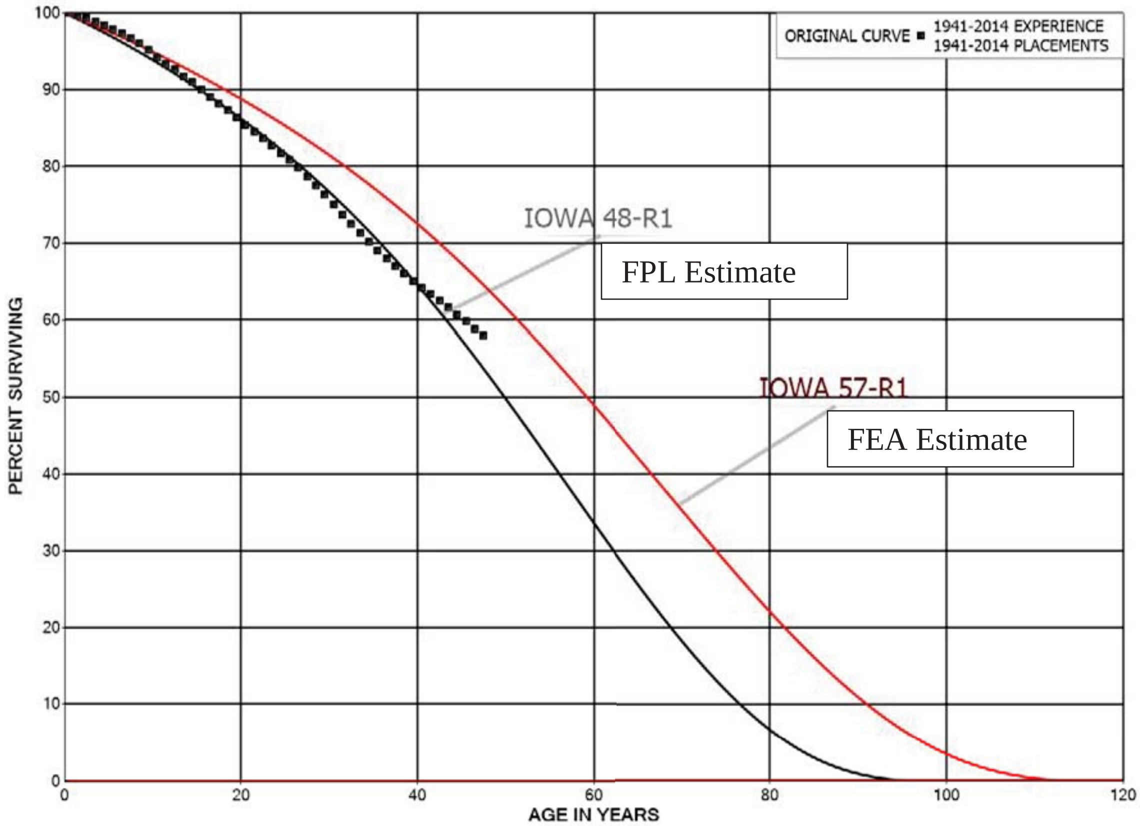

ORIGINAL CURVE ■ 1941-2014 EXPERIENCE
1941-2014 PLACEMENTS
IOWA 53-R1
OPC Estimate
IOWA 48-R1
FPL Estimate
PERCENT SURVIVING
AGE IN YEARS
0
10
20
30
40
50
60
70
80
90
100
120

Figure 17

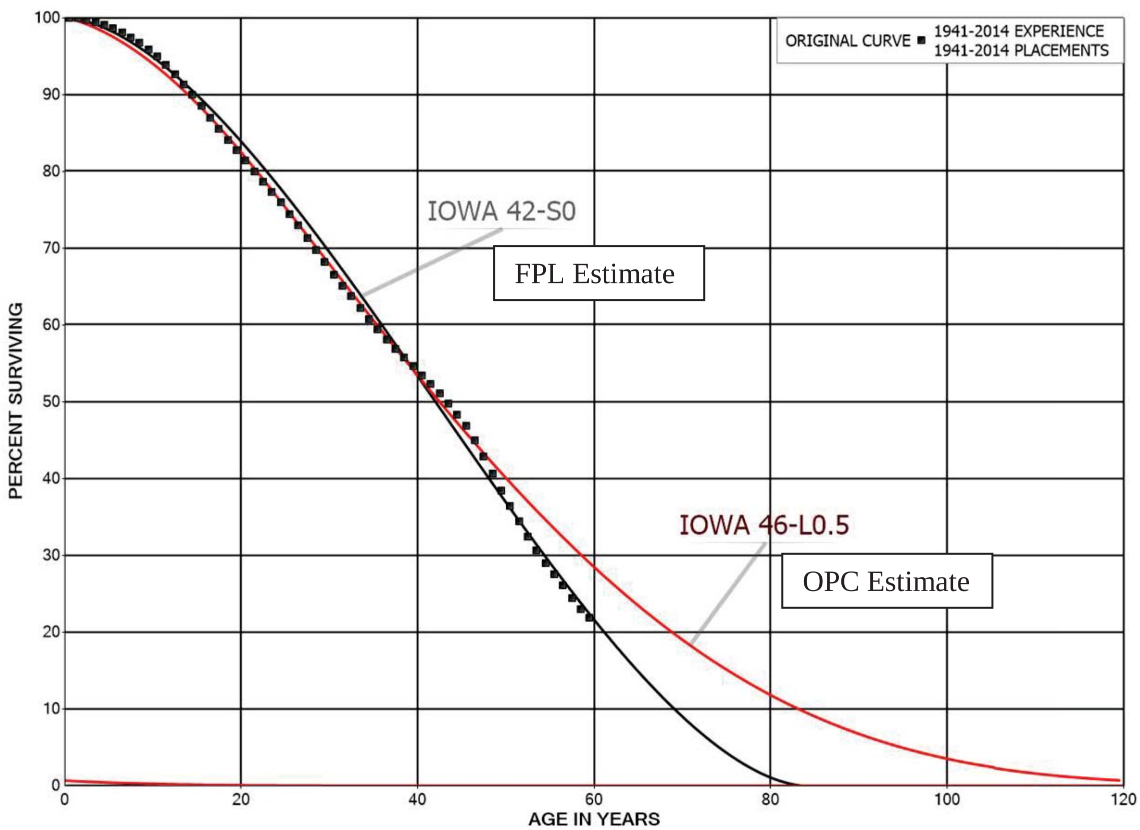


FEA does not provide any additional support for witness Andrews's estimate. OPC provides very little support other than the statistical analysis, which I have addressed above. Witness Pous does not agree with the impact of the storm hardening program on conductor, but I have already addressed this point in Section vi of this exhibit. Witness Pous also compares the maximum lives forecast by both of our estimates to maximum lives for estimates of other utilities. As I have explained in Section III.C of my rebuttal testimony, FPL should be expected to have shorter lives than many other utilities due to the harsh conditions in FPL's service territory. This would also be true of maximum lives. I would expect the maximum lives for FPL's conductor to be quite a bit shorter than many other utilities due to the impact of corrosion and stress on the Company's conductor. Given these factors, a maximum life longer than 100 years (as witness Pous projects) is not as reasonable as is the maximum life resulting from my estimate.

xi. Account 376.6 Underground Conductors and Devices – Duct System

The currently approved estimate for this account is the 38-S0 survivor curve. I have recommended to increase the service life and retain the existing curve type. The 42-S0 is my proposed estimate for this account. OPC has proposed the 46-L0.5 survivor curve for this account. I have discussed the curve fitting for this account in detail in Section VI.B of my rebuttal testimony and have demonstrated both that my estimate is a better fit of the historical data and that witness Pous's selection of an L0.5 curve type is inappropriate. I will not repeat these arguments here, but present again a comparison of our estimates to the Company's data in Figure 18 below. As can be seen in the chart, my estimate (shown in black) is a better fit of the data, and in particular is a better fit from ages 50 to 60.

Figure 18



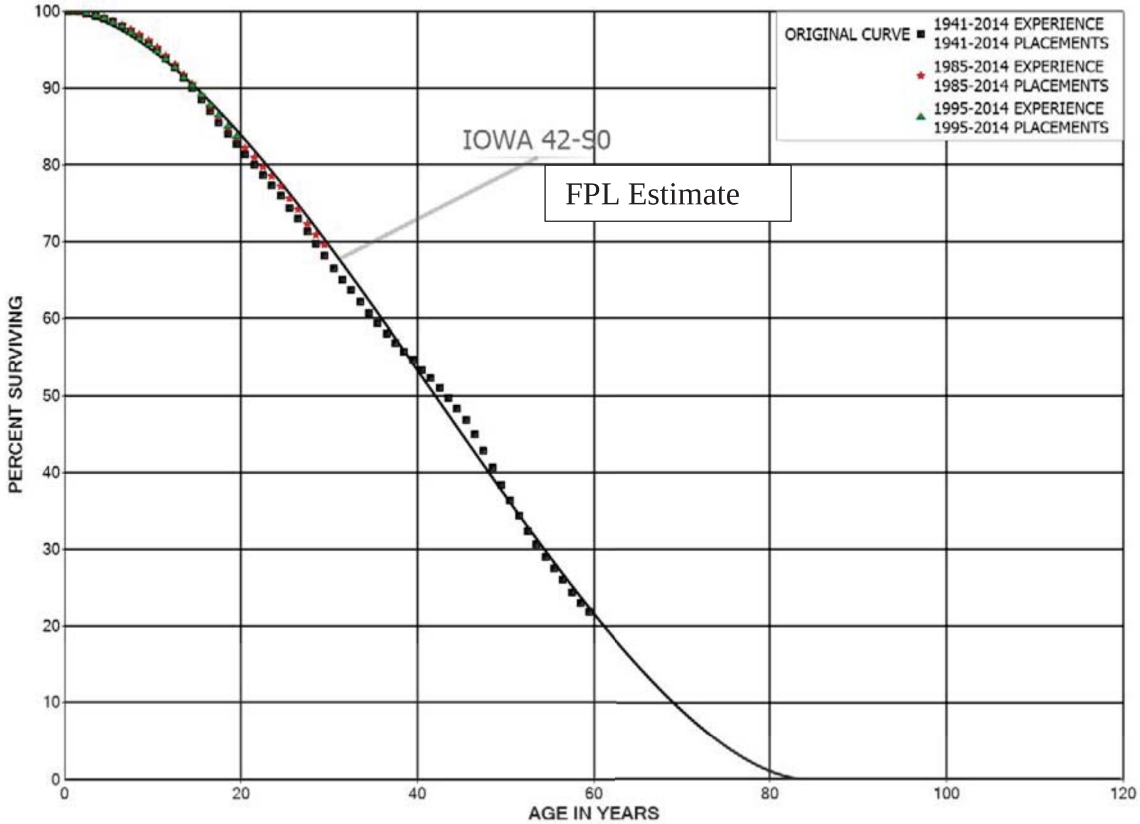
Witness Pous's primary basis for a longer service life, other than his inappropriate approach to curve fitting, is a discussion of the impact of newer types of underground cable that are less subject to early retirements as was the case with older types of cable. There are a couple of issues with witness Pous's discussion as it relates to his recommendation. I should first note that I have considered the impact of newer types of cable in my estimate, as is discussed on page 737 of Exhibit NWA-1. Second, FPL has divided Account 367 into two different types of underground conductor – direct buried and duct system. The issue with high failure rates for older cable is more pronounced for direct buried cable, which is in a different subaccount (Account 367.7) than this account (Account 367.6). Thus, his discussion is more pertinent to the other subaccount. However, as I will discuss in Section xi of this exhibit for Account 367.7, he has taken the opposite approach for that subaccount, proposing a significant increase in the average service life and a curve type that forecasts that some of the older types of cable with last longer than 100 years of age. Unlike my approach, witness Pous has therefore not consistently considered the impact of newer types of underground cable.

In addition to the fact that witness Pous has taken an inconsistent approach to the impact of improvements in cable quality, the Company's data does not support his conclusion as it relates to this account, which does not contain direct buried cable. As I have already explained in discovery,[13] an analysis of more recent placement bands (i.e., newer vintages which represent newer types of underground cable) provides similar service life indications as the overall experience band. Further, my estimate is a very good fit of these more recent bands, and if anything my estimate actually reflects a somewhat longer service life than is indicated by more recent placement bands.

Figure 19 below provides a comparison of the most recent 20 year (shown in green) and 30 year (shown in red) placement bands to the overall experience band. As the chart shows, there is not a material difference between the more recent placement bands and the overall band. Further, my estimate is a very good fit of the more recent placements, and is actually slightly elevated when compared to these bands. Thus, FPL's data does not support witness Pous's conclusion that there will be a significant longer life for the newer cable in this account.

[13] See FPL's response to OPC's Seventh Set of Interrogatories, No. 201(h) (provided in Exhibit NWA-5), in which I have already explained many of the reasons set forth here why witness Pous's estimate is a poor choice for this account.

Figure 19



Witness Pous also cites a statement from FPL representatives that "life of cable for overhead and underground [conductor] is similar."[14] This does not contradict anything I have recommended. My estimates for the two accounts are relatively similar 42 years for underground conductor compared to 48 years for overhead. The Company's data supports a shorter life for underground conductor, which is recognized by both my estimate and by that of OPC. In fact, witness Pous has proposed a larger differential between underground and overhead conductor (46 years vs. 56 years) than I have. Further, more recent notes from my meetings with FPL representatives clarify that it would be reasonable to expect a shorter life for underground conductor than overhead conductor for a number of reasons, including that for underground cable the insulator is built into the cable, failures occur more frequently than for overhead conductor, and water can impact the life of underground cable.[15]

[14] This statement is from my notes provided in Attachment 2 of FPL's response to OPC's First Request for Production of Documents No. 38.

[15] See page 11 of Attachment 1 of FPL's response to OPC's First Request for Production of Documents No. 38.

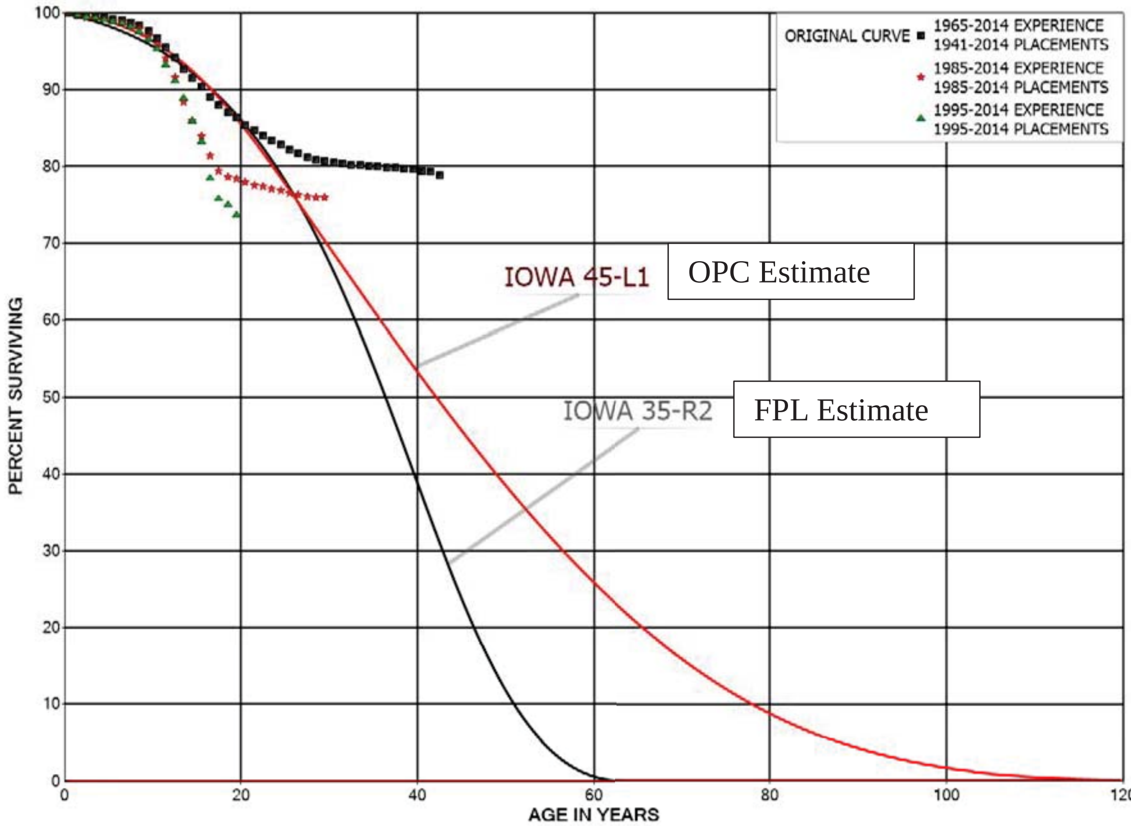
xii. Account 367.7 Underground Conductors and Devices – Direct Buried

The currently approved estimate for this account is the 35-R2 survivor curve. The historical data does not provide materially different indications from the 2009 Depreciation Study. Further, FPL is proactively replacing older direct buried cable. For this reason the expectation going forward is, if anything, for a shorter average service life than has historically been experienced. Further, there are also river crossings in this account, which comprise most of the more recent vintages (since the late 1980s). More recent placement bands indicate a shorter service life than the overall band. For these reasons, my recommendation is to continue to use the approved 35-R2 survivor curve.

Witness Pous has proposed a fairly significant increase in the service life for this account, and has recommended the 45-L1 survivor curve. His estimate is based primarily on the statistical analysis. However, based on his testimony, he does not appear to consider the types of assets in the account, more recent placement bands, or Company plans. This is particularly surprising considering his discussion for Account 367.6 of higher failure rates for older types of underground cable, which again will impact direct buried cable in this account more than the assets in Account 367.6.

A comparison of my estimate (shown in black) and that of witness Pous (shown in red) to the historical data is presented below. As can be seen in the chart, more recent placement bands (shown in green and red) indicate a shorter service life than the overall band.

Figure 20



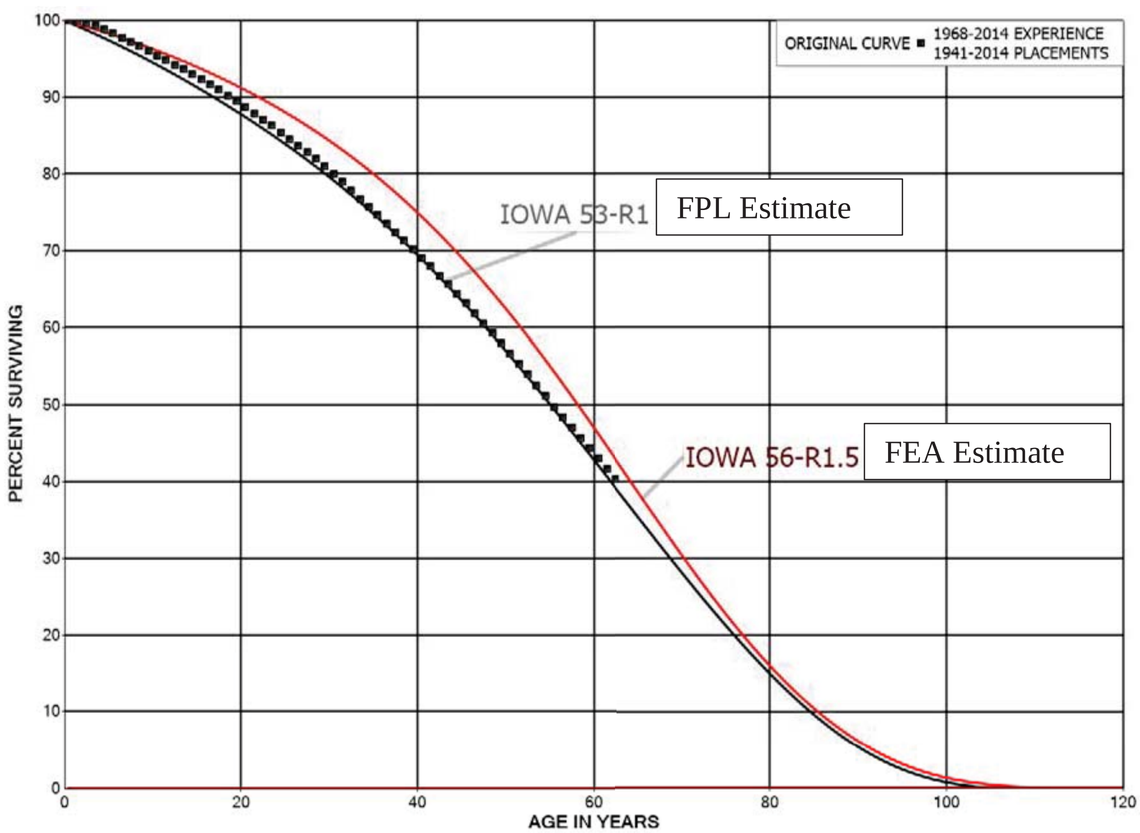
The chart also helps to illustrate the inappropriateness of witness Pous's estimate. As he discusses for Account 367.6 but fails to mention for this account, older types of cable have higher failure rates than newer types of cable. This is particularly true for direct buried cable. As a result, the dispersion pattern indicated by the R2 type curve is much more reasonable than the L1 type curve, in particular because the Company plans to proactively replace older direct buried cable. Retirements for the assets in this account should be expected to increase significantly with age and few should be expected to survive for a very long time. Witness Pous's estimate predicts the opposite, forecasting a slowing level of retirements with age and predicting that some direct buried cable will remain in service for more than 100 years. His estimate is therefore not a reasonable expectation for the assets in this account. Additionally, his estimates for both this account and Account 367.6 are almost the same (45-L1 for this account vs. a 46-L0.5), which makes little sense given that this account has a higher percentage of older cable than Account 367.6.

In addition to the statistical analysis, the only other support for witness Pous's estimate is a comparison to estimates for other utilities. Yet the comparison witness Pous makes for this account is even less reasonable than the comparisons he makes for many other accounts. Most utilities do not have separate subaccounts for direct buried cable, and as a result the service life estimates in industry database he cites on pages 125 and 126 of his testimony are for all types of underground conductor, not just direct buried cable. Further, many utilities operate in different climates than Florida. It is not appropriate to make a comparison of all types of underground conductor from utilities in entirely different regions of the country to only direct buried cable in Florida.

xiii. Account 369.1 Services – Overhead

The currently approved survivor curve estimate for this account is the 48-R1 survivor curve. Consistent with the historical data and for the reasons discussed on page 743 of Exhibit NWA-1, I have recommended the 53-R1 survivor curve. OPC has not proposed an adjustment for this account. FEA has recommended a 56-R1.5 survivor curve. FEA's estimate is based on the most recent 20 year experience band. I have addressed the issues with FEA's approach in Section VI.B.iv of my rebuttal testimony. A comparison of my estimate (shown in black) and FEA's estimate (shown in red) to the overall band is provided in Figure 21 below, which demonstrates that my estimate is a better fit of the overall band.

Figure 21

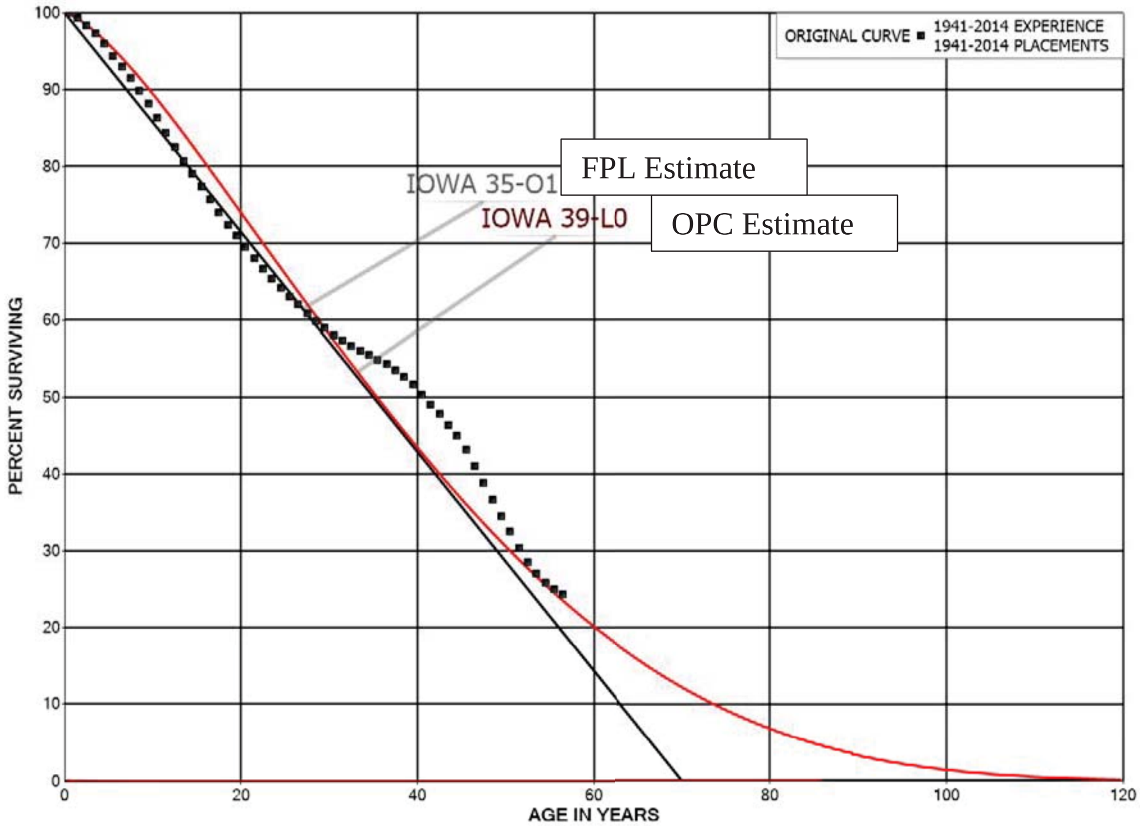


xiv. Account 373 Street Lighting and Signal Systems

The currently approved estimate for this account is the 30-R0.5. I have recommended an increase in average service life and change in curve type to the 35-O1 survivor curve. OPC has recommended an even longer service life, proposing the 39-L0 survivor curve. OPC witness Pous does not provide any support for estimate other than the statistical analysis.

There are a number of problems with OPC's witness Pous's statistical analysis. As with most of his graphs, his graphical presentation on page 127 of his testimony omits important information as he only shows the portion of the graph through age 48.5 and above 30% surviving. However, his presentation of the survivor curves for this account is also simply incorrect. Specifically, it shows a curve labeled as a "35O1" curve, but the actual graph does not show a 35-O1 survivor curve. A comparison of my 35-O1 survivor curve estimate (shown in black) to both OPC's estimate (shown in red) and the historical data is shown in Figure 22 below. As can be seen in the graph, the 35-O1 survivor curve is actually quite different from the curve labeled "35O1" on witness Pous's graph. For example, the 35-O1 is much closer to the historical data for ages 0 through 30 than the curve shown in witness Pous's graph on page 127 of his testimony. The O1 curve is also a straight line, yet the curve labeled "35O1" in witness Pous's graph curves and is not straight.

Figure 22



As a result of his presentation showing the wrong curve, the observations made by witness Pous comparing the 35-O1 and 39-L0 survivor curves are therefore also incorrect. His conclusion that the 39-L0 survivor curve estimate is a better estimate than mine based on the statistical analysis is therefore also incorrect. For example, he states "[a]s shown in the following graph, witness Allis' proposal is not the best fitting curve early on, but becomes a particularly poor fit after age 30."[16] As noted above, witness Pous has shown the wrong curve in his graph on page 127 of his testimony. As can be seen in Figure 22 above, the 35-O1 is in fact a much better fit of the data through age 30 than the 39-L0.

Witness Pous then states that "[w]hile [his] recommendation is also not a particularly great fit of the historical data, it is superior throughout the OLT. Moreover, it better captures the noticeable change in the annual retirement rate after age 30."[17] This too is incorrect. His estimate is not "superior throughout the OLT" when compared to my estimate, but is instead a much worse fit from age 0 through 30. Further, while witness Pous cites a "noticeable change in the annual retirement rate after age 30," a more complete look at the data shows that this "change" is not as pronounced as in his presentation in

[16] Direct Testimony of Jacob Pous, p. 127, lines 4-6.

[17] Direct Testimony of Jacob Pous, p. 127, lines 6-8. I should note that "OLT" is short for "original life table."

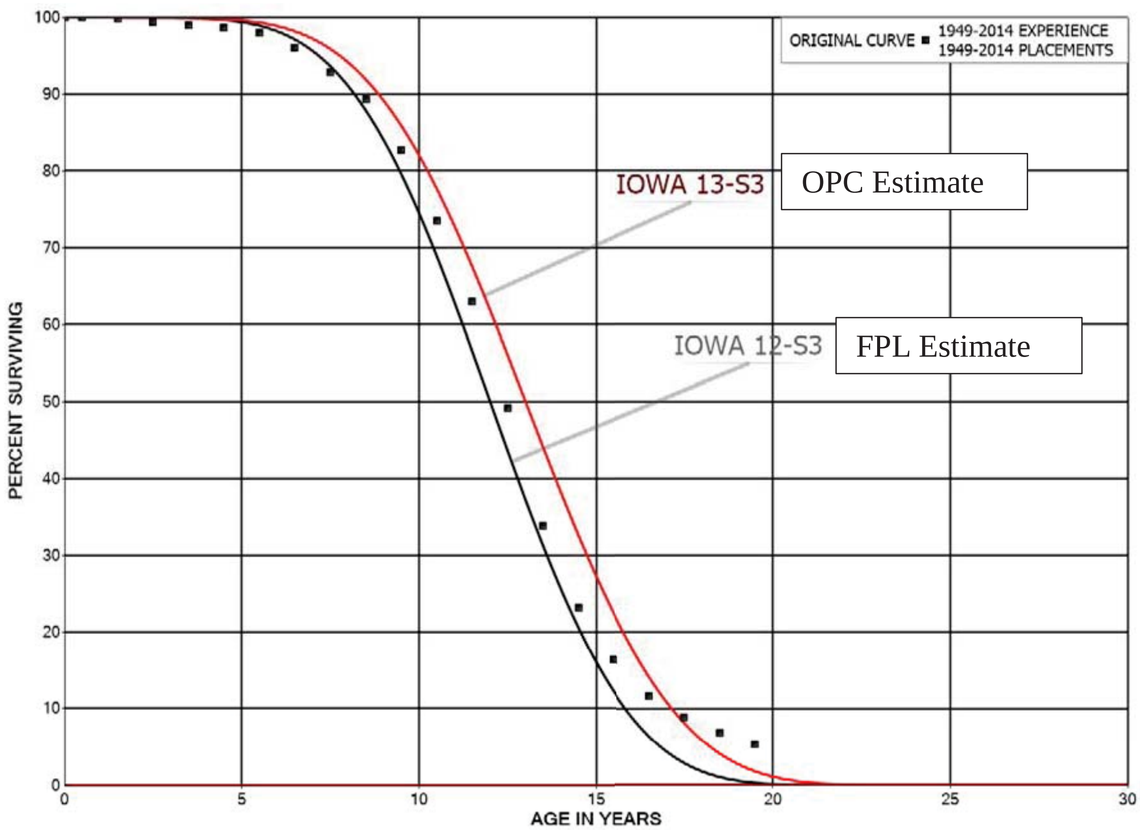
his testimony. As can be seen in Figure 22 above, the rate of retirement increases in the data again after age 40 and returns to percentages surviving that are close to the overall trend established by the 35-O1 curve by age 50. In any event, the data does not support the very long tail extrapolated by witness Pous's selected L0 type curve.

xv. Account 392.3 Heavy Trucks

The current estimate for this account is the 12-S3 survivor curve. The historical data provides similar indications to the previous study. I have recommended to continue to use the 12-S3 survivor curve. OPC has recommended to increase the average service life and has proposed a 13-S3 survivor curve. Witness Pous's recommendation is based on a more recent placement band and on a discussion of an early retirement in the historical data. While I agree with witness Pous that the early retirement he discusses is not likely to recur and should be given less consideration, this retirement activity does not have as much of an impact as his use of a more recent placement band.

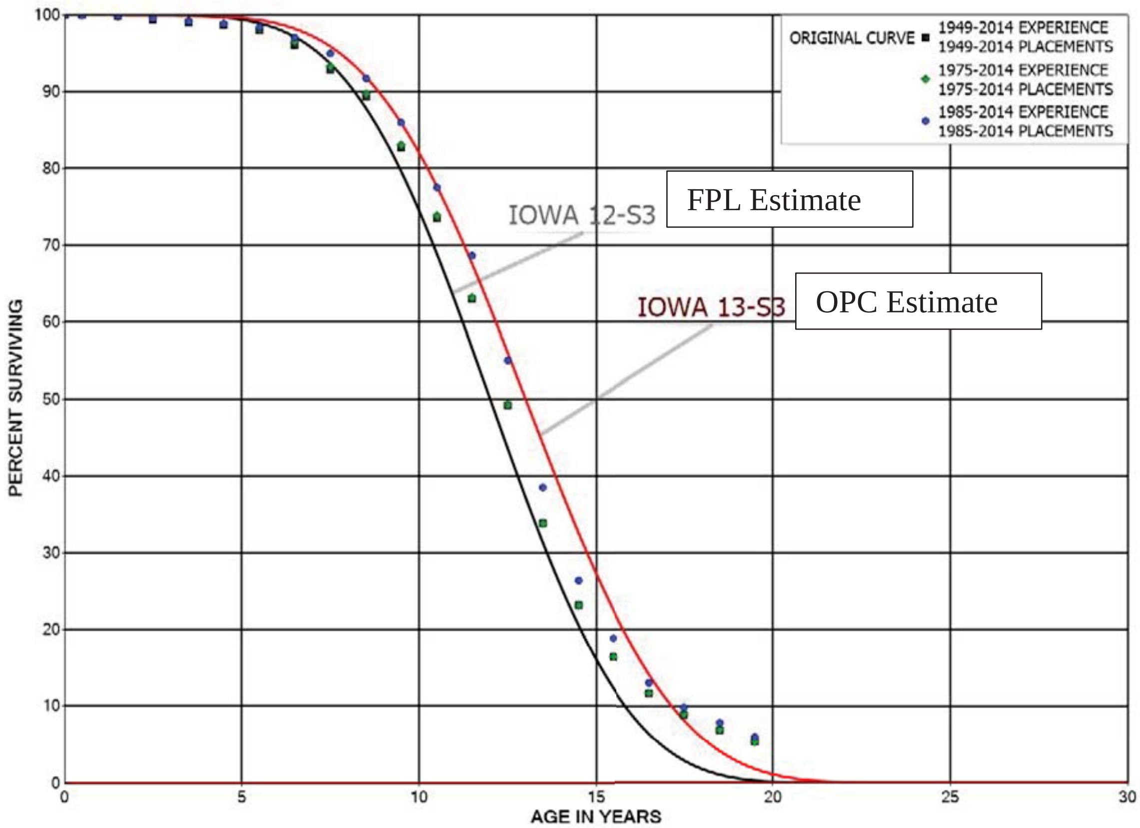
For example, in Figure 23 below I have removed the early retirement noted by witness Pous from the overall band. This graph compares my estimates (shown in black) and OPC's estimate (shown in red) to the data once this retirement is excluded. The overall band therefore does not provide a reason to change the estimate for this account, as the 12-S3 is at least a good of a visual fit as the 13-S3. It is also a better mathematical fit and is somewhat better fit for the portion between 80% and 20% surviving.

Figure 23



More recent placement bands are not necessarily supportive of witness Pous's estimate over mine. Figure 24 below provides a comparison of the overall band and more recent placement bands. While the 1985-2014 placement band (shown in blue) is slightly longer than the overall band, the 1975-2014 placement band (shown in green) is not.

Figure 24



When each of these bands are considered and compared to the 12-S3 and 13-S3 survivor curves, there is not enough support to favor witness Pous's estimate over mine and therefore not enough support to change the currently approved 12-S3 survivor curve. Indeed, the overall and 1975-2014 placement bands indicate that the 12-S3 survivor curve continues to be the better fit of the data.

i. Account 353 Station Equipment

The currently approved net salvage estimate for this account is negative 2%. I have recommended to continue to use the approved negative 2% estimate. OPC has proposed an estimate of 0 net salvage. OPC's estimate means that OPC witness Pous expects that assets at substations such as transformers and circuit breakers will be retired for a net cost of zero. Given the work involved to disconnect, remove and dispose of these assets, as well as the Company's historical data once properly considered, OPC's expectation of zero net salvage is not reasonable. Instead, negative net salvage should be expected for this account.

Witness Pous's criticisms of my estimate for this account are contradictory. In his discussion of this account witness Pous criticizes me for both employing "a simplistic averaging approach"[1] and for not using my "normal approach" to rely "on historical averages."[2] Neither criticism is accurate. As I have explained in Section VII.B of my rebuttal testimony, witness Pous has not accurately characterized my approach, which incorporates more than just reviewing historical averages of net salvage percentages. For example, I have also reviewed and investigated years of data and specific transactions to determine whether they are representative of future net salvage for each account. For this account there are many years for which the gross salvage is higher than should be expected for most of the investment in this account. As a result, the overall and recent averages do not provide the best indication of future experience.

The historical net salvage analysis is provided on pages 341 and 342 of Exhibit NWA-1. The overall net salvage is shown as negative 1%. However, one reason that the overall net salvage is not more negative is that the overall gross salvage is 11%, which offsets the overall cost of removal of 12%. A review of the gross salvage data reveals that the overall level of gross salvage in the historical data is not likely to be indicative of the actual experienced gross salvage for most of investment in the account. Instead, one would expect gross salvage to be lower on average going forward. There are two reasons for this. One is that in recent years the gross salvage includes warranty related transactions (for example in 2012). Most assets will not be retired under these types of circumstances and therefore will experience much lower gross salvage. The other reason is that the older years in the data, from about 1986 through 1997, experienced very high levels of gross salvage. Some individual years experienced gross salvage that was close to or exceeded 100% of the original cost of the assets retired and many of the moving averages were around 50% of the original cost of the assets retired or higher. Clearly FPL will not be compensated for 100%, or even 50%, of the value of most of its assets in this account when they are retired at the end of their useful lives. Instead, gross salvage closer to 5% is a more reasonable expectation. Indeed, the higher levels of gross salvage experienced in the 1980s and early 1990s have

[1] Direct Testimony of Jacob Pous, p. 149, lines 13-15.

[2] Direct Testimony of Jacob Pous, p. 148, line 22 to p. 149, line 1.

not continued since 1997. The overall average gross salvage since 1997 is 6%. Most moving averages of gross salvage since 1997 have been closer to the 5% range, with the exception of those influenced by warranty transactions in recent years. Additionally, as I note on page 709 of Exhibit NWA-1, the most recent 10 and 20 year average gross salvage percentages are 8% and 7%, respectively. The experienced gross salvage since 1997 is a more reasonable predictor of future gross salvage, and is likely still too high given the recent warranty transactions.

In contrast, the cost of removal has been relatively consistent. I should make clear that the full historical database studied includes over $259 million in retirements. The database therefore incorporates a large sample size and a wide variety of types of assets that have been retired and therefore provides a good basis for predicting future cost of removal. Witness Pous's concerns with regard to the mix of the types of investments in the retirements for this account are therefore at a minimum overstated. Additionally, witness Pous's analyses of the historical data focuses on individual years.[3] I have addressed the problems with this approach in Section VII.B of my rebuttal testimony and have explained that it is more appropriate to consider long term and moving averages.

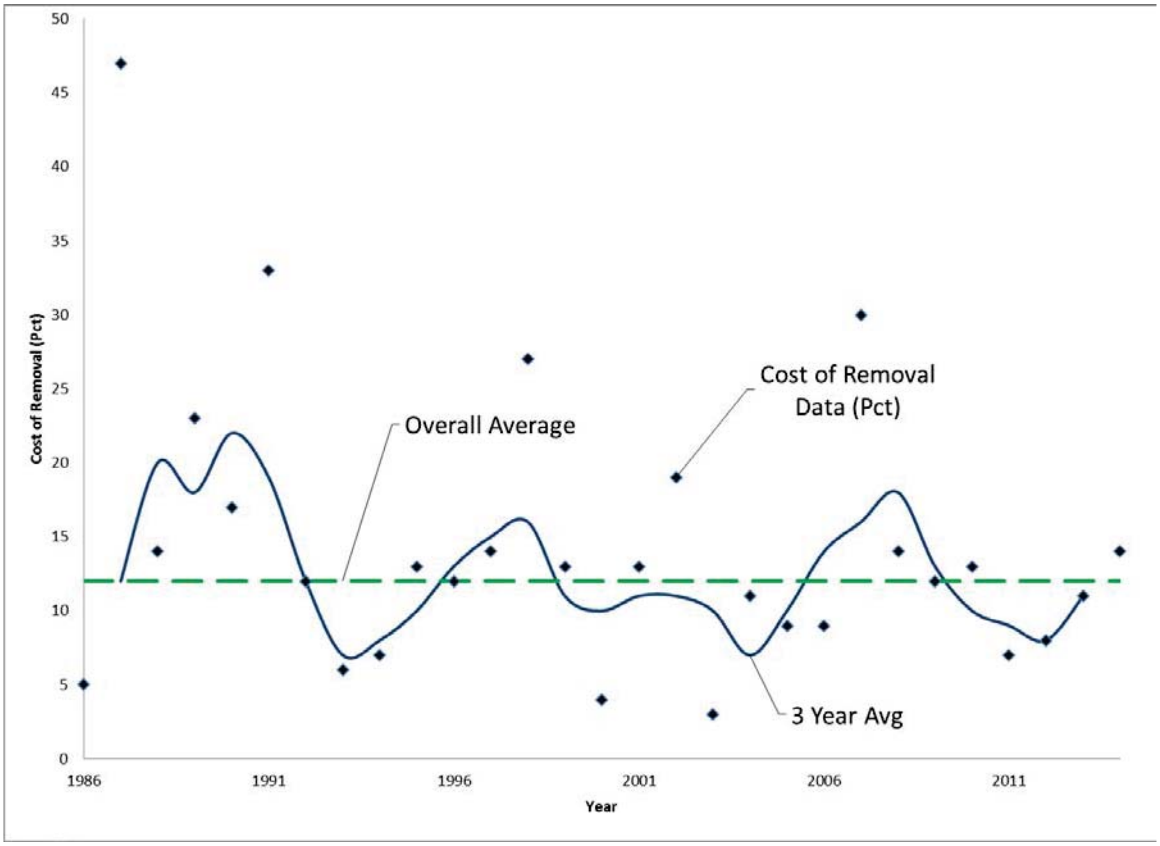
Additionally, much of the basis of OPC's estimate is witness Pous's expectation that "often can bring positive levels of net salvage due to copper content and the lower per-unit cost of removal associated with dollar concentrated large assets."[4] It is incorrect that transformers will often bring positive levels of net salvage once the full process of removing a transformer is considered. While the eventual disposal of a transformer may result in some level of positive salvage, Mr. Pous's statement ignores the fact that there are significant costs to disconnect the transformer, remove the oil from the transformer, and remove the transformer prior to disposal. This work typically involves heavy equipment such as a crane and therefore results in levels of cost of removal which typically offset or exceeds any gross salvage.

Figure 1 below provides a graph of the annual cost of removal percentages (shown as black diamonds), as well as three-year moving averages of cost of removal percentages (shown as the blue line) and the overall average cost of removal percentage (shown as the green dashed line). While the data varies from year to year, cost of removal has consistently been in a fairly similar range with an overall average cost of removal percentage of 12%. As a result, the data provides a sound basis to expect that cost of removal will be on average be around 10% to 15% for the assets in this account.

[3] Direct Testimony of Jacob Pous, p. 150, lines 8-11.

[4] Direct Testimony of Jacob Pous, p. 149, line 23 to p. 150, line 1.

Figure 1



Contrary to witness Pous's assertions that I have only relied on simplistic averaging, the methodology discussed above is a more accurate description of my approach to the estimation of net salvage. Given all of the considerations I have discussed, the most reasonable expectation of the future experience for this account is that cost of removal will be on average in the 10% to 15% going forward, with the 12% overall average being a reasonable expectation. Gross salvage should be expected to be less than has occurred historically. An expectation of about 5% gross salvage is reasonable. An expectation of 10% would be quite conservative, and would certainly address any concerns witness Pous has raised. However, even a conservative expectation of 10% gross salvage supports my estimate and not OPC's. The currently approved estimate of negative 2% (which corresponds to a conservative estimate of 10% gross salvage less a cost of removal estimate of 12%) is therefore, if anything, less negative than the Company will likely experience. My recommendation to retain the existing negative 2% net salvage estimate is therefore not only appropriate but is in fact a conservative estimate of negative net salvage.

ii. Account 354 Towers and Fixtures

The currently approved estimate for this account is negative 15% net salvage. While there have been fewer retirements for this account than for many other accounts (which is due to the fact that the assets in this account are fairly new relative to their expected service life), there has typically been cost of removal when there have been retirements. As can be seen on pages 344 and 345 of Exhibit NWA-1, the overall average cost of removal is 51%. There has been limited gross salvage, and the overall average net salvage is negative 50%. Cost of removal in more recent years, which have on average had a higher level of retirements than was the case in earlier years, has been higher. For example, the most recent five year average net salvage is negative 69%.

The data therefore indicates that a more negative net salvage estimate than negative 15% is appropriate. Further, other transmission line assets such as transmission poles incur more negative levels of net salvage, so a more negative net salvage estimate for this account is a reasonable expectation. I have proposed negative 25% for this account. This is consistent with the trend in the data and is conservative due to the fact that there is a smaller amount of historical activity available for this account than for other transmission and distribution accounts.

OPC witness Pous has ignored the trend in the data and has proposed to retain the currently approved estimate of negative 15%. Witness Pous provides two reasons for his decision to ignore the data – the mix of investment in the historical data and the impact of higher contractor costs in recent years. I should first point out that my estimate is very conservative when compared to the data – negative 25% is half of the overall average and even more less negative than the more recent data. Thus, my estimate is sufficiently conservative to alleviate any concerns he raises.

Witness Pous also discusses the impact of contractor costs for this account. My estimate for this and other accounts already incorporate the impact of higher costs for outside contractors in recent years. For example, as noted above one of the factors considered for this account is the net salvage estimate for transmission poles. I discuss the impact of contractor labor in the discussion on of the net salvage estimate for transmission poles on page 714 of Exhibit NWA-1. For this account, my estimate is also for a less negative level of net salvage than FPL's recent experience. Additionally, I should note that storm hardening work will continue for some time in the future, and therefore witness Pous overstates the impact of contractor costs.

Further, witness Pous's only other support for deviating from the data is incorrect. He discusses the cost of removal for foundations in recent years on page 153 of his direct testimony. There are a number of issues with his discussion. First, the percentage of foundations in the data (38%) is quite close to the percentage of foundations in the current plant balance (30%). Thus, witness Pous has not provided a reason to expect that the mix of investment in the data is not comparable to the mix of investment in the account. Second, foundations and towers are often retired at the same time, and thus recent years that include foundation retirements would provide an indication of the cost of retiring an entire tower. The activity in recent years therefore demonstrates that the both current net salvage estimate and OPC's net salvage estimate are insufficient. Finally, the activity associated with towers that witness Pous cites is representative of FPL's normal practices. FPL has caisson concrete foundations for its towers, which are different from the foundations for lattice steel towers that are often used by other utilities. The typical practice for FPL's is that the top 2 to 3 feet of the foundation is chipped away until the remaining portion of the foundation is below grade. Subsequently, the steel reinforcements and anchor bolt cage are cut and removed. This process should be expected to have cost of removal, and is not necessarily comparable to the experience for other utilities.

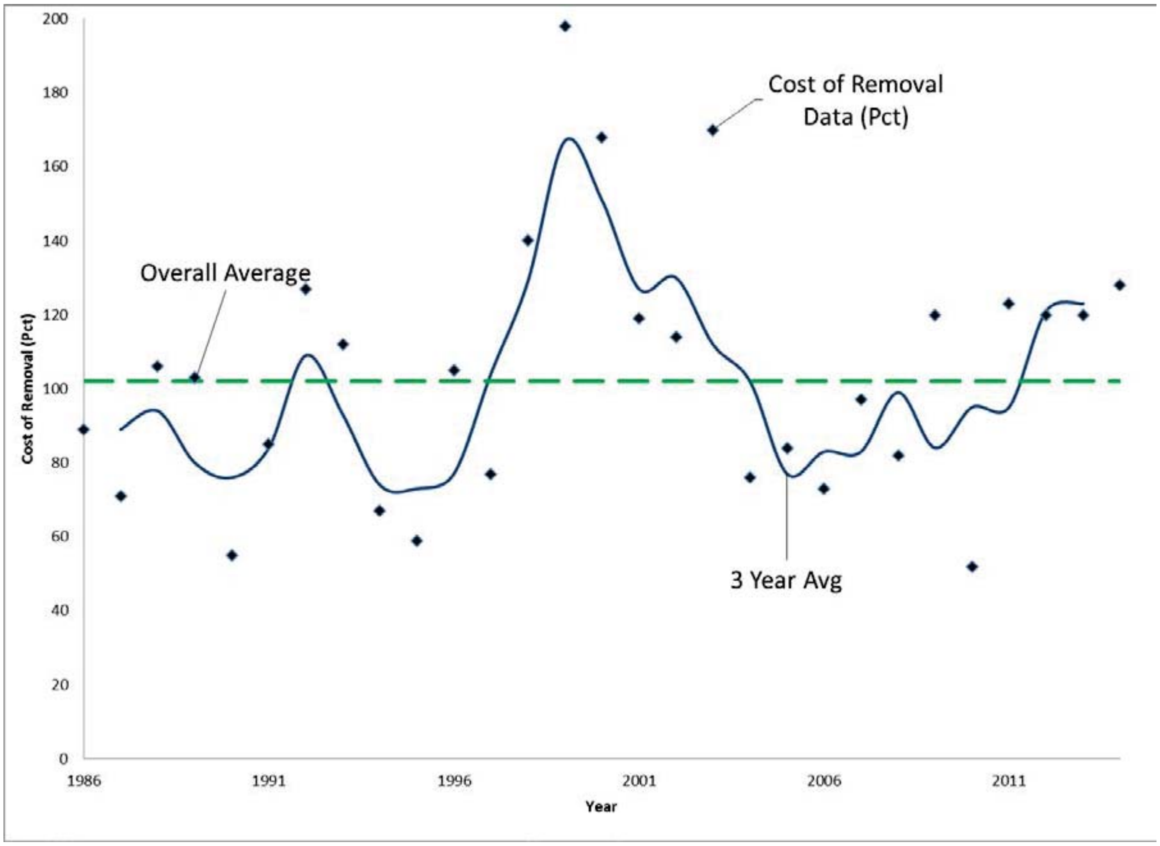
iii. Account 355 Poles and Fixtures

The currently approved net salvage estimate for this account is negative 50%. As can be seen on pages 346 and 347 of Exhibit NWA-1, the overall net salvage data is supportive of a similar estimate as the approved estimate for this account. The overall average net salvage is negative 55% and the most recent five year average is negative 46%. Further, as I will explain, a more detailed review of the data supports that an even more negative net salvage estimate could be appropriate. However, I have recommended to retain the currently approved net salvage estimate of negative 50%. OPC's estimate is for a less negative net salvage estimate of negative 40%, which would not be appropriate for this account. The data definitely supports an estimate of at least negative 50%, and witness Pous's support for his estimate does not stand up to scrutiny. In fact, witness Pous's "analysis" that provides the only quantitative support for his estimate actually supports that a more negative estimate net salvage may be appropriate.

As noted above, the overall average net salvage is negative 55%, which is equal to the overall average gross salvage of 47% less the overall average cost of removal of 102%. I should first note that gross salvage of 47% is higher than should be expected to occur on average for the types of assets in the account. Both wood and concrete poles should be expected to have minimal gross salvage. Chemically treated wood poles typically have no gross salvage and instead incur disposal costs. Concrete poles also do not experience much gross salvage. Thus, the overall gross salvage should not be considered to be indicative of the level of gross salvage that will be experienced by most assets in the account. Instead, a large portion of the gross salvage is instead related to reimbursements that were not excluded from the data, but should not be expected to recur at anywhere near the level as has occurred in the historical data. A more reasonable expectation for the gross salvage for most of the assets in this account is instead in the 5% to 10% range, and certainly no more than 20%.

In contrast, cost of removal has occurred regularly and should be expected to continue because there are significant costs involved with removing and retiring a pole. The experienced cost of removal for this account is presented in Figure 2 below. The figure provides a graph of the annual cost of removal percentages (shown as black diamonds) as well as three-year moving averages of cost of removal percentages (shown as the blue line) and the overall average cost of removal percentage (shown as the green dashed line). The three-year moving averages of these costs have consistently exceeded 70 percent and the overall average is 102 percent.

Figure 2



Given that gross salvage should be expected to be lower in the future, the historical level of cost of removal indicates that, if anything, a more negative net salvage estimate than the currently approved 50% may be appropriate. For example, even if FPL were to experience 20% gross salvage (which is a high expectation for gross salvage for the assets in this account), the historical level of cost of removal of about 100% would result in negative 80% net salvage. A more reasonable level of 5% to 10% gross salvage would result in even more negative net salvage than negative 80%.

On pages 156 and 157, witness Pous discusses the impact of contractor labor on cost of removal. As discussed on page 714 of Exhibit NWA-1, I have already taken this factor into consideration into my estimate. This is one reason why I have recommended negative 50% instead of the negative 80% discussed above.

Thus, once the data is properly considered, it is supportive of an estimate at least as negative as my estimate. The actual basis for Witness Pous's estimate of negative 40%, which is not supported by the Company's actual data, is an analysis he performed of historical net salvage in which wood poles and concrete poles were analyzed separately.[5] Based on his analysis, witness Pous concludes that

[5] Direct Testimony of Jacob Pous, p. 156, lines 1-19.

concrete poles will experience less negative net salvage than wood poles. However, his presentation of the analysis in his testimony is incomplete. Once the actual data is reviewed it demonstrates the opposite conclusion of the one reached by witness Pous – the actual data shows that cost of removal percentages for concrete poles have historically been higher than those for wood poles.

Table 1 below provides the overall retirements, cost of removal, gross salvage and net salvage for the period included in witness Pous's analysis.[6] The cost of removal, gross salvage and net salvage are also presented as percentages of retirements, consistent with the presentation of the net salvage analysis for this account found on page 346 of Exhibit NWA-1. Witness Pous cites the overall average net salvage for concrete poles of negative 39% as support for his expectation that the overall net salvage for the account will be negative 40%. This analysis provides the only actual quantitative basis for his proposal.

Table 1

Type of Pole		Cost of Removal		Gross Salvage		Net Salvage	
	Retirements	Amount	Pct.	Amount	Pct.	Amount	Pct.
Wood	9,133,688	9,332,312	102%	2,085,478	23%	(7,246,834)	-79%
Concrete	7,574,259	10,285,176	136%	7,320,220	97%	(2,964,956)	-39%

However, once the data is in Table 1 is reviewed in more detail it is apparent that witness Pous's conclusion is flawed. I should first note that the cost of removal percentage for concrete poles is 136%, compared to 102% for wood poles. Thus, this analysis actually demonstrates a higher level of cost of removal for concrete poles than for wood poles. This makes some logical sense as well. There are higher cutting costs for concrete poles once they are removed from the ground than is the case for wood poles.

However, the reason that the net salvage percentage, which is the number cited by witness Pous, is different from the cost of removal percentage is because witness Pous's analysis includes a very high level of gross salvage for concrete poles. This occurs because he has not excluded reimbursements from this analysis.[7] The gross salvage for concrete poles is largely due to reimbursements, which should not be expected to continue at a level anywhere close to the 97% that has historically occurred for concrete poles. As I have explained in Section VII.F of my rebuttal testimony, most of these reimbursements

[6] Witness Pous did not provide the actual analysis in his testimony or workpapers. These amounts were provided in discovery in OPC's response to FPL's Second Set of Interrogatories No. 40.

[7] For a further discussion of reimbursements and why they should be excluded from the net salvage analysis, please refer to Section VII.F of my rebuttal testimony.

should be excluded from the net salvage analysis. For this reason, a better comparison of whether concrete poles will be more costly to retire is to compare the cost of removal percentages in Table 1. Again, these demonstrate the opposite of witness Pous's conclusion and show that concrete poles have actually been more costly to remove.

Witness Pous appears to recognize that there is this flaw in his analysis, given that he states that "an experienced depreciation analyst would not try and claim that the gross salvage was due to reimbursable events that are not expected to reoccur in the future, given the continuous and significant annual level that has transpired."[8] However, the opposite is true. A reasonable analyst would recognize that the level of gross salvage for concrete poles in witness Pous's analysis, which is primarily due to reimbursements, is in no way representative of what will occur in the future for the majority of FPL's transmission poles. For witness Pous's analysis to make sense as a basis for the estimate for this account, then the 97% gross salvage experienced for concrete transmission poles (which again is primarily reimbursements) would have to be expected to apply to the full balance of assets in this account (as most are concrete poles). The 2016 plant balance for this account is $1.99 billion. If a 97% gross salvage were representative of the future experience for this account, then FPL would be expected to recover $1.93 billion ($1.99 billion multiplied by 97%) from third parties in order to retire its poles. This is not a reasonable expectation.

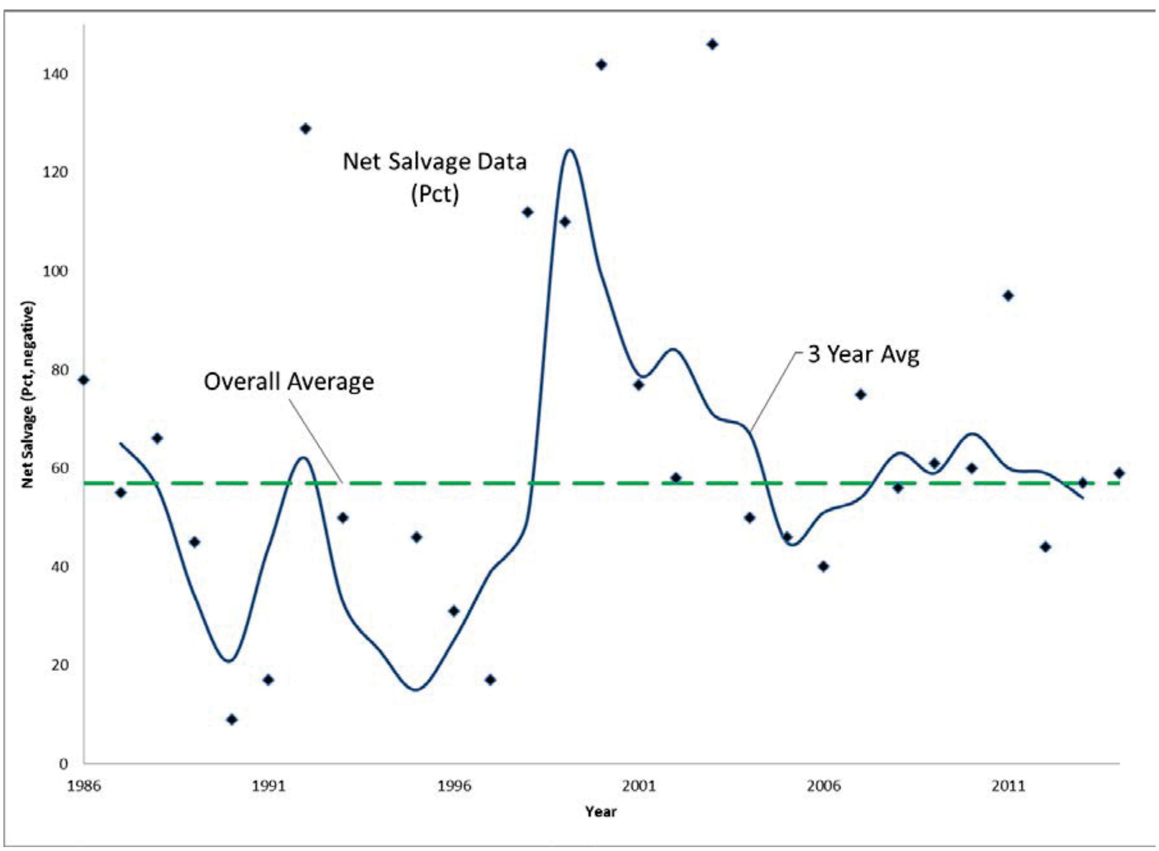
Thus, witness Pous's analysis in no way supports an estimate of negative 40% for this account. If anything, it provides support for a more negative net salvage estimate, because historically cost of removal percentages for concrete poles have been higher than for wood poles. The negative 50% net salvage estimate in the 2016 Depreciation Study, which is supported by the historical data, is the most appropriate estimate for this account.

[8] Direct Testimony of Jacob Pous, p. 156, lines 16-18.

iv. Account 356 Overhead Conductors and Devices.

The currently approved estimate for this account is negative 50%. The historical data, which is provided on pages 348 and 349 of Exhibit NWA-1, indicates a more negative net salvage estimate. The overall average is negative 57% and the most recent five-year average is negative 59%. I have recommended an estimate of negative 55%, which is consistent with trend in the data to a somewhat more negative level of net salvage than the currently approved estimate. Figure 3 below provides a graph of the net salvage data for this account. My estimate of negative 55% is consistent with the overall average shown in green and the more recent three-year averages shown in blue. I should note that for this graph, as well as other graphs of net salvage data in this exhibit, I have shown negative net salvage values as positive (that is, I have reversed the sign). This presents a better visual of the net salvage data, and is also consistent with the graphs I have presented of cost of removal values (which are positive values). The actual negative net salvage percentages would look exactly the same as shown in Figure 3, except they would be "upside down" if shown as negative values.

Figure 3



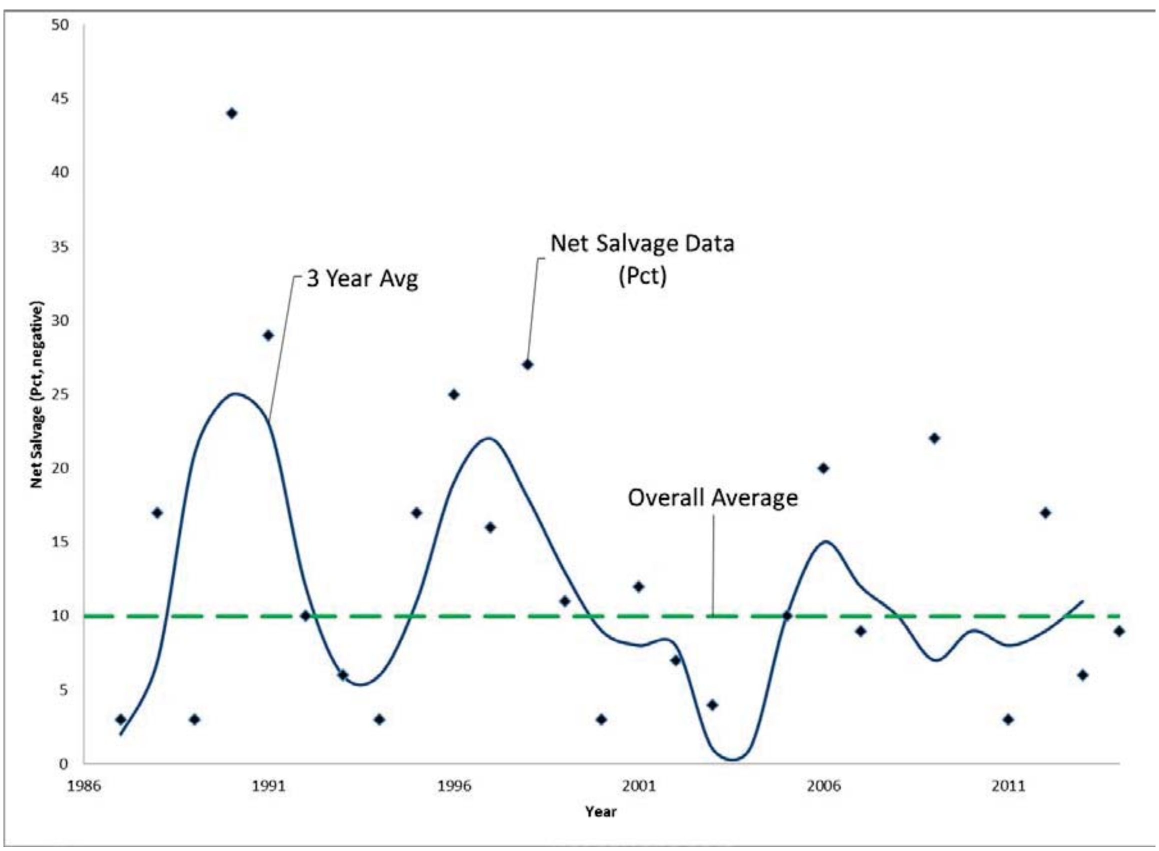
Witness Pous recommends the opposite of what is indicated by the data. Despite indications in the data for more negative net salvage than the currently approved estimate, he recommends a less negative net salvage estimate of negative 45%. His reasons for ignoring the Company's actual data do not stand up to scrutiny. One argument he presents is related to economies of scale. I have addressed the problems with this argument in Section VII.E of my rebuttal testimony. I should also note that the historical data included in the net salvage analysis for this account includes more than $100 million in retirements, and therefore provides a significant amount of experience for the net salvage analysis. Witness Pous also cites references to other utilities, which I have addressed in Section III.C to my rebuttal testimony.

The remaining support presented by witness Pous is related to hurricane related retirements. For this account as well as other accounts witness Pous argues that hurricane related activity is more representative of expectations for future net salvage than normal activity. I have discussed this topic in Section VII.D of my rebuttal testimony. Cost of removal for hurricane related retirements is much different than under normal conditions – both because the hurricane itself has done a large part of the work of removing the wire and because there are not the same costs for factors such traffic control and permitting requirements. It is inappropriate to base an estimate of net salvage on hurricane retirements while ignoring the data for normal retirements, as witness Pous does for this and other accounts.

v. Account 362 Station Equipment

The currently approved estimate for this account is negative 10%. The historical data recorded since the 2009 Depreciation Study continues to indicate that the approved negative 10% estimate is reasonable for this account. I have recommended to continue to use the currently approved negative 10% estimate. Figure 4 provides a graphical depiction of the net salvage data for this account.[9] The data for this account can also be found on pages 358 and 359 of Exhibit NWA-1. The overall average net salvage (shown in green below) is negative 10%, the same as the approved estimate. Further, Figure 4 shows that net salvage in recent years has also been similar to negative 10%, particularly when the three-year moving averages (in blue) are considered. As I explained in Section VII.B of my rebuttal testimony, averages should be given more consideration the analysis than the experience for individual years due to timing differences and differences in the types of activity each year.

Figure 4



[9] Please note that negative net salvage values are shown as positive in this graph.

Witness Pous has recommended a less negative estimate for this account than the approved estimate. His estimate is not supported by the historical data, and instead he attempts to provide a number of rationalizations for ignoring the data. His discussion for this account is very similar to for Account 353. I have previously addressed these concepts in Part i of this exhibit, which discusses Account 353, and will not repeat the discussion here. However, I will note that witness Pous's statement that "there has been a trend to a lower level of negative net salvage than existed when the prior depreciation study was performed" is not correct. As can be seen in the three-year averages in Figure 4 above the data since 2007 (i.e., 2008-2014) is consistent with the overall average of negative 10% and the three-year averages indicate a slight trend to more negative net salvage in the past couple of years. I also should point out that witness Pous relies on the analysis of an individual year of data for his support,[10] which as discussed above and in Section VII.B of my rebuttal testimony, is not the proper way to perform net salvage analysis.

[10] Direct Testimony of Jacob Pous, p. 163, lines 3-9.

vi. Accounts 364.1 and 364.2 Poles, Towers and Fixtures

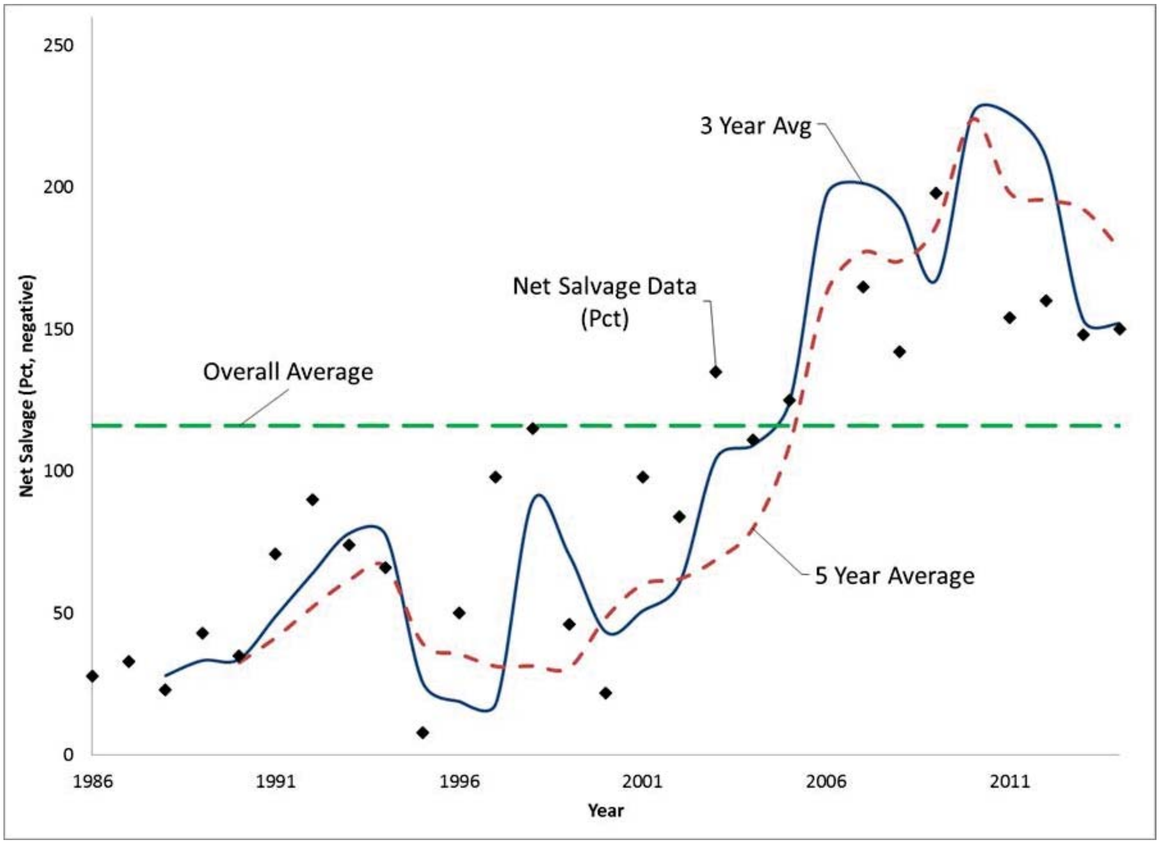
Account 364.1 Poles, Towers and Fixtures – Wood and Account 364.1 Poles, Towers and Fixtures – Concrete were studied together for the net salvage analysis, and the same estimate has been recommended for both accounts. One advantage of creating separate subaccounts for wood and concrete poles will be that the net salvage data can be maintained and analyzed separately for the two subaccounts. However, it is reasonable at this time to expect that on a percentage basis the net salvage will be similar for the two types of poles. The approved estimate for both accounts is negative 60% net salvage. However, the historical data demonstrates quite clearly that a more negative net salvage estimate is required. The overall average net salvage in the net salvage analysis, which is shown on pages 360 and 361 of Exhibit NWA-1, is negative 116% - almost double the approved net salvage estimate. More recent data indicates even more negative net salvage than is indicated by earlier years. For example, the most recent five year average is negative 179%. I have recommended an estimate of negative 100%. This is a conservative estimate in that it is less negative than the overall average in the data. It is an even more conservative estimate given the fact that, as I will explain, the historical data understates actual net salvage expectations due to high levels of gross salvage in the earlier years of the analysis that are not expected to continue.

Despite the fact that the data indicates a far more negative net salvage estimate than the currently approved estimate for this account, witness Pous proposes no change to the currently approved estimate of negative 60%. As is evidenced in both his recommendation and his testimony, witness Pous has elected to ignore the historical data for this account. His approach is therefore clearly inappropriate. However, a review of his arguments presented in his testimony provides further reason to demonstrate that there is no basis for witness Pous to cast aside the strong evidence provided by FPL's data that demonstrates that a more negative net salvage estimate is warranted for these accounts. I will first discuss the data for this account and then will address witness Pous's specific arguments.

I should note that I have discussed the historical net salvage data for this account in some detail in Section VII.B of my rebuttal testimony. Figure 5 below is the same as shown in my rebuttal testimony, and presents the net salvage percentages for each year (black diamonds on the graph), the three-year moving average net salvage percentages (shown in blue), the five-year moving average net salvage percentages (shown in red) and the overall average (shown in green).[11]

[11] Please note that negative net salvage values are shown as positive in this graph.

Figure 5



However, similar to the discussion of Account 355 presented in Section iii of this exhibit, the historical net salvage for this account likely understates the net salvage expectations for this account. As can be seen on page 360 of Exhibit NWA-1, the overall average gross salvage is 28 percent. This is higher than should be expected for the assets in this account. Wood poles should have no positive gross salvage (and instead typically will have disposal costs) and concrete poles should have minimal gross salvage, if any. A closer look at the gross salvage data shows that almost all the gross salvage occurred in the earlier years of the data, and that some years experienced 100% gross salvage or more. In more recent years, gross salvage has trended closer to a reasonable gross salvage expectation for the assets in this account of 5%. Further, many of the earlier years, such as those in the early 1990s, experienced very high gross salvage. Some years had gross salvage of 100% or more. Thus, the historical level of gross salvage should not be expected in the future for most of the assets in this account.

Instead, gross salvage should be expected to be more in the 5% to 10% range (and even that may be too high). The overall cost of removal is 144 percent, and thus the statistical indications, once the historical gross salvage is properly considered, are more in the negative 130% or 140% range. To help illustrate this concept, I have graphed just the historical cost of removal in Figure 6 below. Because the historical gross salvage is higher than should be expected for this account, the graph below likely provides a better indication FPL's future level of net salvage than the net salvage data percentages shown in Figure 5.

Figure 6

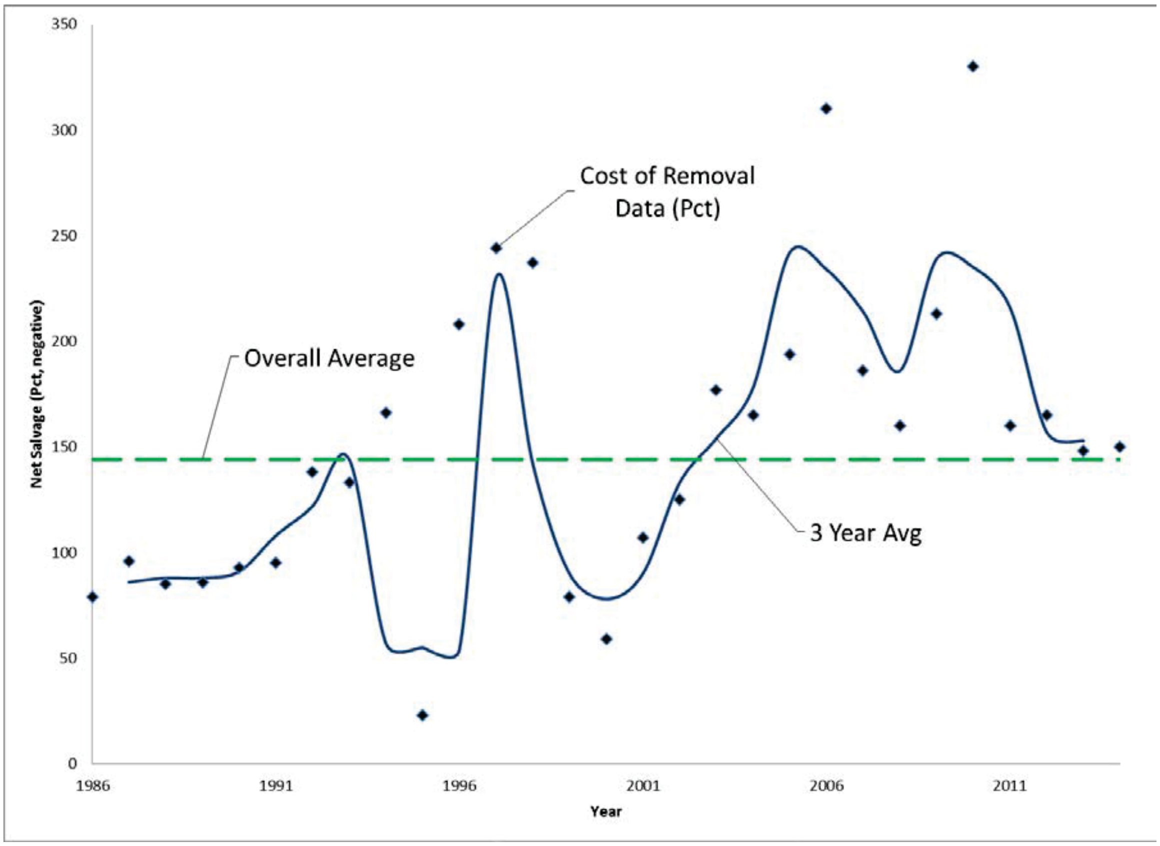


Figure 6 demonstrates further that the existing estimate of negative 60% is insufficient. It better illustrates the overall trend in removal costs and shows that cost of removal has been more negative than 60% for some time. In fact, for most years other than a few years in the mid and late 1990s, the three year averages are fairly close to or higher than 100%. Many years have experienced cost of removal that has been much higher than 100%. Thus, the analysis of historical cost of removal further supports that my estimate is in fact a conservative estimate of net salvage.

Given the clear support of my estimate in the historical data, witness Pous has no choice but to attempt to devise ways to ignore the data in order to support his estimate. His attempts are not convincing, and many have already been addressed in my rebuttal testimony. I should first note that the net salvage database includes more than $130 million in retirements. This is a significant amount of activity and provides good reason for confidence in the data. I have also explained in Section iii of this exhibit that witness Pous's analysis of the historical net salvage for wood and concrete poles was incorrect, and demonstrated that if anything concrete poles should be expected to experience more negative net salvage than wood poles.

Finally, I have also addressed witness Pous's comments regarding economies of scale, which comprises most of his discussion for this account, in Section VII.E of my rebuttal testimony. I should again point out that his discussion of economies of scale is particularly unconvincing in light of the storm hardening program. The storm hardening program provides an example of exactly the type of situation that witness Pous discusses on page 169 of his testimony in which he provides a hypothetical example of "a section of line containing 30 poles that are to be retired at one time." This type of situation has been common for the storm hardening program. However, contrary to the implication in witness Pous's testimony, cost of removal for storm hardening work has not been significantly lower than in other years. In fact, the cost of removal since the implementation of the storm hardening program has been much more negative than my estimate of negative 100%, as can be seen in both Figure 5 and Figure 6. Witness Pous's expectation for economies of scale has not materialized (and should not be expected to materialize in the future). There are a number of other factors that are mostly outside of FPL's control that offset any gains from economies of scale, as I have discussed in Section VII.E of my rebuttal testimony.

vii. Account 365 Overhead Conductors and Devices

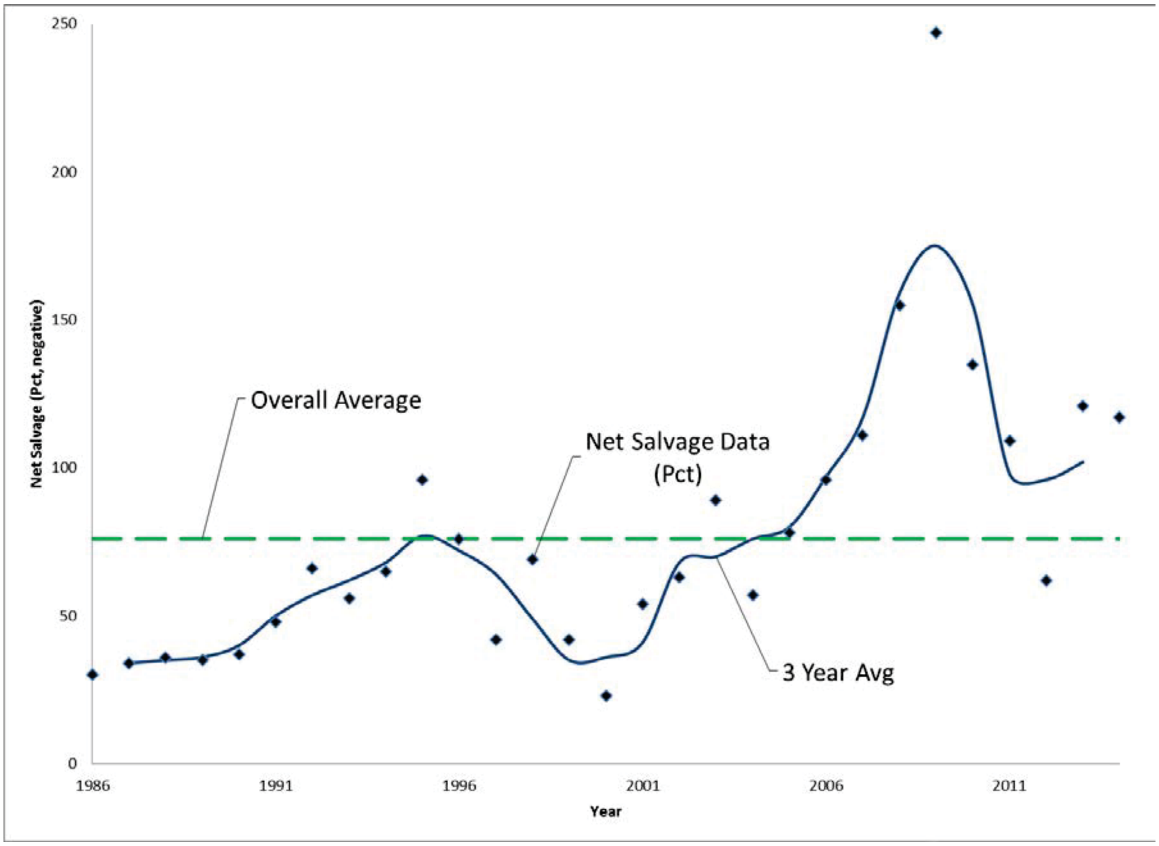
The currently approved estimate for this account is negative 60% net salvage. The historical data indicates that a more negative net salvage estimate is warranted. The historical data indicates an overall average net salvage of negative 76%. More recent data has been more negative. For example, the most recent five year average net salvage is negative 108%. I have recommended an estimate of negative 80%, which is consistent with the overall average net salvage but less negative than more recent data.

Witness Pous has recommended no change in the currently approved negative 60% net salvage. Similar to many accounts, he has opted to ignore the results of the statistical net salvage analysis based on the Company's recorded data. Instead, the primary statistical basis for witness Pous's estimate is an analysis of hurricane retirements, which as I have explained in Section VII.D of my rebuttal testimony are not a reasonable basis for determining net salvage.

The historical net salvage data for this account is presented in Figure 7 below.[12] As the figure illustrates, the net salvage has trended to be more negative. The three year averages have been more negative than the currently approved estimate of negative 60% since the early 2000s, and since the last study they have been even more negative than my estimate.

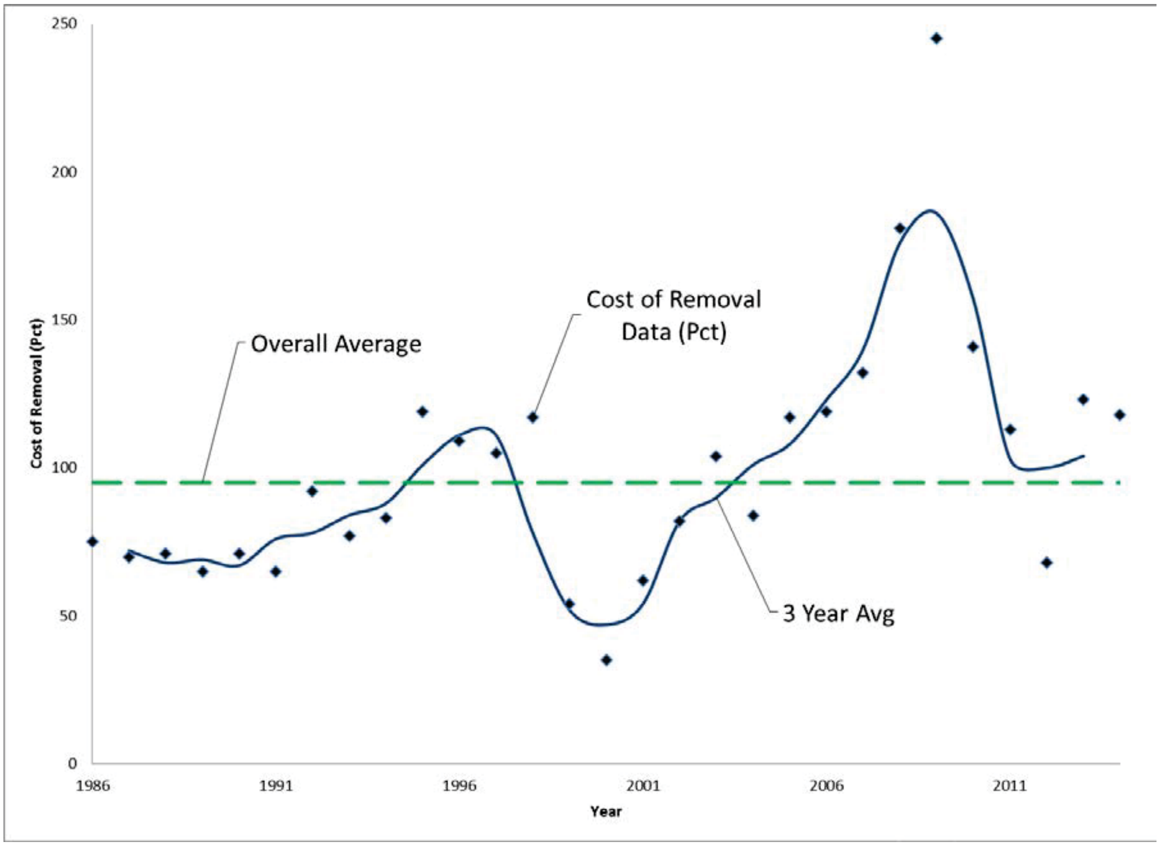
[12] Please note that negative net salvage values are shown as positive in this graph.

Figure 7



If just the cost of removal is reviewed, the data is further supportive of a more negative net salvage estimate. Gross salvage has trended lower in recent years. It is reasonable to expect that gross salvage may not be quite as high as in earlier years. The Company will retire less copper conductor than was the case in earlier years, and as a result will likely receive less scrap salvage on a per unit basis. The historical cost of removal is shown in Figure 8 below. While Figure 8 also shows a trend in historical cost of removal, it is not quite as pronounced as for the net salvage data shown in Figure 7. While cost of removal has increased over time, it has been relatively high for the full period of available data.

Figure 8



Much of witness Pous's criticism of this account is devoted to criticizing the explanations provided for increasing cost of removal for this account. I should first point out that his discussion is not an accurate representation of what has been provided. Many of the driving factors for increasing cost of removal for this account are similar to those for other accounts, such as Account 364. These factors, such as environmental, permitting and traffic control requirements, have all been explained in my direct testimony,[13] the 2016 Depreciation Study[14] and in discovery.[15] I have discussed these factors further in my rebuttal testimony in Section VII.C. On pages 173 and 174 of his testimony, witness Pous cites only a portion of a discovery response and presents it as if it is a full explanation of factors influencing this account. Thus, his testimony does not provide an accurate picture of what I have provided and discussed. Additionally, I should emphasize once again that the data is supportive of my estimate. The full database for the net salvage analysis is based on almost $180 million in retirements, and therefore

[13] Direct Testimony of Ned W. Allis, pp. 39-40.

[14] See for example the discussion on pages 728 and 729 of Exhibit NWA-1.

[15] See for example Attachments 1 and 2 of FPL's response to OPC's First Request for Production of Documents No. 38 and FPL's response to OPC's First Set of Interrogatories, No. 51.

FPL's extensive historical database provides a reasonable representation of the future experience for this account and should not be ignored.

Witness Pous has provided no valid reason to ignore the historical data. He again presents his argument related to economies of scale, which I have addressed in Section VII.E of my rebuttal testimony. He also argues that some of the factors that have driven higher costs of removal, such as higher labor costs, also increase the cost of new assets. I should first note that many of the assets in this account are older and will therefore be unaffected by this concept. Further, while there may be some impact on the net salvage percentage due to this factor, the fact that my estimate is more consistent with the overall average as opposed to more recent averages alleviates this concern. My estimate is much less negative than the more recent averages, and therefore witness Pous's argument does not provide any justification his approach, which completely ignores the trend to more negative net salvage.

The one actual quantitative argument witness Pous sets forth also has no validity. Witness Pous cites a historical net salvage percentage of negative 59% for hurricane retirements in support of his estimate of negative 60%.[16] That is, witness Pous's actual analysis of the historical data for this account consists of the following:

- The Company has almost $180 million in normal retirement activity that supports a more negative estimate than the currently approved estimate.
- Witness Pous chooses to not believe this data and therefore does not consider the data for his estimate.
- Instead, he relies on data for hurricane related retirements, which are not conducted under normal circumstances and are therefore not at all indicative of the future experience for the vast majority of this account.

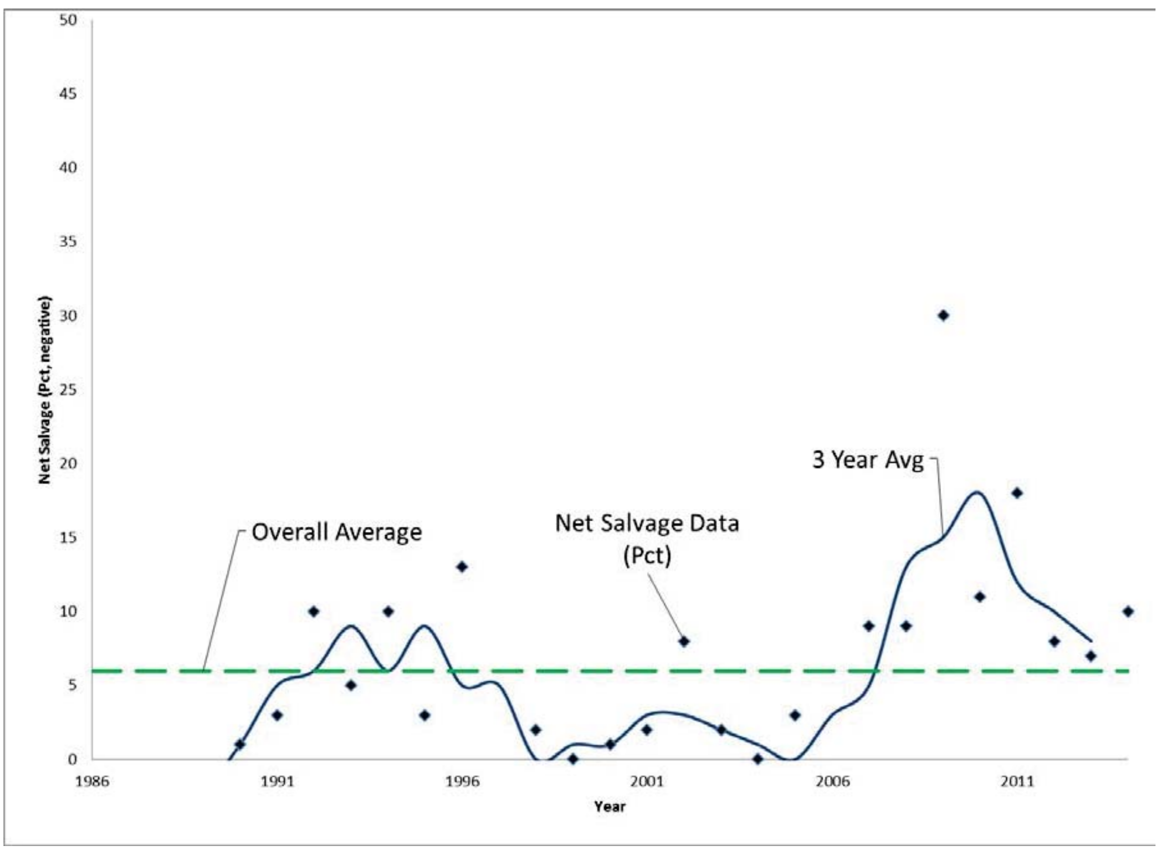
I have explained the problems with relying on hurricane retirements in Section VII.D of my rebuttal testimony. For a number of reasons, one of which is that the hurricane does much of the work to remove overhead conductor, hurricane related activity should not be considered to be indicative of the future net salvage for this account. Witness Pous's approach – ignoring the extensive actual net salvage data for normal retirements, and instead basing an estimate on limited activity for unusual circumstances – is not an accepted method of estimating net salvage, and does not provide reason to ignore the clear support in the historical data for a more negative net salvage estimate.

[16] Direct Testimony of Jacob Pous, p. 178, lines 2-8.

viii. Account 367.6 Underground Conductors and Devices – Duct System

The currently approved estimate for this account is 0%. The net salvage data indicates that a negative net salvage estimate is appropriate. The overall net salvage in the historical data is negative 6%. More recent data indicates more negative net salvage, with the most recent five year average being negative 10%. I have recommended an estimate of negative 5% net salvage. The historical net salvage data for this account is shown in Figure 9 below.[17] Since the early 1990s there has consistently been negative net salvage for this account.

Figure 9



One reason for the trend to more negative net salvage is that there has been lower gross salvage than was the case 15 or 20 years ago. FPL does not expect significant gross salvage for underground cable. Underground cable is different from overhead cable in that the insulator is built into the cable, and because underground cable needs to be cut in order to recover any scrap. As a result, scrap salvage should be expected to be lower than would be the case for overhead cable.

[17] Please note that negative net salvage values are shown as positive in this graph.

OPC witness Pous proposes 0% net salvage. As with most accounts, he again decides to ignore the historical data. Instead, his estimate is based on a discussion of two concepts, both of which are incorrect. First, he states that "the appropriate interpretation of actual transactions should be that conductor is not pulled from conduit unless it can receive positive salvage."[18] This is incorrect. Conductor is removed from conduit so that new conductor can be installed. Typically, this results in negative net salvage because the cost of removing the conductor exceeds any salvage.

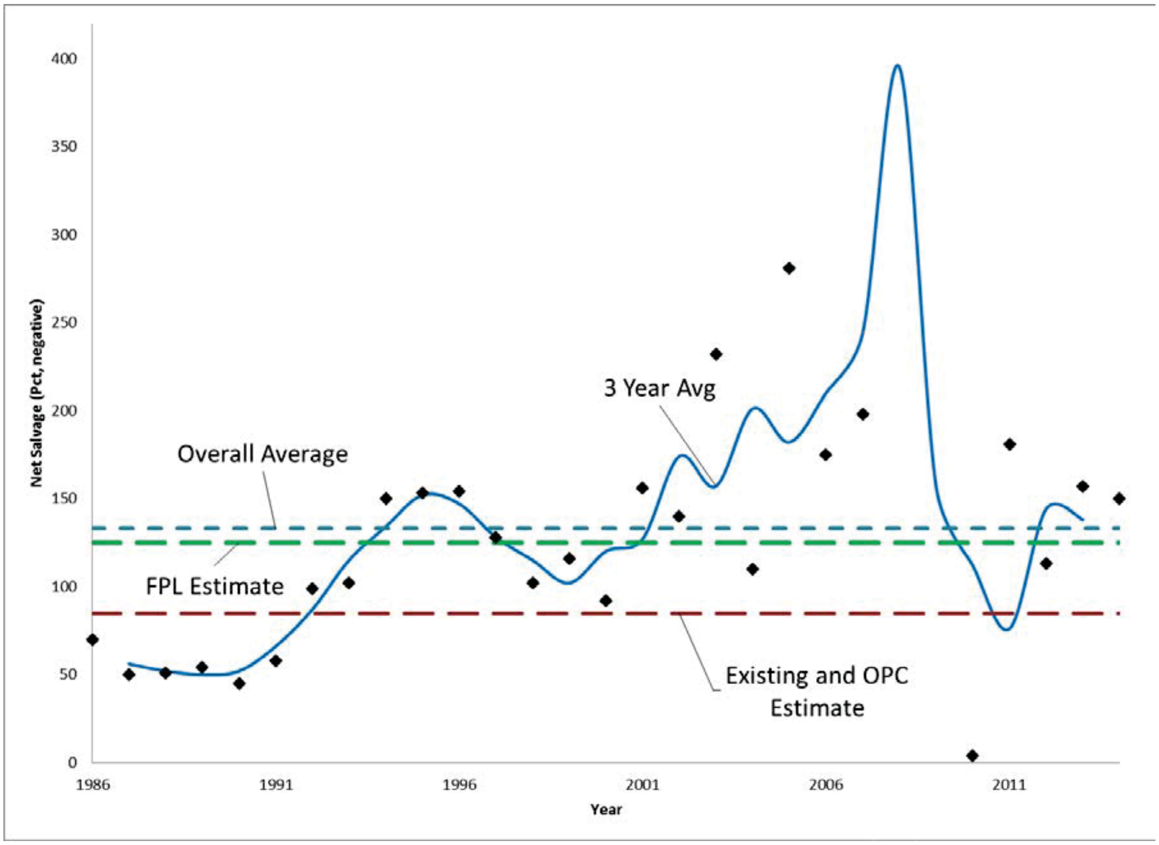
Witness Pous's second argument is that "when conductor is pulled and costs are incurred 'to make room for new conductor,' those costs should be assigned to the new installation rather than as cost of removal."[19] Thus, witness Pous argues against FPL's using net salvage data because he believes that the Company should account for the replacement of underground conductor in a fundamentally incorrect manner. When replacing an asset, the cost related to the new asset should be charged to the new asset and the cost related to removing or retiring the old asset should be charged to cost of removal. Pulling conductor from conduit is quite clearly a process of removing the old conductor and therefore should be charged to cost of removal.

Witness Pous's proposal to ignore the data is therefore based on a combination of an incorrect understanding of FPL's practices and a fundamentally incorrect approach to accounting for cost of removal. I should further note that witness Pous's statement that "[t]he Company's proposal is no different than what the Commission denied in the last proceeding"[20] is also incorrect. The data since the last study provides additional support for my estimate, which can be seen clearly in Figure 9 above. Additionally, in Docket No. 090130-EI the Commission stated "[w]e find that 0 percent net salvage is appropriate based on the data."[21] The data in this case is quite clearly supportive of my estimate and not that of OPC, and therefore the negative 5% net salvage estimate recommended in the 2016 Depreciation Study is most appropriate for this account.

[18] Direct Testimony of Jacob Pous, p. 181, lines 7-10.
[19] Direct Testimony of Jacob Pous, p. 181, lines 10-14.
[20] Direct Testimony of Jacob Pous, p. 180, lines 17-18.
[21] Order No. PSC-10-0153-FOF-EI, p. 69.

ix. Account 369.1 Services – Overhead

The currently approved net salvage estimate for this account is negative 85%. The approved estimate is less negative than indicated by the historical data. The overall average net salvage is negative 133% and most three-year moving averages in the last twenty years have been more negative than the overall average. Figure 10 below presents the historical net salvage data. The overall average is shown as a blue dashed line, and the three-year moving averages are shown as a solid blue line. To provide perspective as to how the existing estimate compares to the data, I have also included the existing estimate (the red dashed line) and my estimate (the green dashed line) in the graph. With the exception of one instance (which is due to timing differences), every three-year moving average since the early 1990s is more negative than the existing negative 85% net salvage estimate.



Cost of removal of 100% or more is a reasonable expectation for services. The actual physical service line is not a particularly expensive item has a lower unit cost than, say, a pole. Additionally, when replacing a service line the effort involved to remove the existing service is similar to the effort required to install the new service, and as a result the labor split between cost of removal and the new asset can be relatively close to 50-50. Considering these factors, as well as that service lines will be replaced on average more than 50 years after installation (the average service life estimate for this account is 53 years) and that costs will increase over a 50 year period, it is not surprising that net salvage for this account is more negative than negative 100%.

Despite the historical data, which has not supported an estimate in the range of negative 85% in more than twenty years, witness Pous recommends no change to the existing negative 85% net salvage estimate. As with most accounts, his approach is to provide a number of reasons to ignore the data. His only quantitative support is, similar to the overhead conductor accounts, to inappropriately rely on hurricane retirements.

One item witness Pous criticizes is the explanations that have been provided for increasing cost of removal presented in the 2016 Depreciation Study. I should first make clear that many of the reasons for an overall increase in cost of removal for this account are consistent the reasons for increases in cost of removal with other accounts. Second, as can be seen in Figure 10, the trend to more negative net salvage is not a particularly recent occurrence for this account. Cost of removal has been consistently high and net salvage has consistently been more negative than negative 100% since the early 1990s. Finally, I have provided additional reasons that explain higher costs for services.[22] Service lines, which generally extend to the customer's property, are often more difficult to access than assets on FPL's land or rights-of-way. Additionally, disconnecting the service line requires care, as a service line often extends across a roadway or structure. Both of these factors can increase the effort involved in removing the service, and in fact the effort involved to remove the service line can exceed that of installing the new service as a result.

Witness Pous is incorrect in his attempt to argue that because there is variability in the types of tasks involved, the net salvage data cannot be relied on. I should note that because much of FPL's service territory is in developed areas, the challenges with replacing services are common because service lines typically extend to customer property in these developed areas. Additionally, the Company has almost thirty years of data, which provide clear support for a more negative net salvage estimate. If there were any validity to witness Pous's arguments regarding the variability in the data, it would support relying on longer term averages instead of individual years or short term averages. In part for this reason, I have given more consideration to longer term averages for my estimate.

Most of witness Pous's other arguments have been addressed previously. These include economies of scale, reimbursed retirements and witness Pous's reliance on hurricane retirement activity. I should make clear that similar to the overhead conductor accounts, hurricane related activity is not at all a reasonable basis for net salvage because the hurricane typically does much of the work to remove the conductor.

Finally, I should make clear that witness Pous's statement that "the Company has chosen not to provide any new specific data" for this account is simply incorrect. There are seven additional years of

[22] See for example page 744 of Exhibit NWA-1.

data for the study, which support that a more negative net salvage estimate than the approved negative 85% estimate is appropriate. As discussed above, I have also provided additional information and explanations to support a more negative net salvage. I should further point out that in Docket 090130-EI the Commission did in fact recognize the trend to more negative net salvage and approved a change from a negative 60% to a negative 85% net salvage estimate.[23] The data continues to support a more negative net salvage estimate – even more negative than the currently approved negative 85%. Therefore an additional move in the 2016 Depreciation Study to a more negative net salvage estimate is appropriate.

[23] Order No. PSC-10-0153-FOF-EI

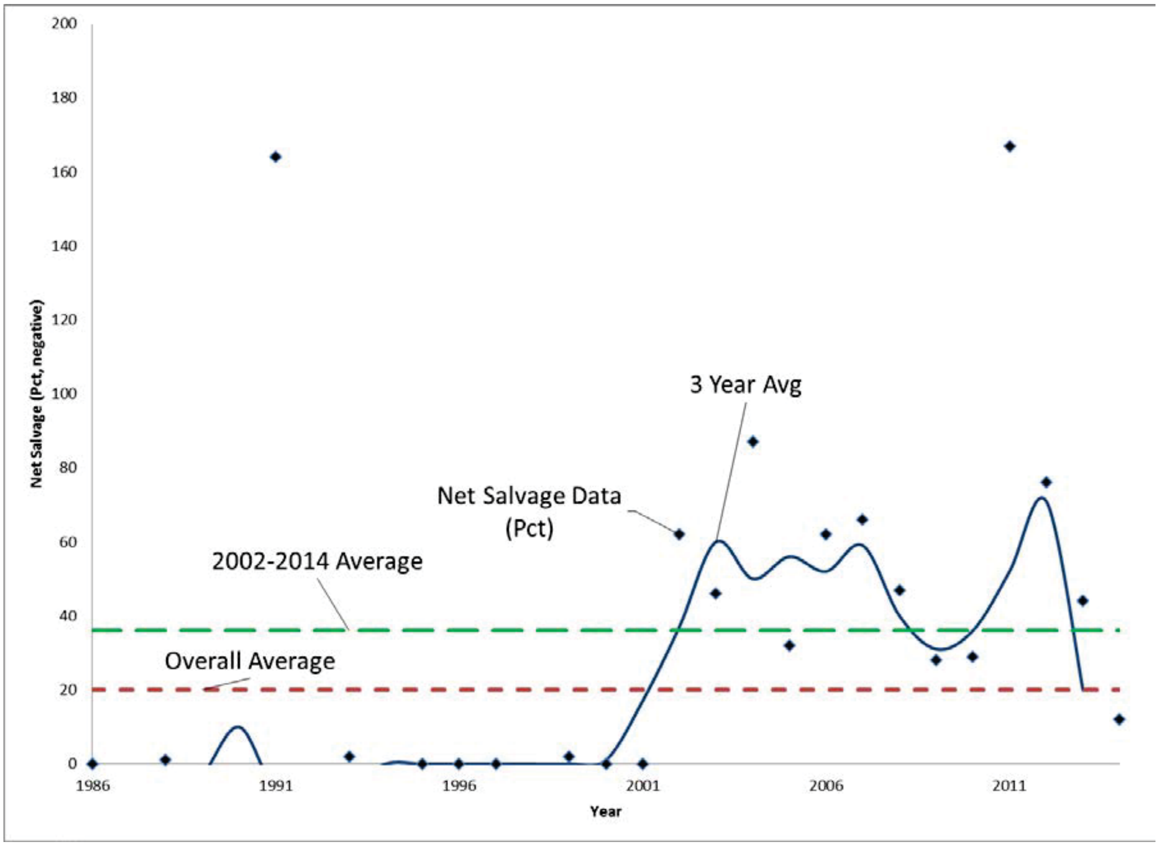
x. Accounts 370 and 370.1 Meters

The currently approved net salvage estimate for this account is negative 30%. The historical data continues to support an estimate that is at least as negative as the currently approved estimate, especially when it is properly considered. I have recommended to retain the existing negative 30% net salvage estimate. In contrast, witness Pous again recommends a less negative net salvage estimate than the currently approved estimate, and proposes a negative 20% net salvage estimate. I should note that despite witness Pous's numerous assertions throughout his testimony that the net salvage data should be investigated to determine whether it is representative of future experience, he ignores the various investigations that I have conducted for this account. Instead, witness Pous bases his estimate on data that is not representative for this account.

Accounts 370 and 370.1 are studied together for the net salvage analysis. Because there is limited historical data for Account 370.1 AMI Meters (because these are new assets), the data for Account 370 Meters is the primary statistical basis for the estimate for both meters accounts. It is reasonable to expect that the costs to remove an older type meter such as included in Account 370 would be the same as the cost to remove a newer AMI meter. This is a reasonable approach until more data specific to Account 370.1 is available. However, I should also point out that to the extent there is limited data available for Account 370.1, these data do support a negative net salvage estimate in the range of negative 30%, as can be seen on page 380 of Exhibit NWA-1.

The historical data for Account 370 is shown on pages 378 and 379 of Exhibit NWA-1. The data is also shown in Figure 10 below. The first observation that is apparent when reviewing the data is that recorded cost of removal changed significantly beginning in 2002. I will discuss this change in more detail, but the most important point is that the data from 2002 to the present is representative of FPL's current practices for recording cost of removal for meters. Thus, the data since 2002 is representative of what will occur in the future – the data prior to 2002 is not. The data prior to 2002 therefore has little value in the net salvage analysis and should be given minimal consideration for the net salvage estimate for this account. In Figure 10 below I have presented both the overall average net salvage of negative 20% as well as the average net salvage since 2002, which is negative 36%. The data prior to 2002 does not provide any indication of future experience, and therefore the 2002 to 2014 average is far more representative of future net salvage for this account.

Figure 10



In the early 2000s the Company implemented a new accounting system, at which time the process for recording cost of removal for this account was revised. Prior to 2002 there was very little recorded cost of removal for this account. I should note that this had been true for many other utilities as well. Many years ago when older-style electromechanical meters were the primary type of meter, when a meter was removed from service it was returned to a meter shop, tested, and repaired and refurbished if possible. As a result, meters were often reused at a different location after being refurbished. At that time, due to this practice it made sense that the cost involved with removing the meter from a customer location was not fully charged to cost of removal, because the meter may not have been retired but instead would be used elsewhere on the system.

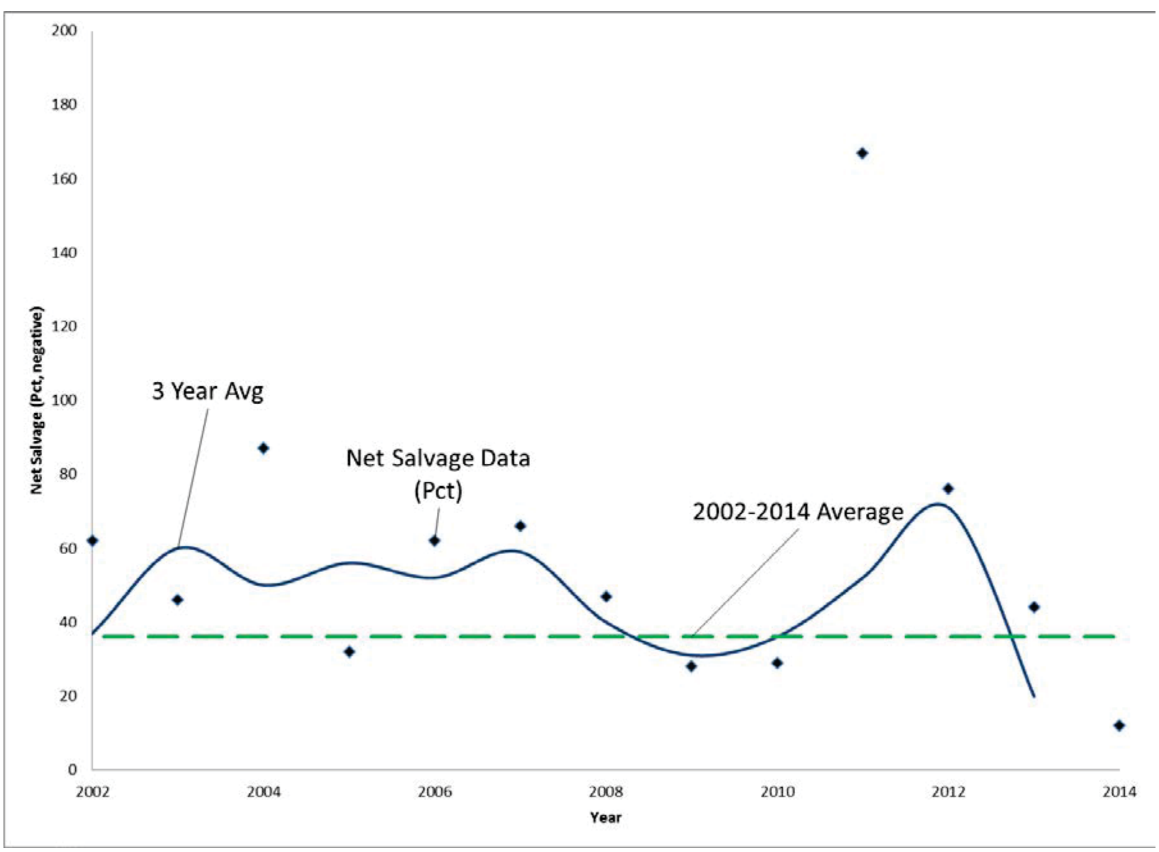
This practice is no longer common. Meters are fairly inexpensive, and as a result it is typically no longer economical to refurbish meters. This is particularly true because meters today are generally either AMI meters or solid state or digital meters. While it may have been economical years ago to refurbish older-style electromechanical meters, the same is not true with newer meters (which also have a shorter service life than older-style meters and typically cannot be refurbished). As a result of these changes, when a meter is removed from a customer location it is generally retired. It therefore makes sense to charge the cost of removing the meter to cost of removal, as FPL has done since 2002.

While witness Pous characterizes FPL's data as an outlier in the industry, FPL's change to better recording cost of removal for meters is not the only instance of such a change. For example, Pacific Gas & Electric experienced a similar change in recorded cost of removal in 2004, and has experienced similar cost of removal to FPL since.

I should add that a relatively high level of cost of removal for meters makes intuitive sense as well. The actual meter is a relatively inexpensive piece of equipment. A meter also has little to no scrap value. Further, the effort involved to retire the old meter when replacing the meter is similar to that involved with installing the new meter. For these reasons, it is not surprising that the cost to remove a meter would be at least 30% of the cost of installing the meter.

For all of these reasons, once the data is investigated it should be clear that only the data since 2002 should be considered in the net salvage analysis. Figure 11 below provides a graph of the historical net salvage data from 2002 through 2014. These data provide clear support that the currently approved negative 30% net salvage continues to be appropriate. If anything, the data properly considered supports a more negative estimate.

Figure 11



Witness Pous cites both the overall average and most recent three-year average of negative 20% in support of his negative 20% net salvage estimate.[24] Neither is representative of the future experience once the data is investigated, as I have done. The overall average is skewed by the non-representative data prior to 2002, as explained above. Further, the most recent-three year average cited by witness Pous is skewed by a large retirement in 2014. I investigated this activity[25] and determined that the retirement in 2014 was primarily related to the deployment of AMI meters for commercial and industry customers. This activity is not likely to recur and therefore is not representative of the future experience for this account.

Witness Pous's other support for his estimate is primarily related to hurricane related retirements and reimbursed retirements. I have addressed this issues previously. Thus, given all of the considerations discussed here, the currently approved negative 30% net salvage estimate continues to be most appropriate for this account. If anything, the data, once properly considered, supports that a more negative net salvage estimate could be appropriate.

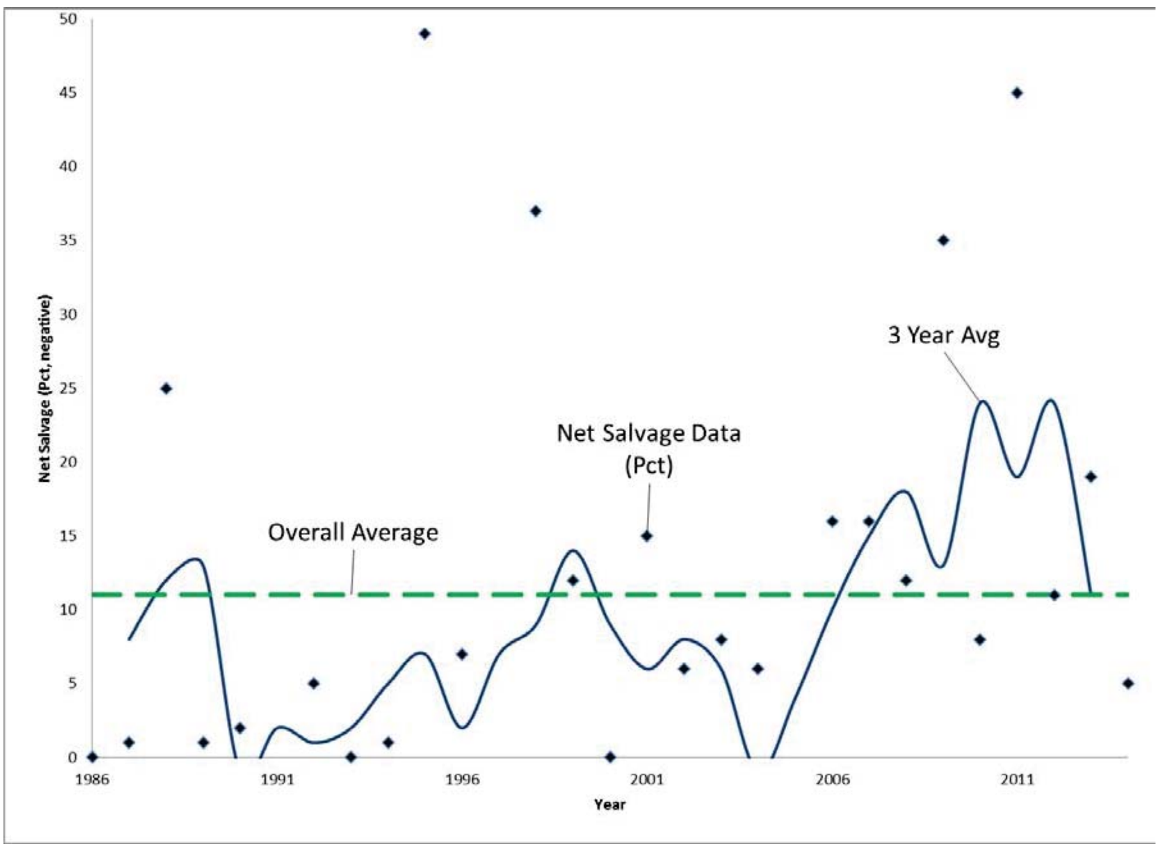
[24] Direct Testimony of Jacob Pous, p. 121, lines 5-6.

[25] This information was provided in discovery in FPL's response to OPC's First Set of Interrogatories, No. 51.

xi. Account 390 Structures and Improvements

The currently approved net salvage estimate for this account is negative 5%. The historical data, which is presented on pages 385 and 386 of Exhibit NWA-1, supports a more negative net salvage estimate than the currently approved estimate. I have recommended an estimate of negative 10%. The overall average net salvage is negative 11% and the most recent five year average is negative 15%. Figure 12 below shows the net salvage analysis for this account.[26]

Figure 12



While the data is supportive of my estimate, witness Pous has proposed a move in the opposite direction. He proposes a positive 10% net salvage estimate. Witness Pous's arguments in support of his estimate are very similar to his arguments in Docket No. 090130-EI. I should note that his arguments were not persuasive in that case and were not adopted by the Commission.[27] Witness Pous's primary argument is that the Company's buildings will have significant value after they reach the end of their useful lives. Specifically, he presents his "selection of a 10% positive net salvage as an initial step in

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[26] It is reasonable to assume that the costs to remove an older type meter such as included in Account 370 would be the same as the cost to remove a new AMI meter.

[27] See page 74 of Order No. PSC-1O-Ol53-FOF-EI

this proceeding towards the recognition of the net salvage that large office buildings, service centers and general plant structures will have even after 50, 60, or 80 years of use or longer is appropriate."[28] This is the same argument he presented in Docket No. 090130-EI, which the Commission did not find persuasive. This argument is no more persuasive today than it was in that docket.

First, I should make clear that I did consider in my estimate any value that a building may have at the end of its useful life, as is discussed on page 755 of Exhibit NWA-1. However, unlike witness Pous, I did not overstate this impact and I did not rely on non-representative data. Further, I used a consistent and balanced approach for both the life and net salvage analysis. The service life estimate for this account is the 55-R1.5 survivor curve. The average service life for this account (which is 55 years) incorporates not only the lives of FPL's actual buildings but also the various components of buildings such as roofs and HVAC equipment that will be replaced over the course of a building's life. As a result, because the components of the Company's buildings will have shorter lives, the 55-R1.5 estimate implies that the buildings themselves will on average have a life longer than 55 years – 60 years or more. Additionally, this is just the average. Some buildings are therefore estimated to remain in service for 80 years or more.

Witness Pous is incorrect that there will be significant value in the buildings themselves after 60 or 80 years. There may be value to the site, but this is primarily related to the land. The building itself can actually have negative value. For example, if a new owner would need to demolish the building for the site to be used for a new purpose, then the net salvage for the actual building would be negative. This is because the land would be worth less than if there were no building on it due to the cost of removing the existing structure. I should also note that this account includes many service centers. These are utility specific buildings that may require significant modifications even if not demolished once they reach the end of their useful lives. This too implies minimal, if not negative, net salvage.

The data presented by witness Pous in support of his proposal is not at all representative of the net salvage of FPL's buildings once they reach the end of their useful lives. His primary data point is the sale of the Company's Miami general office in 2011, for which the Company did receive positive salvage.[29] However, this building was only 36 years old when it was sold.[30] It was therefore not at the end of its useful life, a point which can also be understood by the fact that the Company continues to use the building for its operations (it is just owned by a different owner). This is a very different situation than one in which a building will be retired at 60 to 80 years of age. While the land for the Miami general office will still have value in 30 to 40 years, the building will have much less value.

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[28] Direct Testimony of Jacob Pous, p. 193, lines 13-16.

[29] Direct Testimony of Jacob Pous, p. 193, lines 11-13.

[30] I should note that most of the other sales transactions witness Pous references were even younger, and therefore even less representative of the net salvage for this account.

For this reason, the proper approach is to exclude this sale from the historical data, as it is a non-recurring event. I have properly done so for both the service life and net salvage analyses. Witness Pous has not. While he gives this non-representative transaction undue consideration in the net salvage analysis, he continues to exclude the transaction (as well as the sales of other buildings) from the life analysis (as he proposes no change to my service life recommendation for this account). Thus, he has given undue consideration to sales buildings when they would lead to a higher level of positive net salvage (reducing depreciation expense) but ignores this activity if it would result in a shorter service life (and would therefore increase depreciation expense). He has therefore not taken a balanced approach as I have, but instead has used a results driven approach in order to reduce depreciation expense.

Witness Pous's discussion on page 195 of his testimony of the Uniform System of Accounts is similarly incorrect. I should first note that his comparison of the sales of buildings at early ages to the treatment for vehicles is inaccurate. The service life established for vehicles is the point in time from which they are installed to when they are retired from utility operations (when they are typically sold at auction). Both the service life and net salvage estimates for vehicles are handled consistently – the net salvage for vehicles is based on the end of their life for utility operations. In my approach for buildings, the same is true. The life established for buildings excludes early sales of buildings, as does the net salvage. Thus, the net salvage estimate I have made is based on the time and age at which the buildings are expected to be retired from utility operations. Witness Pous has not taken a consistent approach. He bases the life of buildings on data that excludes these early sales of buildings, but bases his net salvage estimate on data that includes these sales that occur prior to the end of the assets' useful lives.

My approach is therefore consistent with the Uniform System of Accounts. Both my service life and my net salvage estimates are based on the "the time between the date electric plant is includible in electric plant in service, or electric plant leased to others, and the date of its retirement."[31] In contrast, witness Pous's approach is not consistent with the Uniform System of Accounts. His net salvage estimate is based on sales that have occurred prior to the end of the estimated service life for buildings, and are therefore not representative of the service life for the assets in this account.

Finally, I should make clear that many of the retirements in this account are for components of buildings, not the entire buildings themselves. These retirements have and will continue to experience negative net salvage, a point on which witness Pous and I agree.[32] Thus, my estimate properly considers both these costs and the net salvage at the end of the useful lives of the Company's office buildings and service centers. As a result, my estimate of negative 10% is appropriate for this account.

[31] 18 C.F.R. 101 (FERC Uniform System of Accounts), Definition 36.

[32] Direct Testimony of Jacob Pous, p. 194, lines 10-11.

Florida Power & Light Company
Docket No. 160021-EI
OPC's First Set of Interrogatories
Interrogatory No. 51
Page 1 of 1

QUESTION:
Depreciation Net Salvage. Please identify and provide by account the analyses performed, if any, that demonstrates that the mix of investment reflected in the historical net salvage analysis is representative of the current mix of investment still in service. If no specific analysis was performed, explain and justify if and why the Company believes that the historical events are representative of future retirements.

RESPONSE:
As part of the 2016 Depreciation Study, the net salvage data for each account was reviewed for trends, transactions that were outside of the typical experience for the account, and for the type of investment in each account. Certain transactions or trends in the data were analyzed in more detail to determine the proper consideration for the estimation of net salvage. Please refer to Attachment No. 1 of this response for the analyses performed related to historical data transactions which were used to determine whether the historical mix of investment in the net salvage analysis was representative of the current mix of investment that is still in service. Additionally, please refer to the narratives discussing the estimation of net salvage provided in Part X and Part XI of Exhibit NWA-1, as well as the information provided in FPL's response to OPC's First Set of Production of Documents No. 38, for further discussion of the considerations and judgment incorporated into the estimation of net salvage and for further information.

Florida Power and Light Company

Analysis of Investment Mix for Historical Data

Steam Production Plant

Account 312 Boiler Plant Equipment

Question: What has caused high gross salvage in recent years (for example, 2007, 2008, 2010 and 2013)?

Response: A review of work orders from these years reflects that the levels of gross salvage value is related to the increase in the level of Capital Spare Parts (CSP) components (resulting in greater non-cash salvage resulting from refurbishment). Primary drivers are Pt. Everglades U3&4 (2007), Scherer Coal Cars (2007, 2008), Martin U1&2 (2008, 2010, 2013).

For the study, the data was not adjusted. However, activity for CSPs and coal cars likely make up a higher percentage of historical retirements than the overall mix of investment for the account. As assets age CSPs may comprise a smaller percentage of interim retirements. Gross salvage may therefore be lower in the future as a percent of interim retirements.

Account 314, Turbogenerator Units

Question: What caused higher levels of gross salvage for this account in many years (for example, in 1992, 2003, 2004, 2010 and 2011)? Also, what caused the relatively young retirements in some of these years.

Response: Many of the retirements and gross salvage were related to capital spare parts. For the study, the data for these transactions was not adjusted. However, CSPs likely make up a higher percentage of historical retirements than the current mix of investment for the account. As assets age CSPs may comprise a smaller percentage of interim retirements. Gross salvage may therefore be lower in the future as a percent of interim retirements.

Certain transactions were considered to be outliers and adjusted to be excluded from the life and net salvage analyses, including a generator failure/rotor replacement at Martin U1 in 2002-2003; the replacement of U1 generator stator coil at Manatee in 2003-2004; and LP Turbine and Rotor replacements at Manatee in 1992.

Nuclear Production Plant

Account 322 Reactor Plant Equipment

Question. Why are there higher levels of gross salvage in many years?

> **Response:** High gross salvage resulted from the following drivers: St Lucie U1&2 (1995), Turkey Pt. U4 Equipment Reliability (2007, 2011, and 2013), Turkey Pt. U3 CDRM Insurance Settlement (2010), St. Lucie U2 RCP Motor Replacement (2011) and St. Lucie U1&2 Equipment Reliability (2013). Because the CDRM transactions were related to an insurance settlement and therefore not considered to be indicative of the future experience for most of the assets in the account, these transactions given less consideration in the net salvage analysis.

Question. What caused higher levels of retirements and cost of removal in 2011 and 2012?

> **Response:** Much of the activity in these years is due to the EPU (uprate) projects. Retirement, salvage and cost of removal identified as uprate work were excluded from the life and net salvage analyses. Additionally, regular outage work was typically scheduled to coincide with the uprate activity and was not considered to be abnormal.

Question. What caused the gross salvage recorded in 2014?

> **Response:** PTN U3: $8.9 million XFR from CE 5421100 WO P-121127 to 5959998 on refurbishment WO P-121128. PSL salvage XFR from P-111735, CE 5421100 to CE 5959998 on same WO – remove/refurb/re-install. Generally, many of the retirements and gross salvage recorded in 2014 were refurbishment work orders. For the study, the data for these transactions were not adjusted. However, these types of transactions likely make up a higher percentage of historical retirements than the overall mix of investment for the account. As assets age refurbishments may comprise a smaller percentage of interim retirements. Gross salvage may therefore be lower in the future as a percent of interim retirements.

Account 323 Turbogenerator Units

Question. What caused the relatively early retirements (i.e., ages 2 and less) in 2011?

> **Response.** Retirements related to PSL LP Turbine Rotors, PSL U2 Turbine Valves, and PTN U4 Turbine Valves that were retired at age 2 or less in 2011 were excluded from the life and net salvage analyses and not considered to be indicative of future experience.

Question. What caused the higher levels of gross salvage in this account (1994, 2005, 2006, 2007, 2009 and 2010 for example)?

> **Response.** Retirement, cost of removal and/or salvage transactions related to turbine valves at PTN U4 recorded in 2009, LP rotors at St Lucie Units 1 and 2 recorded in 2005 and the replacement of LP Rotors at St Lucie Unit 2 recorded in 1994 were excluded from the life and net salvage analyses and not considered to be indicative of future experience for the full account. Additionally, many of the retirements and gross salvage in these years were related to capital spare parts. For the study, the data for these transactions was not adjusted. However, CSPs likely make up a higher percentage of historical retirements than the mix of investment for the account. As assets age CSPs may comprise a smaller percentage of interim retirements. Gross salvage may therefore be lower in the future as a percent of interim retirements.

Question. What caused higher levels of retirements and cost of removal in 2011, 2012 and 2013?

> **Response:** Many of the activity in these years is due to the EPU projects. Costs identified as uprate work was excluded as retirements and cost of removal for the life and net salvage analyses. Additionally, regular outage work was typically scheduled to coincide with the uprate activity and was not considered to be abnormal.

Question. Cost of removal in 2014 was lower than in previous years. Why was cost of removal lower (while retirements were still at a high level)?

> **Response:** Almost all of the difference in nuclear removal cost for UA 323 occurred Turkey Point Unit 4. The uprate project was completed in 2013 so 2014 removal cost for the uprate project was zero (actually slightly negative due almost certainly to a true-up in early 2014). Also, regular outage work for Unit 4 was scheduled to coincide with the uprate activity so that work also was completed in 2013 and therefore was minimal in 2014. Costs identified as uprate work was excluded as retirements and cost of removal for the life and net salvage analyses. Additionally, due to the timing of costs, overall and moving averages were given more consideration in the net salvage analysis.

Account 324 Accessory Electric Equipment

Question. What was retired 2011?

> **Response.** Aux Transformer at TP U4. This was considered to be a normal retirement.

Other Production Plant

Account 341 Structures and Improvements

Question. Why was there a higher level of cost of removal recorded in 2010?

Response: 2010 total cost of removal is $2.4M. $2.2M is attributed to piping replacement projects at Putnam Common. Underground piping replacement was completed through internal order 09377-070-0905-007 with a cost of removal of $1.3M and over ground piping replacement was completed through internal order 09378-070-0905-007 with a cost of removal of $909. No adjustment was made to exclude these amounts from the life or net salvage analyses. However, the cost of removal amount was given less consideration in the net salvage analysis because future interim retirements may consist of a smaller percentage of this type of retirement than is represented in the historical data.

Question. In 2005 what caused the higher level of cost of removal?

Response: The cost of removal is related to Martin U8 combined cycle conversion project. Retirements are due to Ft. Myers U2 replacement of discharge canal retaining wall and Martin U3 replacement of intake cooling pump. The cost of removal amount was given less consideration in the net salvage analysis because future interim retirements may consist of a smaller percentage of this type of retirement than is represented in the historical data.

Question. What was the large cost removal in 1994 (approximately $1.5 million)? Was this related to the retirement in 1995?

Response: The retirement in 1995 is related to Ft. Lauderdale Common demolition and backfill of service building and Putnam Common water treatment facilities. The large cost of removal in 1994 is also related to Ft. Lauderdale Common. No adjustment was made to exclude this from the analysis, but the cost of removal amount was given less consideration in the net salvage analysis.

Account 343.2 Prime Movers – Capitalized Spare Parts

Question. Gross salvage in 2010 and 2013 is higher than in other years. What caused the higher gross salvage in these years?

Response: Primary drivers for 2013 include Major Dot 04 Rotor Outages at Sanford Unit 4 and Unit 5 ($30.7M); Hot Gas Path Outages at West County Unit 1 and Unit 2 ($29.9M); and the sale of a rotor from Ft. Myer Unit 2 to Lamar ($10.4M). These drivers account for $71.0M of gross salvage. Primary drivers for 2010 include outage costs for Sanford U4 and Turkey Pt. U5. No adjustments were made to the data although this information was considered in the net salvage analysis. Generally, due in part to potential timing differences, long term and moving averages were given more consideration in the statistical analysis.

Account 344 Generators

Question. What caused the gross salvage in 2013?

> **Response:** Primary drivers include a generator rotor replacement at Ft. Myers Unit 2 (internal order G00000107223) and generator rotor rewind at Putnam Unit 1 (internal order G00000107173). No adjustment made to data for net salvage analysis.

Question. What was retired in 2012 and 2013?

> **Response:** 2012 retirements at $4.1M and 2013 retirements at $4.7M; Activity related to the retirements include combustion turbine overhauls, rotor rewinds, and wedge replacements. These were not considered to be abnormal retirements and no adjustment was made to data for life or net salvage analysis.

Question. What caused the gross salvage amount in 2014?

> **Response:** The gross salvage amounts for UA 344 in 2014 relate to Sanford Unit 4 and Unit 5 generator rewind work orders. Unit 4 (472,852) credited to CE 5421100 and debited to CE 5959998 for WO G-119988 in August, 2014 This was a remove/re-wind/replace work order so a separate work order for re-wind was not needed. Unit 5 (1,046,660) Unit 5 credited to CE 5421100 and debited to 5959998 for WO G-107404 on February, 2014. Again this was a remove/re-wind/replace work order so both sides of the entry are recorded to G-107404. No adjustment made to data for net salvage analysis.

Account 345 Accessory Electric Equipment

Question. What caused the retirements in 2012 and 2013?

> **Response:** 2012 retirements at $3.4M and 2013 retirements at $3.6M; the primary driver is the combustion turbine exciter upgrades completed on Ft. Lauderdale Unit 4 and Unit 5. No adjustment made to data for life or net salvage analysis.

Transmission Plant

Account 352 Structures and Improvements

Question. What is the gross salvage recorded in 2009?

Response: The large gross salvage is due to a lump sum reimbursable relocation payment which was recorded to account 35200 in October 2009 in the amount of $245,880.80 (WO 00279-009-0311-000). This was adjusted to be excluded from the net salvage analysis.

Account 353 Station Equipment

Question. What are the salvage amounts in 2008 and 2011?

Response: The majority of the gross salvage for 2008 is primarily is due to the recording of the Siemens Settlement ($4,350,000; other recoveries for material and labor cost), as a result of the failure of a Turkey Point Unit 4 GSU transformer after 10 days in service. An additional $2,900,000 was recorded to other recoveries in 2008 as a result of the sale of a transformer to FPLE Calhoun. The transactions related to the TP GSU and transformer sale were excluded from the life and net salvage analyses.

The major other recoveries in 2011 were : $762,000 associated with retirements of high voltage breakers and equipment at C-5 Complex substation (WO T00000000612); $346,000 associated with equipment retirements at Delta substation (WO T00000003208); and $291,549.00 related to the replacement of a GSU transformer at Manatee Unit 3 (WO T00000006034). The Manatee GSU was adjusted to Account 353.1. The other transactions were not adjusted and were not considered to be abnormal.

Question. What caused the gross salvage in 2012?

Response: Gross salvage in 2012 resulted primarily from a) warranty replacement of Gratigny Substation auto transformer, b) other recovery accrual processed under Duval Substation internal order to install the JEA tie line#4, and C) other recovery recorded for Delta Substation addition of mid span breaker and 2 disconnect switches. These amounts were not adjusted in the data. However, less consideration was given to the warranty replacement. The mix of investment retired in the future is likely to have less gross salvage than recorded in 2012.

Question. What types of transactions have resulted in the levels of gross salvage experienced in recent years?

Response: The last 10 years were analyzed. In summary, the types of salvage is primarily other recoveries associated with Storm Recovery transactions, Participation Accounting transactions, warranty replacements transactions, Reserve Equipment sales, junked reserve equipment sales, and reimbursable accruals. Due to the types of transactions recorded for this time period (e.g. reimbursable accruals, reserve equipment sales), it is likely that the mix of investment in retirements recorded during this time experienced a higher level of gross salvage than will occur for the mix of investment currently in service.

Account 353.1, Step Up Transformers

Question. What caused the gross salvage in 2009?

Response: Other recoveries of $5,999,188.80 were recorded to properly reflect warranty transactions for the GSU failure at Turkey Point Unit 4 (see response to Acct 353 for 2008) to utility account 353.1. These other recoveries had been recorded to utility account 353. The transactions associated with the TP 4 GSU were excluded from the life and net salvage analyses.

Question. What caused the retirements in vintage 2007 ($5.9 million and $1.7 million) and vintage 2004 ($1.6 million) recorded in 2012?

Response: The 2007 vintage retirements for approximately $5.9M are related to retirements of 2 main transformers at Port Everglades Units 1 & 2. There are also 2007 vintage property retirements for approximately S1.7M associated with 2 main transformer cooling units at St. Lucie Unit 1. The vintage 2004 property retirement for approximately $1.6M retired main transformer from Manatee Unit 3. These were not adjusted in the data although consideration was given to the causes of retirement. One of the causes of retirement of step up transformers in this account is the retirement of the associated generating facility, which resulted in the retirement of the Pt Everglades GSUs. However, the level of retirements in this account over the fifteen year period of historical data that is available is likely higher on an annual basis than will be the case for the time remaining assets in this account will be in service. This factor was considered in the estimation of service life for this account.

Account 354 Towers and Fixtures

Question. What was the large gross salvage in 2011?

Response: The majority of the salvage amount is due to $453,834.47 of other recoveries recorded in June 2011 that were related to reimbursements. These transactions were excluded from the net salvage analysis.

Account 355 Poles and Fixtures

Question: Why was there negative gross salvage recorded in 2004 and 2009?

Response: These amounts offset positive gross salvage in prior years. The data was not adjusted, but was analyzed using averages.

Question. What caused higher levels of salvage for transmission poles in some years (for example what caused high gross salvage in 2007 or 2013)?

Response: Many of these transactions are related to reimbursements. The mix of reimbursements in the historical data is higher than the mix of assets that will have reimbursement amounts going forward. For this reason, gross salvage should be lower going forward than in recent years for this account, which was considered in the estimation of net salvage.

Question. Why has cost of removal increased in recent years?

Response: Cost of removal has increased for many reasons that should be expected to continue, such as labor costs, equipment costs, permitting costs and environmental costs. However, a portion of the increase in costs is due to the volume of work performed for storm hardening, which has led to increases in contractor costs. For this reason, there could be some moderation of costs in future years, which was considered in the estimation of net salvage.

Account 356 Overhead Conductors and Devices

Question: What was the gross salvage recorded in recent years?

Response: Some of the transactions (for example $1,151,244 of other recoveries in 2011) were related to reimbursable relocation contractor accruals recorded in 2011. While these amounts were not adjusted in the historical data, the mix of reimbursements for these years is higher than the mix of assets that will have reimbursement amounts going forward. For this reason, gross salvage should be lower going forward than in recent years for this account, which was considered in the estimation of net salvage.

Account 357 Underground Conduit

Question. Why was there cost of removal but no retirements in many years?

Response: These were generally due to timing differences, and the retirements were recorded in different years.

Question. What were the gross salvage amounts recorded in 1997, 1999 and 2000?

Response: The 1997 gross salvage amount of $2,029,590 recorded to other recoveries under account 357 (WO 08068-009-0988-000) was related to a lawsuit settlement associated with the St. Lucie Unit 2 Participation Agreement. The 1999 gross salvage amount of $892,276 recorded to other recoveries under account 357 (WO 04101-009-0984-000) was related to the recording of a Loxahatchee River Crossing transmission project installed by FPL for the Town of Jupiter. In The 2000 gross salvage amount of $3,125,259.79 was recorded to other recoveries under account 357 related to the recording of a Venetian Causeway transmission project installed by FPL for the City of Miami Beach. These transactions are considered to be abnormal and were excluded from the net salvage analysis. There were no retirements associated with the Venetian Causeway project or WO 04101-009-0984-000.

Account 358 Underground Conductors and Devices

Question. What are the large gross salvage amounts in 1997, 1999 and 2000?

Response: Primary drivers include reimbursable relocations associated with Dade-Flagami #1 underground feed to Aviation, Hobe-Plumosus #2 Underground Cable, Miami-Miami Beach 69KV loop to Lummus Substation, and a lawsuit settlement associated with Miami Beach Substation WO scope titled as "Repair work in Government Cut". These transactions were not adjusted in the historical data but were given less considerations as similar transactions are not expected to occur for most of current investment mix in the account.

Account 359 Roads and Trails

Question: What removal cost does FPL experience for Roads and Trails? What sorts of project have removal costs in this account?

Response: The replacement projects associated with account 359 are primarily related to the replacement of culverts, bridges, and gates. The mix of investment currently in the account has a lower percentage of these types of assets than is reflected in the historical retirements. This was considered in the estimation of net salvage.

Distribution Plant

Account 361 Structures and Improvements

Question: What were the gross salvage amounts recorded in 1997 and 2008?

Response: The majority of the $2,151,446.32 of 1997 other recoveries, 99.7% or $2,143,949.08 is from a contract with Aviation to build a new 138KV distribution substation. In 2008, the other recovery amount of $502,000 is related to a CIAC reimbursement for work performed. Both of these transactions were excluded from the net salvage analysis.

Account 364, Poles, Towers and Fixtures

Question. Why has cost of removal increased in recent years?

Response: Cost of removal has increased for many reasons, many of which should be expected to continue. These include factors such as labor costs, equipment costs, permitting costs and environmental costs. However, a portion of the increase in costs are due to the volume of work performed for storm hardening. Storm hardening work is more likely to occur near major roadways, which result in higher removal costs. For this reason, future cost of removal could moderate somewhat when compared to the more recent years. All of these factors were considered in the estimation of net salvage.

Question. Why has gross salvage decreased for this account?

Response: The decrease in gross salvage is likely due to two factors. The first is that stricter disposal requirements for wood poles can mean that there is less salvage value. This trend should be expected to continue. The other reason is that the use of contractors has been higher in recent years, and contractor charges are typically net charges (i.e., net of salvage).

Account 365, Overhead Conductors and Devices

Question. Why has cost of removal increased in recent years?

Response: Cost of removal has increased for many reasons that should be expected to continue, such as labor costs, equipment costs, permitting costs and safety requirements. However, a portion of the increase in costs could also be due to the volume of work performed for storm hardening. Storm hardening work is more likely to occur near major roadways, which result in higher removal costs. For this reason, future cost of removal could moderate somewhat when compared to the more recent years. All of these factors were considered in the estimation of net salvage.

Question. Why has gross salvage decreased for this account?

Response: The decrease in gross salvage is likely due to multiple factors. One is that scrap prices have been lower in some years. Another is that there may be less copper in recent retirements. This trend should be expected to continue, as the overall historical database likely contains a higher percentage of copper than the current mix of investment. The other reason is that the use of contractors has been higher in recent years, and contractor charges are typically net charges (i.e., net of salvage).

Account 366.6 Underground Conduit – Duct System

Question: Why is there negative cost of removal in 2012 through 2014?

Response: The negative cost of removal recorded for Underground Conduit – Duct System, account 366.6 in 2012 through 2014 was primarily due to the classification of reimbursable jobs as non-reimbursable. These transactions are not expected to be reoccurring and were not considered to be indicative of the retirement experience for the current investment mix in this account.

Account 366.7 Underground Conduit – Direct Buried

Question: Why is there negative cost of removal in 2012 through 2014?

Response: The negative cost of removal recorded for Underground Conduit – Duct System, account 366.6 in 2012 through 2014 was primarily due to the classification of reimbursable jobs as non-reimbursable. These transactions are not expected to be reoccurring and were not considered to be indicative of the retirement experience for the current investment mix in this account.

Account 368 Line Transformers

Question: What caused the large cost of removal in 2013?

Response: The large cost of removal in 2013 is primarily due to a true-up of transformer removal cost that actually occurred in prior periods. The data was not adjusted to prior periods, but averages were given more consideration in the net salvage analysis.

Account 369.1 Services – Overhead

Question. What was caused high cost of removal for this account relative to retirements?

Response: There are a number of factors that have influenced the cost of removal for this account. One of the reasons for high removal costs is the fact that overhead services are small in quantity but are often in hard to get at places with high safety factors involved. This is especially true around residential neighborhoods. Removal is often time consuming due to safety requirements. Often distribution services are stretched across roads in high residential areas and with the spring effect of conductor more manpower is required. Factors that have influenced cost of removal for other distribution line accounts, such as permitting requirements, have also influenced the cost of removal for this account. The material costs are also relatively small for services (when compared to other types of assets such as poles), and the labor costs when replacing a service are often about half the time for removal and half for the new asset. For these reasons, higher levels of cost of removal are expected to continue for this account.

Question. Why is cost of removal lower in 2010 than other years?

Response: Timing differences. Averages were given more consideration in the net salvage analysis than individual years.

Account 370 Meters

Question. Why has cost of removal been higher since 2002?

Response: The Company's process for recording cost of removal changed in 2002. Recording of cost of removal has improved since 2002 and many costs that had not been recorded to cost of removal are now reflected in the data. The accounting practices since 2002 are expected to be more indicative of the future experience for this account than those prior to 2002.

Question. What caused the higher level of retirements in 2014?

Response: The higher level of retirements in 2014 was primarily due to CI (Commercial/Industrial) Expansion Deployment (related to AMI Meters for commercial and industrial customers).

General Plant

Account 390 Structures and Improvements

Question. What was retired in 2011?

Response: Most of the retirements recorded in 2011 are related to the sale of the General Office building (GO). The retirements and salvage for this sale were excluded from the service life and net salvage analyses, as the building was sold before the end of its life (a portion of the building is still leased to FPL).

Florida Power & Light Company
Docket No. 160021-EI
OPC's First Set of Interrogatories
Interrogatory No. 69
Page 1 of 1

QUESTION:
Depreciation Account 353. Please identify the size, year of installation and cost of each transformer in Account 353 on the Company system. The information should be provided on electronic medium in Excel readable format.

RESPONSE:
See Attachment No. 1 to this response for transformers by size, year of installation, and cost in Account 353 as of December 2014 and 2015.

Florida Power & Light Company
Docket No. 160021-EI
OPC's First Set of Interrogatories
Interrogatory No. 69
Attachment No. 1
Tab 1 of 1

Transformers as of December 2014

Utility Account	Short Description	1941	1947	1948	1950	1951	1952
35300 - Station Equipment	TRANSFORMER, AUTO 1-120 MVA						
	TRANSFORMER, AUTO 1-20 MVA						
	TRANSFORMER, CURRENT 4-23KV	400.00		0.04			
	TRANSFORMER, POTENTIAL 230/500KV	4,620.00	1,636.00				
	TRANSFORMER, POTENTIAL 69KVA	34,121.00			15,643.00	2,700.00	327.01
	TRANSFORMER, POTENTIAL UNDER 69KV						
	TRANSFORMER, STEP DOWN 1 & 3ph 1 - 15 MVA						
	TRANSFORMER, CURRENT FREESTANDING 550K						
	METERING UNIT CT/PT 69-240KV						
	TRANSFORMER, AUTO 496-795 MVA						
	TRANSFORMER, AUTO 121-295 MVA						
	TRANSFORMER, CURRENT 138KV						
	TRANSFORMER, AUTO 296-495 MVA						
	TRANSFORMER, POTENTIAL 115/138KV - TRAN						
	TRANSFORMER, CURRENT 240KV						
	TRANSFORMER, CURRENT FREESTANDING 138KV						
	TRANSFORMER, CURRENT METERING						
	TRANSFORMER, AUTO 796-1500 MVA						
	TRANSFORMER, AUTO 795-1500 MVA						
	TRANSFORMER, CURRENT FREESTANDING 240K						
	TRANSFORMER, POWER VOLTAGE 69-500KV						
	TRANSFORMER, CURRENT 69K						
	TRANSFORMER, CURRENT 115KV - 600A						
	TRANSFORMER, PLANT MAIN						
	TRANSFORMER, PLANT MAIN INSTALLATION						
Grand Total		**39,141.00**	**1,636.00**	**0.04**	**15,643.00**	**2,700.00**	**327.01**

Transformers as of December 2015

Utility Account	Short Description	1941	1947	1948	1950	1951	1952
35300 - Station Equipment	TRANSFORMER, AUTO 1-120 MVA						
	TRANSFORMER, AUTO 1-20 MVA						
	TRANSFORMER, CURRENT 4-23KV	400.00		0.04			
	TRANSFORMER, POTENTIAL 230/500KV	4,620.00	1,636.00				
	TRANSFORMER, POTENTIAL 69KVA	34,121.00			15,643.00	2,700.00	327.01
	TRANSFORMER, POTENTIAL UNDER 69KV						
	TRANSFORMER, STEP DOWN 1 & 3ph 1 - 15 MVA						
	TRANSFORMER, CURRENT FREESTANDING 550K						
	METERING UNIT CT/PT 69-240KV						
	TRANSFORMER, AUTO 496-795 MVA						
	TRANSFORMER, AUTO 121-295 MVA						
	TRANSFORMER, CURRENT 138KV						
	TRANSFORMER, AUTO 296-495 MVA						
	TRANSFORMER, POTENTIAL 115/138KV - TRAN						
	TRANSFORMER, CURRENT 240KV						
	TRANSFORMER, CURRENT FREESTANDING 138KV						
	TRANSFORMER, CURRENT METERING						
	TRANSFORMER, AUTO 796-1500 MVA						
	TRANSFORMER, AUTO 795-1500 MVA						
	TRANSFORMER, CURRENT FREESTANDING 240K						
	TRANSFORMER, POWER VOLTAGE 69-500KV						
	TRANSFORMER, CURRENT 69K						
	TRANSFORMER, CURRENT 115KV - 600A						
	TRANSFORMER, PLANT MAIN						
	TRANSFORMER, PLANT MAIN INSTALLATION						
Grand Total		**39,141.00**	**1,636.00**	**0.04**	**15,643.00**	**2,700.00**	**327.01**

1953	1954	1955	1956	1957	1958	1959	1961	1962
						10,000.00		
						885.00		
				170.00	1,850.00	1,051.93	7,100.00	
8,585.00	1,605.00	12,105.84		13,418.00	11,604.14	29,990.36		408.77
		1,144.83	225.00	7,055.00		16,680.00		
				4,860.00		5,250.00	9,456.27	
						6,600.00		1,750.00
8,585.00	**1,605.00**	**13,250.67**	**225.00**	**25,503.00**	**13,454.14**	**70,457.29**	**16,556.27**	**2,158.77**

1953	1954	1955	1956	1957	1958	1959	1961	1962
						10,000.00		
						885.00		
				170.00	1,850.00	1,051.93	7,100.00	
8,585.00	1,605.00	12,105.84		13,418.00	11,604.14	29,990.36		408.77
		1,144.83	225.00	7,055.00		16,680.00		
				4,860.00		5,250.00	9,456.27	
						6,600.00		1,750.00
8,585.00	**1,605.00**	**13,250.67**	**225.00**	**25,503.00**	**13,454.14**	**70,457.29**	**16,556.27**	**2,158.77**

1963	1964	1965	1966	1967	1968	1969	1970	1971
		1,900.00		10,160.00		17,912.00	16,494.17	13,514.57
			549,229.45	1,367,402.29	276,072.81	138,095.10	1,125,611.40	383,045.13
	1,275.50				1,650.00		1,282.12	
14,228.85		1,600.00				13,380.26	35,951.48	
5,145.00		4,905.00			13,312.54			
	344.17	7,669.00			96.61			
						1,420.52		
			2,888,226.37	10,948.34	0.00		492,200.28	2,484,974.62
			632,232.86	1,036,360.00	1,019,079.73	85,900.11	293,950.50	3,279,565.52
4,200.00								
							324,594.34	0.00
8,400.00								
31,973.85	**1,619.67**	**16,074.00**	**4,069,688.68**	**2,424,870.63**	**1,310,211.69**	**256,707.99**	**2,290,084.29**	**6,161,099.84**

1963	1964	1965	1966	1967	1968	1969	1970	1971
		1,900.00		10,160.00		17,912.00	16,494.17	13,514.57
			549,229.45	1,367,402.29	276,072.81	138,095.10	1,125,611.40	383,045.13
	1,275.50				1,650.00		1,282.12	
14,228.85		1,600.00				13,380.26	35,951.48	
5,145.00		4,905.00			13,312.54			
	344.17	7,669.00			96.61			
						1,420.52		
			2,888,226.37	10,948.34	0.00		492,200.28	2,484,974.62
			632,232.86	1,036,360.00	1,019,079.73	85,900.11	293,950.50	3,279,565.52
4,200.00								
							324,594.34	0.00
8,400.00								
31,973.85	**1,619.67**	**16,074.00**	**4,069,688.68**	**2,424,870.63**	**1,310,211.69**	**256,707.99**	**2,290,084.29**	**6,161,099.84**

1972	1973	1974	1975	1976	1977	1978	1979	1980
82,049.87	26,536.46	27,131.44	32,059.68	13,264.39	9,576.00	45,092.55	7,378.96	
2,562,480.21	347,112.06	1,520,834.99	3,051,207.10	53,846.15	(275,475.08)	513,539.97	400,836.88	(281,215.04)
1,140.00	7,614.77		2,351.12	1,922.01				
		91.30	41,025.19	1,751.51		36,118.46	45,218.67	2,457.63
13,579.86			4,588.15	1,391.43		7,879.53	2,642.98	18,529.13
							5,856.85	343.65
8,088.05	0.00	(2,136.17)			161.52			12,064.70
13,625.84		3,299.16	3,663.29	13,322.42				
1,530,225.65	940,856.50	20,124.66	10,693.78	1,728,586.36	928,960.46	90,290.60	4,459,556.41	569,954.10
1,546,299.07	39,951.11	1,304,596.80	16,298.00	601,778.02	1,206,011.48	2,008,338.63	12,721.42	258,142.62
							0.00	
1,667.12			1,897,477.72	2,748.62	8,616,173.82		10,267,143.29	196,067.07
							20,392.59	
								1,364,787.01
5,759,155.67	**1,362,070.90**	**2,873,942.18**	**5,059,364.03**	**2,418,610.91**	**10,485,408.20**	**2,701,259.74**	**15,221,748.05**	**2,141,130.87**

1972	1973	1974	1975	1976	1977	1978	1979	1980
82,049.87	26,536.46	27,131.44	32,059.68	13,264.39	9,576.00	45,092.55	7,378.96	
2,562,480.21	347,112.06	1,520,834.99	3,051,207.10	53,846.15	(275,475.08)	513,539.97	400,836.88	(281,215.04)
1,140.00	7,614.77		2,351.12	1,922.01				
		91.30	41,025.19	1,751.51		36,118.46	45,218.67	2,457.63
13,579.86			4,588.15	1,391.43		7,879.53	2,642.98	18,529.13
							5,856.85	343.65
8,088.05	0.00	(2,136.17)			161.52			12,064.70
13,625.84		3,299.16	3,663.29	13,322.42				
1,530,225.65	940,856.50	20,124.66	10,693.78	1,728,586.36	928,960.46	90,290.60	4,459,556.41	569,954.10
1,546,299.07	39,951.11	1,304,596.80	16,298.00	601,778.02	1,206,011.48	2,008,338.63	12,721.42	258,142.62
							0.00	
1,667.12			1,897,477.72	2,748.62	8,616,173.82		10,267,143.29	196,067.07
							20,392.59	
								1,364,787.01
5,759,155.67	**1,362,070.90**	**2,873,942.18**	**5,059,364.03**	**2,418,610.91**	**10,485,408.20**	**2,701,259.74**	**15,221,748.05**	**2,141,130.87**

1981	1982	1983	1984	1985	1986	1987	1988	1989
53,029.55	47,138.22	81,596.81	32,157.05	89,464.91	30,161.70	19,435.30	40,567.48	7,841.06
313,699.89	(274,963.98)	1,167,443.97	474,886.78	654,515.17	197,273.36	2,476,497.41	734,919.82	76,919.42
	1,446.60	2,637.52					2,493.02	
	130,416.02	24,658.60	9,631.15	78,823.03	161,474.94		24,515.33	18,044.93
	4,037.19	0.00		10,455.58		6,407.89	6,596.01	14,490.74
			307.06					
(1,957.46)	38,101.86	0.00	20,652.51	117,202.48	212,041.49	21,088.14		
						225,000.00		
			103,006.64		820,707.27	62,181.97	11,582.99	
24,261.12	170,683.62	(694,506.31)	0.00	16,333.94	5,479,843.19	16,161,647.90	9,432,061.06	4,536,190.12
48,839.81	3,248,854.43	273,810.23	1,331,637.55	1,352,886.10	4,766,633.48	(420,421.16)	869,871.93	1,998,965.81
	3,228.03	0.00		794.71		30,784.07		
4,696,264.12	2,869,628.16	2,188,322.13	2,677,069.33	6,895.66	4,458,768.76	(2,058,312.83)	(6,924,834.98)	38,878.39
			70,265.79				66,292.89	12,590.53
	32,748.46							
						21,000.00		
4,509.75					0.00			
	5,603.37			47,764.64				
						210,000.00		
					(1,062.26)	39,509.68	(0.36)	
5,138,646.78	**6,276,921.98**	**3,043,962.95**	**4,719,613.86**	**2,375,136.22**	**16,125,841.93**	**16,794,818.37**	**4,264,065.19**	**6,703,921.00**

1981	1982	1983	1984	1985	1986	1987	1988	1989
53,029.55	47,138.22	81,596.81	32,157.05	89,464.91	30,161.70	19,435.30	40,567.48	7,841.06
313,699.89	(274,963.98)	1,167,443.97	474,886.78	654,515.17	197,273.36	2,476,497.41	734,919.82	76,919.42
	1,446.60	2,637.52					2,493.02	
	130,416.02	24,658.60	9,631.15	78,823.03	161,474.94		24,515.33	18,044.93
	4,037.19	0.00		10,455.58		6,407.89	6,596.01	14,490.74
			307.06					
(1,957.46)	38,101.86	0.00	20,652.51	117,202.48	212,041.49	21,088.14		
						225,000.00		
			103,006.64		820,707.27	62,181.97	11,582.99	
24,261.12	170,683.62	(694,506.31)	0.00	16,333.94	5,479,843.19	16,161,647.90	9,432,061.06	4,536,190.12
48,839.81	3,248,854.43	273,810.23	1,331,637.55	1,352,886.10	4,766,633.48	(420,421.16)	869,871.93	1,998,965.81
	3,228.03	0.00		794.71		30,784.07		
4,696,264.12	2,869,628.16	2,188,322.13	2,677,069.33	6,895.66	4,458,768.76	(2,058,312.83)	(6,924,834.98)	38,878.39
			70,265.79				66,292.89	12,590.53
	32,748.46							
						21,000.00		
4,509.75					0.00			
	5,603.37			47,764.64				
						210,000.00		
					(1,062.26)	39,509.68	(0.36)	
5,138,646.78	**6,276,921.98**	**3,043,962.95**	**4,719,613.86**	**2,375,136.22**	**16,125,841.93**	**16,794,818.37**	**4,264,065.19**	**6,703,921.00**

1990	1991	1992	1993	1994	1995	1996	1997	1998
	138,303.03	(893.53)	(83,578.87)	36,991.23	19,066.10		146,487.24	
28,182.65	829,858.35	2,783,505.43	(6,080,434.27)	(296,708.16)	(14,918.08)	111,636.48		
		(6,243.90)	8,334.05	(10.31)	65.27	3,568.42		11,698.45
	(799.96)	51,335.55	73,960.11	(640.35)	107,748.66	76,311.85	(56,896.99)	118,864.17
	15,141.46	19,855.88	42,267.03	40,605.27	(78,156.73)			63,789.79
	1,528.65	(5,956.29)	3,151.12	33.26	46.28	1,349.23		15,687.53
					(12,064.70)			
260,083.57					45,000.00		123,677.79	
			34,586.16	(22,787.85)	(132,316.43)	175,977.66	209,214.84	166,056.30
6,580,666.49	2,865,938.61	3,930,682.27	2,874,699.36	(2,713,887.14)	62,398.16	2,353,264.31	7,331,533.45	4,967,187.60
25,259.81	7,821,695.96	19,827,885.15	(8,572,898.91)	862,352.61	1,650,093.50	180,846.96	211,382.11	2,509,983.40
			362,748.96	(992.57)				
10,780,389.39	27,602,206.29	3,034,411.25	(33,662,430.15)	25,643.10	2,014,429.36	3,800,687.21	(6,524,704.24)	0.00
	58,671.63	(42,996.06)	57,279.08	(97,318.76)	65,559.78			
			46,198.61					
					(144,468.93)			117,912.32
		1,557,393.18	(1,557,393.18)		(82,157.81)			
		146,703.50	(146,703.50)					
83,124.37		91,148.65					(270,269.31)	269,571.32
11,220.37					179,428.59	(9,383.29)		(11,733.41)
			52,885,685.75	614,919.33	1,637,339.94	6,432,215.70	7,409,986.07	2,758,814.29
			3,428,784.13		790,370.22	595,164.69	681,633.02	652,465.99
17,768,926.65	**39,332,544.02**	**31,386,831.08**	**9,714,255.48**	**(1,551,800.34)**	**6,107,463.18**	**13,721,639.22**	**9,262,043.98**	**11,640,297.75**

1990	1991	1992	1993	1994	1995	1996	1997	1998
	138,303.03	(893.53)	(83,578.87)	36,991.23	19,066.10		146,487.24	
28,182.65	829,858.35	2,783,505.43	(6,080,434.27)	(296,708.16)	(14,918.08)	111,636.48		
		(6,243.90)	8,334.05	(10.31)	65.27	3,568.42		11,698.45
	(799.96)	51,335.55	73,960.11	(640.35)	107,748.66	76,311.85	(56,896.99)	118,864.17
	15,141.46	19,855.88	42,267.03	40,605.27	(78,156.73)			63,789.79
	1,528.65	(5,956.29)	3,151.12	33.26	46.28	1,349.23		15,687.53
					(12,064.70)			
260,083.57					45,000.00		123,677.79	
			34,586.16	(22,787.85)	(132,316.43)	175,977.66	209,214.84	166,056.30
6,580,666.49	2,865,938.61	3,930,682.27	2,874,699.36	(2,713,887.14)	62,398.16	2,353,264.31	7,331,533.45	4,967,187.60
25,259.81	7,821,695.96	19,827,885.15	(8,572,898.91)	862,352.61	1,650,093.50	180,846.96	211,382.11	2,509,983.40
			362,748.96	(992.57)				
10,780,389.39	27,602,206.29	3,034,411.25	(33,662,430.15)	25,643.10	2,014,429.36	3,800,687.21	(6,524,704.24)	0.00
	58,671.63	(42,996.06)	57,279.08	(97,318.76)	65,559.78			
			46,198.61					
					(144,468.93)			117,912.32
		1,557,393.18	(1,557,393.18)		(82,157.81)			
		146,703.50	(146,703.50)					
83,124.37		91,148.65					(270,269.31)	269,571.32
11,220.37					179,428.59	(9,383.29)		(11,733.41)
			52,885,685.75	614,919.33	1,637,339.94	6,432,215.70	7,409,986.07	2,758,814.29
			3,428,784.13		790,370.22	595,164.69	681,633.02	652,465.99
17,768,926.65	**39,332,544.02**	**31,386,831.08**	**9,714,255.48**	**(1,551,800.34)**	**6,107,463.18**	**13,721,639.22**	**9,262,043.98**	**11,640,297.75**

1999	2000	2001	2002	2003	2004	2005	2006
(176,974.70)		5,749.65			(31,239.53)	123,080.99	
(659,653.64)	0.00	0.00	0.00	0.00		0.00	1,210,043.21
	3,488.01	14,426.78	15,815.51	47,099.42			
				47,408.38	0.00		
5,805.00	84,923.24	(27,842.90)		13,177.08	42,643.96	55,205.02	24,886.63
			3,977.57	20,993.90	234.34	0.00	
	198,905.87	149,431.78			280,272.06	145,792.83	
2,750.00	210,652.46	(15,901.90)	(41.12)	207,242.39	192,447.88	1.36	45,863.73
407,600.99	2,631,837.87	2,915,026.46	1,267,640.43	2,722,715.95	1,434,579.98	10,335,813.26	(574,845.36)
(9,234,437.23)	1,147,685.50	(1,217,675.17)	2,686,631.65	465,380.75	7,112,973.89	2,223,922.01	3,551,715.05
	11,177.02	67,759.87				51,775.49	11,002.16
3,282,823.88	(281,640.80)	0.00	0.00	0.00	251,192.94	148,768.79	5,004,734.60
	1,197.67						
					38,474.06	55,322.95	22,787.97
	91,634.91		8,832.49			24,562.80	107,794.49
					834.18		880.79
	0.00	33,355.02			61,879.37		
			4,669.74				
19,782,612.38	(85,427,693.77)		2,917,812.72	(1,458,906.36)	(1,458,906.36)		2,965,777.39
890,964.66	(5,665,837.78)		274,342.06	(137,171.03)	(137,171.03)		216,669.55
14,301,491.34	**(86,993,669.80)**	**1,924,329.59**	**7,179,681.05**	**1,927,940.48**	**7,788,215.74**	**13,164,245.50**	**12,587,310.21**

1999	2000	2001	2002	2003	2004	2005	2006
(176,974.70)		5,749.65			(31,239.53)	123,080.99	
(659,653.64)	0.00	0.00	0.00	0.00		0.00	1,210,043.21
	3,488.01	14,426.78	15,815.51	47,099.42			
				47,408.38	0.00		
5,805.00	84,923.24	(27,842.90)		13,177.08	42,643.96	55,205.02	24,886.63
			3,977.57	20,993.90	234.34	0.00	
	198,905.87	149,431.78			280,272.06	145,792.83	
2,750.00	210,652.46	(15,901.90)	(41.12)	207,242.39	192,447.88	1.36	45,863.73
407,600.99	2,631,837.87	2,915,026.46	1,267,640.43	2,722,715.95	1,434,579.98	10,335,813.26	(574,845.36)
(9,234,437.23)	1,147,685.50	(1,217,675.17)	2,686,631.65	465,380.75	7,112,973.89	2,223,922.01	3,551,715.05
	11,177.02	67,759.87				51,775.49	11,002.16
3,282,823.88	(281,640.80)	0.00	0.00	0.00	251,192.94	148,768.79	5,004,734.60
	1,197.67						
					38,474.06	55,322.95	22,787.97
	91,634.91		8,832.49			24,562.80	107,794.49
					834.18		880.79
	0.00	33,355.02			61,879.37		
			4,669.74				
19,782,612.38	(85,427,693.77)		2,917,812.72	(1,458,906.36)	(1,458,906.36)		2,965,777.39
890,964.66	(5,665,837.78)		274,342.06	(137,171.03)	(137,171.03)		216,669.55
14,301,491.34	**(86,993,669.80)**	**1,924,329.59**	**7,179,681.05**	**1,927,940.48**	**7,788,215.74**	**13,164,245.50**	**12,587,310.21**

2007	2008	2009	2010	2011	2012	2013	2014	Grand Total
	13,974.34		0.00					905,428.12
(733,516.19)	34,100.70	(634,268.71)	(356,620.16)			(761.24)		13,774,261.63
	11,330.00	42,344.11	13,209.64	4,962.24	26,377.42	42,961.34	31,222.68	295,746.83
		0.00	28,219.31					1,101,326.01
62,107.91	13,501.33	19,822.83	17,837.51	8,256.46	50,106.90	83,511.17	75,081.75	876,995.74
2,527.01			7,658.95			9,708.11	20,824.02	121,485.85
								413,242.42
371,356.83	153,191.30	739,118.90	636,276.37	135,000.00	566,914.47	750,106.42	777,757.23	5,557,885.42
112,531.07	97,735.50	127,084.18	306,333.43	0.00	997,851.99	133,794.28	99,407.51	4,000,859.81
(1,290,693.58)	246,164.23	(9,003,230.75)	5,717,271.43	10,282,305.77	12,167,338.86	(84,396.94)	24,428,321.86	143,138,046.34
(2,767,898.10)	6,467,552.03	(3,339,506.25)	5,968,129.76	12,273,129.35	(816,742.03)	(1,367,547.76)	(301,337.70)	74,180,880.39
41,654.25	34,806.90	212,585.05	0.00			1.59	(12,087.52)	827,788.01
(2,378,759.24)	8,894,560.75	(3,885,114.74)	4,733,674.19	166,753.47	(0.45)	262,712.12	5,250,513.72	57,779,402.16
	6,706.52		0.00					218,641.66
52,722.24	13,519.40							270,173.69
	238,269.01	53,537.53	31,239.60	23,351.99	56,947.76	158,949.43	135,661.04	925,224.44
								1,714.97
(83,664.03)			(1,203,474.92)					0.00
	10,889.77		(64,257.78)					0.00
	34,697.51			13,724.73		266,708.45	54,601.29	753,307.01
	9,166.67					(24,657.08)		287,723.30
				576.78				576.78
								4,669.74
(137,565.74)	5,183,214.87	(6,250,613.13)	(1,760,813.39)			0.00		6,093,879.69
130,666.47		(303,780.53)						1,417,100.42
(6,618,531.10)	**21,463,380.83**	**(22,222,021.51)**	**14,074,683.94**	**22,908,060.79**	**13,048,794.92**	**231,089.89**	**30,559,965.88**	**312,946,360.43**

2007	2008	2009	2010	2011	2012	2013	2014	2015	Grand Total
	13,974.34		0.00					296,410.60	1,201,838.72
(733,516.19)	34,100.70	(634,268.71)	(356,620.16)			(761.24)			13,774,261.63
	11,330.00	42,344.11	13,209.64	4,962.24	26,377.42	42,961.34	31,222.68	376.48	296,123.31
		0.00	28,219.31						1,101,326.01
62,107.91	13,501.33	19,822.83	17,837.51	8,256.46	50,106.90	83,511.17	75,081.75	143,907.62	1,020,903.36
2,527.01			7,658.95			9,708.11	20,824.02	22,059.70	143,545.55
									413,242.42
371,356.83	153,191.30	739,118.90	636,276.37	135,000.00	566,914.47	750,106.42	777,757.23	820,742.89	6,378,628.31
112,531.07	97,735.50	127,084.18	306,333.43	0.00	997,851.99	133,794.28	99,407.51	1,033,737.37	5,034,597.18
(1,290,693.58)	246,164.23	(9,003,230.75)	5,717,271.43	10,282,305.77	12,167,338.86	(84,396.94)	24,428,321.86	19,266,949.91	162,404,996.25
(2,767,898.10)	6,467,552.03	(3,339,506.25)	5,968,129.76	12,273,129.35	(816,742.03)	(1,367,547.76)	(301,337.70)	10,092,530.48	84,273,410.87
41,654.25	34,806.90	212,585.05	0.00			1.59	(12,087.52)		827,788.01
(2,378,759.24)	8,894,560.75	(3,885,114.74)	4,733,674.19	166,753.47	(0.45)	262,712.12	5,250,513.72	107,770.44	57,887,172.60
	6,706.52		0.00						218,641.66
52,722.24	13,519.40								270,173.69
	238,269.01	53,537.53	31,239.60	23,351.99	56,947.76	158,949.43	135,661.04	304,414.63	1,229,639.07
									1,714.97
(83,664.03)			(1,203,474.92)						0.00
	10,889.77		(64,257.78)						0.00
	34,697.51			13,724.73		266,708.45	54,601.29	20,207.72	773,514.73
	9,166.67					(24,657.08)		303,206.10	590,929.40
				576.78					576.78
								(4,669.74)	0.00
(137,565.74)	5,183,214.87	(6,250,613.13)	(1,760,813.39)			0.00			6,093,879.69
130,666.47		(303,780.53)							1,417,100.42
(6,618,531.10)	**21,463,380.83**	**(22,222,021.51)**	**14,074,683.94**	**22,908,060.79**	**13,048,794.92**	**231,089.89**	**30,559,965.88**	**32,407,644.20**	**345,354,004.63**

QUESTION:
Depreciation Account 367.6. For Account 367.6 - Underground Conductors & Devices, please provide the following:

a. The different types of conductor and duct systems by linear footage and corresponding dollar amount.
b. When each type of conductor was first installed, the year when each type of conductor ceased to be installed, and the reasons for changing types of conductor.
c. The dollar level of retirement by year, by type of conductor and duct system for the period 2004-2015.
d. Whether it is FPL's policy to retire the investment in this sub account in place when possible.
e. The dollar level of retirements by year, for the period 2004-2015 that were abandoned in place rather than removed.
f. The linear footage and corresponding dollars of copper cable.
g. The corresponding linear footage and dollar level of copper retired by year, for the period 2004-215.
h. All reasons why FPL believes that an average service life of 45 years or longer would not also be a reasonable average service life.

RESPONSE:
a. See Attachment No. 1 to this response.

b. See Attachment No. 2 to this response. These conductors are still being installed.

c. See Attachment No. 3 to this response.

d. It is FPL's policy to retire the investment in this sub account in place when possible.

e. FPL does not track whether underground cable is abandoned rather than removed.

f. See Attachment No. 4 to this response.

g. See Attachment No. 5 to this response.

h. There are a number of reasons that support FPL's recommended 42-S0 survivor curve as a better estimate than a survivor curve estimate with an average service life of 45 years or more. The first is the statistical life analysis. The 42-S0 survivor curve represents a very good fit of the representative data points for the overall experience band (which are shown on page VII-109 of Exhibit NWA-1). Other experience and placement bands also provide similar statistical indications. S type survivor curves that have an average service life of 45 years or more are not good fits of the historical data. Similarly, R type survivor curves with an average service life of 45 years or more are not good fits of the historical data.

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There are some L type curves that represent relatively good fits of a portion of the historical data that have an average service life of around 45 years. However, there are multiple reasons as to why L type curves do not represent a good estimate for this account. The first is that these L curves do not fit the historical data as well as the S0. Second, the approved curve type is the S0 curve type (the same as recommended in the depreciation study). OPC had recommended an L type curve in the 2009 Depreciation Study, but the Commission did not adopt OPC's curve type recommendation in favor of the S0 survivor curve recommended by FPL. Third, L type survivor curves forecast a decreasing level of retirements as the assets age (e.g., for this account this effect would be most pronounced starting at age 50). This expectation inherent to the L type curves is not reasonable for this type of property, both because this pattern of retirements is not consistent with the historical data for the account and also because factors such as corrosion should result in an increasing, or at least consistent, level of retirements as the assets in this account age.

For these reasons, an average service life estimate of 45 years or more would have to deviate from the statistical indications from the historical data. There is not a convincing reason to do so for this account. As discussed on page XI-35 of Exhibit NWA-1, while there have been improvements in the quality underground conductor, the impact of these improvements is already supported by the historical data. The 42-S0 survivor curve represents an increase in service life over the approved 38-S0 survivor curve. Further, the 42-S0 survivor curve was favored by Mr. Allis over the 41-S0 survivor curve, which is also a very good fit of the historical data, for this reason. Additionally, more recent placement bands do not support that newer cable will experience a significantly longer service life than indicated by the overall experience band. The 42-S0 survivor curve is a very good fit of the most recent 30 and 20 year placement bands, and a 45-S0 or longer curve is not a good fit of these placement bands.

Finally, environmental factors in Florida may limit the impact on longer service lives for conductor in duct system or conduit. The proximity to the ocean and the frequency of thunderstorms means that water (and salt water) can enter conduit and ducts. While improved cable quality can help mitigate the impact of corrosion, newer cable is not immune to these factors. Cable failures in duct or conduit typically require replacement (i.e., the cable cannot be easily spliced), and thus the environment in Florida means that underground conductor will continue to need to be replaced.

For all of these reasons, the 42-S0 survivor curve, which is a very good fit of the historical data, represents a superior estimate than survivor curves with an average service life of 45 years or more.

Florida Power & Light Company
Docket No. 160021-EI
OPC's Tenth Set of Interrogatories
Interrogatory No. 253

QUESTION:
Forecasting
Depreciation Account 364.1 - Please specifically state and demonstrate how the retirements due to the storm hardening and pole inspection programs were treated and considered in the life analysis and estimation process that resulted in a 40R2 life-curve combination proposal. Further, explain and justify how such treatment resulted in proper recognition of the future life characteristics for the remaining investment in Account 364.1.

RESPONSE:
Retirements related to the storm hardening and pole inspection programs were not coded as outliers and were not excluded from the statistical life analysis, for reasons that are discussed in this response. However, the impact of both of these programs – both in terms of historical retirements and in terms of the future outlook for the account – were considered in the recommended 40-R2 survivor curve for this account. The 40-R2 forecasts that FPL will experience a lower rate of retirements for earlier ages (e.g., until about age 30), but will experience a similar rate of retirements for later ages (e.g. from ages 40 to 60) as has occurred historically. Factors related to both the pole inspection and storm hardening program that inform the judgment used for this estimate are as follows.

First, it should be noted the service life estimate for this account represents an increase in service life over the estimate from the previous depreciation study. The currently approved estimate for this account is the 39-R2 survivor curve. The recommended 40-R2 survivor curve for this account is therefore an increase in service life over the approved estimate. However, the approved estimate applies to all distribution poles (including concrete poles). Since concrete poles have historically had a longer service life than wood poles, the change in service life for this proposed subaccount is actually longer than a change from a 39-R2 to a 40-R2. The 40-R2 survivor curve estimate therefore incorporates an expectation for a longer service life for wood poles than in previous depreciation studies.

Retirements specifically related to the pole inspection program should not be excluded from the statistical analysis because the pole inspection program will continue to result in retirements going forward. Under the pole inspection program, the Company inspects each pole in its service territory every eight years. If a pole has deteriorated or is in poor condition, the Company can either take action to mitigate deterioration, such as adding treatment to the pole, or the pole will be replaced. The impact of the inspection program on the service lives in this account is therefore mixed. For some assets, mitigation may improve the life of the poles, but for others assets will be replaced earlier than would have occurred prior to the inspection program (e.g., prior to the program poles might not be replaced until damaged and could no longer remain service, but now that the program is in place these poles will be identified sooner and replaced proactively). The overall impact on the service life for this account is therefore mixed, but the likely impact going forward is that there will be somewhat fewer retirements for earlier ages (e.g., through about age 30), but a higher rate of retirements for later ages. The impact therefore could affect the mode of the curve more than the average service life, producing a higher mode curve.

Retirements for this account have increased since the implementation of the storm hardening program. However, while the storm hardening program resulted in the retirements of some assets earlier than would have occurred absent the program, a portion of the poles replaced were older and weaker poles that therefore would have to be replaced at some point absent the storm hardening program. Additionally, storm hardening is ongoing. FPL will continue to replace older wood poles going forward. For these reasons, excluding storm hardening transactions from the database would result in the exclusion of too much information and would result in indications of too long of service lives.

One aspect of the statistical data that supports that the storm hardening retirements should not be discounted too significantly is that the historical data for the current study through 2014 actually provides indications of longer service lives than prior to the implementation of the storm hardening program. That is, if replacements due to storm hardening were to dramatically impact the service life of the assets in this account, the expectation is that data that incorporates activity since the program began in 2007 would indicate a shorter service life than data that only included experiences prior to 2007. Instead, the opposite is true. As noted above, the recommendation in the 2016 Depreciation Study for this account is for an increase in the service life for this account. Data that excludes the years since the implementation of the storm hardening program (i.e., through 2006) indicates a shorter service life than is indicated for the full band in the 2016 Depreciation Study. This provides reason to expect that a portion of the wood poles retired for storm hardening were replaced at ages consistent with their overall life expectation (i.e., were not replaced prematurely), and therefore retirements associated with storm hardening should not be too aggressively discounted.

Storm hardening and the pole inspection program together may have an additional impact on service lives that would limit any further increases in the life of poles. In order to operate a more reliable system, FPL’s standards for strength and loading of poles have increased. In the past, older poles may have remained in service for a relatively long period of time and would be retired when significantly deteriorated or damaged. Based on FPL’s current outlook, poles will be retired when they do not meet strength or loading requirements that are more stringent than in the past. For example if an automated feeder switch or if foreign utility attachments (phone, cable, etc.) are added, a pole may have to be replaced with a stronger pole (or a concrete pole) due to loading. A stronger system also means less tolerance for deterioration of wood poles, which could also result in replacing poles more frequently. Additionally, because FPL now inspects each pole on an eight year cycle, these factors will be observed and addressed proactively, which could also result in more frequent replacements than in the past. Taken together, these factors provide further reason not to significantly discount retirements associated with either pole inspections or storm hardening in recent years.

Given these considerations, the expectation for this account is that the level of retirements at earlier ages (through about age 30) will occur at a lower rate than has occurred historically. However, the retirement pattern for later ages (about age 40 and beyond) should be similar to what has occurred historically. These expectations are incorporated into the recommended 40-R2 survivor curve, which is generally above the historical data for earlier ages and a good fit for later ages.

Florida Power & Light Company
Docket No. 160021-EI
OPC's Tenth Set of Interrogatories
Interrogatory No. 256

QUESTION:
Forecasting
Depreciation Account 364.2 - Please state whether a 55S0 life-curve combination is also a reasonable and appropriate life-curve combination alternative to the Company's proposed 50R1.5 life-curve combination for Account 364.2. To the extent the response is other than fully affirmative, then provide all support and justification for a contrary position. The response should identify and justify the criteria relied upon for the position taken, and to the extent judgment is relied upon for the response include the specific input values or information that formed and supports the results of the asserted judgment process

RESPONSE:
The 55-S0 survivor curve is not a reasonable and appropriate survivor curve estimate for this account. As is discussed on pages XI-26 and XI-27 of Exhibit NWA-1, the statistical indications based on the historical data for concrete distribution poles indicated an average service life of about 45 years. A 55-S0 survivor curve estimate would represent an average service life that is 10 years longer than indicated by the historical data. This is too long of an increase over the statistical indications for this account.

As discussed on page XI-27, it is appropriate to estimate a service life that is somewhat longer than indicated by the historical data. One reason for this is because newer poles are stronger than those installed 30 or 40 years ago, which may result in a longer service life. The 50-R1.5 survivor curve, which represents an average service life that is five years longer than indicated by the historical data, incorporates this expectation. The 50-R1.5 is also a reasonable fit of more recent 30 and 40 year placement bands, although these placements have experienced a higher rate of retirement than represented by the 50-R1.5 survivor curve for ages in the middle portion of the curve (this can be seen by comparing the 50-R1.5 survivor curve to the 1975-2014 placement band on page VII-96 of Exhibit NWA-1). The impact of stronger poles therefore supports a longer service life than indicated by the historical data. In contrast, a 55-S0 survivor curve is too long of an increase given these considerations and is also a different curve type than is indicated by the historical data.

For most years, retirements for concrete poles have not been significantly higher since the storm hardening program began than was the case in higher years, with the exception of 2014. While storm hardening retirements were a consideration in recommending the 50-R1.5 survivor curve, the impact of storm hardening has not been significant enough to support the 55-S0 survivor curve, which again is a large increase over what is supported by the statistical data.

Another consideration that supports the 50-R1.5 survivor curve is the mortality characteristics of concrete poles. The primary difference between the 50-R1.5 and 55-S0 survivor curves is the level of retirements forecast by each curves for later ages (i.e., for ages 50 and beyond). The 50-R1.5 survivor curve forecasts the level of retirements to increase for these ages. This is consistent with both the historical experience for this account, and with the forces of retirements for concrete poles. While not subject to the same level of deterioration as wood poles (which is one reason a lower mode curve is recommended for concrete poles than for wood poles), deterioration does cause retirements of concrete poles and tends to increase with age. Concrete poles tend to deteriorate due to cracking in the concrete and corrosion of the rebar (which can accelerate due to cracking). Cracking of the concrete and corrosion are more pronounced in areas in proximity to the ocean due to salt in the air. In contrast to the 50-R1.5 survivor curve, the 55-S0 is a fairly straight curve beyond age 50, meaning that the 55-S0 forecasts a fairly constant level of retirements for later ages. This expectation would be inconsistent with the impact of deterioration described above and with FPL’s actual experience (which indicates an increasing level of retirements with age).

Given all of these considerations, the 50-R1.5 survivor curve is more appropriate than the 55-S0.