BEFORE THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

REBUTTAL TESTIMONY

OF

DR. RONALD E. WHITE

ON BEHALF OF WESTAR ENERGY

Docket No. 18-WSEE-328-RTS

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Ronald E. White. My business address is 17595 S. Tamiami Trail, Suite 260, Fort Myers, Florida 33908.

Q. ARE YOU THE SAME RONALD E. WHITE WHO FILED DIRECT TESTIMONY ON BEHALF OF WESTAR ENERGY, INC. IN THIS PROCEEDING?

A. Yes.

I. OVERVIEW

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I was asked by Westar Energy, Inc. (Westar or Company) to respond to portions of the pre–filed direct testimony of Kansas Corporation Commission Staff Witness William Dunkel. In particular, I was asked to address depreciation rate adjustments advocated by Mr. Dunkel to the rates developed by Foster Associates in a 2017 Depreciation Rate Study. His rate adjustments were produced by: a) Abandoning the half-year convention for steam and other production plants; b) Rebalancing depreciation reserves within steam and other production functions rather than within plant locations; c) Extending the estimated years of final retirement for selected gas turbine plants; and d) Adjusting projection lives and curves for selected distribution plant accounts.

Q. WHAT IS THE MAGNITUDE OF THE ADJUSTMENTS ADVOCATED BY MR. DUNKEL?

A. Table 1 below provides a summary of the difference in annual depreciation rates and accruals recommended by Foster Associates and those advocated by Mr. Dunkel. This comparison is based on December 31, 2016 plant and reserves reported in the 2017 Depreciation Study.

Function	Accrual Rate			2017 Annualized Accrual		
	Westar	Staff	Difference	Westar	Staff	Difference
A	B	C	D=C-B	E	F	G=F-E
Steam Production	3.74%	3.49%	-0.25%	$135,423,982	$126,437,407	($8,986,575)
Nuclear Production	2.05%	2.05%	0.00%	37,711,097	37,711,097	0
Other Production	3.56%	2.79%	-0.77%	30,938,671	24,240,632	(6,698,039)
Transmission	2.21%	2.21%	0.00%	41,094,229	41,094,229	0
Distribution	2.50%	2.37%	-0.13%	57,129,082	54,189,002	(2,940,080)
General Plant	3.83%	3.83%	0.00%	11,292,325	11,280,714	(11,611)
Total	2.91%	2.74%	-0.17%	$313,589,386	$294,953,081	($18,636,305)

Table 1. Westar vs Staff Depreciation Rates and Accruals (Excluding Western Plains)

It can be observed from Table 1 that Mr. Dunkel is advocating a composite depreciation rate reduction of 0.17 percentage points below the rates recommended for the Company. The depreciation rate reduction advocated by Mr. Dunkel produces a reduction in 2017 annualized depreciation expense of $18,636,305, or about 5.9 percent below the annualized accruals derived for the Company.[1]

II. Summary and Conclusions

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. Foster Associates conducted and sponsored a disciplined depreciation study in support of Westar's rate filing in this matter. The 2017 study was conducted without any preconceived ambition of either increasing or decreasing depreciation expense. It appears to me, however, that Mr. Dunkel's disagreement with our work in this and earlier proceedings was purposefully intended to reduce depreciation expense. This is not the standard that should be used in deriving appropriate depreciation rates.

In this proceeding, Mr. Dunkel has abandoned his earlier attempts[2] and proposes to reduce depreciation rates by a) modifying the commonly used half-year convention; b) rebalancing depreciation reserves at a level that will reduce test year depreciation expense; and c) extending estimated service lives to shift the timing of capital recovery to future accounting periods.

[1] I have been informed that Westar is currently evaluating an alternative capital recovery mechanism for the Western Plains Wind Farm. The wind farm has, therefore, been removed from the 2017 depreciation study and Table 1 for comparative purposes.

[2] Earlier attempts have included treating third–party reimbursements as salvage, removing inflation from future net salvage ratios, applying a SFAS 143 formulation of accruals for net salvage and eliminating accruals for terminal net salvage.

The goal of depreciation accounting is to charge to operations a reasonable estimate of the cost of the service potential of an asset (or group of assets) consumed during an accounting interval. The service potential of an asset is the present value of future net revenue (*i.e.*, revenue less expenses exclusive of depreciation and other non–cash expenses) or cash inflows attributable to the use of that asset alone. If some other standard–such as reducing revenue requirements or increasing internal cash generation–is considered more important in setting depreciation rates, then cost allocation theory must be abandoned as the foundation for depreciation accounting.

This is not to suggest that regulation is prohibited from using depreciation or other expense reduction measures to achieve social policy objectives such as reducing utility rates to benefit current customers. These measures, however, have consequences. Reducing internal cash generation by reducing depreciation expense, for example, can increase the marginal cost of external financing and potentially restrict future access to the capital markets.

If, however, regulation chooses to use depreciation expense to achieve a desired social objective, that objective should be expressed, not hidden, and the regulated entity should be directed to derive depreciation rates that will produce a desired dollar amount of depreciation expense. This is not the same as reviewing the testimony of opposing witnesses and issuing an opinion based on which testimony seems more credible and technically correct.

A regulated entity may also voluntarily choose to reduce depreciation expense to moderate an otherwise undesirable increase in revenue requirements. Westar, for example, is requesting approval of depreciation expense in this proceeding that excludes accruing for terminal net salvage and further reduces depreciation expense by an additional $8 million from that supported by the 2017 depreciation study. Both of these measures are a departure from the accounting standard adopted in the 2017 study to develop appropriate depreciation rates. Foster Associates is prepared, however, to develop depreciation rates that will produce a specified dollar amount of depreciation expense whether requested by the Company or directed by the Commission.

The remainder of this response to Mr. Dunkel will address technical differences of opinion, should the Commission choose to approve depreciation expense from a “bottom–up” derivation of depreciation rates rather than directing Westar to formulate rates that will produce an authorized level of depreciation expense.

III. THE HALF–YEAR CONVENTION

Q. PLEASE EXPLAIN THE HALF–YEAR CONVENTION.

A. Statistical service–life studies are conducted from plant accounting transactions (*i.e.*, additions, retirements, transfers and adjustments) recorded over a series of accounting periods. An accounting period is typically measured as one year and service lives are estimated in years. Given that service lives are not estimated in months, weeks or days, it becomes necessary to select a fractional point of one year when additions are assumed to be physically installed and/or physically retired during an accounting period. While it could be assumed that all plant is installed on January 1 and retired on December 31, this would be an extreme assumption given that both additions and retirements are distributed over varying months within an accounting period. The midpoint of an accounting period is, therefore, conventionally selected to minimize errors in realized lives attributable to expressing service lives in years or fractions of a year rather than in months. This treatment, called the “half–year convention,” has been used consistently in all prior Westar depreciation studies.

Q. IS DEPRECIATION EXPENSE DERIVED IN A DEPRECIATION STUDY IMPACTED BY THE HALF–YEAR CONVENTION?

A. Yes. The half–year convention produces a half–period accrual on plant additions and a half–year period on plant retirements, irrespective of the month plant was added or retired. Stated differently, annualized accruals calculated and reported in a depreciation study for additions and retirements are independent of the accounting month in which plant was added or retired.

Q. DOES WESTAR USE THE HALF-YEAR CONVENTION IN RECORDING DEPRECIATION EXPENSE FOR STEAM AND OTHER PRODUCTION PLANT ACCOUNTS?

A. No. Westar (and many other utilities) apply 1/12 the annual rate developed in a depreciation study to the beginning monthly plant balance for each account. This treatment will commence depreciation on a new plant addition one month after the plant is classified in service and cease depreciation one month after the plant is retired from service. Strict adherence to the half–year convention would produce a reported accrual for six months on plant additions and six months on plant retirements.

Modeling a monthly accounting treatment in a depreciation study would require estimating the life–span of a production facility in months (not years) and deriving accruals using a full–month convention. This would be far too surgical for a depreciation study and imply a level of precision far greater than a calendar year of retirements that engineering or resource planning personnel can hope to predict.

Q. MR. DUNKEL CLAIMS THAT "DR. WHITE'S DEPRECIATION STUDY ASSUMES PRODUCTION UNITS ARE SCHEDULED TO RETIRE IN THE MIDDLE OF THE SUMMER PEAK USAGE PERIOD." [3] DOES YOUR STUDY MAKE SUCH AN ASSUMPTION?

A. No. As discussed above, the half–year convention produces a half–period accrual on plant additions and a half–year period on plant retirements, irrespective of the month plant was added or retired.

Q. USING TECUMSEH UNIT 7 AS AN EXAMPLE, MR. DUNKEL CLAIMS THAT WESTAR EXPECTS UNIT 7 "…TO RETIRE AT THE <u>END</u> OF THE YEAR 2022."[4] IS THIS AN ACCURATE STATEMENT OF WESTAR'S EXPECTATION?

A. No. Mr. Dunkel cited Westar's response to KCC–137 to support his claim. The relevant language in this response is: "This assumes that [Unit 7] would be retired <u>by the end of the year</u> [emphasis added] and as a result would not be available for the Summer peak of the following year."[5] The phrase "by the end of the year" cannot be interpreted to mean "at the end of the year." Moreover, the response speaks to the summer

[3] Dunkel Direct Testimony, page 13, lines 11–12.
[4] Dunkel Direct Testimony, page 14, lines 18–20.
[5] Dunkel Direct Testimony, page 14, lines 23–24.

peak of the following year … not the year the plant is retired.

It is simply incorrect for Mr. Dunkel to claim that: "Dr. White's depreciation study has the production units retiring approximately one–half year earlier than Westar expects them to retire."[6]

Q. HOW DOES MR. DUNKEL PROPOSE TO "CORRECT" YOUR RECOMMENDED DEPRECIATION RATES FOR STEAM AND OTHER PRODUCTION FACILITIES?

A. His solution is to add ½ year to the remaining lives estimated in the 2007 study and ½ year to the estimated average service lives. This treatment abandons the half–year convention used in the 2017 study for all plant accounts and serves to further his apparent objective of reducing depreciation expense.

IV. REBALANCING DEPRECIATION RESERVES

Q. WHAT IS YOUR UNDERSTANDING OF MR. DUNKEL'S CRITICISM OF THE REBALANCING OF DEPRECIATION RESERVES IN THE 2017 DEPRECIATION STUDY?

A. According to Mr. Dunkel, the Westar depreciation study did not make "efficient use" of the Steam Production accumulated depreciation reserve.[7] Nowhere in his testimony, however, does Mr. Dunkel explain the meaning of "efficient use."

Q. IS THE PHRASE "EFFICIENT USE" COMMONLY USED IN DEPRECIATION STUDIES?

A. No. It is a phrase Mr. Dunkel coined for use in this proceeding.

Q. WHY WERE DEPRECIATION RESERVES REBALANCED IN THE 2017 DEPRECIATION STUDY?

A. As noted in my direct testimony, offsetting reserve imbalances attributable to both the passage of time and parameter adjustments recommended in the 2017 study were rea-

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[6] Dunkel Direct Testimony, page 13, lines 17–19.
[7] Dunkel Direct Testimony, page 17, lines 3–5.

ligned among primary accounts to reduce offsetting imbalances and increase depreciation rate stability.[8]

Q. DOES MR. DUNKEL DISAGREE WITH REBALANCING DEPRECIATION RESERVES?

A. No. He merely disagrees with *how* depreciation reserves were rebalanced for steam production plants.

Q. HOW DOES MR. DUNKEL PROPOSE TO CORRECT HIS CLAIMED "INEFFICIENCY"?

A. Unlike the 2017 depreciation study in which depreciation reserves for steam production units were rebalanced by multiplying the calculated reserve for each primary account within a plant location by the ratio of the location total recorded reserves to the location total calculated reserve, Mr. Dunkel claims reserves should have been rebalanced by multiplying the calculated reserve for each primary account within a plant location by the ratio of the steam function total recorded reserves to the steam function total calculated reserve.

Q. WHAT IS HIS REASONING FOR CLAIMING THAT TOTAL FUNCTION RESERVES SHOULD BE USED RATHER THAN LOCATION RESERVES?

A. According to Mr. Dunkel, "The USOA requires a reserve amount to be maintained for Steam Production, but not by plant or by any other subcategories within Steam Production."[9] I find it noteworthy that Mr. Dunkel did not have the same problem with reserves redistributed by Foster Associates using the same methodology in a 2011 Westar study filed in Docket No. 12–WSEE–112–RTS.

Q. DO YOU AGREE THAT PLANT LOCATION RESERVES ARE NOT SUPPORTED BY THE USOA?

A. No. While the USOA does not require depreciation reserves to be maintained by plant location, the regulation does not prohibit maintaining reserves lower than the functional class. Utilities may choose, for example, to maintain reserves by plant location,

[8] White Direct Testimony, page 9, lines 19–22.
[9] Dunkel Direct Testimony, page 21, Footnote 25.

by unit, by primary account within a functional class. It is only the aggregation of lower level of reserves that is required to be reported by functional class.

Q. WHY ARE STEAM AND OTHER PRODUCTION RESERVES OFTEN MAINTAINED BY PLANT LOCATION?

A. Unlike transmission and distribution plant accounts that are viewed and treated as open–ended (*i.e*., full mortality) plant categories with ongoing additions and retirements, power plants are viewed as closed–ended (*i.e*., life–span) categories composed of major items of plant that will likely be retired as a single unit. All plant items serving a generating unit within in a power station, for example, will likely be retired simultaneously when the unit is retired from service, irrespective of the vintage year of any single plant component. Each generating unit, however, may have a different estimated year of final retirement.

This distinction between full–mortality and life–span categories is recognized in a depreciation study by treating each generating unit as sub–category within a power station. Because generating units are related to a specific power station (with common plant often serving multiple units), it is reasonable to estimate depreciation rates for each unit within a station to more nearly achieve the goals of depreciation accounting.

Power stations are also distinguishable by factors such as manufacture, age, capacity, utilization, fuel type, emission controls, efficiency and other determinants of economic service-life. The unallocated cost (*i.e*., net book value) of a power plant is, therefore, relevant to the formulation of depreciation rates designed to estimate the service potential of a plant consumed during a counting interval. Westar should not be directed to redistribute depreciation reserves at a level deliberately chosen by Mr. Dunkel for the sole purpose of reducing current test year depreciation expense.[10]

[10] Mr. Dunkel's expense–driven motivation for redistributing reserves within the Steam function is clearly evident from his testimony that" In many cases there is relatively little difference in the total proposed depreciation expense if the reserve is redistributed within each functional category as compared to using the recorded reserve amount for each account. However, in this case there is a large difference in the stream production depreciation rates between using the depreciation reserve amount as recorded for each plant compared to redistributing the depreciation reserve within the functional category based upon [the] relative computed reserve." Dunkel Direct Testimony, page 23, Footnote 17.

Nothing in the USOA prohibits the Company from rebalancing reserves within named power stations.

Q. DID MR. DUNKEL REBALANCE RESERVES FOR OTHER PRODUCTION PLANTS USING THE RATIO OF OTHER FUNCTION TOTAL RECORDED RESERVES TO OTHER FUNCTION TOTAL CALCULATED RESERVES?

A. Yes, in part. While not discussed in his testimony, this treatment appears in his workpapers. For some unexplained reason, however, Mr. Dunkel removed all wind farms and selected plant accounts for the Hutchinson station from the function total reserves before redistributing reserves among the remaining plant locations. This treatment of the Hutchinson station produces a difference between his function total recorded reserve and his function total redistributed reserve. His reserve rebalancing of the wind farms and the Hutchinson station (both classified in Other Production) is identical to the treatment contained in the 2017 depreciation study. It is proper and consistent with the USOA to redistribute reserves within named power stations for both Other Production and Steam Production functions as was adopted for Westar in the 2017 and prior depreciation studies.

V. Estimated Life–Span of Gas Turbine Plants

Q. WHAT IS YOUR UNDERSTANDING OF MR. DUNKEL'S DISAGREEMENT WITH THE ESTIMATED LIFE–SPAN OF GAS TURBINE PLANTS CONTAINED IN THE 2017 DEPRECIATION STUDY?

A. According to Mr. Dunkel, "Instead of using a 50 or 60 year life span, Dr. White calculates the depreciation rates for the gas combustion turbines that have been more recently installed using much shorter lives, such as 30 or 33 years."[11]

Q. WHY DID MR. DUNKEL CHOOSE A 50–YEAR LIFE SPAN FOR GAS TURBINE PLANTS?

A. Presumably, he considered that the Hutchinson station has an expected life–span of 60 years and three gas turbines retired earlier had a life–span of 40 years.[12]

[11] Dunkel Direct Testimony, page 24, lines 4–6.
[12] Dunkel Direct Testimony, page 24, Footnote 30.

Q. WHAT IS YOUR OPINION OF A REASONABLE LIFE–SPAN FOR GAS TURBINE PLANTS?

A. Unlike Mr. Dunkel, I claim no expertise in estimating the life–span of gas turbine plants owned and operated by Westar. Estimated years of final retirement used in the 2017 depreciation study were obtained from Westar engineering personnel familiar the gas turbine fleet and expected utilization of these facilities in meeting current and future capacity requirements. Company witness Mr. John Bridson will speak to the estimated retirement dates used in the 2017 study.

VI. SERVICE–LIVES FOR DISTRIBUTION PLANT ACCOUNTS.

Q. WHAT IS YOUR UNDERSTANDING OF MR. DUNKEL'S DISAGREEMENT WITH THE ESTIMATED SERVICE–LIFE OF CERTAIN DISTRIBUTION PLANT ACCOUNTS?

A. According to Mr. Dunkel, "… for some accounts the lives used in the Westar depreciation study are shorter than the lives indicated by the evidence."[13]

Q. HOW DOES MR. DUNKEL DESCRIBE HIS METHOD FOR ESTIMATING SERVICE LIVES FOR THESE ACCOUNTS?

A. According to his testimony, Mr. Dunkel conducted an "actuarial life analysis" using "percent surviving" as described in a 1996 publication by the National Association of Regulatory Commissioners. The method used by Mr. Dunkel is nothing more than a computerized version of a visual curve fitting technique.

Q. PLEASE EXPLAIN VISUAL CURVE FITTING.

A. Visual curve–fitting was employed long before the advent of computers. Prior to the availability of mechanized systems, a series of survivor proportions obtained from an observed life table was typically plotted on graph paper and overlaid with correspondingly scaled graphs of survivor curves such as the Iowa–type curves. The type–curves

[13] Dunkel Direct Testimony, page 26, lines 11–12.

were drawn with various average service lives such that both the dispersion and average service life of the observed proportion surviving could be selected from a visual inspection of which curve appeared to best "fit" the data.

A computerized version of the same technique has since replaced manual plotting of points and fitting to survivor curves. The type–curves (such as Iowa) used in such an analysis can be scaled to any average service life, thereby providing a description of both the dispersion (*i.e*., distribution of retirements over time) and average service life exhibited by the fitted data. The "best fitting" curve, however, is still decided by a visual inspection of which curve seems to fit the data points best.

Visual curve fitting is an application of *descriptive statistics* used to summarize and describe data through numerical calculations, graphs or tables.

Q. WHAT METHOD DO YOU USE IN CONDUCTING STATISTICAL SERVICE–LIFE STUDIES?

A. The statistical method used by Foster Associates is an application of *inferential statistics.* Hazard rates are graduated rather than "visually" fitting data points to a survivor curve. This method draws inferences and predictions about population service–life parameters based on an analysis of samples drawn from the parent population.

Q. HOW DOES GRADUATING HAZARD RATES DIFFER FROM VISUAL CURVE FITTING?

A. Projection lives and projection curves are population parameters "inferred" from a statistical analysis of the underlying forces of retirement described by probability distributions. A projection life is an estimate of mean service–life of the population from which retirements are observed as a random sample.

The fundamental probability distribution of interest in estimating the service life of industrial property is called a *hazard function*. This function, which is also used in reliability theory, is a parametric equation that describes the conditional probability of retirement (called a *hazard rate*) during an age interval given survival to the beginning of the interval. So, for example, the probability that plant that has been in service, say for 5 years, will be retired during the 6th year is a conditional probability of retirement. In other words, the probability is conditioned upon having achieved an age of 5 years.

The objective of a statistical analysis of plant retirements is to identify the form of an equation that best describes the conditional probabilities of retirement, where the form of the equation is dictated by the underlying forces of retirement. Any number of equations can be considered as candidates for selection. The so–called Iowa curves are a family of probability distributions often used in conducting depreciation studies.

Each Iowa curve has a unique hazard function derived from the ratio of its retirement frequency distribution to its survivor distribution. Iowa density functions, however, cannot be integrated to obtain a functional form of survivor curves. It is for this reason that polynomials of the form $y = a + bx + cx^2 + dx^3$ are used to estimate the conditional probabilities of a hazard function. The variable y is the hazard rate and x is the age interval of the rate.[14] A polynomial can then be transformed into a survivor function and numerically integrated to obtain an estimate of the projection life of a plant category. The observed proportions surviving are fitted by a weighted least–squares procedure to the Iowa–curve family (using the projection life derived from the polynomial hazard function) to obtain a mathematical description or classification of the dispersion characteristics of the data. The only purpose of fitting to Iowa curves is to obtain service–life descriptors more familiar to users of Iowa curves than curves described by the coefficients of a polynomial.

The problem, therefore, is to estimate the coefficients (*i.e.*, *a*, *b, c* and *d*) of the polynomial from an estimate of hazard rates derived from a sampling of historical retirements recorded for a plant category. Different estimators of the hazard rate can be used depending upon the desired statistical properties of the estimator. The ratio of retirements to exposures is most often used for depreciation studies.

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[14] The reason polynomials are limited to a third–degree term (*i.e.*, a polynomial having an x^3 term) is that some low modal Iowa curves exhibit two inflection points in a plot of the hazard function.

Coefficients of the polynomials are estimated for numerous trials or samples of retirements recorded over various bands of activity years. An activity year is the calendar year in which retirements were recorded. Retirements from vintages of like ages are combined to increase the size of the samples from which hazard rates are estimated. The motivation for examining various bands of activity years is to observe service–life trends to the extent they may be detectable.

Q. ARE THERE OTHER REASONS TO PREFER THE STATISTICAL TECHNIQUES USED BY FOSTER ASSOCIATES OVER THE VISUAL CURVE FITTING RELIED UPON BY MR. DUNKEL?

A. Apart from a difference in the objective (*i.e.*, descriptive vs inferential statistics), the analysis techniques used by Foster Associates overcome another problem with visual curve fitting. Each successive point (*i.e.*, proportion surviving) plotted against a survivor curve is dependent upon the points plotted for prior age–intervals. One or more anomalous or irregular retirements, therefore, will dictate the value of points plotted for subsequent age–intervals. Fitting survivor curves to observed proportions surviving will seldom produce an accurate description of the underlying forces of mortality and often produce a misleading estimate of projections lives.

In short, the statistical methods used in the 2017 study maximize the informational content of the data and minimize the influence of extraneous events by analyzing the underlying forces of retirement at the level of independent hazard rates.[15] This is not to suggest that an analyst must be highly trained in actuarial statistics to conduct a depreciation study. Absent the use of more powerful statistical techniques, however, life analysis simply becomes an exercise in trying to visually fit a curve to an oddly shaped array of data points.

Q. ACCORDING TO MR. DUNKEL, "ON PAGES 199–202 OF HIS FILED DEPRECIATION STUDY, EXHIBIT REW–1, DR. WHITE SHOWS A LIFE ANALYSIS USING A 'HAZARD FUNCTION.' ON PAGE 204 HE SHOWS A

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[15] Although some correlation can be found in the conditional proportion retired, the covariance between the hazard rates in two age–intervals is asymptotically zero. This property has permitted the development of various methods of weighting that reflect serial independence of the disturbance term.

DIFFERENT LIFE ANALYSIS METHOD THAT IS BASED ON 'PERCENT SURVIVING.'[16] IS THIS AN ACCURATE DESCRIPTION OF YOUR WORK?

A. No. Intentional or not, Mr. Dunkel implies that I too use the visual curve fitting technique he used to support longer lives "indicated by the evidence." It should be clear from the above explanation of the actuarial technique used by Foster Associates that it is not the same as the "visual curve fitting" exercise relied upon by Mr. Dunkel to reduce depreciation expense. The more powerful techniques used by Foster Associates may appear overly complex, but this serves to illustrate our commitment to conducting principled and technically rigorous depreciation studies supporting our recommended depreciation rates. This is what sets our work apart from the superficial work of others committed to reducing depreciation expense. If, however, the Commission finds that Mr. Dunkel uses a "better" method for estimating service lives, Westar should then be directed to abandon inferential statistics and only use visual curve fitting in future depreciation studies.

VII. AMI METERS

Q. WHAT IS YOUR UNDERSTANDING OF HOW MR. DUNKEL ESTIMATED A SERVICE LIFE AMI METERS?

A. Based only on his claim that "The AMI meters from the manufacturer that Westar switched to are proving to be reliable," Mr. Dunkel concludes that a 25–year average service should continue to be used for AMI meters.[17]. A lack of retirements prevented both Foster Associates and Mr. Dunkel from conducting a service–life study for this account.

Q. WHAT IS THE ORIGIN OF THE SERVICE LIFE CURRENTLY USED FOR AMI METERS?

A. A 25–year service life was advocated by Mr. Dunkel in Docket No. 12–WSEE–112–RTS. Although AMI meters were not included in the 2011 depreciation study,[18] Foster Associates recommended a 15–year mean projection life based on a consideration

[16] Dunkel Direct Testimony, page 26, lines 14–16.
[17] Dunkel Direct Testimony, page 30, lines 4–14.
[18] The first generation of AMI meters was capitalized in 2011.

of the physical and function forces of retirement expected to be acting upon a relatively new technology.

Mr. Dunkel argued that the 15-year mean projection life recommended by Foster associates was less than one–half the service life then approved for electromechanical meters and, therefore, an estimated service life shorter than 25 years would be unacceptable. Docket No. 12–WSEE–112–RTS was settled under a Stipulation and Agreement in which the 25–year life proposed by Mr. Dunkel was adopted.

Q. IS YOUR OPINION THE SAME TODAY AS IT WAS IN 2011 REGARDING AN ESTIMATE OF THE MEAN PROJECTION LIFE FOR AMI METERS?

A. Yes. As I testified in Docket No. 12–WSEE–112–RTS, metering communication technology and protocols overlaid on electronic meters are rapidly evolving and will likely accelerate the rate of AMI meter replacements relative to older–style, electro–mechanical metering equipment. Moreover, unlike electro–mechanical meters in which service lives were often extended by meter shop repairs, electronic and AMI meters are virtually "throw away" items containing no cost–effective repairable components. It is also my understanding that vendors and utilities often cannot repair AMI meters (or electronic meters) because manufacturers will not sell the necessary electronic boards. Manufacturers will not sell these boards for reasons including data security concerns; the unique utility ID embedded in the electronics; proprietary metering and communication protocols; and proprietary meter calibration, testing and programming by the manufacturer. I, therefore, remain of the opinion that a 15–year projection life is within a zone of reasonableness for AMI meters. Company witness Mr. Travis Lincoln will further address the life expectancy of AMI meters.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

STATE OF FLORIDA)
) ss:
COUNTY OF LEE)

VERIFICATION

Dr. Ronald E. White, being duly sworn upon his oath deposes and states that he is the President of Foster Associates Consultants, LLC, that he has read and is familiar with the foregoing Rebuttal Testimony, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.

Dr. Ronald E. White

Subscribed and sworn to before me this 02 day of July, 2018.

Lynnette A. Jay
Notary Public

My Appointment Expires:

NOTARY PUBLIC STATE OF FLORIDA

Lynnette A. Jay
Notary Public, State of Florida
My Comm. Expires March 7, 2021
Commission No. GG 80655