STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF DUKE ENERGY INDIANA, LLC PURSUANT TO IND. CODE §§ 8-1-2-42.7 AND 8-1-2-61, FOR (1) AUTHORITY TO MODIFY ITS RATES AND CHARGES FOR ELECTRIC UTILITY SERVICE THROUGH A STEP-IN OF NEW RATES AND CHARGES USING A FORECASTED TEST PERIOD; (2) APPROVAL OF NEW SCHEDULES OF RATES AND CHARGES, GENERAL RULES AND REGULATIONS, AND RIDERS; (3) APPROVAL OF A FEDERAL MANDATE CERTIFICATE UNDER IND. CODE § 8-1-8.4-1; (4) APPROVAL OF REVISED ELECTRIC DEPRECIATION RATES APPLICABLE TO ITS ELECTRIC PLANT IN SERVICE; (5) APPROVAL OF NECESSARY AND APPROPRIATE ACCOUNTING DEFERRAL RELIEF; AND (6) APPROVAL OF A REVENUE DECOUPLING MECHANISM FOR CERTAIN CUSTOMER CLASSES	**)**	**CAUSE NO. 45253**

VERIFIED DIRECT TESTIMONY
OF
JOHN J. SPANOS

On Behalf of Petitioner,
DUKE ENERGY INDIANA, LLC

Petitioner's Exhibit 14

July 2, 2019

DIRECT TESTIMONY OF JOHN J. SPANOS
PRESIDENT
GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
ON BEHALF OF DUKE ENERGY INDIANA, LLC
BEFORE THE INDIANA UTILITY REGULATORY COMMISSION

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

Q. ARE YOU ASSOCIATED WITH ANY FIRM?

A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate Consultants, LLC (Gannett Fleming).

Q. HOW LONG HAVE YOU BEEN ASSOCIATED WITH GANNETT FLEMING?

A. I have been associated with the firm since college graduation in June 1986.

Q. WHAT IS YOUR POSITION WITH THE FIRM?

A. I am President.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Duke Energy Indiana, LLC ("Duke Energy Indiana" or "Company").

Q. PLEASE STATE YOUR QUALIFICATIONS.

A. I have 33 years of depreciation experience which includes giving expert testimony in over 300 cases before 40 regulatory commissions, including this Commission. These cases have included depreciation studies in the electric, gas, water,

wastewater and pipeline industries. In addition to cases where I have submitted testimony, I have supervised over 600 other depreciation or valuation assignments. Please refer to Appendix A for my qualifications statement, which includes further information with respect to my work history, case experience, and leadership in the Society of Depreciation Professionals.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I have Bachelor of Science degrees in Industrial Management and Mathematics from Carnegie-Mellon University and a Master of Business Administration from York College.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony will support and explain the depreciation study and fair value study conducted under my direction and supervision for Duke Energy Indiana.

II. DISCUSSION

Q. PLEASE DEFINE THE CONCEPT OF DEPRECIATION.

A. Depreciation refers to the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation, against which the Company is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, obsolescence, changes in the art, changes in demand and the requirements of public authorities.

Q. PLEASE IDENTIFY PETITIONER'S EXHIBIT 14-A (JJS).

A. Petitioner's Exhibit 14-A (JJS) is a report entitled, "2018 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of December 31, 2018." This report sets forth the results of my depreciation study for Duke Energy Indiana.

Q. IS PETITIONER'S EXHIBIT 14-A (JJS) A TRUE AND ACCURATE COPY OF YOUR DEPRECIATION STUDY?

A. Yes.

Q. DOES PETITIONER'S EXHIBIT 14-A (JJS) ACCURATELY PORTRAY THE RESULTS OF YOUR DEPRECIATION STUDY AS OF DECEMBER 31, 2018?

A. Yes.

Q. IN PREPARING THE DEPRECIATION STUDY, DID YOU FOLLOW GENERALLY ACCEPTED PRACTICES IN THE FIELD OF DEPRECIATION AND VALUATION?

A. Yes.

Q. WHAT WAS THE PURPOSE OF YOUR DEPRECIATION STUDY?

A. The purpose of the depreciation study was to estimate the annual depreciation accruals related to electric plant in service for ratemaking purposes and determine appropriate average service lives and net salvage percents for each plant account.

Q. PLEASE DESCRIBE THE CONTENTS OF YOUR REPORT.

A. The Depreciation Study is presented in nine parts. Part I, Introduction, presents the scope and basis for the Depreciation Study. Part II, Estimation of Survivor Curves, includes descriptions of the methodology of estimating survivor curves. Parts III and IV set forth the analysis for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, presents a description of the results of my analysis and a summary of the depreciation calculations. Parts VII, VIII and IX include graphs and tables that relate to the service life and net salvage analyses, and the detailed depreciation calculations by account.

The Depreciation Study also includes several tables and tabulations of data and calculations. Table 1 on pages VI-5 through VI-11 of the Depreciation Study presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2018, the book depreciation reserve, and the calculated annual depreciation accrual and rate for each account or subaccount. The section beginning on page VII-2 presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. The section beginning on page VIII-2 presents the results of the net salvage analysis. The section beginning on page IX-2 presents the depreciation calculations related to surviving original cost as of December 31, 2018.

Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR DEPRECIATION STUDY.

A. I used the straight line remaining life method of depreciation, with the equal life group procedure for all plant assets except some general plant accounts. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and rational manner.

For General Plant Accounts 391.0, 391.1, 393.0, 393.1, 394.0, 395.0, 397.0 and 398.0, I used the straight line remaining life method of amortization. The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

Q. HOW DID YOU DETERMINE THE RECOMMENDED ANNUAL DEPRECIATION ACCRUAL RATES?

A. I did this in two phases. In the first phase, I estimated the service life and net salvage characteristics for each depreciable group, that is, each plant account or subaccount identified as having similar characteristics. In the second phase, I calculated the composite remaining lives and annual depreciation accrual rates based on the service life and net salvage estimates determined in the first phase.

Q. PLEASE DESCRIBE THE FIRST PHASE OF THE DEPRECIATION STUDY, IN WHICH YOU ESTIMATED THE SERVICE LIFE AND NET SALVAGE CHARACTERISTICS FOR EACH DEPRECIABLE GROUP.

A. The service life and net salvage study consisted of compiling historic data from records related to Duke Energy Indiana's plant; analyzing these data to obtain historic trends of survivor and net salvage characteristics; obtaining supplementary information from Duke Energy Indiana's management, and operating personnel concerning practices and plans as they relate to plant operations; and interpreting the above data and the estimates used by other electric utilities to form judgments regarding average service life and net salvage characteristics.

Q. WHAT HISTORIC DATA DID YOU ANALYZE FOR THE PURPOSE OF ESTIMATING SERVICE LIFE CHARACTERISTICS?

A. I analyzed the Company's accounting entries that record plant transactions during the period 1956 through 2018. The transactions included additions, retirements, transfers, sales, and the related balances. The Company records also included surviving dollar value by year installed for each plant account as of December 31, 2018.

Q. WHAT METHOD DID YOU USE TO ANALYZE THIS SERVICE LIFE DATA?

A. I used the retirement rate method. This is the most appropriate method when aged retirement data are available, because this method determines the average rates of retirement actually experienced by the Company during the period of time covered by the study.

Q. PLEASE DESCRIBE HOW YOU USED THE RETIREMENT RATE METHOD TO ANALYZE DUKE ENERGY INDIANA'S SERVICE LIFE DATA.

A. I applied the retirement rate method to each different group of property in the study. For each property group, I used the retirement rate method to form a life table which, when plotted, shows an original survivor curve for that property group. Each original survivor curve represents the average survivor pattern experienced by the several vintage groups during the experience band studied. The survivor patterns do not necessarily describe the life characteristics of the property group; therefore, interpretation of the original survivor curves is required in order to use them as valid considerations in estimating service life. The Iowa-type survivor curves were used to perform these interpretations.

Q. WHAT IS AN "IOWA-TYPE SURVIVOR CURVE" AND HOW DID YOU USE SUCH CURVES TO ESTIMATE THE SERVICE LIFE CHARACTERISTICS FOR EACH PROPERTY GROUP?

A. Iowa type curves are a widely used group of generalized survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

Iowa type curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The Iowa curves and truncated Iowa curves were used in this study to describe the forecasted rates of retirement based on the observed rates of retirement and the outlook for future retirements.

The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, the Iowa 55-R0.5 indicates an average service life of fifty-five years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a low height, 0.5, for the mode (possible modes for R type curves range from 1 to 5).

Q. WHAT APPROACH DID YOU USE TO ESTIMATE THE LIVES OF SIGNIFICANT PRODUCTION FACILITIES?

A. I used the life span technique to estimate the lives of significant facilities for which concurrent retirement of the entire facility is anticipated. In this technique, the survivor characteristics of such facilities are described by the use of interim survivor curves and estimated probable retirement dates. The interim survivor curve describes the rate of retirement related to the replacement of elements of the facility, such as, for a power plant, the retirement of assets such as pumps, motors and piping that occur during the life of the facility. The probable retirement date provides the rate of final retirement for each year of installation for the facility by truncating the interim survivor curve for each installation year at its attained age at the date of probable retirement. The use of interim survivor curves truncated at the

date of probable retirement provides a consistent method for estimating the lives of the several years of installation for a particular facility inasmuch as a single concurrent retirement for all years of installation will occur when it is retired.

Q. IS THIS APPROACH WIDELY ACCEPTED FOR ESTIMATING THE SERVICE LIVES OF PRODUCTION FACILITIES?

A. Yes. The life span technique has been used previously for Duke Energy Indiana. My firm has also used the life span technique in performing depreciation studies presented to many other public utility commissions across the United States and Canada, including the Indiana Utility Regulatory Commission ("IURC").

Q. HOW ARE THE LIFE SPANS ESTIMATED FOR DUKE ENERGY INDIANA'S PRODUCTION FACILITIES?

A. Duke Energy Indiana provided the production facility life span estimates based on informed judgment that incorporates factors for each facility such as the age, use, size, nature of construction, and technology of the facility; management plans and outlook for the facility; the estimates for similar facilities for other utilities; and the results of the Company's 2018 Integrated Resource Plan. Duke Energy Indiana witness Mr. Keith Pike discusses the life span estimates in detail. At the appropriate time, detailed studies of the economies of rehabilitations and continued use or retirement of the structure will be performed and the results incorporated in the estimation of the facility's life span.

Q. ARE THE FACTORS CONSIDERED IN YOUR ESTIMATES OF SERVICE LIFE AND NET SALVAGE PERCENTS PRESENTED IN PETITIONER'S EXHIBIT 14-A (JJS)?

A. Yes. A discussion of the factors considered in the estimation of service lives and net salvage percents are presented in Part III and Part IV of Petitioner's Exhibit 14-A (JJS).

Q. DID YOU PHYSICALLY OBSERVE DUKE ENERGY INDIANA'S PLANT AND EQUIPMENT AS PART OF YOUR DEPRECIATION STUDY?

A. Yes. I made a field review of Duke Energy Indiana's property during November 2018 to observe representative portions of plant. I have also made field visits during prior studies since 1999. Field reviews are conducted to become familiar with Company operations and obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. This knowledge was incorporated in the interpretation and extrapolation of the statistical analyses.

Q. WHAT IS YOUR OPINION OF THE REASONABLENESS OF THE LIFE SPANS ESTIMATED FOR DUKE ENERGY INDIANA'S PRODUCTION FACILITIES?

A. Because I customarily conduct field reviews for my depreciation studies, I have had the opportunity to visit scores of similar plants and meet with operations personnel at other companies. The knowledge accumulated from those visits and meetings provide me useful information that I can draw on to confirm or challenge my

analyses concerning plant condition and remaining life estimates. Drawing upon that experience, my opinion is that the estimated life spans for production facilities as provided by Duke Energy Indiana, and used in the depreciation study, are reasonable and consistent with life spans of similar facilities currently being experienced by other utilities in the industry.

Q. WOULD YOU PLEASE EXPLAIN THE CONCEPT OF "NET SALVAGE"?

A. Net salvage is a component of the service value of capital assets that is recovered through depreciation rates. The service value of an asset is its original cost less its net salvage. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire exceeds the salvage value, the result is negative net salvage.

Inasmuch as depreciation expense is the loss in service value of an asset during a defined period, (*e.g.* one year) it must include a ratable portion of both the original cost and the net salvage. That is, the net salvage related to an asset should be incorporated in the cost of service during the same period as its original cost so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost and the net salvage value.

For example, the full recovery of the service value of a $20,000 circuit breaker will include not only the $20,000 of original cost, but also, on average, $3,300 to remove the breaker at the end of its life and $300 in salvage value. In

this example, the net salvage component is negative $3,000 ($300 - $3,300), and the net salvage percent is negative 15% (($300 - $3,300)/$20,000).

Q. PLEASE DESCRIBE HOW YOU ESTIMATED NET SALVAGE PERCENTAGES.

A. The net salvage percentages estimated in the Depreciation Study were based on informed judgment that incorporated factors such as the statistical analyses of historical net salvage data; information provided to me by the Company's operating personnel, general knowledge and experience of industry practices; and trends in the industry in general. The statistical net salvage analyses incorporates the Company's actual historical data for the period 1989 through 2018, and considers the cost of removal and gross salvage ratios to the associated retirements during the 30-year period. Trends of these data are also measured based on three-year moving averages and the most recent five-year indications.

Q. WERE THE NET SALVAGE PERCENTAGES FOR GENERATING FACILITIES BASED ON THE SAME ANALYSES?

A. Yes, for the interim net salvage estimates. The net salvage percentages for generating facilities were based on two components, the interim net salvage percentage and the final net salvage percentage. The interim net salvage percentage is determined based on the historical indications from the period 1989 to 2018 of the cost of removal and gross salvage amounts as a percentage of the associated plant retired. The final net salvage, or decommissioning and dismantlement

component, was determined based on the retirement activities associated with the assets anticipated to be retired at the concurrent date of final retirement.

Q. HAVE YOU INCLUDED A DECOMMISSIONING OR DISMANTLEMENT COMPONENT INTO THE OVERALL RECOVERY OF GENERATING FACILITIES?

A. Yes. A decommissioning or dismantlement component has been included to the net salvage percentage for steam, hydro and other production facilities.

Q. CAN YOU EXPLAIN HOW THE FINAL NET SALVAGE COMPONENT IS INCLUDED IN THE DEPRECIATION STUDY?

A. Yes. The decommissioning and dismantlement component is part of the overall net salvage for each location within the production assets. Based on studies for other utilities and the cost estimates of Duke Energy Indiana, it was determined that the decommissioning or dismantlement component for steam, hydro, and other production facilities is best calculated by dividing the decommissioning or dismantlement cost by the surviving plant at final retirement. These amounts at a location basis are added to the interim net salvage percentage of the assets anticipated to be retired on an interim basis to produce the weighted net salvage percentage for each location. The detailed calculations of the overall net salvage for each location is set forth on page VIII-2 of the Depreciation Study.

Q. WHAT IS THE BASIS OF THE DECOMMISSIONING OR DISMANTLEMENT COST ESTIMATES?

A. The decommissioning or dismantlement cost estimates are based on the decommissioning study of each generating site performed by Burns and McDonnell (Petitioner's Exhibit 13-A (JTK)). These estimates are based on the current cost (year 2018 dollars) to decommission the facilities. However, the costs to decommission power plants has tended to increase over time (as have construction costs in general). For this reason, in order to recover the full decommissioning costs for each site, these costs need to be escalated to the time of retirement. The calculations of the escalation of these costs have been provided in the table set forth on page VIII-3 of the Depreciation Study.

Q. PLEASE DESCRIBE THE SECOND PHASE OF THE PROCESS THAT YOU USED IN THE DEPRECIATION STUDY IN WHICH YOU CALCULATED COMPOSITE REMAINING LIVES AND ANNUAL DEPRECIATION ACCRUAL RATES.

A. After I estimated the service life and net salvage characteristics for each depreciable property group, I calculated the annual depreciation accrual rates for each depreciable group based on the straight line remaining life method, using remaining lives weighted consistent with the equal life group procedure. The calculation of annual depreciation accrual rates were developed as of December 31, 2018.

Q. PLEASE DESCRIBE THE STRAIGHT LINE REMAINING LIFE METHOD OF DEPRECIATION.

A. The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal

amounts to each year of remaining service life.

Q. PLEASE DESCRIBE THE EQUAL LIFE GROUP PROCEDURE FOR CALCULATING REMAINING LIFE ACCRUAL RATES.

A. In the equal life group procedure, the property group is subdivided according to service life. That is, each equal life group includes that portion of the property which experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve. This procedure eliminates the need to base depreciation on average lives, inasmuch as each group is equivalent to a unit having a single life. The full costs of short-lived units are accrued during their lives, leaving no deferral of accruals required to be added to the annual costs associated with long-lived units. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life group.

The equal life group procedure allocates the capital cost of a group property to annual expense in accordance with the consumption of the service value of the group. The more timely return of plant investment accomplished by fully accruing each item’s cost during its service life not only reduces the risk of incomplete capital recovery, but also results in less investment-related cost over the life span of a depreciable group. Under the equal life group procedure, the future book accruals (original cost less book reserve) for each vintage are divided by the composite remaining life for the surviving original cost of that vintage. The vintage composite remaining life is derived by summing the original cost less the calculated

reserve for each equal life group and dividing by the sum of the whole life annual accruals.

Q. PLEASE DESCRIBE AMORTIZATION ACCOUNTING.

A. Amortization accounting is used for accounts with a large number of units, but small asset values. In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. However, depreciation accounting is difficult for these assets because periodic inventories are required to properly reflect plant in service. Consequently, retirements are recorded when a vintage is fully amortized rather than as the units are removed from service. That is, there is no dispersion of retirement. All units are retired when the age of the vintage reaches the amortization period. Each plant account or group of assets is assigned a fixed period which represents an anticipated life during which the asset will render service. For example, in amortization accounting, assets that have a 20-year amortization period will be fully recovered after 20 years of service and taken off the Company books, but not necessarily removed from service. In contrast, assets that are taken out of service before 20 years remain on the books until the amortization period for that vintage has expired.

Q. FOR WHICH PLANT ACCOUNTS IS AMORTIZATION ACCOUNTING BEING IMPLEMENTED?

A. Amortization accounting is only appropriate for certain Common and General Plant accounts. These accounts are 391.0, 391.1, 393.0, 393.1, 394.0, 395.0, 397.0 and 398.0 which represents approximately one percent of depreciable plant.

Q. PLEASE DESCRIBE HOW YOU ASSIGNED ACCUMULATED BOOK RESERVE TO EACH LOCATION WITHIN EACH ACCOUNT?

A. The development of the book reserve for each location has been established based on a composite rate for a group of locations within an account. Thus, the actual book reserve at the location level was determined by applying a composite rate to the plant balance. When dealing with group depreciation there are multiple parameters that affect the rate, such as interim survivor curve, probable retirement date and net salvage percent among the key factors. In conducting a depreciation study, a more defined manner of determining the individual location rates should be established. The key factors stated above establish the theoretical reserve which is utilized to appropriately assign the book reserve at the location and vintage level. Updating retirement dates adjusts the weighting between the locations. Therefore, a changed retirement date, survivor curve or net salvage percent for one location affects all the locations in the account.

Q. PLEASE USE AN EXAMPLE TO ILLUSTRATE THE DEVELOPMENT OF THE ANNUAL DEPRECIATION ACCRUAL RATE FOR A PARTICULAR GROUP OF PROPERTY IN YOUR DEPRECIATION STUDY.

A. I will use Account 353.0, Station Equipment, as an example because it is one of the largest depreciable groups.

The retirement rate method was used to analyze the survivor characteristics of this property group. Aged plant accounting data were compiled from 1956

through 2018 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1956-2018 and 1999-2018 experience bands are presented in the depreciation study on pages VII-102 through VII-107. Each life table displays the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-102 of Petitioner's Exhibit 14-A (JJS), shows $475,046 retired during age interval 0.5-1.5 with $707,787,534 exposed to retirement at the beginning of the interval. Consequently, the retirement ratio is 0.0007 ($475,046/$707,787,534) and the survivor ratio is 0.9993 (1-0.0007). The life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 53-R1.5, on page VII-101 of Petitioner's Exhibit 14-A (JJS).

The net salvage percent is presented on pages VIII-45 and VIII-46. The percentage is based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 1989 through 2018. The 30-year period experienced $9,327,082 ($800,642 - $10,127,724) in net salvage for $101,258,893 plant retired. The result is negative net salvage of 9 percent ($9,327,082/$101,258,893). Recent trends have shown indications of negative 18 percent, therefore, it was determined that based on industry ranges, historical indications and Company expectations, that negative 10 percent was the most appropriate estimate. The negative 10 percent estimate balances the overall average of negative 9 percent and more recent averages of negative 18 percent. Year 2018 has a less negative net salvage percent due to a

delay in recording cost of removal for the assets retired.

My calculation of the annual depreciation related to original cost of electric utility plant at December 31, 2018 for Account 353.0 is presented on pages IX-129 through IX-131 of Petitioner's Exhibit 14-A (JJS). The calculation is based on the 53-R1.5 survivor curve, 10% negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual. These totals are brought forward to Table 1 on page VI-10.

Q. HAVE YOU DEVELOPED RATES FOR FUTURE ASSETS?

A. Yes. Duke Energy Indiana has plans to add new solar generation assets by end-of-year 2019. The rates for these assets will be based on interim survivor curves for each account, a negative net salvage percent for some of the accounts, and a 25-year life span for all assets at the location. Also, an estimated rate for new battery storage assets in Account 363 were prepared. These rates are presented on page VI-11 of Petitioner's Exhibit 14-A (JJS).

Q. PLEASE IDENTIFY PETITIONER'S EXHIBIT 14-B (JJS).

A. This is a report entitled, "Reproduction Cost New Less Depreciation as of December 31, 2018."

Q. PLEASE DESCRIBE PETITIONER'S EXHIBIT 14-B (JJS).

A. Petitioner's Exhibit 14-B (JJS) is a summary tabulation that presents the survivor curve, net salvage percent, trended original cost, calculated accrued depreciation

and trended original cost less depreciation by account.

Q. PLEASE DESCRIBE BRIEFLY THE PROCEDURE USED IN DETERMINING THE COMPANY'S REPRODUCTION COST NEW LESS ACCRUED DEPRECIATION.

A. My study segregated the property by plant account consistent with the depreciation study and Company accounting system.

First, I determined the Reproduction Cost New ("RCN") for the property in service at December 31, 2018, by trending the original cost and then deducted depreciation to arrive at the Reproduction Cost New Less Depreciation ("RCNLD").

For the property for which I determined the trended original cost, I used cost indexes.

Each depreciable account was considered as a property group for which the RCNLD at December 31, 2018, was calculated. This was determined by trending the original cost as of December 31, 2018, for all vintages to the 2018 price level, and reducing this amount by the appropriate depreciation. In the trending process, original costs at one price level are converted to another price level by means of an appropriate system of cost index numbers. The basic elements required to determine the RCNLD for each account were the original cost balance by year of original installation, trend factors to bring the original cost to the 2018 price level, and the estimated amount of depreciation applicable to the property.

Q. WHAT COST INDEXES DID YOU USE IN YOUR TRENDING STUDY?

A. I used the Handy-Whitman Index of Public Utility Construction Costs (Handy-Whitman) for those classes of electric utility property for which Handy-Whitman publishes construction cost indexes. The Handy-Whitman index was used for a majority of the property. The U.S. Department of Labor, Bureau of Labor Statistics, was used for the general plant accounts which represents the remaining property.

Q. HAVE YOU DETERMINED THE REPRODUCTION COST NEW OF THE COMPANY'S ELECTRIC PLANT IN SERVICE AS OF DECEMBER 31, 2018, UTILIZING THE METHOD DESCRIBED ABOVE?

A. Yes, I have.

Q. WHAT IS THAT COST?

A. The Reproduction Cost New of the Company's electric plant in service as of December 31, 2018, is $27,218,507,545.

Q. WHAT METHOD DID YOU USE IN DETERMINING THE ACCRUED DEPRECIATION RELATED TO RCN OF THE PROPERTY AS OF DECEMBER 31, 2018?

A. The accrued depreciation as of December 31, 2018 is based on the application of accrued factors determined from the estimated average service life, mortality dispersion, and net salvage for each age of property in each account. The calculation of accrued depreciation applicable to the Reproduction Cost New was made in accordance with the straight-line method, equal life group procedure.

Specific estimates of average life and average survivor characteristics, described by Iowa-type survivor curves, were made for each class of property using the Company's own retirement experience. The average life and Iowa curve type I used for each primary plant account are the same as those used in the depreciation study recommended to Duke Energy Indiana with regard to appropriate depreciation rates. The net salvage component was recalculated to represent a percent of the RCN of plant in service as of December 31, 2018. For the Production Plant, depreciation was calculated for each generating unit based on its age at December 31, 2018, its life expectancy, and the expected net salvage.

Q. HAVE YOU ESTABLISHED THE REPRODUCTION COST NEW LESS DEPRECIATION OF THE COMPANY'S ELECTRIC PLANT IN SERVICE AS OF DECEMBER 31, 2018?

A. Yes, I have.

Q. WHAT IS YOUR OPINION?

A. The Reproduction Cost New Less Depreciation of the Company's electric utility plant in service as of December 31, 2018 is $11,633,493,162 which is 43% of the Reproduction Cost New.

Q. HAVE YOU PREPARED SIMILAR SCHEDULES AS OF DECEMBER 31, 2020?

A. Yes. I have. These schedules are included in Exhibit 14-B (JJS). The methodology for the December 31, 2020 calculations were the same as those utilized to determine the Reproduction Cost New Less Depreciation as of December 31, 2018. The

Reproduction Cost New as of December 31, 2020 is $28,967,368,703 and the Reproduction Cost New Less Depreciation as of December 31, 2020 is $12,054,723,694.

III. CONCLUSION

Q. WERE PETITIONER'S EXHIBITS 14-A (JJS) AND 14-B (JJS) PREPARED UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

Q. IN YOUR OPINION, ARE THE DEPRECIATION AND AMORTIZATION RATES SET FORTH IN PETITIONER'S EXHIBIT 14-A (JJS) THE APPROPRIATE RATES FOR THE COMMISSION TO ADOPT IN THIS PROCEEDING FOR DUKE ENERGY INDIANA?

A. Yes. These rates appropriately reflect the rates at which the costs of Duke Energy Indiana's assets are being consumed over their useful lives. These rates are an appropriate basis for setting electric rates in this matter and for the Company to use for booking depreciation and amortization expense going forward.

Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?

A. Yes, it does.

APPENDIX A

JOHN SPANOS

DEPRECIATION EXPERIENCE

Q. Please state your name.

A. My name is John J. Spanos.

Q. What is your educational background?

A. I have Bachelor of Science degrees in Industrial Management and Mathematics from Carnegie-Mellon University and a Master of Business Administration from York College.

Q. Do you belong to any professional societies?

A. Yes. I am a member and past President of the Society of Depreciation Professionals and a member of the American Gas Association/Edison Electric Institute Industry Accounting Committee.

Q. Do you hold any special certification as a depreciation expert?

A. Yes. The Society of Depreciation Professionals has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 1997 and was recertified in August 2003, February 2008, January 2013 and February 2018.

Q. Please outline your experience in the field of depreciation.

A. In June 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as a Depreciation Analyst. During the period from June 1986 through December, 1995, I helped prepare numerous depreciation and original cost studies for utility companies in various industries. I helped perform depreciation studies for the following telephone companies: United Telephone of Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility. I helped perform depreciation studies for the following

companies in the railroad industry: Union Pacific Railroad, Burlington Northern Railroad, and Wisconsin Central Transportation Corporation.

I helped perform depreciation studies for the following organizations in the electric utility industry: Chugach Electric Association, The Cincinnati Gas and Electric Company (CG&E), The Union Light, Heat and Power Company (ULH&P), Northwest Territories Power Corporation, and the City of Calgary - Electric System.

I helped perform depreciation studies for the following pipeline companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

I helped perform depreciation studies for the following gas utility companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

I helped perform depreciation studies for the following water utility companies: Indiana-American Water Company, Consumers Pennsylvania Water Company and The York Water Company; and depreciation and original cost studies for Philadelphia Suburban Water Company and Pennsylvania-American Water Company.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service life and net salvage, calculated annual depreciation, and prepared reports for submission to state public utility commissions or federal regulatory agencies. I performed these studies under the general direction of William M. Stout, P.E.

In January 1996, I was assigned to the position of Supervisor of Depreciation Studies. In July 1999, I was promoted to the position of Manager, Depreciation and

Valuation Studies. In December 2000, I was promoted to the position as Vice-President of Gannett Fleming Valuation and Rate Consultants, Inc., in April 2012, I was promoted to the position as Senior Vice President of the Valuation and Rate Division of Gannett Fleming Inc. (now doing business as Gannett Fleming Valuation and Rate Consultants, LLC) and in January of 2019, I was promoted to my present position of President of Gannett Fleming Valuation and Rate Consultants, LLC. In my current position I am responsible for conducting all depreciation, valuation and original cost studies, including the preparation of final exhibits and responses to data requests for submission to the appropriate regulatory bodies.

Since January 1996, I have conducted depreciation studies similar to those previously listed including assignments for Pennsylvania-American Water Company; Aqua Pennsylvania; Kentucky-American Water Company; Virginia-American Water Company; Indiana-American Water Company; Iowa-American Water Company; New Jersey-American Water Company; Hampton Water Works Company; Omaha Public Power District; Enbridge Pipe Line Company; Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corporation; The York Water Company; Public Service Company of Colorado; Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American Water Company; St. Louis County Water Company; Missouri-American Water Company; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Company; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy Corporation – CG&E; Cinergy Corporation – ULH&P; Columbia Gas of

Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El Paso Electric Company; Aqua North Carolina; Aqua Ohio; Aqua Texas, Inc.; Aqua Illinois, Inc.; Ameren Missouri; Central Hudson Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; CenterPoint Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana; NSTAR – Boston Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services; Anchorage Water and Wastewater Utility; Kansas City Power and Light; Duke Energy North Carolina; Duke Energy South Carolina; Monongahela Power Company; Potomac Edison Company; Duke Energy Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Duke Energy Progress; Northern Indiana Public Service Company; Tennessee-American Water Company; Columbia Gas of Maryland; Maryland-American Water Company; Bonneville Power Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas; Entergy Texas; Entergy Mississippi; Entergy Louisiana; Entergy Gulf States Louisiana; the Borough of Hanover; Louisville Gas and Electric Company; Kentucky Utilities Company; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; United Water Arkansas; Central Vermont Public Service Corporation; Green Mountain Power; Portland General Electric Company; Atlantic City Electric; Nicor Gas Company; Black Hills Power; Black Hills Colorado Gas; Black Hills Kansas Gas; Black Hills Service Company; Black Hills Utility Holdings; Public Service Company of Oklahoma; City of

Dubois; Peoples Gas Light and Coke Company; North Shore Gas Company; Connecticut Light and Power; New York State Electric and Gas Corporation; Rochester Gas and Electric Corporation; Greater Missouri Operations; Tennessee Valley Authority; Omaha Public Power District; Indianapolis Power & Light Company; Vermont Gas Systems, Inc.; Metropolitan Edison; Pennsylvania Electric; West Penn Power; Pennsylvania Power; PHI Service Company - Delmarva Power and Light; Atmos Energy Corporation; Citizens Energy Group; PSE&G Company; Berkshire Gas Company; Alabama Gas Corporation; Mid-Atlantic Interstate Transmission, LLC; SUEZ Water; WEC Energy Group; Rocky Mountain Natural Gas, LLC; Illinois-American Water Company and Northern Illinois Gas Company.

My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?

A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the Commonwealth of Kentucky Public Service Commission; the Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New Jersey; the Missouri Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility Commission; the Louisiana Public Service Commission; the State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the Public Service Commission of South Carolina; Railroad Commission of Texas – Gas Services Division; the New York Public Service Commission; Illinois Commerce Commission; the Indiana

Utility Regulatory Commission; the California Public Utilities Commission; the Federal Energy Regulatory Commission ("FERC"); the Arkansas Public Service Commission; the Public Utility Commission of Texas; Maryland Public Service Commission; Washington Utilities and Transportation Commission; The Tennessee Regulatory Commission; the Regulatory Commission of Alaska; Minnesota Public Utility Commission; Utah Public Service Commission; District of Columbia Public Service Commission; the Mississippi Public Service Commission; Delaware Public Service Commission; Virginia State Corporation Commission; Colorado Public Utility Commission; Oregon Public Utility Commission; South Dakota Public Utilities Commission; Wisconsin Public Service Commission; Wyoming Public Service Commission; the Public Service Commission of West Virginia; Maine Public Utility Commission; Iowa Utility Board; Connecticut Public Utilities Regulatory Authority; New Mexico Public Regulation Commission; Commonwealth of Massachusetts Department of Public Utilities; Rhode Island Public Utilities Commission and the North Carolina Utilities Commission.

Q. Have you had any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: "Techniques of Life Analysis," "Techniques of Salvage and Depreciation Analysis," "Forecasting Life and Salvage," "Modeling and Life Analysis Using Simulation," and "Managing a Depreciation Study." I have also completed the "Introduction to Public Utility Accounting" program conducted by the American Gas Association.

Q. Does this conclude your qualification statement?

A. Yes.

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY

	Year	Jurisdiction	Docket No.	Client Utility	Subject
01.	1998	PA PUC	R-00984375	City of Bethlehem – Bureau of Water	Original Cost and Depreciation
02.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
03.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
04.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
05.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
06.	2001	PA PUC	R-00017236	The York Water Company	Depreciation
07.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
08.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp – Cincinnati Gas & Elect Company	Depreciation
09.	2001	KY PSC	2001-092	Cinergy Corp – Union Light, Heat & Power Co.	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Company	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GF02040245	NUI Corporation/Elizabethtown Gas Company	Depreciation
13.	2002	ID PUC	IPC-E-03-7	Idaho Power Company	Depreciation
14.	2003	PA PUC	R-0027975	The York Water Company	Depreciation
15.	2003	IN URC	R-0027975	Cinergy Corp – PSI Energy, Inc.	Depreciation
16.	2003	PA PUC	R-00038304	Pennsylvania-American Water Company	Depreciation
17.	2003	MO PSC	WR-2003-0500	Missouri-American Water Company	Depreciation
18.	2003	FERC	ER-03-1274-000	NSTAR-Boston Edison Company	Depreciation
19.	2003	NJ BPU	BPU 03080683	South Jersey Gas Company	Depreciation
20.	2003	NV PUC	03-10001	Nevada Power Company	Depreciation
21.	2003	LA PSC	U-27676	CenterPoint Energy – Arkla	Depreciation
22.	2003	PA PUC	R-00038805	Pennsylvania Suburban Water Company	Depreciation
23.	2004	AB En/Util Bd	1306821	EPCOR Distribution, Inc.	Depreciation
24.	2004	PA PUC	R-00038168	National Fuel Gas Distribution Corp (PA)	Depreciation
25.	2004	PA PUC	R-00049255	PPL Electric Utilities	Depreciation
26.	2004	PA PUC	R-00049165	The York Water Company	Depreciation
27.	2004	OK Corp Cm	PUC 200400187	CenterPoint Energy – Arkla	Depreciation
28.	2004	OH PUC	04-680-El-AIR	Cinergy Corp. – Cincinnati Gas and Electric Company	Depreciation
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Gas (NY)	Depreciation
31.	2004	AR PSC	04-121-U	CenterPoint Energy – Arkla	Depreciation
32.	2005	IL CC	05-	North Shore Gas Company	Depreciation
33.	2005	IL CC	05-	Peoples Gas Light and Coke Company	Depreciation
34.	2005	KY PSC	2005-00042	Union Light Heat & Power	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
35.	2005	IL CC	05-0308	MidAmerican Energy Company	Depreciation
36.	2005	MO PSC	GF-2005	Laclede Gas Company	Depreciation
37.	2005	KS CC	05-WSEE-981-RTS	Westar Energy	Depreciation
38.	2005	RR Com of TX	GUD #	CenterPoint Energy – Entex Gas Services Div.	Depreciation
39.	2005	FERC		Cinergy Corporation	Accounting
40.	2005	OK CC	PUD 200500151	Oklahoma Gas and Electric Company	Depreciation
41.	2005	MA Dept Tele-com & Ergy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-934/05-G-0935	Central Hudson Gas & Electric Company	Depreciation
43.	2005	AK Reg Com	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A05-12-002	Pacific Gas & Electric	Depreciation
45.	2006	PA PUC	R-00051030	Aqua Pennsylvania, Inc.	Depreciation
46.	2006	PA PUC	R-00051178	T.W. Phillips Gas and Oil Company	Depreciation
47.	2006	NC Util Cm.		Pub. Service Company of North Carolina	Depreciation
48.	2006	PA PUC	R-00051167	City of Lancaster	Depreciation
49.	2006	PA PUC	R00061346	Duquesne Light Company	Depreciation
50.	2006	PA PUC	R-00061322	The York Water Company	Depreciation
51.	2006	PA PUC	R-00051298	PPL GAS Utilities	Depreciation
52.	2006	PUC of TX	32093	CenterPoint Energy – Houston Electric	Depreciation
53.	2006	KY PSC	2006-00172	Duke Energy Kentucky	Depreciation
54.	2006	SC PSC		SCANA	
55.	2006	AK Reg Com	U-06-6	Municipal Light and Power	Depreciation
56.	2006	DE PSC	06-284	Delmarva Power and Light	Depreciation
57.	2006	IN URC	IURC43081	Indiana American Water Company	Depreciation
58.	2006	AK Reg Com	U-06-134	Chugach Electric Association	Depreciation
59.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
60.	2006	FERC	ISO82, ETC. AL	TransAlaska Pipeline	Depreciation
61.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
62.	2007	NC Util Com.	E-7 SUB 828	Duke Energy Carolinas, LLC	Depreciation
63.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
64.	2007	PA PUC	R-00072155	PPL Electric Utilities Corporation	Depreciation
65.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
66.	2007	PA PUC	R-00072229	Pennsylvania American Water Company	Depreciation
67.	2007	KY PSC	2007-0008	NiSource – Columbia Gas of Kentucky	Depreciation
68.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp (NY)	Depreciation
69.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
70.	2008	TN Reg Auth	08-00039	Tennessee-American Water Company	Depreciation
71.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
72.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
73.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
74.	2008	IN URC	43526	Northern Indiana Public Service Company	Depreciation
75.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
76.	2008	MD PSC	9159	NiSource – Columbia Gas of Maryland	Depreciation
77.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
78.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
79.	2008	PA PUC	2008-20322689	Pennsylvania American Water Co. - Wastewater	Depreciation
80.	2008	NY PSC	08-E887/08-00888	Central Hudson	Depreciation
81.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
82.	2008	IL CC	ICC-09-166	Peoples Gas, Light and Coke Company	Depreciation
83.	2009	IL CC	ICC-09-167	North Shore Gas Company	Depreciation
84.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
85.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
86.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
87.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Company	Depreciation
88.	2009	NC Util Cm	E-7, Sub 090	Duke Energy Carolinas, LLC	Depreciation
89.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
90.	2009	VA St. CC	PUE-2009-00059	Aqua Virginia, Inc.	Depreciation
91.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation
92.	2009	MS PSC	09-	Entergy Mississippi	Depreciation
93.	2009	AK PSC	09-08-U	Entergy Arkansas	Depreciation
94.	2009	TX PUC	37744	Entergy Texas	Depreciation
95.	2009	TX PUC	37690	El Paso Electric Company	Depreciation
96.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
97.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
98.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
99.	2009	OH PUC		Aqua Ohio Water Company	Depreciation
100.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Company	Depreciation
101.	2009	MO PSC	WR-2010	Missouri American Water Company	Depreciation
102.	2009	AK Reg Cm	U-09-097	Chugach Electric Association	Depreciation
103.	2010	IN URC	43969	Northern Indiana Public Service Company	Depreciation
104.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
105.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
106.	2010	KY PSC	2010-00036	Kentucky American Water Company	Depreciation
107.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
108.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
109.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Company	Depreciation
110.	2010	NJ BD OF PU	ER09080664	Atlantic City Electric	Depreciation
111.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
112.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
113.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Company	Depreciation
114.	2010	MO PSC	ER-2010-0355	Kansas City Power and Light	Depreciation
115.	2010	PA PUC	R-2010-2167797	T.W. Phillips Gas and Oil Company	Depreciation
116.	2010	PSC SC	2009-489-E	SCANA – Electric	Depreciation
117.	2010	PA PUC	R-2010-22010702	Peoples Natural Gas, LLC	Depreciation
118.	2010	AK PSC	10-067-U	Oklahoma Gas and Electric Company	Depreciation
119.	2010	IN URC		Northern Indiana Public Serv. Company - NIFL	Depreciation
120.	2010	IN URC		Northern Indiana Public Serv. Co. - Kokomo	Depreciation
121.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co. - WW	Depreciation
122.	2010	NC Util Cn.	W-218,SUB310	Aqua North Carolina, Inc.	Depreciation
123.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
124.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation
125.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
126.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
127.	2011	PA PUC	R-2010-2179103	City of Lancaster – Bureau of Water	Depreciation
128.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
129.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
130.	2011	IL CC	11-0217	MidAmerican Energy Corporation	Depreciation
131.	2011	OK CC	201100087	Oklahoma Gas & Electric Company	Depreciation
132.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
133.	2011	FERC	2011-2232243	Carolina Gas Transmission	Depreciation
134.	2012	WA UTC	UE-120436/UG-120437	Avista Corporation	Depreciation
135.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
136.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
137.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
138.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
139.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
140.	2012	PA PUC	R-2012-2311725	Borough of Hanover – Bureau of Water	Depreciation
141.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
142.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
143.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
144.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
145.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
146.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
147.	2012	PA PUC	R-2012-2310366	City of Lancaster – Sewer Fund	Depreciation
148.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
149.	2012	FERC	ER-12-2681-000	ITC Holdings	Depreciation
150.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
151.	2012	MO PSC	ER-2012-0175	KCPL Greater Missouri Operations Company	Depreciation
152.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
153.	2012	MN PUC	G007,001/D-12-533	Integrys – MN Energy Resource Group	Depreciation
153.	2012	TX PUC		Aqua Texas	Depreciation
155.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
156.	2013	NJ BPU	ER12121071	PHI Service Company– Atlantic City Electric	Depreciation
157.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation
158.	2013	VA St CC	2013-00020	Virginia Electric and Power Company	Depreciation
159.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
160.	2013	PA PUC	2013-2355276	Pennsylvania American Water Company	Depreciation
161.	2013	NY PSC	13-E-0030, 13-G-0031, 13-S-0032	Consolidated Edison of New York	Depreciation
162.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
163.	2013	TN Reg Auth	12-0504	Tennessee American Water	Depreciation
164.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
165.	2013	DC PSC	Case 1103	PHI Service Company – PEPCO	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
166.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Company	Depreciation
167.	2013	FERC	ER13- -0000	Kentucky Utilities	Depreciation
168.	2013	FERC	ER13- -0000	MidAmerican Energy Company	Depreciation
169.	2013	FERC	ER13- -0000	PPL Utilities	Depreciation
170.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
171.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Company	Depreciation
172.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
173.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
174.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
175.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
176.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
177.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
178.	2013	PA PUC	2013-2350509	Dubois, City of	Depreciation
179.	2014	IL CC	14-0224	North Shore Gas Company	Depreciation
180.	2014	FERC	ER14-	Duquesne Light Company	Depreciation
181.	2014	SD PUC	EL14-026	Black Hills Power Company	Depreciation
182.	2014	WY PSC	20002-91-ER-14	Black Hills Power Company	Depreciation
183.	2014	PA PUC	2014-2428304	Borough of Hanover – Municipal Water Works	Depreciation
184.	2014	PA PUC	2014-2406274	Columbia Gas of Pennsylvania	Depreciation
185.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
186.	2014	MO PSC	ER-2014-0258	Ameren Missouri	Depreciation
187.	2014	KS CC	14-BHCG-502-RTS	Black Hills Service Company	Depreciation
188.	2014	KS CC	14-BHCG-502-RTS	Black Hills Utility Holdings	Depreciation
189.	2014	KS CC	14-BHCG-502-RTS	Black Hills Kansas Gas	Depreciation
190.	2014	PA PUC	2014-2418872	Lancaster, City of – Bureau of Water	Depreciation
191.	2014	WV PSC	14-0701-E-D	First Energy – MonPower/PotomacEdison	Depreciation
192	2014	VA St CC	PUC-2014-00045	Aqua Virginia	Depreciation
193.	2014	VA St CC	PUE-2013	Virginia American Water Company	Depreciation
194.	2014	OK CC	PUD201400229	Oklahoma Gas and Electric Company	Depreciation
195.	2014	OR PUC	UM1679	Portland General Electric	Depreciation
196.	2014	IN URC	Cause No. 44576	Indianapolis Power & Light	Depreciation
197.	2014	MA DPU	DPU. 14-150	NSTAR Gas	Depreciation
198.	2014	CT PURA	14-05-06	Connecticut Light and Power	Depreciation
199.	2014	MO PSC	ER-2014-0370	Kansas City Power & Light	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
200.	2014	KY PSC	2014-00371	Kentucky Utilities Company	Depreciation
201.	2014	KY PSC	2014-00372	Louisville Gas and Electric Company	Depreciation
202.	2015	PA PUC	R-2015-2462723	United Water Pennsylvania Inc.	Depreciation
203.	2015	PA PUC	R-2015-2468056	NiSource - Columbia Gas of Pennsylvania	Depreciation
204.	2015	NY PSC	15-E-0283/15-G-0284	New York State Electric and Gas Corporation	Depreciation
205.	2015	NY PSC	15-E-0285/15-G-0286	Rochester Gas and Electric Corporation	Depreciation
206.	2015	MO PSC	WR-2015-0301/SR-2015-0302	Missouri American Water Company	Depreciation
207.	2015	OK CC	PUD 201500208	Oklahoma, Public Service Company of	Depreciation
208.	2015	WV PSC	15-0676-W-42T	West Virginia American Water Company	Depreciation
209.	2015	PA PUC	2015-2469275	PPL Electric Utilities	Depreciation
210.	2015	IN URC	Cause No. 44688	Northern Indiana Public Service Company	Depreciation
211.	2015	OH PSC	14-1929-EL-RDR	First Energy-Ohio Edison/Cleveland Electric/ Toledo Edison	Depreciation
212.	2015	NM PRC	15-00127-UT	El Paso Electric	Depreciation
213.	2015	TX PUC	PUC-44941; SOAH 473-15-5257	El Paso Electric	Depreciation
214.	2015	WI PSC	3270-DU-104	Madison Gas and Electric Company	Depreciation
215.	2015	OK CC	PUD 201500273	Oklahoma Gas and Electric	Depreciation
216.	2015	KY PSC	Doc. No. 2015-00418	Kentucky American Water Company	Depreciation
217.	2015	NC UC	Doc. No. G-5, Sub 565	Public Service Company of North Carolina	Depreciation
218.	2016	WA UTC	Docket UE-17	Puget Sound Energy	Depreciation
219.	2016	NY PSC	Case No. 16-W-0130	SUEZ Water New York, Inc.	Depreciation
220.	2016	MO PSC	ER-2016-0156	KCPL – Greater Missouri	Depreciation
221.	2016	WI PSC		Wisconsin Public Service Commission	Depreciation
222.	2016	KY PSC	Case No. 2016-00026	Kentucky Utilities Company	Depreciation
223.	2016	KY PSC	Case No. 2016-00027	Louisville Gas and Electric Company	Depreciation
224.	2016	OH PUC	Case No. 16-0907-WW-AIR	Aqua Ohio	Depreciation
225.	2016	MD PSC	Case 9417	NiSource - Columbia Gas of Maryland	Depreciation
226.	2016	KY PSC	2016-00162	Columbia Gas of Kentucky	Depreciation
227.	2016	DE PSC	16-0649	Delmarva Power and Light Company – Electric	Depreciation
228.	2016	DE PSC	16-0650	Delmarva Power and Light Company – Gas	Depreciation
229.	2016	NY PSC	Case 16-G-0257	National Fuel Gas Distribution Corp – NY Div	Depreciation
230.	2016	PA PUC	R-2016-2537349	Metropolitan Edison Company	Depreciation
231.	2016	PA PUC	R-2016-2537352	Pennsylvania Electric Company	Depreciation
232.	2016	PA PUC	R-2016-2537355	Pennsylvania Power Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
233.	2016	PA PUC	R-2016-2537359	West Penn Power Company	Depreciation
234.	2016	PA PUC	R-2016-2529660	NiSource - Columbia Gas of PA	Depreciation
235.	2016	KY PSC	Case No. 2016-00063	Kentucky Utilities / Louisville Gas & Electric Co	Depreciation
236.	2016	MO PSC	ER-2016-0285	KCPL Missouri	Depreciation
237.	2016	AR PSC	16-052-U	Oklahoma Gas & Electric Co	Depreciation
238.	2016	PSCW	6680-DU-104	Wisconsin Power and Light	Depreciation
239.	2016	ID PUC	IPC-E-16-23	Idaho Power Company	Depreciation
240.	2016	OR PUC	UM1801	Idaho Power Company	Depreciation
241.	2016	ILL CC	16-	MidAmerican Energy Company	Depreciation
242.	2016	KY PSC	Case No. 2016-00370	Kentucky Utilities Company	Depreciation
243.	2016	KY PSC	Case No. 2016-00371	Louisville Gas and Electric Company	Depreciation
244.	2016	IN URC		Indianapolis Power & Light	Depreciation
245.	2016	AL RC	U-16-081	Chugach Electric Association	Depreciation
246.	2017	MA DPU	D.P.U. 17-05	NSTAR Electric Company and Western Massachusetts Electric Company	Depreciation
247.	2017	TX PUC	PUC-26831, SOAH 973-17-2686	El Paso Electric Company	Depreciation
248.	2017	WA UTC	UE-17033 and UG-170034	Puget Sound Energy	Depreciation
249.	2017	OH PUC	Case No. 17-0032-EL-AIR	Duke Energy Ohio	Depreciation
250.	2017	VA SCC	Case No. PUE-2016-00413	Virginia Natural Gas, Inc.	Depreciation
251.	2017	OK CC	Case No. PUD201700151	Public Service Company of Oklahoma	Depreciation
252.	2017	MD PSC	Case No. 9447	Columbia Gas of Maryland	Depreciation
253.	2017	NC UC	Docket No. E-2, Sub 1142	Duke Energy Progress	Depreciation
254.	2017	VA SCC	Case No. PUR-2017-00090	Dominion Virginia Electric and Power Company	Depreciation
255.	2017	FERC	ER17-1162	MidAmerican Energy Company	Depreciation
256.	2017	PA PUC	R-2017-2595853	Pennsylvania American Water Company	Depreciation
257.	2017	OR PUC	UM1809	Portland General Electric	Depreciation
258.	2017	FERC	ER17-217	Jersey Central Power & Light	Depreciation
259.	2017	FERC	ER17-211	Mid-Atlantic Interstate Transmission, LLC	Depreciation
260.	2017	MN PUC	Docket No. G007/D-17-442	Minnesota Energy Resources Corporation	Depreciation
261.	2017	IL CC	Docket No. 17-0124	Northern Illinois Gas Company	Depreciation
262.	2017	OR PUC	UM1808	Northwest Natural Gas Company	Depreciation
263.	2017	NY PSC	Case No. 17-W-0528	SUEZ Water Owego-Nichols	Depreciation
264.	2017	MO PSC	GR-2017-0215	Laclede Gas Company	Depreciation
265.	2017	MO PSC	GR-2017-0216	Missouri Gas Energy	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
266.	2017	ILL CC	Docket No. 17-0337	Illinois-American Water Company	Depreciation
267.	2017	FERC	Docket No. ER17- _	PPL Electric Utilities Corporation	Depreciation
268.	2017	IN URC	Cause No. 44988	Northern Indiana Public Service Company	Depreciation
269.	2017	NJ BPU	BPU Docket No. WR17090985	New Jersey American Water Company, Inc.	Depreciation
270.	2017	RI PUC	Docket No. 4800	SUEZ Water Rhode Island	Depreciation
271.	2017	OK CC	Cause No. PUD 201700496	Oklahoma Gas and Electric Company	Depreciation
272.	2017	NJ BPU	ER18010029 & GR18010030	Public Service Electric and Gas Company	Depreciation
273.	2017	NC Util Com.	Docket No. E-7, SUB 1146	Duke Energy Carolinas, LLC	Depreciation
274.	2017	KY PSC	Case No. 2017-00321	Duke Energy Kentucky, Inc.	Depreciation
275.	2017	MA DPU	D.P.U. 18-40	Berkshire Gas Company	Depreciation
276.	2018	IN IURC	Cause No. 44992	Indiana-American Water Company, Inc.	Depreciation
277.	2018	IN IURC	Cause No. 45029	Indianapolis Power and Light	Depreciation
278.	2018	NC Util Com.	Docket No. W-218, Sub 497	Aqua North Carolina, Inc.	Depreciation
279.	2018	PA PUC	Docket No. R-2018-2647577	NiSource - Columbia Gas of Pennsylvania, Inc.	Depreciation
280.	2018	OR PUC	Docket UM 1933	Avista Corporation	Depreciation
281.	2018	WA UTC	Docket No. UE-108167	Avista Corporation	Depreciation
282.	2018	ID PUC	AVU-E-18-03, AVU-G-18-02	Avista Corporation	Depreciation
283.	2018	IN URC	Cause No. 45039	Citizens Energy Group	Depreciation
284.	2018	FERC	Docket No. ER18-	Duke Energy Progress	Depreciation
285.	2018	PA PUC	Docket No. R-2018-3000124	Duquesne Light Company	Depreciation
286.	2018	MD PSC	Case No. 9480	NiSource - Columbia Gas of Maryland	Depreciation
287.	2018	MA DPU	D.P.U. 18-45	NiSource - Columbia Gas of Massachusetts	Depreciation
288.	2018	OH PUC	Case No. 18-0299-GA-ALT	Vectren Energy Delivery of Ohio	Depreciation
289.	2018	PA PUC	Docket No. R-2018-3000834	SUEZ Water Pennsylvania Inc.	Depreciation
290.	2018	MD PSC	Case No. 9847	Maryland-American Water Company	Depreciation
291.	2018	PA PUC	Docket No. R-2018-3000019	The York Water Company	Depreciation
292.	2018	FERC	Docket Nos. ER-18-2231-000	Duke Energy Carolinas, LLC	Depreciation
293.	2018	KY PSC	Case No. 2018-00261	Duke Energy Kentucky, Inc.	Depreciation
294.	2018	NJ BPU	BPU Docket No. WR18050593	SUEZ Water New Jersey	Depreciation
295.	2018	WA UTC	Docket No. UE-180778	PacifiCorp	Depreciation
296.	2018	UT PSC	Docket No. 18-035-36	PacifiCorp	Depreciation
297.	2018	OR PUC	Docket No. UM-1968	PacifiCorp	Depreciation
298.	2018	ID PUC	Case No. PAC-E-18-08	PacifiCorp	Depreciation
299.	2018	WY PSC	20000-539-EA-18	PacifiCorp	Depreciation
300.	2018	PA PUC	Docket No. R-2018-3003068	Aqua Pennsylvania, Inc.	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	Year	Jurisdiction	Docket No.	Client Utility	Subject
301.	2018	IL CC	Docket No. 18-1467	Aqua Illinois, Inc.	Depreciation
302.	2018	KY PSC	Case No. 2018-00294	Louisville Gas & Electric Company	Depreciation
303.	2018	KY PSC	Case No. 2018-00295	Kentucky Utilities Company	Depreciation
304.	2018	IN URC	Cause No. 45159	Northern Indiana Public Service Company	Depreciation
305.	2018	VA SCC	Case No. PUR-2019-00175	Virginia American Water Company	Depreciation
306.	2019	PA PUC	Docket No. R-2018-3006818	Peoples Natural Gas Company, LLC	Depreciation
307.	2019	OK CC	Cause No. PUD201800140	Oklahoma Gas and Electric Company	Depreciation
308.	2019	MD PSC	Case No. 9490	FirstEnergy – Potomac Edison	Depreciation
309.	2019	SC PSC	Docket No. 2018-318-E	Duke Energy Progress	Depreciation
310.	2019	SC PSC	Docket No. 2018-319-E	Duke Energy Carolinas	Depreciation

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO ELECTRIC PLANT
AS OF DECEMBER 31, 2018

Prepared by:

Excellence Delivered ***As Promised***

DUKE ENERGY INDIANA
Plainfield, Indiana

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO ELECTRIC PLANT
AS OF DECEMBER 31, 2018

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
Harrisburg, Pennsylvania

Gannett Fleming

Excellence Delivered ***As Promised***

June 27, 2019

Duke Energy Indiana
550 South Tryon
DEC 42A
Charlotte, NC 28202

Attention David Doss
Director Asset Accounting

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the electric plant of Duke Energy Indiana as of December 31, 2018. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual and accrued depreciation, the statistical support for the service life and net salvage estimates, and the detailed tabulations of annual and accrued depreciation.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

John J. Spanos

JOHN J. SPANOS
President

JJS:mle

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DUKE ENERGY INDIANA

DEPRECIATION STUDY

EXECUTIVE SUMMARY

Pursuant to Duke Energy Indiana's ("DEI" or "Company") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") conducted a depreciation study related to the electric plant as of December 31, 2018. The purpose of this study was to determine the annual depreciation accrual rates and amounts for book and ratemaking purposes.

The depreciation rates are based on the straight line method using the equal life group ("ELG") procedure and were applied on a remaining life basis. The calculations were based on attained ages and estimated average service life and forecasted net salvage characteristics for each depreciable group of assets.

DEI's accounting policy has not changed since the last depreciation study was prepared. However, there has been a significant change in the surviving assets, particularly at steam facilities. These changes have caused the proposed service life estimates and net salvage parameters in the depreciation study to change which creates new depreciation rates from the previous depreciation study as of December 31, 2009.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to electric plant in service as of December 31, 2018 as summarized by Table 1 of the study. Supporting analysis and calculations are provided within the study.

The study results set forth an annual depreciation expense of $624 million when applied to depreciable plant balances as of December 31, 2018. The results are summarized at the functional level as follows:

SUMMARY OF ORIGINAL COST, ACCRUAL RATES AND AMOUNTS

FUNCTION	ORIGINAL COST AS OF DECEMBER 31, 2018	PROPOSED RATE	PROPOSED EXPENSE
ELECTRIC PLANT			
Steam Production Plant	$7,808,333,721.16	5.23	$408,633,191
Hydraulic Production Plant	76,674,561.22	2.64	2,026,918
Other Production Plant	1,039,841,865.72	3.64	37,851,954
Transmission Plant	1,715,396,976.45	3.04	52,163,011
Distribution Plant	3,300,722,918.77	3.17	104,657,820
General Plant	443,323,740.63	4.21	18,664,744
Total	**$14,384,293,783.95**		**$623,997,638**

PART I. INTRODUCTION

DUKE ENERGY INDIANA
DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report sets forth the results of the depreciation study for Duke Energy Indiana ("DEI") as applied to electric plant in service as of December 31, 2018. It relates to the concepts, methods and basic judgments which underlie recommended annual depreciation accrual rates related to current electric plant in service.

The service life estimates resulting from the study were based on informed judgment which incorporated analyses of historical plant retirement data as recorded through 2018; a review of Company practice and outlook as they relate to plant operation and retirement; and consideration of current practice in the electric industry, including knowledge of service life and salvage estimates used for other electric properties.

PLAN OF REPORT

Part I, Introduction, contains statements with respect to the plan of the report, and the basis of the study. Part II, Estimation of Survivor Curves, presents descriptions of the considerations and the methods used in the service life and net salvage studies. Part III, Service Life Considerations, presents the factors and judgment utilized in the average service life analysis. Part IV, Net Salvage Considerations, presents the judgment utilized for the net salvage study. Part V, Calculation of Annual and Accrued Depreciation, describes the procedures used in the calculation of group depreciation. Part VI, Results of Study, presents summaries by depreciable group of annual depreciation accrual rates and amounts, as well as composite remaining lives. Part VII, Service Life Statistics presents the statistical analysis of service life estimates, Part VIII, Net Salvage Statistics

sets forth the statistical indications of net salvage percents, and Part IX, Detailed Depreciation Calculations presents the detailed tabulations of annual depreciation.

BASIS OF THE STUDY

Depreciation

Depreciation, in public utility regulation, is the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among causes to be given consideration are wear and tear, deterioration, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and the requirements of public authorities.

Depreciation, as used in accounting, is a method of distributing fixed capital costs, less net salvage, over a period of time by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing electric utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight-line method of depreciation.

For most accounts, the annual depreciation was calculated by the straight line method using the equal life group procedure and the remaining life basis. For certain General Plant Accounts, the annual depreciation was based on amortization accounting. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group.

Service Life and Net Salvage Estimates

The service life and net salvage estimates used in the depreciation and amortization calculations were based on informed judgment which incorporated a review of management's plans, policies and outlook, a general knowledge of the electric utility industry, and comparisons of the service life and net salvage estimates from our studies of other electric utilities. The use of survivor curves to reflect the expected dispersion of retirement provides a consistent method of estimating depreciation for electric plant. Iowa type survivor curves were used to depict the estimated survivor curves for the plant accounts not subject to amortization accounting.

The procedure for estimating service lives consisted of compiling historical data for the plant accounts or depreciable groups, analyzing this history through the use of widely accepted techniques, and forecasting the survivor characteristics for each depreciable group on the basis of interpretations of the historical data analyses and the probable future. The combination of the historical experience and the estimated future yielded estimated survivor curves from which the average service lives were derived.

PART II. ESTIMATION OF SURVIVOR CURVES

PART II. ESTIMATION OF SURVIVOR CURVES

The calculation of annual depreciation based on the straight line method requires the estimation of survivor curves and the selection of group depreciation procedures. The estimation of survivor curves is discussed below and the development of net salvage is discussed in later sections of this report.

SURVIVOR CURVES

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages.

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 1, a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1, the remaining life at age 30 is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval. It is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

This study has incorporated the use of Iowa curves developed from a retirement rate analysis of historical retirement history. A discussion of the concepts of survivor curves and of the development of survivor curves using the retirement rate method is presented below.

Iowa Type Curves

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. There are four families in the Iowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves, presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers represent the relative heights of the modes of the frequency curves within each family.

The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125. These curve types have also been presented in subsequent

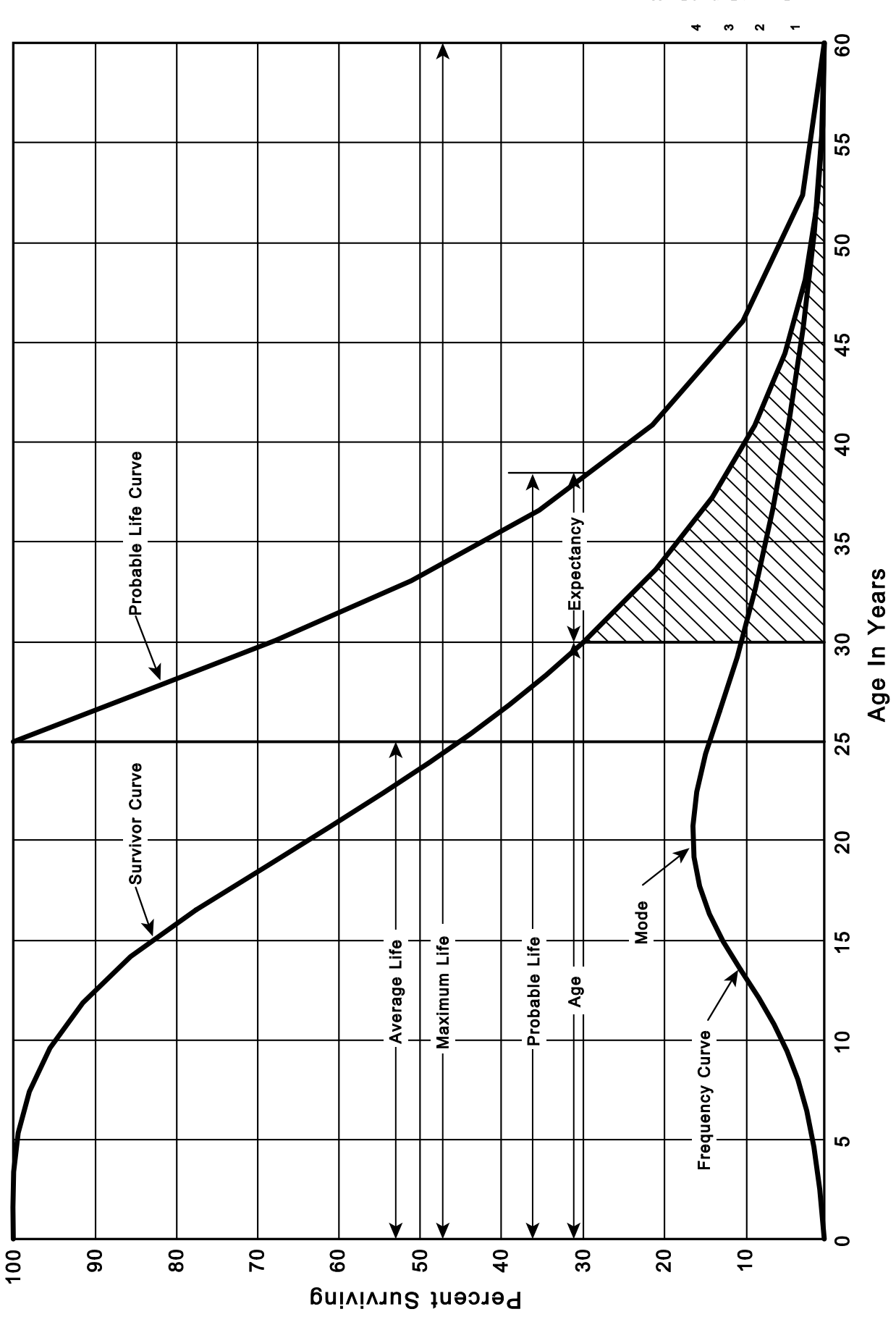


Figure 1. A Typical Survivor Curve and Derived Curves

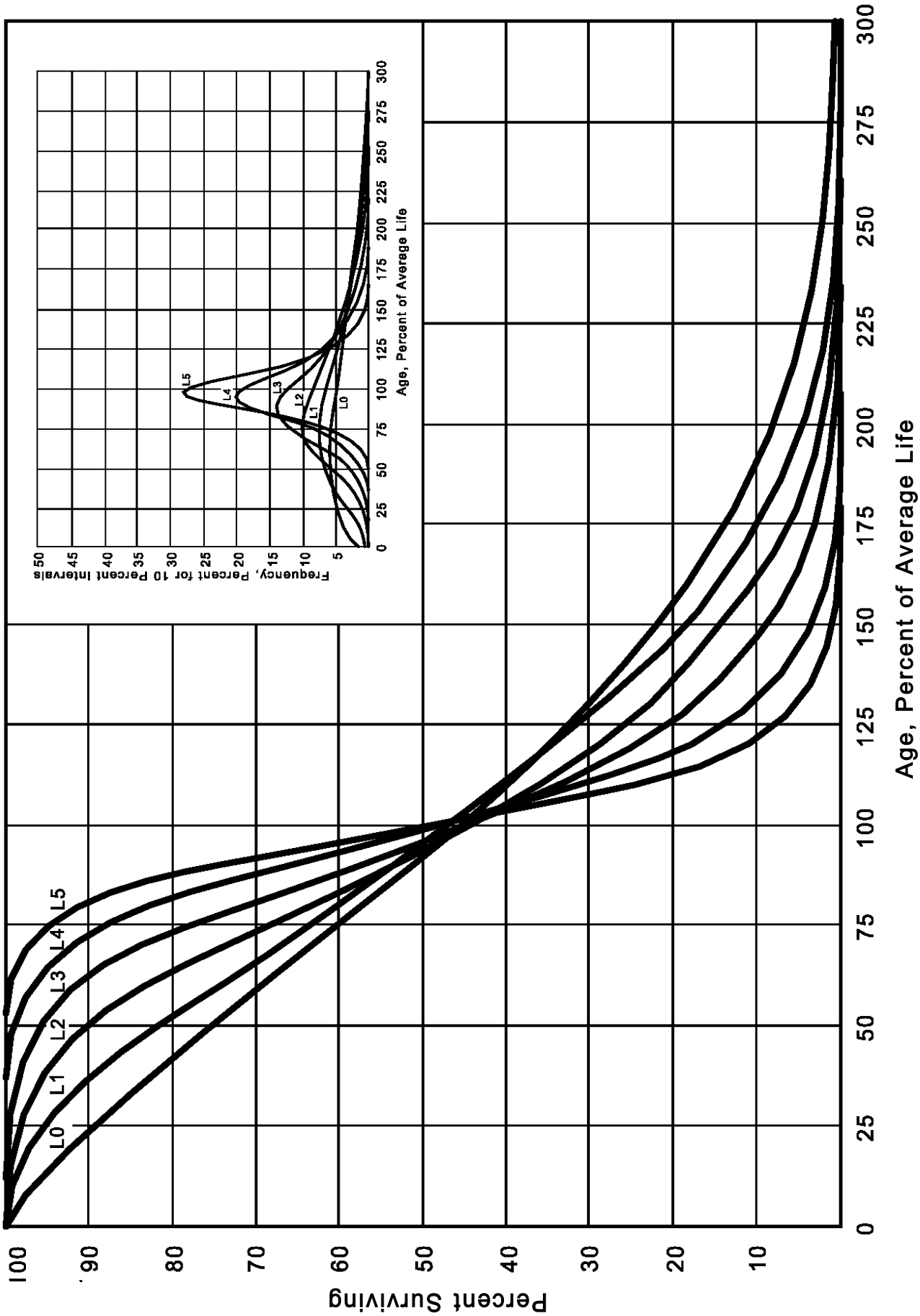


Figure 2. Left Modal or "L" Iowa Type Survivor Curves

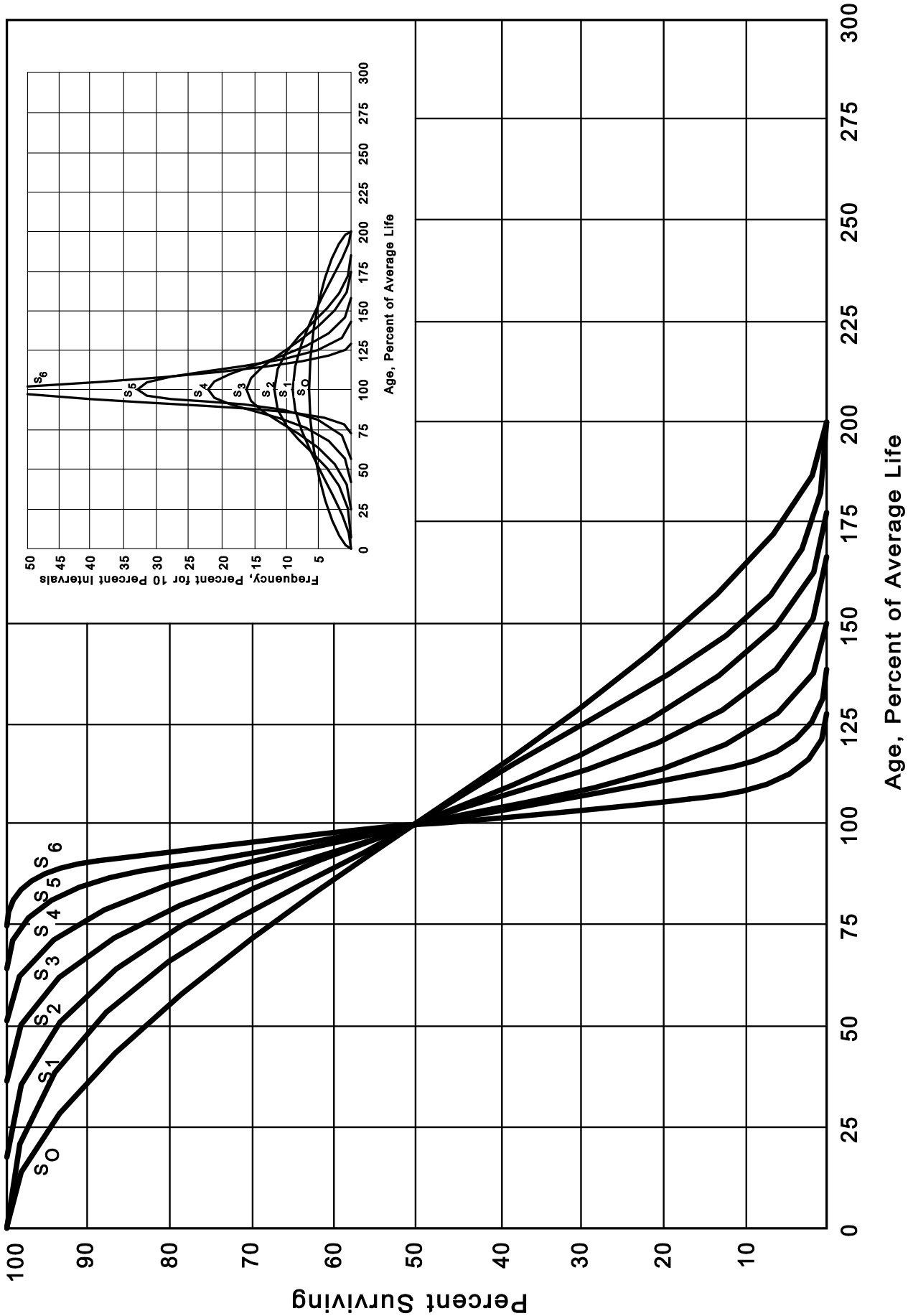


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

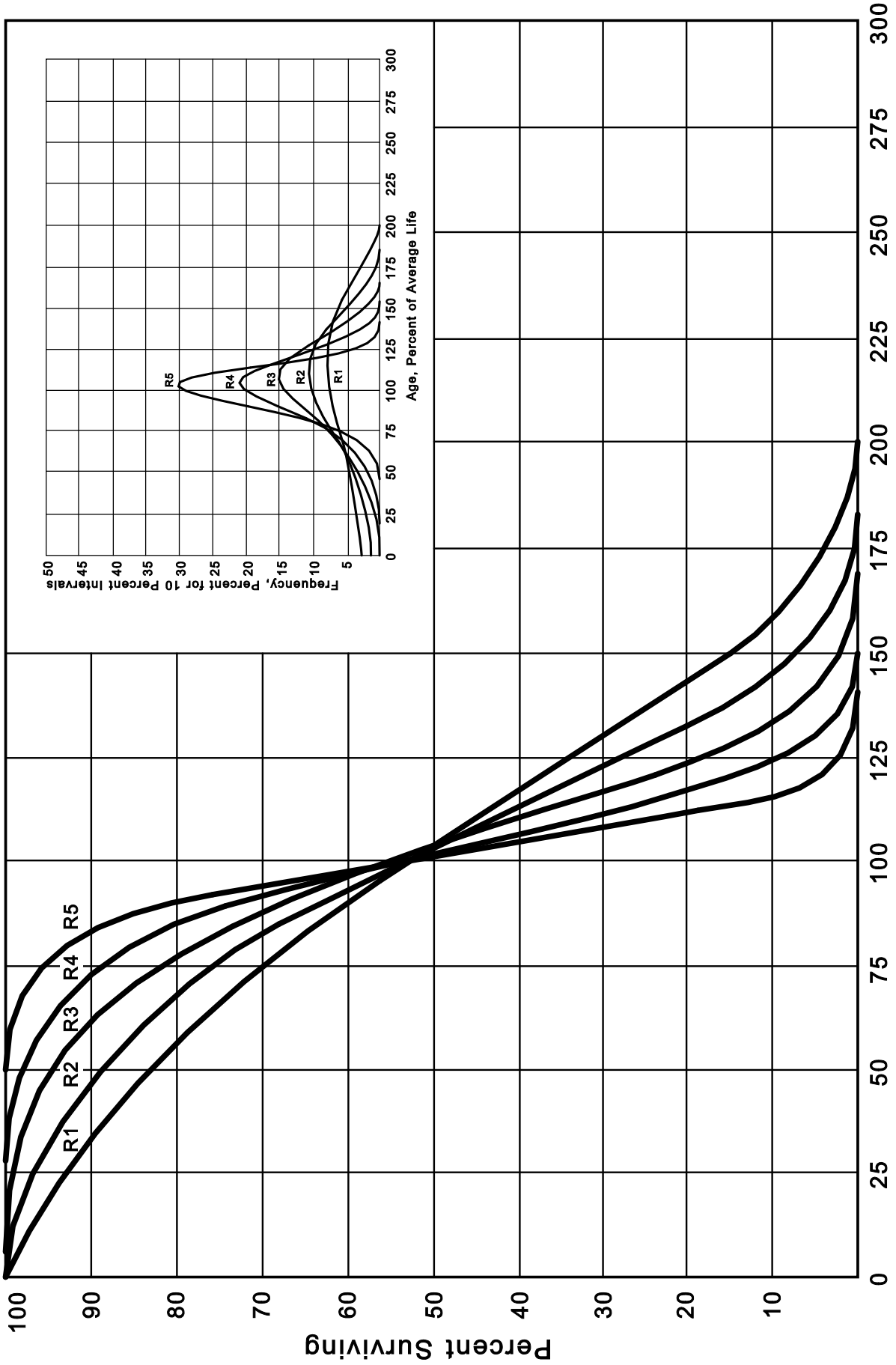


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

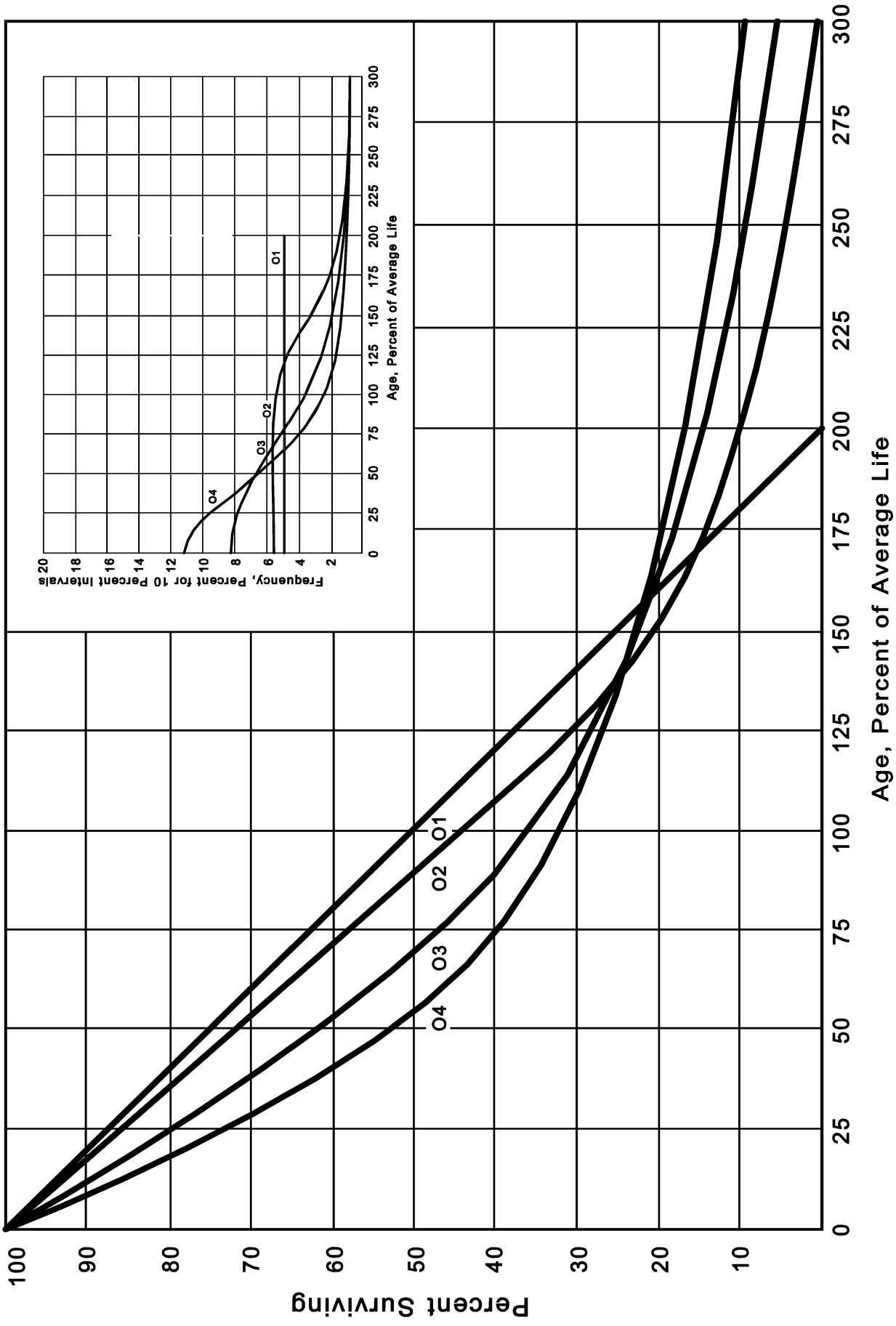


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."[1] In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

Retirement Rate Method of Analysis

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to property groups for which aged accounting experience is available and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"[2] "Engineering Valuation and Depreciation,"[3] and "Depreciation Systems."[4]

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginning of the age intervals during the same period. The period of observation is referred to as the experience band, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the placement band. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

---

[1]Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

[2]Winfrey, Robley, Statistical Analyses of Industrial Property Retirements. Iowa State College Engineering Experiment Station, Bulletin 125. 1935.

[3]Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

[4]Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994.

Schedules of Annual Transactions in Plant Records

The property group used to illustrate the retirement rate method is observed for the experience band 2009-2018 during which there were placements during the years 2004-2018. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner presented in Schedules 1 and 2 on pages II-11 and II-12. In Schedule 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, $10,000 of the dollars invested in 2004 were retired in 2009. The $10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a
one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of $143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2009 retirements of 2004 installations and ending with the 2018 retirements of the 2013 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20.

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018

Placement Band 2004-2018

Year Placed	Retirements, Thousands of Dollars During Year										Total During Age Interval	Age Interval
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2004	10	11	12	13	14	16	23	24	25	26	26	13½-14½
2005	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2006	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2007	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2008	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2009	4	9	10	11	12	13	14	15	16	20	105	8½-9½
2010		5	11	12	13	14	15	16	18	20	113	7½-8½
2011			6	12	13	15	16	17	19	19	124	6½-7½
2012				6	13	15	16	17	19	19	131	5½-6½
2013					7	14	16	17	19	20	143	4½-5½
2014						8	18	20	22	23	146	3½-4½
2015							9	20	22	25	150	2½-3½
2016								11	23	25	151	1½-2½
2017									11	24	153	½-1½
2018										13	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606	

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018 Placement Band 2004-2018

Year Placed	Acquisitions, Transfers and Sales, Thousands of Dollars During Year										Total During Age Interval	Age Interval
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2004	-	-	-	-	-	-	60[a]	-	-	-	-	13½-14½
2005	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2006	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2007	-	-	-	-	-	-	-	(5)[b]	-	-	60	10½-11½
2008	-	-	-	-	-	-	-	6[a]	-	-	-	9½-10½
2009	-	-	-	-	-	-	-	-	-	-	(5)	8½-9½
2010		-	-	-	-	-	-	-	-	-	6	7½-8½
2011			-	-	-	-	-	-	-	-	-	6½-7½
2012				-	-	-	-	(12)[b]	-	-	-	5½-6½
2013					-	-	-	-	22[a]	-	-	4½-5½
2014						-	-	(19)[b]	-	-	10	3½-4½
2015							-	-	-	-	-	2½-3½
2016								-	-	(102)[c]	(121)	1½-2½
2017									-	-	-	½-1½
2018											-	0-½
Total	-	-	-	-	-	-	60	(30)	22	(102)	(50)	

[a] Transfer Affecting Exposures at Beginning of Year
[b] Transfer Affecting Exposures at End of Year
[c] Sale with Continued Use
Parentheses Denote Credit Amount.

In Schedule 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are not totaled with the retirements but are used in developing the exposures at the beginning of each age interval.

Schedule of Plant Exposed to Retirement

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-14.

The surviving plant at the beginning of each year from 2009 through 2018 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2014 are calculated in the following manner:

Exposures at age 0	= amount of addition	= $750,000
Exposures at age ½	= $750,000 - $ 8,000	= $742,000
Exposures at age 1½	= $742,000 - $18,000	= $724,000
Exposures at age 2½	= $724,000 - $20,000 - $19,000	= $685,000
Exposures at age 3½	= $685,000 - $22,000	= $663,000

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT
JANUARY 1 OF EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018

Placement Band 2004-2018

Year Placed	Exposures, Thousands of Dollars — Annual Survivors at the Beginning of the Year										Total at Beginning of Age Interval	Age Interval
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2004	255	245	234	222	209	195	239	216	192	167	167	13½-14½
2005	279	268	256	243	228	212	194	174	153	131	323	12½-13½
2006	307	296	284	271	257	241	224	205	184	162	531	11½-12½
2007	338	330	321	311	300	289	276	262	242	226	823	10½-11½
2008	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½
2009	420[a]	416	407	397	386	374	361	347	332	316	1,503	8½-9½
2010		460[a]	455	444	432	419	405	390	374	356	1,952	7½-8½
2011			510[a]	504	492	479	464	448	431	412	2,463	6½-7½
2012				580[a]	574	561	546	530	501	482	3,057	5½-6½
2013					660[a]	653	639	623	628	609	3,789	4½-5½
2014						750[a]	742	724	685	663	4,332	3½-4½
2015							850[a]	841	821	799	4,955	2½-3½
2016								960[a]	949	926	5,719	1½-2½
2017									1,080[a]	1,069	6,579	½-1½
2018										1,220[a]	7,490	0-½
Total	1,975	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	44,780	

[a]Additions during the year

For the entire experience band 2009-2018, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.

Original Life Table

The original life table, illustrated in Schedule 4 on page II-16**,** is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age 4½	=	88.15				
Exposures at age 4½	=	3,789,000				
Retirements from age 4½ to 5½	=	143,000				
Retirement Ratio	=	143,000	÷	3,789,000	=	0.0377
Survivor Ratio	=	1.000	-	0.0377	=	0.9623
Percent surviving at age 5½	=	(88.15)	x	(0.9623)	=	84.83

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

SCHEDULE 4. ORIGINAL LIFE TABLE
CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2009-2018 Placement Band 2004-2018

(Exposure and Retirement Amounts are in Thousands of Dollars)

Age at Beginning of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Beginning of Age Interval
(1)	(2)	(3)	(4)	(5)	(6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	167	26	0.1557	0.8443	42.24
					35.66
Total	44,780	1,606			

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.
Column 3 from Schedule 1, Column 12, Retirements for Each Year.
Column 4 = Column 3 Divided by Column 2.
Column 5 = 1.0000 Minus Column 4.
Column 6 = Column 5 Multiplied by Column 6 as of the Preceding Age Interval.

The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

Smoothing the Original Survivor Curve

The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group.

FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

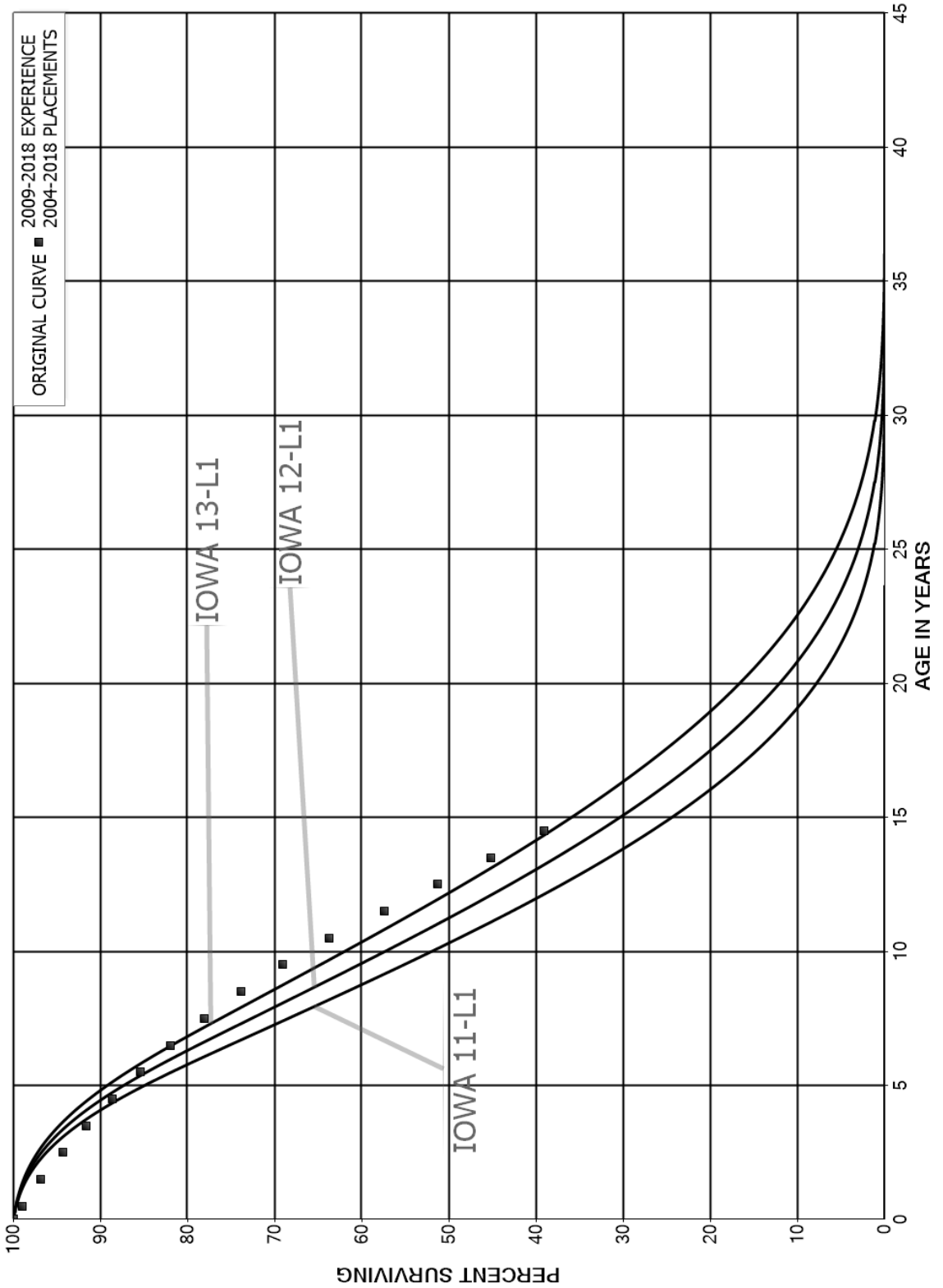


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

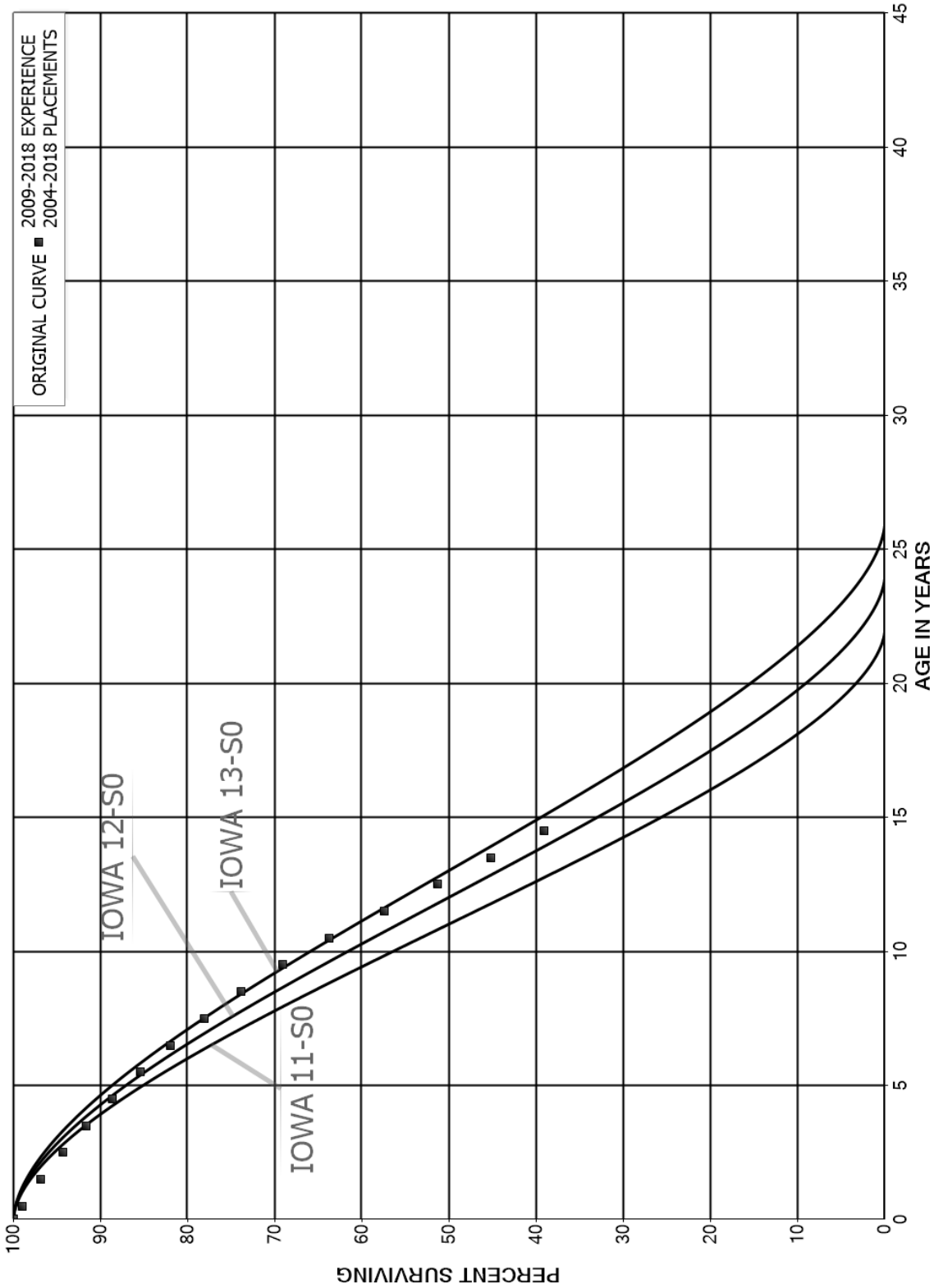


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

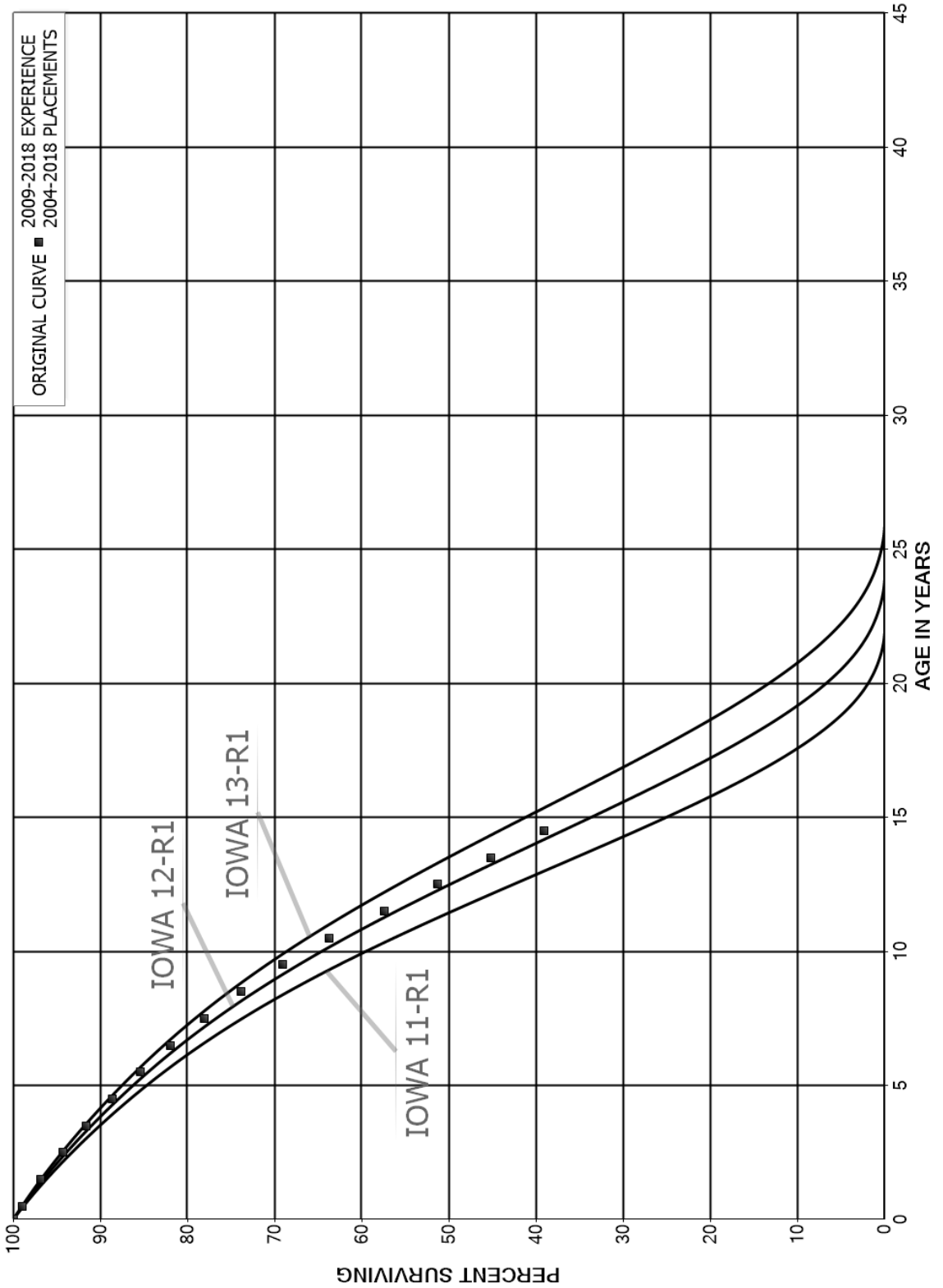
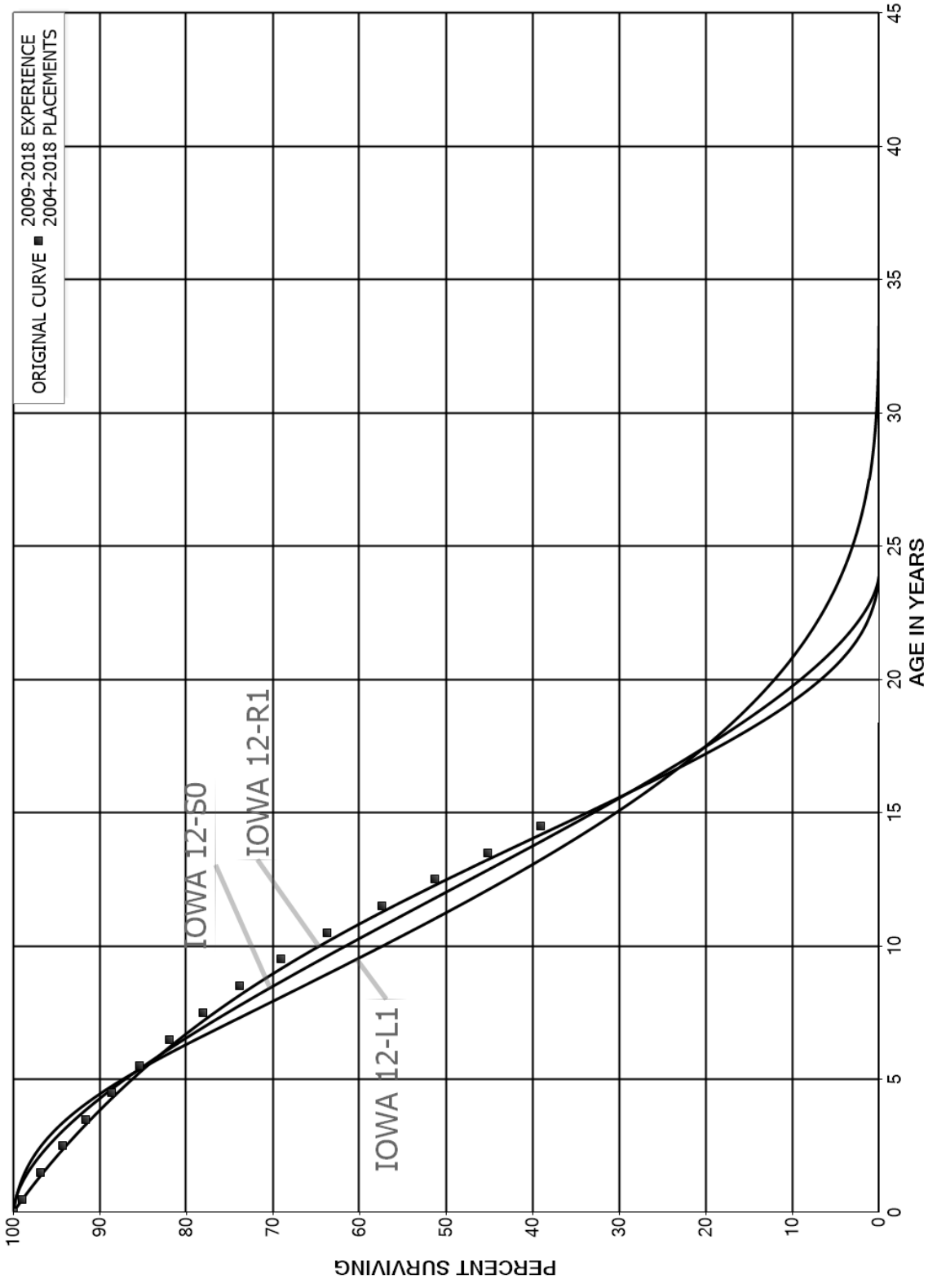


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES



PART III. SERVICE LIFE CONSIDERATIONS

PART III. SERVICE LIFE CONSIDERATIONS

FIELD TRIPS

In order to be familiar with the operation of the Company and to observe representative portions of the plant, a field trip was conducted. A general understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements was obtained during this trip. This knowledge and information were incorporated in the interpretation and extrapolation of the statistical analyses.

The plant facilities visited during past site visits are as follows:

November 28, 2018
- Wabash River Generating Station
- Cayuga Generating Station
- Noblesville Generating Station

November 27, 2018
- Gibson Generating Station
- Wheatland Generating Station
- Edwardsport IGCC Station

November 26, 2018
- Gallagher Generating Station

February 20, 2008
- Noblesville Generating Station
- Cadiz (Henry County) Generating Station
- Madison Generating Station

February 19, 2008
- Wheatland Generating Station
- Wheatland Substation
- Cayuga Generating Station
- Cayuga Combustion Station
- Cayuga Substation
- Wabash River Staunton Substation
- Noblesville Substation
- Wabash River Substation
- Cadiz Substation
- Madison Substation
- Staunton Substation

April 18, 2002

Cayuga Generating Station
Cayuga Peaker – Diesel
Cayuga Combustion Turbine
Edwardsport Generating Station
Edwardsport Substation
Gibson Substation
Gibson Cayuga Substation
Dresser Machine Shop
Sullivan District Office
Princeton District Office
Plainfield Headquarters
Greencastle
Greencastle Industrial Park Distribution
Clinton Distribution
Clinton District Office
Terre Haute Sandcut Distribution
Terre Haute Margaret Ave. Distribution
Vincennes Distribution
Oakland City
French Lick Distribution
Mitchell Distribution
Bloomington District Office
Bloomington Rogers St.
Bloomington
Martinsville Distribution
Martinsville Southeast Distribution
Wabash River
Wabash River Substation
Wabash River Peaker – Diesel
Wabash River Repowering Project

April 17, 2002

Aurora Distribution
Connersville Peaking
Connersville District Office
Columbus Denois Creek
Columbus North
Columbus District Office
Markland Generating Station
Markland Substation
Madison Generating Station
Madison Northeast Rd. Distribution
Madison District Office
Gallagher Generating Station
Gallagher Substation
Whitestown
Noblesville District Office

Noblesville Generating Station
Noblesville Substation
New Castle
New Castle District office
Aurora District Office
Seymour District Office
Seymour Distribution
Carmel Distribution
Brookville Distribution
Batesville

September 3, 1999
Aurora District Office
Aurora Distribution
New Castle
New Castle District Office
Batesville
Brookville Distribution
Carmel Distribution
Gallagher Generating Station
Gallagher Substation
Madison Generating Station
Madison District Office
Madison Northeast Road Distribution
Markland Generating Station
Connersville District Office
Connersville Peaking
Noblesville Generating Station
Noblesville Substation
Noblesville District Office
Columbus District Office
Columbus Denois Creek
Columbus North
Seymour District Office
Seymour Distribution
Whitestown

September 2, 1999
Bloomington
Bloomington Rogers St.
Bloomington District Office
Cayuga Generating Station
Cayuga Peaker – Diesel
Cayuga Combustion Turbine
Cayuga Substation
Edwardsport Generating Station
Gibson Generating Station
Gibson Substation

Greencastle
Greencastle Industrial Park Distribution
Dresser Machine Shop
Sullivan District Office
Princeton District Office
Plainfield Headquarters
Clinton Distribution
Terre Haute Sandcut Distribution
Terre Haute Margaret Ave. Distribution
Vincennes Distribution
Oakland City
French Lick Distribution
Mitchell Distribution
Martinsville Distribution
Martinsville Southeast Distribution
Wabash River Generating Station
Wabash River Substation
Wabash River Peaker – Diesel
Wabash River Repowering Project

SERVICE LIFE ANALYSIS

The service life estimates were based on judgment which considered a number of factors. The primary factors were the statistical analyses of data; current company policies and outlook as determined during the field review of the property and other conversations with management; and the survivor curve estimates from previous studies of this company and other electric utility companies.

For many accounts and subaccounts, the statistical analysis resulted in good to excellent indications of complete survivor patterns. These accounts represent 69% of the depreciable plant. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below:

Account No.	Account Description
STEAM PRODUCTION PLANT	
311	Structures and Improvements
312	Boiler Plant Equipment
312.1	Boiler Plant Equipment - Coal Cars
314	Turbogenerator Units
315	Accessory Electric Equipment
316	Miscellaneous Power Plant Equipment

HYDRO PLANT
- 331 Structures and Improvements
- 332 Reservoirs, Dams and Waterways
- 334 Accessory Electric Equipment

OTHER PRODUCTION PLANT
- 342 Fuel Holders, Producers and Accessories
- 343 Prime Movers
- 344 Generators
- 345 Accessory Electric Equipment
- 346 Miscellaneous Power Plant Equipment

TRANSMISSION PLANT
- 352 Structures and Improvements
- 353 Station Equipment
- 354 Towers and Fixtures
- 355 Poles and Fixtures

DISTRIBUTION PLANT
- 361 Structures and Improvements
- 362 Station Equipment
- 364 Poles, Towers and Fixtures
- 366 Underground Conduit
- 367 Underground Conductors and Devices
- 368 Line Transformers
- 370 Meters
- 371 Installations on Customers' Premises
- 373 Street Lighting and Signal Systems

GENERAL PLANT
- 390 Structures and Improvements
- 392 Transportation Equipment
- 396 Power Operated Equipment

Two of the largest mass accounts, 353 and 364, are used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through 2018. These data have been coded according to account or property group, type of transaction, year in which the transaction took place and year in which the utility plant was placed in service. The

retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for Account 353, Station Equipment, is the 53-R1.5 and is based on the statistical indication for the periods 1956 through 2018 and 1999 through 2018. The 53-R1.5 is a very good fit of the significant portion of the original survivor curve as set forth on page VII-101 and consistent with management outlook for a continuation of the historical experience, and within the typical service life range of 40 to 55 years for station equipment. The previous estimate for this account was a 60-R2 survivor curve.

The survivor curve estimate for Account 364, Poles, Towers and Fixtures, is the 55-R0.5 and is based on the statistical indication for the period 1956 through 2018. The 55-R0.5 is an excellent fit of the significant portion of the original survivor curve as set forth on page VII-149 and consistent with management outlook for a continuation of historical experience, and within the typical service life range of 40 to 55 years for distribution poles. The previous estimate for this account was a 48-R0.5 survivor curve.

Inasmuch as production plant consists of large generating units, the life span technique was employed in conjunction with the use of interim survivor curves which reflect interim retirements that occur prior to the ultimate retirement of the major unit. An interim survivor curve was estimated for each plant account, inasmuch as the rate of interim retirements differs from account to account. The interim survivor curves estimated for steam, hydro and other production plant related to Duke Energy Indiana stations were based on the retirement rate method.

The life span estimates for power generating stations were the result of considering experienced life spans of similar generating units, the age of surviving units, general operating characteristics of the units, major refurbishing, and discussions with management personnel concerning the probable long-term outlook for the units. Final

decisions as to date of retirement will be determined by management on a unit by unit basis.

The life span estimate for the coal-fired, base-load units is 47 to 64 years, which is typical of life spans for coal units with the current regulation. A 32-year life span estimate applies to the Edwardsport IGCC unit which is common for that type of unit. The life spans for the hydro facility is 94 years and tied to the license date. Life spans of 31 to 43 years were estimated for the combustion turbines. These life span estimates are typical for combustion turbines which are used primarily as peaking units. The solar facility life span is 30 years which is on the long end of the range.

A summary of the year in service, life span and probable retirement year for each power production unit, follows:

Depreciable Group	Year in Service	Probable Retirement Year	Life Span
STEAM PRODUCTION PLANT			
Gallagher Unit 2	1958	2022	64
Gallagher Unit 4	1961	2022	61
Cayuga Unit 1	1970	2028	58
Cayuga Unit 2	1972	2028	56
Gibson Unit 1	1976	2038	62
Gibson Unit 2	1975	2038	63
Gibson Unit 3	1978	2034	56
Gibson Unit 4	1979	2026	47
Gibson Unit 5	1982	2034	52
Edwardsport IGCC	2013	2045	32
HYDRO PLANT			
Markland	1967	2061	94
OTHER PRODUCTION PLANT			
Noblesville	1950, 2003	2034	84, 31
Noblesville Unit 3	2003	2034	31
Noblesville Unit 4	2003	2034	31
Noblesville Unit 5	2003	2034	31
Vermillion	2000	2043	43
Cayuga Unit 4	1993	2028	35
Cincap Madison	2000	2041	41

Henry County (Cadiz)	2001	2038	37
Wheatland Unit 1	2005	2043	38
Wheatland Unit 2	2005	2043	38
Wheatland Unit 3	2005	2043	38
Wheatland Unit 4	2005	2043	38
Cayuga Diesel	1972	2028	56
Crane Solar	2017	2047	30

Generally, the survivor curve estimates for the remaining accounts were based on judgments which considered the statistical analyses, the nature of the plant and equipment, the previous estimate for this company and a general knowledge of service lives for similar equipment in other electric companies.

PART IV. NET SALVAGE CONSIDERATIONS

PART IV. NET SALVAGE CONSIDERATIONS

SALVAGE ANALYSIS

The estimates of net salvage by account were based in part on historical data compiled by account through 2018. Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration. The net salvage estimates are expressed as a percent of the original cost of plant retired.

Net Salvage Considerations

The estimates of future net salvage are expressed as percentages of surviving plant in service, i.e., all future retirements. In cases in which removal costs are expected to exceed salvage receipts, a negative net salvage percentage is estimated. The net salvage estimates were based on judgment which incorporated analyses of historical cost of removal and salvage data, expectations with respect to future removal requirements and markets for retired equipment and materials.

The analyses of historical cost of removal and salvage data are presented in the section titled “Net Salvage Statistics” for the plant accounts for which the net salvage estimates relied partially on those analyses.

Statistical analyses of historical data for the period 1989 through 2018 for electric plant were analyzed. The analyses contributed significantly toward the net salvage estimates for 21 plant accounts, representing 36 percent of the depreciable plant, as follows:

Transmission Plant

352.00	Structures and Improvements
353.00	Station Equipment
354.00	Towers and Fixtures
355.00	Poles and Fixtures
356.00	Overhead Conductors and Devices

Distribution Plant

361.00	Structures and Improvements
362.00	Station Equipment
364.00	Poles, Towers and Fixtures
365.00	Overhead Conductors and Devices
366.00	Underground Conduit
367.00	Underground Conductors and Devices
368.00	Line Transformers
369.00	Services
369.10	Services - Underground
369.20	Services - Overhead
370.00	Meters
371.00	Installations on Customers' Premises
373.00	Street Lighting and Signal Systems

General Plant

390.00	Structures and Improvements
392.00	Transportation Equipment
396.00	Power Operated Equipment

The analysis for Account 365, Overhead Conductors and Devices, is used to illustrate the manner in which the study was conducted for the groups in the preceding list. Net salvage data for the period 1989 through 2018 were analyzed for this account. The data include cost of removal, gross salvage and net salvage amounts and each of these amounts is expressed as a percent of the original cost of regular retirements. Three-year moving averages for the 1989-1991 through 2016-2018 periods were computed to smooth the annual amounts.

Cost of removal fluctuated widely throughout the period. The years with high cost of removal was a result of removing many different locations. Cost of removal for the thirty year period averaged 39 percent. Cost of removal for the most recent five years averaged 53 percent.

Gross salvage was high for the first few years of the period but has diminished since the mid-1990s with the exception of 2014. The most recent five-year average of 1 percent gross salvage reflects recent trends and the reduced market for overhead conductors.

The net salvage percent based on the overall period 1989 through 2018 is 38 percent negative net salvage and based on the most recent five-year period is 52 percent negative net salvage. The range of estimates made by other electric companies for Overhead Conductors and Devices is negative 15 to negative 60 percent. The net salvage estimate for poles is negative 40 percent, is within the range of other estimates and reflects the overall historical indications of negative net salvage.

For steam, hydraulic and other production plants, or 62 percent of the depreciable plant, the estimates of net salvage were based on the results of decommissioning studies performed by Burns and McDonnell. The decommissioning study results were valued to the final retirement date by unit or location to determine the most appropriate net salvage percent for the facility.

The net salvage percents for the remaining accounts representing 2 percent of plant were based on judgment incorporating estimates of previous studies of this and other electric utilities.

PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

After the survivor curve and salvage are estimated, the annual depreciation accrual rate can be calculated. In the average service life procedure, the annual accrual rate is computed by the following equation:

$$Annual\ Accrual\ Rate, Percent = \frac{(100\% - Net\ Salvage, Percent).}{Average\ Service\ Life}$$

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which will not be allocated to expense through future depreciation accruals if current forecasts of life characteristics are used as a basis for straight line depreciation accounting.

The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon the attained age and the estimated survivor curve. The accrued depreciation ratios are calculated as follows:

$$Ratio = (1 - \frac{Average\ Remaining\ Life\ Expectancy}{Average\ Service\ Life}) (1 - Net\ Salvage, Percent).$$

The application of these procedures is described for a single unit of property and a group of property units. Salvage is omitted from the description for ease of application.

Single Unit of Property

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a $1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1,000}{(4 + 6)} = \$100\ per\ year.$$

The accrued depreciation is:

$$\$1{,}000\ (1 - \frac{6}{10}) = \$400.$$

Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because normally all of the items within a group do not have identical service lives but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group.

Average Service Life Procedure

In the average service life procedure, the rate of annual depreciation is based on the average service life of the group, and this rate is applied to the surviving balances of the group's cost. The accrued depreciation is based on the average service life of the group and the average remaining life of each vintage within the group derived from the area under the survivor curve between the attained age of the vintage and the maximum age.

A characteristic of this procedure is that the cost of plant retired prior to average life is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent to average life is more than fully recouped. Over the entire life cycle, the portion of cost not recouped prior to average life is balanced by the excess cost recouped subsequent to average life. The recovery of cost is complete at the end of the life cycle, but the distribution of capital cost to annual expense does not match the consumption of service value of plant.

Equal Life Group Procedure

In the equal life group procedure, also known as the unit summation procedure, the property group is subdivided according to service life. That is, each equal life group includes that portion of the property which experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life unit.

This procedure eliminates the need to base annual depreciation expense on average lives, inasmuch as each group has a single life. The full cost of short-lived items is accrued during their lives, leaving no deferral of accruals required to be added to the annual cost associated with long-lived items. The depreciation expense for the property group is the summation of the depreciation expense based on the service life of each equal life group.

The table on the following page presents an illustration of calculation of equal life group depreciation using the Iowa 22-R0.5 survivor curve, net salvage of 0 percent and a December 31, 2018 calculation date.

In the table, each equal life group is defined by the age interval shown in columns 1 and 2. These are the ages at which the first and last retirement of each group occurs, and the group's equal life, shown in column 3, is the midpoint of the interval. For purposes of the calculation, the computer is programmed to divide each vintage into equal life groups arranged so that the midpoint of each one-year age interval coincides with the calculation date, e.g., December 31 in this case. This enables the calculation of annual accruals for a twelve-month period centered on the date of calculation.

The retirement during the age interval, shown in column 4, is the size of each equal life group, and is derived from the Iowa 22-R0.5 survivor curve. It is the difference between the percents surviving at the beginning and end of the age interval.

Each equal life group's annual accrual, shown in column 5, equals the group's size (column 4) divided by its life (column 3) and multiplied by the quantity one minus the net salvage percent with the exception of 2018 installations. For 2018 installations, the group annual accrual is equal to the retirements during the interval multiplied by one minus the net salvage percent.

DETAILED COMPUTATION OF ANNUAL AND ACCRUED FACTORS USING THE EQUAL LIFE GROUP PROCEDURE

INPUT PARAMETERS:
CALCULATION DATE.. 12-31-2018
SURVIVOR CURVE.... 22-R0.5

AGE INTERVAL BEG (1)	END (2)	LIFE (3)	RETIREMENTS DURING INTERVAL (4)	GROUP ANNUAL ACCRUAL (5)=(4)/(3)	YEAR INST (6)	SUMMATION OF ANNUAL ACCRUALS (7)	AVERAGE PERCENT SURVIVING (8)	ANNUAL FACTOR (9)	ACCRUED FACTOR (10)
0.000	1.000	0.500	1.73762	1.73762000000	2018	9.55985895733	99.134084	0.0964	0.0482
1.000	2.000	1.500	1.77522	1.18348000000	2017	7.23049895733	97.374768	0.0743	0.1115
2.000	3.000	2.500	1.81251	0.72500400000	2016	6.27625695733	95.580905	0.0657	0.1643
3.000	4.000	3.500	1.84978	0.52850857143	2015	5.64950067161	93.749761	0.0603	0.2111
4.000	5.000	4.500	1.88608	0.41912888889	2014	5.17568194145	91.881830	0.0563	0.2534
5.000	6.000	5.500	1.92242	0.34953090909	2013	4.79135204246	89.977580	0.0533	0.2932
6.000	7.000	6.500	1.95727	0.30111846154	2012	4.46602735715	88.037736	0.0507	0.3296
7.000	8.000	7.500	1.99399	0.26586533333	2011	4.18253545971	86.062106	0.0486	0.3645
8.000	9.000	8.500	2.03245	0.23911176471	2010	3.93004691069	84.048885	0.0468	0.3978
9.000	10.000	9.500	2.07651	0.21858000000	2009	3.70120102834	81.994405	0.0451	0.4285
10.000	11.000	10.500	2.12346	0.20223428571	2008	3.49079388548	79.894421	0.0437	0.4589
11.000	12.000	11.500	2.17669	0.18927739130	2007	3.29503804698	77.744346	0.0424	0.4876
12.000	13.000	12.500	2.23364	0.17869120000	2006	3.11105375133	75.539179	0.0412	0.5150
13.000	14.000	13.500	2.29451	0.16996370370	2005	2.93672629948	73.275102	0.0401	0.5414
14.000	15.000	14.500	2.35863	0.16266413793	2004	2.77041237866	70.948534	0.0390	0.5655
15.000	16.000	15.500	2.42438	0.15641161290	2003	2.61087450325	68.557028	0.0381	0.5906
16.000	17.000	16.500	2.49188	0.15102303030	2002	2.45715718165	66.098898	0.0372	0.6138
17.000	18.000	17.500	2.55801	0.14617200000	2001	2.30855966650	63.573957	0.0363	0.6353
18.000	19.000	18.500	2.62393	0.14183405405	2000	2.16455663947	60.982989	0.0355	0.6568
19.000	20.000	19.500	2.68512	0.13769846154	1999	2.02479038168	58.328460	0.0347	0.6767
20.000	21.000	20.500	2.74383	0.13384536585	1998	1.88901846798	55.613981	0.0340	0.6970
21.000	22.000	21.500	2.79447	0.12997534884	1997	1.75710811064	52.844833	0.0333	0.7160
22.000	23.000	22.500	2.83938	0.12619466667	1996	1.62902310288	50.027911	0.0326	0.7335
23.000	24.000	23.500	2.87526	0.12235148936	1995	1.50475002487	47.170593	0.0319	0.7497
24.000	25.000	24.500	2.90031	0.11838000000	1994	1.38438428019	44.282810	0.0313	0.7669
25.000	26.000	25.500	2.91495	0.11431176471	1993	1.26803839783	41.375175	0.0306	0.7803
26.000	27.000	26.500	2.91590	0.11003396226	1992	1.15586553435	38.459750	0.0301	0.7977
27.000	28.000	27.500	2.90451	0.10561854545	1991	1.04803928049	35.549546	0.0295	0.8113
28.000	29.000	28.500	2.87754	0.10096631579	1990	0.94474684987	32.658517	0.0289	0.8237
29.000	30.000	29.500	2.83646	0.09615118644	1989	0.84618809876	29.801518	0.0284	0.8378
30.000	31.000	30.500	2.77921	0.09112163934	1988	0.75255168587	26.993684	0.0279	0.8510
31.000	32.000	31.500	2.70660	0.08592380952	1987	0.66402896144	24.250779	0.0274	0.8631
32.000	33.000	32.500	2.61874	0.08057661538	1986	0.58077874899	21.588111	0.0269	0.8743
33.000	34.000	33.500	2.51436	0.07505552239	1985	0.50296268010	19.021558	0.0264	0.8844
34.000	35.000	34.500	2.39883	0.06953130435	1984	0.43066926673	16.564960	0.0260	0.8970
35.000	36.000	35.500	2.26753	0.06387408451	1983	0.36396657230	14.231784	0.0256	0.9088
36.000	37.000	36.500	2.12840	0.05831232877	1982	0.30287336566	12.033821	0.0252	0.9198
37.000	38.000	37.500	1.97939	0.05278373333	1981	0.24732533461	9.979923	0.0248	0.9300
38.000	39.000	38.500	1.82803	0.04748129870	1980	0.19719281860	8.076214	0.0244	0.9394
39.000	40.000	39.500	1.67729	0.04246303797	1979	0.15222065026	6.323554	0.0241	0.9520
40.000	41.000	40.500	1.53618	0.03793037037	1978	0.11202394609	4.716816	0.0237	0.9599
41.000	42.000	41.500	1.41887	0.03418963855	1977	0.07596394163	3.239296	0.0235	0.9753
42.000	43.000	42.500	1.31658	0.03097835294	1976	0.04337994589	1.871574	0.0232	0.9860
43.000	44.000	43.500	1.21100	0.02783908046	1975	0.01397122919	0.607782	0.0230	1.0000
44.000	44.220	44.110	0.00228	0.00005168896	1974	0.00000568579	0.000251	0.0000	1.0000
TOTAL			100.00000						

Columns 6 through 10 show the derivation of the annual factor and accrued factor for each vintage based on the information developed in the first five columns. The year installed is shown in column 6. For all vintages other than 2018, the summation of annual accruals for each year installed, shown in column 7, is calculated by adding one-half of the group annual accrual (column 5) for that vintage's current age interval plus the group annual accruals for all succeeding age intervals. For example, the figure 7.23049895733 for 2017 equals one-half of 1.18348000000 plus all of the succeeding figures in column 5. Only one-half of the annual accrual for the vintage's current age interval group is included in the summation because the equal life group for that interval has reached the year during which it is expected to be retired.

The summation of annual accruals (column 7) for installations during 2018 is calculated on the basis of an in-service date at the midpoint of the year, i.e., June 30. Inasmuch as the overall calculation is centered on December 31, 2018, the first figure in column 7, for vintage 2018, equals all of the group annual accrual for the first equal life group plus the accruals for all of the subsequent equal life groups.

The average percent surviving, derived from the Iowa 22-R0.5 survivor curve, is shown in column 8 for each age interval. The annual factor, shown in column 9, is the result of dividing the summation of annual accruals (column 7) by the average percent surviving (column 8).

The accrued factor, shown in column 10, equals the annual factor multiplied by the age of the group as of December 31, 2018.

REMAINING LIFE ANNUAL ACCRUAL RATES

The annual depreciation accrual rates are calculated as of December 31, 2018 and based on the straight line remaining life method using the equal life group procedure. For the purpose of calculating the composite remaining life accrual rates as of December 31, 2018, the book reserve for each plant account is allocated among vintages in

proportion to the calculated accrued depreciation for the account as of December 31, 2018. The remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the composite remaining life for the surviving original cost of that vintage. The composite remaining life is derived by compositing the individual equal life group remaining lives in accordance with the following equation:

$$Composite\ Remaining\ Life\ = \frac{(\frac{Book\ Cost}{Life}\ x\ Remaining\ Life\ )}{\frac{Book\ Cost}{Life}}$$

The book costs and lives of the several equal life groups which are summed in the foregoing equation are defined by the estimated future survivor curve.

Inasmuch as book cost divided by life equals the whole life annual accrual, the foregoing equation reduces to the following form:

$$Composite\ Remaining\ Life = \frac{\Sigma\ Whole\ Life\ Future\ Accruals}{\Sigma\ Whole\ Life\ Annual\ Accruals}$$

or

$$Composite\ Remaining\ Life = \frac{\Sigma\ Book\ Cost\ -\ Calc.\ Reserve}{\Sigma\ Whole\ Life\ Annual\ Accrual}$$

The composite remaining life calculations were made using computer software that utilizes detailed ELG calculations of whole life future accruals and annual accruals in order to derive the vintage composite remaining lives. The annual accrual rate for each account is equal to the sum of the remaining life annual accruals divided by the total original cost. The composite remaining life is calculated by dividing the sum of the future book accruals by the sum of the remaining life annual accruals.

CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization, as defined in the Uniform System of Accounts, is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

The calculation of annual and accrued amortization requires the selection of an amortization period. The amortization periods used in this report were based on judgment which incorporated a consideration of the period during which the assets will render most of their service, the amortization periods and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is appropriate for certain General Plant accounts that represent numerous units of property, but a very small portion of depreciable electric plant in service. The accounts and their amortization periods are as follows:

Account		Amortization Period, Years
ELECTRIC PLANT		
391	Office Furniture and Equipment	20
391.1	Office Furniture and Equipment - EDP	5
393	Stores Equipment	20
393.1	Forklifts	25
394	Tools, Shop and Garage Equipment	25
395	Laboratory Equipment	20
397	Communication Equipment	20
398	Miscellaneous Equipment	15

The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The annual amortization amount is determined by dividing the original cost by the period of amortization for the account.

PART VI. RESULTS OF STUDY

PART VI. RESULTS OF STUDY

QUALIFICATION OF RESULTS

The calculated annual and accrued depreciation are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation using the equal life group procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

The annual depreciation accrual rates are applicable specifically to the electric and common plant in service as of December 31, 2018. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to December 31, 2018, is reasonable for a period of three to five years.

DESCRIPTION OF SUMMARY TABULATIONS

Summaries of the results of the study, as applied to the original cost of electric plant as of December 31, 2018, are presented on pages VI-5 through VI-11 of this report. The schedules set forth the original cost, the book depreciation reserve, future accruals, the calculated annual depreciation rate and amount, and the composite remaining life related to electric plant.

DESCRIPTION OF DETAILED TABULATIONS

Supporting statistical data for the estimates of average service lives and survivor curves, gross salvage and cost of removal data and the annual depreciation calculations are presented in three sections.

The service life estimates were based on judgment that incorporated statistical analysis of retirement data, discussions with management and consideration of estimates made for other electric utility companies. The results of the statistical analysis of service life are presented in the section beginning on page VII-2, within the supporting documents of this report.

For each depreciable group analyzed by the retirement rate method, a chart depicting the original and estimated survivor curves followed by a tabular presentation of the original life table(s) plotted on the chart. The survivor curves estimated for the depreciable groups are shown as dark smooth curves on the charts. Each smooth survivor curve is denoted by a numeral followed by the curve type designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. The titles of the chart indicate the group, the symbol used to plot the points of the original life table, and the experience and placement bands of the life tables which where plotted. The experience band indicates the range of years for which retirements were used to develop the stub survivor curve. The placements indicate, for the related experience band, the range of years of installations which appear in the experience.

The analyses of salvage data are presented in the section titled, “Net Salvage Statistics”. The tabulations present annual cost of removal and salvage data, three-year moving averages and the most recent five-year average. Data are shown in dollars and as percentages of original costs retired.

The tables of the calculated annual depreciation applicable to depreciable assets as of December 31, 2018 are presented in account sequence starting on page IX-2 of the supporting documents. The tables indicate the estimated survivor curve and net salvage percent for the account and set forth, for each installation year, the original cost, the

calculated accrued depreciation, the allocated book reserve, future accruals, the remaining life, and the calculated annual accrual amount.

DUKE ENERGY INDIANA
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	STEAM PRODUCTION PLANT										
311.00	STRUCTURES AND IMPROVEMENTS										
	NOBLESVILLE	12-2018	100-R2.5	*	(5)	24,727.48	25,964	0	0	-	-
	WABASHRIVER COMMON 2-6	12-2018	100-R2.5	*	(5)	442,309.18	464,425	0	0	-	-
	GALLAGHER UNIT 2	12-2022	100-R2.5	*	(15)	19,632.90	16,841	5,737	1,438	7.32	4.0
	GALLAGHER UNIT 4	12-2022	100-R2.5	*	(15)	25,584.18	21,991	7,431	1,859	7.27	4.0
	GALLAGHER COMMON 1-4	12-2022	100-R2.5	*	(15)	76,036,089.99	58,596,354	28,845,149	7,234,378	9.51	4.0
	CAYUGA UNIT 1	05-2028	100-R2.5	*	(7)	3,651,013.62	786,172	3,120,413	334,349	9.16	9.3
	CAYUGA UNIT 2	05-2028	100-R2.5	*	(7)	1,306,400.78	356,317	1,041,532	111,396	8.53	9.3
	CAYUGA COMMON 1-2	05-2028	100-R2.5	*	(7)	126,376,301.65	49,682,864	85,539,779	9,179,542	7.26	9.3
	CAYUGA INLAND CONTAINER	05-2028	100-R2.5	*	(7)	756,820.44	568,027	241,771	26,332	3.48	9.2
	GIBSON UNIT 1	05-2038	100-R2.5	*	(9)	20,066,885.53	13,127,165	8,745,740	471,803	2.35	18.5
	GIBSON UNIT 2	05-2038	100-R2.5	*	(9)	24,684,353.13	16,362,883	10,543,062	565,819	2.29	18.6
	GIBSON UNIT 3	05-2034	100-R2.5	*	(9)	34,255,215.11	23,880,170	13,458,014	893,460	2.61	15.1
	GIBSON UNIT 4	05-2026	100-R2.5	*	(9)	26,613,348.62	21,419,781	7,588,769	1,048,081	3.94	7.2
	GIBSON UNIT 5	05-2034	100-R2.5	*	(9)	24,181,559.36	16,155,825	10,202,075	677,659	2.80	15.1
	GIBSON 3 FLUE GAS	05-2034	100-R2.5	*	(9)	391,692.00	236,047	190,897	12,600	3.22	15.2
	GIBSON 4 FLUE GAS	05-2034	100-R2.5	*	(9)	33,422,528.64	19,808,734	16,621,822	1,094,979	3.28	15.2
	GIBSON 5 FLUE GAS	05-2026	100-R2.5	*	(9)	2,533,467.06	2,020,372	741,107	100,672	3.97	7.4
	GIBSON COMMON 1-2	05-2038	100-R2.5	*	(9)	8,622,835.77	3,719,037	5,679,854	299,095	3.47	19.0
	GIBSON COMMON 1-3	05-2038	100-R2.5	*	(9)	84,100,898.84	27,466,362	64,203,618	3,398,510	4.04	18.9
	GIBSON COMMON 1-4	05-2038	100-R2.5	*	(9)	2,327,130.55	1,082,939	1,453,633	76,925	3.31	18.9
	GIBSON COMMON 1-5	05-2038	100-R2.5	*	(9)	192,005,834.14	38,693,239	170,593,120	9,061,399	4.72	18.8
	GIBSON COMMON 3-4	05-2034	100-R2.5	*	(9)	1,863,114.39	655,169	1,375,626	90,930	4.88	15.1
	GIBSON COMMON 4-5	05-2034	100-R2.5	*	(9)	10,285,200.29	5,943,800	5,267,068	348,001	3.38	15.1
	GIBSON COMMON 3-5	05-2034	100-R2.5	*	(9)	1,764,570.72	920,900	1,002,482	66,214	3.75	15.1
	TOTAL STRUCTURES AND IMPROVEMENTS					675,757,514.37	302,011,378	436,468,699	35,095,441	5.19	12.4
311.20	STRUCTURES AND IMPROVEMENTS - EDWARDSPORT IGCC										
	EDWARDSPORT IGCC	05-2045	100-R2.5	*	(15)	150,906,524.64	26,261,113	147,281,390	5,766,894	3.82	25.5
312.00	BOILER PLANT EQUIPMENT										
	NOBLESVILLE	12-2018	50-S0	*	(5)	24,727.48	25,964	0	0	-	-
	GALLAGHER STATION	12-2022	50-S0	*	(15)	175,826.63	153,885	48,316	12,453	7.08	3.9
	GALLAGHER UNIT 2	12-2022	50-S0	*	(15)	57,045,022.12	44,994,872	20,606,903	5,262,362	9.22	3.9
	GALLAGHER UNIT 4	12-2022	50-S0	*	(15)	61,426,143.24	48,688,368	21,951,697	5,598,338	9.11	3.9
	GALLAGHER COMMON 1-2	12-2022	50-S0	*	(15)	8,220,357.56	7,037,212	2,416,199	624,519	7.60	3.9
	GALLAGHER COMMON 3-4	12-2022	50-S0	*	(15)	9,752,585.42	8,277,454	2,938,019	758,246	7.77	3.9
	GALLAGHER COMMON 1-4	12-2022	50-S0	*	(15)	18,682,517.31	16,055,679	5,429,216	1,402,068	7.50	3.9
	CAYUGA UNIT 1	05-2028	50-S0	*	(7)	502,836,244.36	218,788,121	319,246,660	35,794,793	7.12	8.9
	CAYUGA UNIT 2	05-2028	50-S0	*	(7)	456,229,498.88	207,491,537	280,674,027	31,490,828	6.90	8.9
	CAYUGA COMMON 1-2	05-2028	50-S0	*	(7)	175,379,676.06	36,649,441	151,006,812	16,797,408	9.58	9.0
	CAYUGA INLAND CONTAINER	05-2028	50-S0	*	(7)	2,437,060.24	1,906,002	701,652	83,645	3.43	8.4
	GIBSON UNIT 1	05-2038	50-S0	*	(9)	306,543,418.23	126,999,908	207,132,418	12,674,562	4.13	16.3
	GIBSON UNIT 2	05-2038	50-S0	*	(9)	310,424,007.39	133,474,342	204,887,826	12,563,031	4.05	16.3
	GIBSON UNIT 3	05-2034	50-S0	*	(9)	326,768,649.09	143,326,590	212,851,238	15,595,995	4.77	13.6
	GIBSON UNIT 4	05-2026	50-S0	*	(9)	317,659,376.10	183,552,184	162,696,536	22,897,908	7.21	7.1
	GIBSON UNIT 5	05-2034	50-S0	*	(9)	166,693,281.20	74,301,280	107,394,397	7,894,373	4.74	13.6
	GIBSON 1 FLUE GAS	05-2038	50-S0	*	(9)	142,896,275.54	56,801,325	98,955,615	5,992,431	4.19	16.5
	GIBSON 2 FLUE GAS	05-2038	50-S0	*	(9)	147,940,792.77	59,088,168	102,167,296	6,188,207	4.18	16.5
	GIBSON 3 FLUE GAS	05-2034	50-S0	*	(9)	207,675,317.39	96,530,188	129,835,908	9,491,533	4.57	13.7
	GIBSON 4 FLUE GAS	05-2034	50-S0	*	(9)	131,053,528.55	78,820,426	64,027,920	4,805,289	3.67	13.3
	GIBSON 5 FLUE GAS	05-2026	50-S0	*	(9)	56,789,565.25	36,784,407	25,116,219	3,566,418	6.28	7.0
	GIBSON COMMON 1-2	05-2038	50-S0	*	(9)	4,771,959.15	2,756,466	2,444,969	157,646	3.30	15.5
	GIBSON COMMON 1-3	05-2038	50-S0	*	(9)	246,889,883.68	44,774,168	224,335,805	13,370,462	5.42	16.8
	GIBSON COMMON 1-4	05-2038	50-S0	*	(9)	207,364.56	70,020	156,007	9,450	4.56	16.5
	GIBSON COMMON 1-5	05-2038	50-S0	*	(9)	70,483,422.32	35,424,909	41,402,021	2,608,788	3.70	15.9
	GIBSON COMMON 3-4	05-2034	50-S0	*	(9)	10,691,947.36	7,420,985	4,233,238	332,225	3.11	12.7
	GIBSON COMMON 4-5	05-2034	50-S0	*	(9)	9,220,870.08	6,134,983	3,915,765	303,047	3.29	12.9
	GIBSON COMMON 3-5	05-2034	50-S0		(9)	41,697.85	6,157	39,294	2,813	6.75	14.0
	TOTAL BOILER PLANT EQUIPMENT					3,748,961,015.81	1,676,335,041	2,396,611,973	216,278,838	5.77	11.1

DUKE ENERGY INDIANA
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
312.10	BOILER PLANT EQUIPMENT - COAL CARS										
	GIBSON COMMON 1-5	05-2038	35-S3	*	20	2,914,384.60	1,230,007	1,101,501	82,837	2.84	13.3
312.20	BOILER PLANT EQUIPMENT - EDWARDSPORT IGCC										
	EDWARDSPORT IGCC	05-2045	50-S0	*	(15)	1,843,155,022.34	377,453,747	1,742,174,529	83,381,013	4.52	20.9
312.30	BOILER PLANT EQUIPMENT - SCR CATALYST										
	GIBSON UNIT 1	05-2038	15-S1		(9)	6,424,043.36	3,186,953	3,815,254	533,964	8.31	7.1
	GIBSON UNIT 2	05-2038	15-S1		(9)	6,189,864.16	4,610,267	2,136,685	490,835	7.93	4.4
	GIBSON UNIT 3	05-2034	15-S1		(9)	5,652,917.01	4,463,908	1,697,772	443,283	7.84	3.8
	GIBSON UNIT 4	05-2026	15-S1		(9)	3,476,457.22	1,934,999	1,854,339	337,490	9.71	5.5
	GIBSON UNIT 5	05-2034	15-S1		(9)	1,926,610.52	1,354,237	745,768	149,622	7.77	5.0
	TOTAL BOILER PLANT EQUIPMENT - SCR CATALYST					23,669,892.27	15,550,364	10,249,818	1,955,194	8.26	5.2
314.00	TURBOGENERATOR UNITS										
	NOBLESVILLE	12-2018	60-S0.5	*	(5)	24,727.48	25,964	0	0	-	-
	GALLAGHER UNIT 2	12-2022	60-S0.5	*	(15)	11,775,378.68	9,475,161	4,066,524	1,059,211	9.00	3.8
	GALLAGHER UNIT 4	12-2022	60-S0.5	*	(15)	13,808,501.32	11,016,630	4,863,147	1,240,180	8.98	3.9
	GALLAGHER COMMON 1-2	12-2022	60-S0.5	*	(15)	1,054,634.48	838,206	374,624	95,117	9.02	3.9
	GALLAGHER COMMON 3-4	12-2022	60-S0.5	*	(15)	856,083.42	686,400	298,096	76,800	8.97	3.9
	GALLAGHER COMMON 1-4	12-2022	60-S0.5	*	(15)	2,329,361.60	1,830,909	847,857	221,127	9.49	3.8
	CAYUGA UNIT 1	05-2028	60-S0.5	*	(7)	43,472,925.57	22,314,867	24,201,163	2,688,456	6.18	9.0
	CAYUGA UNIT 2	05-2028	60-S0.5	*	(7)	38,020,087.43	20,868,720	19,812,774	2,207,685	5.81	9.0
	CAYUGA COMMON 1-2	05-2028	60-S0.5	*	(7)	18,125,644.33	10,422,705	8,971,734	1,004,249	5.54	8.9
	GIBSON UNIT 1	05-2038	60-S0.5	*	(9)	55,257,696.56	19,338,392	40,892,497	2,334,788	4.23	17.5
	GIBSON UNIT 2	05-2038	60-S0.5	*	(9)	56,206,502.10	20,502,646	40,762,441	2,337,240	4.16	17.4
	GIBSON UNIT 3	05-2034	60-S0.5	*	(9)	58,813,792.83	24,551,157	39,555,877	2,780,566	4.73	14.2
	GIBSON UNIT 4	05-2026	60-S0.5	*	(9)	60,379,425.10	32,121,099	33,692,474	4,652,314	7.71	7.2
	GIBSON UNIT 5	05-2034	60-S0.5	*	(9)	36,851,091.75	16,096,832	24,070,858	1,699,774	4.61	14.2
	GIBSON COMMON 1-2	05-2038	60-S0.5	*	(9)	2,696,136.89	1,535,537	1,403,252	86,193	3.20	16.3
	GIBSON COMMON 1-5	05-2038	60-S0.5	*	(9)	2,644,278.85	1,367,811	1,514,453	91,386	3.46	16.6
	GIBSON COMMON 3-4	05-2034	60-S0.5	*	(9)	217,229.84	144,442	92,339	7,088	3.26	13.0
	GIBSON COMMON 3-5	05-2034	60-S0.5	*	(9)	2,322,901.98	1,369,894	1,162,069	85,363	3.67	13.6
	TOTAL TURBOGENERATOR UNITS					404,856,400.21	194,507,372	246,582,179	22,667,537	5.60	10.9
314.20	TURBOGENERATOR UNITS - EDWARDSPORT IGCC										
	EDWARDSPORT IGCC	05-2045	60-S0.5	*	(15)	644,993,821.94	108,568,432	633,174,463	27,318,898	4.24	23.2
315.00	ACCESSORY ELECTRIC EQUIPMENT										
	GALLAGHER STATION	12-2022	70-R1.5	*	(15)	39,546.55	19,800	25,679	6,485	16.40	4.0
	GALLAGHER UNIT 2	12-2022	70-R1.5	*	(15)	1,810,974.04	1,283,707	798,913	202,689	11.19	3.9
	GALLAGHER UNIT 4	12-2022	70-R1.5	*	(15)	1,439,955.33	1,358,768	297,181	75,922	5.27	3.9
	GALLAGHER COMMON 1-2	12-2022	70-R1.5	*	(15)	761,143.71	693,731	181,584	45,807	6.02	4.0
	GALLAGHER COMMON 3-4	12-2022	70-R1.5	*	(15)	571,545.51	531,186	126,091	31,949	5.59	3.9
	GALLAGHER COMMON 1-4	12-2022	70-R1.5	*	(15)	2,454,874.76	2,319,822	503,284	127,444	5.19	3.9
	CAYUGA UNIT 1	05-2028	70-R1.5	*	(7)	8,672,875.27	5,008,515	4,271,462	471,053	5.43	9.1
	CAYUGA UNIT 2	05-2028	70-R1.5	*	(7)	7,261,991.67	3,472,366	4,297,965	473,547	6.52	9.1
	CAYUGA COMMON 1-2	05-2028	70-R1.5	*	(7)	1,813,005.72	1,203,000	736,916	81,301	4.48	9.1
	CAYUGA INLAND CONTAINER	05-2028	70-R1.5	*	(7)	232,950.36	190,623	58,634	6,603	2.83	8.9
	GIBSON UNIT 1	05-2038	70-R1.5	*	(9)	21,588,553.27	5,675,832	17,855,691	1,034,059	4.79	17.3
	GIBSON UNIT 2	05-2038	70-R1.5	*	(9)	18,128,552.07	8,736,649	11,023,473	623,384	3.44	17.7
	GIBSON UNIT 3	05-2034	70-R1.5	*	(9)	15,418,198.79	9,957,777	6,848,060	480,905	3.12	14.2
	GIBSON UNIT 4	05-2026	70-R1.5	*	(9)	12,030,437.29	8,022,972	5,090,205	703,552	5.85	7.2
	GIBSON UNIT 5	05-2034	70-R1.5	*	(9)	15,655,429.14	8,789,832	8,274,586	576,103	3.68	14.4
	GIBSON 4 FLUE GAS	05-2034	70-R1.5	*	(9)	8,299,264.58	5,266,395	3,779,803	259,608	3.13	14.6
	GIBSON 5 FLUE GAS	05-2026	70-R1.5	*	(9)	2,138,719.25	1,778,847	552,357	76,938	3.60	7.2
	GIBSON COMMON 1-2	05-2038	70-R1.5	*	(9)	115,219.01	78,118	47,471	2,749	2.39	17.3
	GIBSON COMMON 1-3	05-2038	70-R1.5	*	(9)	1,159,798.29	686,883	577,297	32,900	2.84	17.5
	GIBSON COMMON 1-4	05-2038	70-R1.5	*	(9)	78,568.16	48,320	37,319	2,102	2.68	17.8
	GIBSON COMMON 1-5	05-2038	70-R1.5	*	(9)	8,526,726.17	5,087,674	4,206,458	241,769	2.84	17.4
	GIBSON COMMON 3-4	05-2034	70-R1.5	*	(9)	223,540.02	68,256	175,403	12,623	5.65	13.9
	GIBSON COMMON 4-5	05-2034	70-R1.5	*	(9)	355,440.35	242,357	145,073	10,242	2.88	14.2
	TOTAL ACCESSORY ELECTRIC EQUIPMENT					128,777,309.31	70,521,430	69,910,905	5,579,734	4.33	12.5

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	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
315.20	ACCESSORY ELECTRIC EQUIPMENT - EDWARDSPORT IGCC										
	EDWARDSPORT IGCC	05-2045	40-R1.5	*	(15)	43,265,206.31	9,477,829	40,277,158	1,984,197	4.59	20.3
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	GALLAGHER STATION	12-2022	55-R1	*	(15)	649,969.76	209,218	538,247	137,450	21.15	3.9
	GALLAGHER UNIT 2	12-2022	55-R1	*	(15)	110,861.62	79,999	47,492	12,125	10.94	3.9
	GALLAGHER UNIT 4	12-2022	55-R1	*	(15)	148,183.38	106,487	63,924	16,193	10.93	3.9
	GALLAGHER COMMON 1-2	12-2022	55-R1	*	(15)	3,491,797.37	2,471,490	1,544,077	393,414	11.27	3.9
	GALLAGHER COMMON 3-4	12-2022	55-R1	*	(15)	2,059,838.91	1,611,228	757,587	193,373	9.39	3.9
	GALLAGHER COMMON 1-4	12-2022	55-R1	*	(15)	7,917,768.38	5,737,845	3,367,589	860,508	10.87	3.9
	CAYUGA UNIT 1	05-2028	55-R1	*	(7)	8,578,317.95	4,036,520	5,142,280	592,328	6.90	8.7
	CAYUGA UNIT 2	05-2028	55-R1	*	(7)	6,678,872.61	3,960,155	3,186,239	359,656	5.38	8.9
	CAYUGA COMMON 1-2	05-2028	55-R1	*	(7)	16,023,790.84	5,948,108	11,197,348	1,269,428	7.92	8.8
	CAYUGA INLAND CONTAINER	05-2028	55-R1	*	(7)	144,121.16	89,439	64,771	7,318	5.08	8.9
	GIBSON UNIT 1	05-2038	55-R1	*	(9)	6,930,865.76	2,509,518	5,045,126	297,442	4.29	17.0
	GIBSON UNIT 2	05-2038	55-R1	*	(9)	4,804,584.36	2,085,109	3,151,888	187,265	3.90	16.8
	GIBSON UNIT 3	05-2034	55-R1	*	(9)	7,511,336.42	3,613,013	4,574,344	328,533	4.37	13.9
	GIBSON UNIT 4	05-2026	55-R1	*	(9)	7,737,148.77	4,634,898	3,798,594	533,445	6.89	7.1
	GIBSON UNIT 5	05-2034	55-R1	*	(9)	3,804,784.11	1,818,127	2,329,088	169,060	4.44	13.8
	GIBSON 4 FLUE GAS	05-2034	55-R1	*	(9)	1,156,458.91	432,600	827,940	58,854	5.09	14.1
	GIBSON 5 FLUE GAS	05-2026	55-R1	*	(9)	1,658,109.09	980,689	826,650	116,151	7.01	7.1
	GIBSON COMMON 1-2	05-2038	55-R1	*	(9)	1,631,929.10	842,138	936,665	56,072	3.44	16.7
	GIBSON COMMON 1-3	05-2038	55-R1	*	(9)	217,961.54	91,307	146,271	8,614	3.95	17.0
	GIBSON COMMON 1-4	05-2038	55-R1	*	(9)	11,062,788.88	890,033	11,168,407	698,620	6.32	16.0
	GIBSON COMMON 1-5	05-2038	55-R1	*	(9)	32,758,091.32	12,855,227	22,851,092	1,386,679	4.23	16.5
	GIBSON COMMON 3-4	05-2034	55-R1	*	(9)	114,215.64	73,849	50,646	3,874	3.39	13.1
	GIBSON COMMON 4-5	05-2034	55-R1		(9)	12,729.18	6,778	7,097	512	4.02	13.9
	TOTAL MISCELLANEOUS POWER PLANT EQUIPMENT					125,204,525.06	55,083,775	81,623,362	7,686,914	6.14	13.0
316.20	MISCELLANEOUS POWER PLANT EQUIPMENT - EDWARDSPORT IGCC										
	EDWARDSPORT IGCC	05-2045	55-R1	*	(15)	15,872,104.30	1,469,296	16,783,624	835,694	5.27	20.1
	TOTAL STEAM PRODUCTION PLANT					**7,808,333,721.16**	**2,838,469,784**	**5,822,239,601**	**408,633,191**	**5.23**	**14.2**
	HYDRAULIC PRODUCTION PLANT										
331.00	STRUCTURES AND IMPROVEMENTS										
	MARKLAND	04-2061	105-R3	*	(23)	4,092,638.33	4,272,053	761,892	18,607	0.45	40.9
332.00	RESERVOIRS, DAMS AND WATERWAYS										
	MARKLAND	04-2061	80-R3	*	(23)	16,224,619.60	15,148,967	4,807,315	121,523	0.75	39.6
333.00	WATER WHEELS, TURBINES AND GENERATORS										
	MARKLAND	04-2061	60-R2.5	*	(23)	51,457,282.22	6,425,244	56,867,213	1,666,653	3.24	34.1
334.00	ACCESSORY ELECTRIC EQUIPMENT										
	MARKLAND	04-2061	60-R3	*	(23)	3,418,831.86	(750,967)	4,956,130	161,375	4.72	30.7
335.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	MARKLAND	04-2061	40-R2	*	(23)	1,481,189.21	411,712	1,410,151	58,760	3.97	24.0
	TOTAL HYDRAULIC PRODUCTION PLANT					**76,674,561.22**	**25,507,009**	**68,802,701**	**2,026,918**	**2.64**	**33.9**

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ACCOUNT		PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
(1)		(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
OTHER PRODUCTION PLANT											
341.00	STRUCTURES AND IMPROVEMENTS										
	NOBLESVILLE	05-2034	55-R2.5	*	(11)	15,378,254.41	8,641,160	8,428,703	599,949	3.90	14.0
	NOBLESVILLE CT UNIT 3	05-2034	55-R2.5	*	(11)	3,163,542.29	1,797,636	1,713,896	117,223	3.71	14.6
	NOBLESVILLE CT UNIT 4	05-2034	55-R2.5	*	(11)	3,163,274.93	1,797,595	1,713,640	117,206	3.71	14.6
	NOBLESVILLE CT UNIT 5	05-2034	55-R2.5	*	(11)	3,182,777.19	1,807,422	1,725,461	118,007	3.71	14.6
	VERMILLION CT STATION	05-2043	55-R2.5	*	(9)	4,959,576.05	2,433,992	2,971,946	137,869	2.78	21.6
	CAYUGA CT UNIT 4	05-2028	55-R2.5	*	(5)	5,782,259.37	4,353,463	1,717,909	190,613	3.30	9.0
	CINCAP MADISON CT 1-8	05-2041	55-R2.5	*	(6)	10,100,987.03	4,981,877	5,725,169	283,948	2.81	20.2
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	55-R2.5	*	(6)	5,407,210.18	2,512,605	3,219,038	178,032	3.29	18.1
	CAYUGA DIESEL	05-2028	55-R2.5	*	(5)	5,514.86	4,907	884	109	1.98	8.1
	WHEATLAND CT UNIT 1	05-2043	55-R2.5	*	(17)	28,000.00	12,375	20,385	923	3.30	22.1
	WHEATLAND CT UNIT 2	05-2043	55-R2.5	*	(17)	28,000.00	12,375	20,385	923	3.30	22.1
	WHEATLAND CT UNIT 3	05-2043	55-R2.5	*	(17)	28,000.00	12,375	20,385	923	3.30	22.1
	WHEATLAND CT UNIT 4	05-2043	55-R2.5	*	(17)	28,000.00	12,375	20,385	923	3.30	22.1
	WHEATLAND COMMON CT 1-4	05-2043	55-R2.5	*	(17)	1,351,662.40	201,222	1,380,223	61,097	4.52	22.6
	TOTAL STRUCTURES AND IMPROVEMENTS					52,607,058.71	28,581,379	28,678,409	1,807,745	3.44	15.9
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES										
	NOBLESVILLE	05-2034	60-R2.5	*	(11)	232,157.50	56,383	201,312	13,542	5.83	14.9
	NOBLESVILLE CT UNIT 3	05-2034	60-R2.5	*	(11)	98,080.96	34,971	73,899	4,942	5.04	15.0
	NOBLESVILLE CT UNIT 4	05-2034	60-R2.5	*	(11)	155,988.07	30,521	142,626	9,700	6.22	14.7
	NOBLESVILLE CT UNIT 5	05-2034	60-R2.5	*	(11)	1,922,767.71	241,076	1,893,196	127,425	6.63	14.9
	NOBLESVILLE COMMON 3-5	05-2034	60-R2.5	*	(11)	6,686,286.62	4,490,496	2,931,282	198,060	2.96	14.8
	VERMILLION CT STATION	05-2043	60-R2.5	*	(9)	20,687,538.84	11,523,515	11,025,903	495,878	2.40	22.2
	CAYUGA CT UNIT 4	05-2028	60-R2.5	*	(5)	2,689,517.87	2,433,922	390,072	42,779	1.59	9.1
	CINCAP MADISON CT 1-8	05-2041	60-R2.5	*	(6)	9,287,951.00	5,492,186	4,353,042	211,671	2.28	20.6
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	60-R2.5	*	(6)	808,840.83	354,391	502,980	27,567	3.41	18.2
	CAYUGA DIESEL	05-2028	60-R2.5	*	(5)	25,530.44	26,807	0	0	0.00	0.0
	WHEATLAND CT UNIT 1	05-2043	60-R2.5	*	(17)	110,000.00	57,137	71,563	3,185	2.90	22.5
	WHEATLAND CT UNIT 2	05-2043	60-R2.5	*	(17)	145,403.68	36,518	133,604	5,840	4.02	22.9
	WHEATLAND CT UNIT 3	05-2043	60-R2.5	*	(17)	110,000.00	57,137	71,563	3,185	2.90	22.5
	WHEATLAND CT UNIT 4	05-2043	60-R2.5	*	(17)	110,000.00	57,137	71,563	3,185	2.90	22.5
	WHEATLAND COMMON CT 1-4	05-2043	60-R2.5	*	(17)	762,137.09	395,876	495,824	22,066	2.90	22.5
	TOTAL FUEL HOLDERS, PRODUCERS AND ACCESSORIES					43,832,200.61	25,288,073	22,358,429	1,169,025	2.67	19.1
343.00	PRIME MOVERS										
	NOBLESVILLE	05-2034	40-R1.5	*	(11)	37,149,288.55	16,645,223	24,590,487	1,827,119	4.92	13.5
	NOBLESVILLE CT UNIT 3	05-2034	40-R1.5	*	(11)	43,431,309.27	21,586,244	26,622,509	1,982,227	4.56	13.4
	NOBLESVILLE CT UNIT 4	05-2034	40-R1.5	*	(11)	48,555,363.87	21,773,244	32,123,210	2,397,111	4.94	13.4
	NOBLESVILLE CT UNIT 5	05-2034	40-R1.5	*	(11)	42,395,917.27	20,082,339	26,977,129	1,998,360	4.71	13.5
	VERMILLION CT STATION	05-2043	40-R1.5	*	(9)	12,083,164.88	4,349,829	8,820,821	499,996	4.14	17.6
	CAYUGA CT UNIT 4	05-2028	40-R1.5	*	(5)	28,357,632.22	19,864,847	9,910,667	1,167,910	4.12	8.5
	CINCAP MADISON CT UNIT 5	05-2041	40-R1.5	*	(6)	49,513.97	1,450	51,035	3,156	6.37	16.2
	CINCAP MADISON CT UNIT 6	05-2041	40-R1.5	*	(6)	4,916,528.11	593,289	4,618,231	277,184	5.64	16.7
	CINCAP MADISON CT UNIT 7	05-2041	40-R1.5	*	(6)	1,593,245.69	494,104	1,194,736	65,501	4.11	18.2
	CINCAP MADISON CT UNIT 8	05-2041	40-R1.5	*	(6)	3,185,257.49	502,459	2,873,914	158,342	4.97	18.2
	CINCAP MADISON CT 1-8	05-2041	40-R1.5	*	(6)	217,271,421.57	96,724,210	133,583,497	7,757,640	3.57	17.2
	HENRY COUNTY CT UNIT 3 (CADIZ CINCAP)	05-2038	40-R1.5	*	(6)	339,716.58	112,944	247,156	15,034	4.43	16.4
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	40-R1.5	*	(6)	47,360,621.19	17,477,008	32,725,250	2,062,356	4.35	15.9
	WHEATLAND CT UNIT 1	05-2043	40-R1.5	*	(17)	24,295,500.98	6,628,499	21,797,237	1,139,865	4.69	19.1
	WHEATLAND CT UNIT 2	05-2043	40-R1.5	*	(17)	18,042,161.99	7,280,721	13,828,609	733,617	4.07	18.8
	WHEATLAND CT UNIT 3	05-2043	40-R1.5	*	(17)	18,164,568.67	7,110,718	14,141,827	749,043	4.12	18.9
	WHEATLAND CT UNIT 4	05-2043	40-R1.5	*	(17)	17,407,177.30	7,284,856	13,081,541	693,018	3.98	18.9
	WHEATLAND COMMON CT 1-4	05-2043	40-R1.5	*	(17)	1,361,367.75	298,805	1,293,995	68,471	5.03	18.9
	TOTAL PRIME MOVERS					565,959,757.35	248,810,789	368,481,851	23,595,950	4.17	15.6

DUKE ENERGY INDIANA
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE		NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
344.00	GENERATORS										
	NOBLESVILLE	05-2034	45-S1.5	*	(11)	31,366,266.41	22,544,593	12,271,963	859,159	2.74	14.3
	NOBLESVILLE CT UNIT 3	05-2034	45-S1.5	*	(11)	2,570,465.76	1,851,312	1,001,905	71,927	2.80	13.9
	NOBLESVILLE CT UNIT 4	05-2034	45-S1.5	*	(11)	2,532,001.21	1,803,253	1,007,268	72,128	2.85	14.0
	NOBLESVILLE CT UNIT 5	05-2034	45-S1.5	*	(11)	2,529,647.32	1,807,522	1,000,387	71,685	2.83	14.0
	VERMILLION CT STATION	05-2043	45-S1.5	*	(9)	114,748,831.30	78,751,828	46,324,398	2,494,521	2.17	18.6
	CAYUGA CT UNIT 4	05-2028	45-S1.5	*	(5)	9,930,571.23	8,763,943	1,663,157	183,414	1.85	9.1
	CINCAP MADISON CT 1-8	05-2041	45-S1.5	*	(6)	70,466,112.28	47,603,967	27,090,112	1,527,300	2.17	17.7
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	45-S1.5	*	(6)	25,371,949.11	17,355,203	9,539,063	582,751	2.30	16.4
	CAYUGA DIESEL	05-2028	45-S1.5	*	(5)	1,950,116.19	1,532,677	514,945	55,565	2.85	9.3
	WHEATLAND CT UNIT 1	05-2043	45-S1.5	*	(17)	4,059,676.06	2,423,912	2,325,909	116,587	2.87	19.9
	WHEATLAND CT UNIT 2	05-2043	45-S1.5	*	(17)	4,059,676.06	2,423,913	2,325,908	116,587	2.87	19.9
	WHEATLAND CT UNIT 3	05-2043	45-S1.5	*	(17)	4,059,676.06	2,423,912	2,325,909	116,587	2.87	19.9
	WHEATLAND CT UNIT 4	05-2043	45-S1.5	*	(17)	4,059,676.06	2,423,913	2,325,908	116,587	2.87	19.9
	WHEATLAND COMMON CT 1-4	05-2043	45-S1.5	*	(17)	99,306.82	20,644	95,545	4,269	4.30	22.4
	TOTAL GENERATORS					277,803,971.87	191,730,592	109,812,377	6,389,067	2.30	17.2
344.20	GENERATORS - SOLAR										
	CRANE SOLAR	05-2047	40-S2	*	(12)	36,800,103.86	2,314,063	38,902,053	1,493,361	4.06	26.0
345.00	ACCESSORY ELECTRIC EQUIPMENT										
	NOBLESVILLE	05-2034	35-S0.5	*	(11)	4,353,571.54	2,057,948	2,774,516	397,542	9.13	7.0
	NOBLESVILLE CT UNIT 3	05-2034	35-S0.5	*	(11)	794,893.28	411,311	471,021	38,608	4.86	12.2
	NOBLESVILLE CT UNIT 4	05-2034	35-S0.5	*	(11)	840,650.94	367,683	565,440	44,837	5.33	12.6
	NOBLESVILLE CT UNIT 5	05-2034	35-S0.5	*	(11)	820,065.17	407,828	502,444	40,793	4.97	12.3
	VERMILLION CT STATION	05-2043	35-S0.5	*	(9)	919,272.13	177,847	824,160	45,618	4.96	18.1
	CAYUGA CT UNIT 4	05-2028	35-S0.5	*	(5)	4,735,743.75	3,152,319	1,820,212	231,899	4.90	7.8
	CINCAP MADISON CT UNIT 1	05-2041	35-S0.5	*	(6)	51,122.51	10,974	43,216	2,524	4.94	17.1
	CINCAP MADISON CT UNIT 2	05-2041	35-S0.5	*	(6)	50,087.23	10,752	42,340	2,473	4.94	17.1
	CINCAP MADISON CT UNIT 6	05-2041	35-S0.5	*	(6)	46,568.87	9,996	39,367	2,299	4.94	17.1
	CINCAP MADISON CT UNIT 7	05-2041	35-S0.5	*	(6)	48,262.40	10,360	40,798	2,383	4.94	17.1
	CINCAP MADISON CT UNIT 8	05-2041	35-S0.5	*	(6)	48,377.98	10,385	40,896	2,389	4.94	17.1
	CINCAP MADISON CT 1-8	05-2041	35-S0.5	*	(6)	13,237,249.64	5,543,207	8,488,278	551,580	4.17	15.4
	HENRY COUNTY CT UNIT 1 (CADIZ CINCAP)	05-2038	35-S0.5	*	(6)	142,051.85	18,094	132,481	8,248	5.81	16.1
	HENRY COUNTY CT UNIT 2 (CADIZ CINCAP)	05-2038	35-S0.5	*	(6)	10,908.13	2,501	9,062	578	5.30	15.7
	HENRY COUNTY CT UNIT 3 (CADIZ CINCAP)	05-2038	35-S0.5	*	(6)	10,758.58	2,467	8,937	570	5.30	15.7
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	35-S0.5	*	(6)	7,256,791.30	1,897,754	5,794,445	376,470	5.19	15.4
	CAYUGA DIESEL	05-2028	35-S0.5	*	(5)	872,195.33	237,790	678,015	78,527	9.00	8.6
	WHEATLAND CT UNIT 1	05-2043	35-S0.5	*	(17)	519,360.92	218,321	389,331	23,755	4.57	16.4
	WHEATLAND CT UNIT 2	05-2043	35-S0.5	*	(17)	579,009.94	229,389	448,053	26,983	4.66	16.6
	WHEATLAND CT UNIT 3	05-2043	35-S0.5	*	(17)	500,272.93	211,384	373,935	22,848	4.57	16.4
	WHEATLAND CT UNIT 4	05-2043	35-S0.5	*	(17)	216,248.02	84,632	168,378	10,112	4.68	16.7
	WHEATLAND COMMON CT 1-4	05-2043	35-S0.5	*	(17)	1,665,425.59	338,633	1,609,915	88,967	5.34	18.1
	TOTAL ACCESSORY ELECTRIC EQUIPMENT					37,718,888.03	15,411,575	25,265,240	2,000,003	5.30	12.6
345.20	ACCESSORY ELECTRIC EQUIPMENT - SOLAR										
	CRANE SOLAR	05-2047	25-S2.5	*	(12)	1,504,180.99	95,194	1,589,489	76,898	5.11	20.7
346.00	MISCELLANEOUS POWER PLANT EQUIPMENT										
	NOBLESVILLE	05-2034	50-R1.5	*	(11)	6,630,887.76	1,669,017	5,691,269	410,173	6.19	13.9
	NOBLESVILLE CT UNIT 3	05-2034	50-R1.5	*	(11)	1,975,255.02	620,744	1,571,789	111,466	5.64	14.1
	NOBLESVILLE CT UNIT 4	05-2034	50-R1.5	*	(11)	1,895,372.08	612,794	1,491,069	105,810	5.58	14.1
	NOBLESVILLE CT UNIT 5	05-2034	50-R1.5	*	(11)	1,913,578.36	609,918	1,514,154	107,469	5.62	14.1
	VERMILLION CT STATION	05-2043	50-R1.5	*	(9)	1,347,503.75	127,286	1,341,493	66,212	4.91	20.3
	CAYUGA CT UNIT 4	05-2028	50-R1.5	*	(5)	1,228,893.39	454,303	836,035	93,880	7.64	8.9
	CINCAP MADISON CT 1-8	05-2041	50-R1.5	*	(6)	1,862,193.74	153,457	1,820,468	96,276	5.17	18.9
	HENRY COUNTY COMMON CT 1-3 (CADIZ CINCAP)	05-2038	50-R1.5	*	(6)	864,793.37	86,864	829,817	48,842	5.65	17.0
	CAYUGA DIESEL	05-2028	50-R1.5	*	(5)	311.15	156	171	22	7.07	7.8
	WHEATLAND CT UNIT 1	05-2043	50-R1.5	*	(17)	629,836.13	137,279	599,629	29,313	4.65	20.5
	WHEATLAND CT UNIT 2	05-2043	50-R1.5	*	(17)	573,662.51	130,566	540,619	26,444	4.61	20.4
	WHEATLAND CT UNIT 3	05-2043	50-R1.5	*	(17)	615,252.36	141,068	578,777	28,305	4.60	20.4
	WHEATLAND CT UNIT 4	05-2043	50-R1.5	*	(17)	575,640.35	130,344	543,155	26,570	4.62	20.4
	WHEATLAND COMMON CT 1-4	05-2043	50-R1.5	*	(17)	3,502,524.33	650,364	3,447,589	169,123	4.83	20.4
	TOTAL MISCELLANEOUS PLANT EQUIPMENT					23,615,704.30	5,524,160	20,806,034	1,319,905	5.59	15.8
	TOTAL OTHER PRODUCTION PLANT					**1,039,841,865.72**	**517,755,824**	**615,893,882**	**37,851,954**	**3.64**	**16.3**
	TOTAL PRODUCTION					**8,924,850,148.10**	**3,381,732,617**	**6,506,936,184**	**448,512,063**	**5.03**	**14.5**

DUKE ENERGY INDIANA
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	TRANSMISSION PLANT									
350.10	RIGHTS OF WAY		80-R4	0	38,621,842.27	19,954,329	18,667,513	412,888	1.07	45.2
352.00	STRUCTURES AND IMPROVEMENTS		70-R2.5	(5)	52,451,026.26	9,180,990	45,892,588	969,044	1.85	47.4
353.00	STATION EQUIPMENT		53-R1.5	(10)	699,465,966.97	204,491,225	564,921,339	18,878,085	2.70	29.9
353.50	STATION EQUIPMENT ELECTRONICS		20-S2.5	0	288,534.57	207,355	81,180	4,884	1.69	16.6
354.00	TOWERS AND FIXTURES		75-R3	(30)	89,056,102.10	56,002,880	59,770,053	1,527,063	1.71	39.1
355.00	POLES AND FIXTURES		55-R1	(50)	458,743,154.34	112,796,625	575,318,107	18,717,873	4.08	30.7
356.00	OVERHEAD CONDUCTORS AND DEVICES		65-R2.5	(60)	375,266,043.88	131,956,482	468,469,188	11,623,874	3.10	40.3
357.00	UNDERGROUND CONDUIT		65-R3	0	208,382.62	105,497	102,886	1,948	0.93	52.8
358.00	UNDERGROUND CONDUCTOR AND DEVICES		40-R4	0	1,295,923.44	413,269	882,654	27,352	2.11	32.3
	TOTAL TRANSMISSION PLANT				**1,715,396,976.45**	**535,108,651**	**1,734,105,508**	**52,163,011**	**3.04**	**33.2**
	DISTRIBUTION PLANT									
360.10	RIGHTS OF WAY		75-R4	0	2,013,063.74	1,011,544	1,001,520	19,056	0.95	52.6
361.00	STRUCTURES AND IMPROVEMENTS		65-R2	(15)	45,256,279.70	8,867,862	43,176,859	1,009,273	2.23	42.8
362.00	STATION EQUIPMENT		52-S0.5	(15)	547,556,994.01	203,673,504	426,017,039	13,639,531	2.49	31.2
364.00	POLES, TOWERS AND FIXTURES		55-R0.5	(50)	511,503,709.33	270,800,456	496,455,108	17,072,316	3.34	29.1
365.00	OVERHEAD CONDUCTORS AND DEVICES		55-R0.5	(40)	615,224,020.68	136,371,000	724,942,629	24,941,623	4.05	29.1
366.00	UNDERGROUND CONDUIT		55-R2	(25)	49,110,603.57	1,874,614	59,513,640	1,686,025	3.43	35.3
367.00	UNDERGROUND CONDUCTORS AND DEVICES		55-R2.5	(25)	525,591,706.04	184,016,156	472,973,477	13,780,134	2.62	34.3
368.00	LINE TRANSFORMERS		44-R0.5	(20)	476,169,774.70	215,516,907	355,886,823	15,475,539	3.25	23.0
369.00	SERVICES		55-R0.5	(25)	5,938.81	1,273	6,151	237	3.99	26.0
369.10	SERVICES - UNDERGROUND		55-R0.5	(25)	212,347,005.19	148,069,432	117,364,324	4,080,983	1.92	28.8
369.20	SERVICES - OVERHEAD		55-R0.5	(25)	46,713,686.56	39,352,566	19,039,542	634,797	1.36	30.0
370.00	METERS		30-S0.5	(1)	103,153,691.14	59,004,220	45,181,008	3,195,044	3.10	14.1
370.20	METERS - AMI		15-S2.5	0	93,317,259.20	7,681,941	85,635,318	6,935,173	7.43	12.3
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES		20-L0	(10)	33,180,160.54	26,407,126	10,091,050	978,459	2.95	10.3
373.00	STREET LIGHTING AND SIGNAL SYSTEMS		28-O1	(15)	39,579,025.56	28,536,681	16,979,198	1,209,630	3.06	14.0
	TOTAL DISTRIBUTION PLANT				**3,300,722,918.77**	**1,331,185,282**	**2,874,263,686**	**104,657,820**	**3.17**	**27.5**
	GENERAL PLANT									
390.00	STRUCTURES AND IMPROVEMENTS		55-S0.5	(10)	248,623,848.35	101,862,581	171,623,652	4,802,904	1.93	35.7
391.00	OFFICE FURNITURE AND EQUIPMENT		20-SQ	0	14,489,256.44	8,719,188	5,770,069	327,495	2.26	17.6
391.10	OFFICE FURNITURE AND EQUIPMENT - EDP		5-SQ	0	15,609,440.43	1,013,140	14,596,300	6,801,651	43.57	2.1
392.00	TRANSPORTATION EQUIPMENT		22-L3	5	15,753,687.17	4,552,067	10,413,936	578,888	3.67	18.0
393.00	STORES EQUIPMENT		20-SQ	0	857,280.63	257,360	599,921	36,600	4.27	16.4
393.10	FORKLIFTS		25-SQ	0	566,834.72	12,109	554,726	22,642	3.99	24.5
394.00	TOOLS,SHOPS AND GARAGE EQUIPMENT		25-SQ	0	44,579,676.70	13,083,954	31,495,723	1,732,917	3.89	18.2
395.00	LABORATORY EQUIPMENT		20-SQ	0	1,918,992.88	2,005,383	(86,390)	0	-	-
396.00	POWER OPERATED EQUIPMENT		22-R0.5	0	846,850.35	469,747	377,103	54,256	6.41	7.0
397.00	COMMUNICATION EQUIPMENT		20-SQ	0	98,561,626.13	44,676,739	53,884,887	4,289,468	4.35	12.6
398.00	MISCELLANEOUS EQUIPMENT		15-SQ	0	1,516,246.83	1,256,366	259,881	17,923	1.18	14.5
	TOTAL GENERAL PLANT				**443,323,740.63**	**177,908,634**	**289,489,808**	**18,664,744**	**4.21**	**15.5**
	TOTAL TRANSMISSION, DISTRIBUTION AND GENERAL PLANT				**5,459,443,635.85**	**2,044,202,567**	**4,897,859,002**	**175,485,575**	**3.21**	**27.9**
	TOTAL DEPRECIABLE PLANT				**14,384,293,783.95**	**5,425,935,185**	**11,404,795,186**	**623,997,638**	**4.34**	**18.3**

DUKE ENERGY INDIANA
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)
	NONDEPRECIABLE AND ACCOUNTS NOT STUDIED									
301.00	ORGANIZATION				225,629.48					
302.00	FRANCHISES AND CONSENTS				2,774,170.58	397,631				
303.00	MISCELLANEOUS INTANGIBLE PLANT				254,575,888.55	205,536,629				
310.00	LAND AND LAND RIGHTS				30,462,881.52	0				
310.10	RIGHTS OF WAY				26,439.08					
317.00	ARO				552,944,056.49	116,437,173				
340.00	LAND AND LAND RIGHTS				5,693,709.05					
340.10	RIGHTS OF WAY				28,987.75					
347.00	ARO				2,360,397.70	590,471				
350.00	LAND AND LAND RIGHTS				2,928,600.41	(96,678)				
360.00	LAND AND LAND RIGHTS				17,434,790.36	(110,409)				
389.00	LAND AND LAND RIGHTS				2,808,097.01	(25,833)				
399.00	ARO				3,599,896.88	4,339,198				
	ACCOUNTS 789 AND 790					396,514				
	SEC EQUITY AMORT					(27,102,066)				
	WABASH RIVER UNIT 1 WVPA					(23,801)				
	TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED				**875,863,544.86**	**300,338,829**				
	TOTAL ELECTRIC PLANT				**15,260,157,328.81**	**5,726,274,013**				

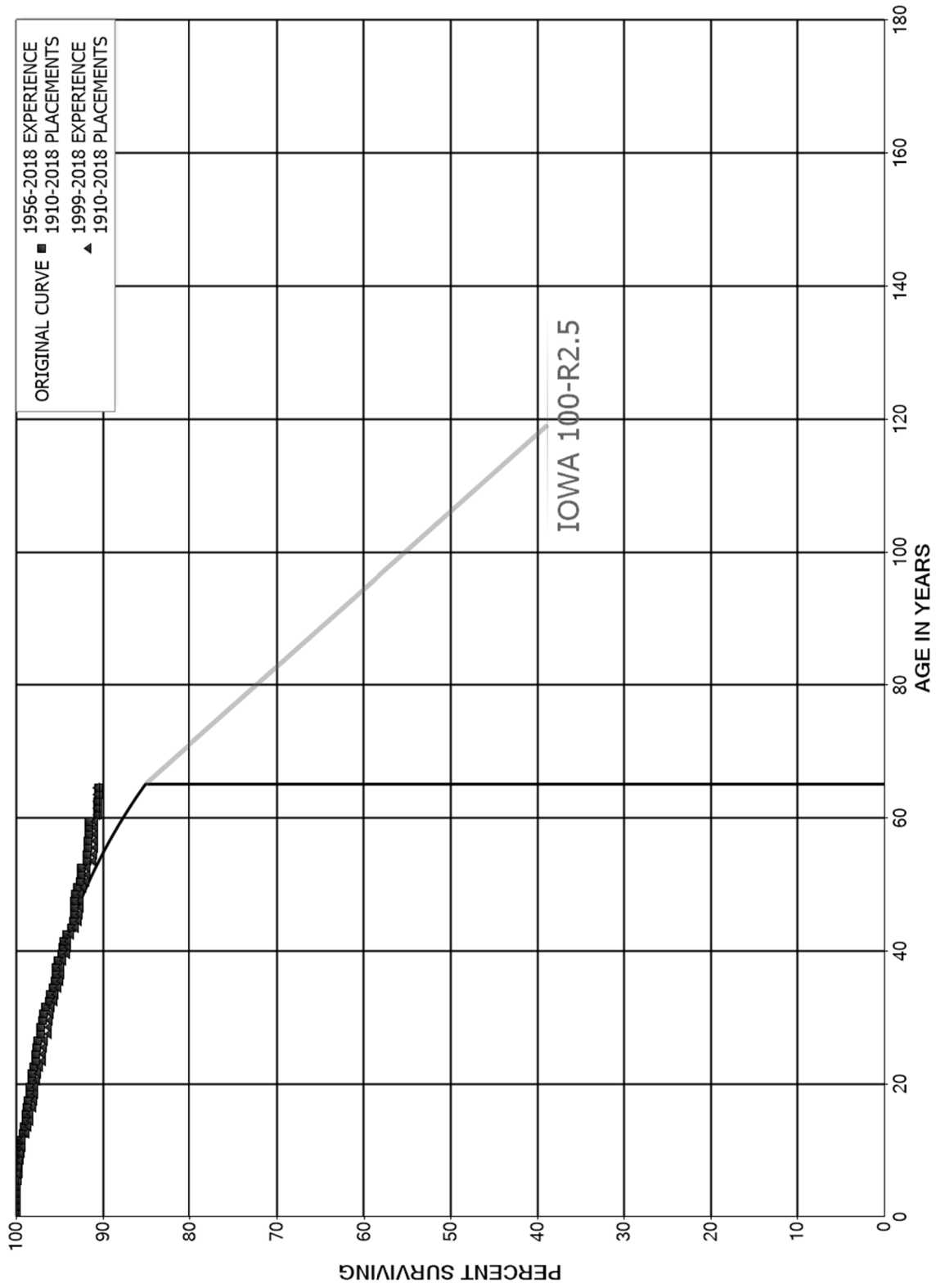
* Curve shown is interim survivor curve. Each facility in the account is assigned an individual probable retirement year.

** The depreciation rates as of December 31, 2019 for Solar Assets and Storage Battery Equipment, will be as follows:

Account	Life	Net Salvage	Depreciation Rate
341.20	40-R2.5	-5	5.05
344.20	40-S2	-10	4.68
345.20	25-S2.5	-5	5.12
363.00	15-L3	0	7.85

PART VII. SERVICE LIFE STATISTICS

DUKE ENERGY INDIANA
ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	762,906,040		0.0000	1.0000	100.00
0.5	655,948,763		0.0000	1.0000	100.00
1.5	591,048,739	43,499	0.0001	0.9999	100.00
2.5	546,249,499	77,399	0.0001	0.9999	99.99
3.5	532,496,762	28,540	0.0001	0.9999	99.98
4.5	531,981,513	594,329	0.0011	0.9989	99.97
5.5	532,891,416	668,936	0.0013	0.9987	99.86
6.5	528,952,263	324,712	0.0006	0.9994	99.74
7.5	525,276,467	343,202	0.0007	0.9993	99.67
8.5	487,060,677	495,846	0.0010	0.9990	99.61
9.5	482,829,951	533,425	0.0011	0.9989	99.51
10.5	430,065,653	213,701	0.0005	0.9995	99.40
11.5	409,298,186	710,395	0.0017	0.9983	99.35
12.5	400,170,656	536,393	0.0013	0.9987	99.18
13.5	398,657,174	754,743	0.0019	0.9981	99.04
14.5	397,308,937	199,466	0.0005	0.9995	98.86
15.5	395,448,437	466,314	0.0012	0.9988	98.81
16.5	391,416,548	478,769	0.0012	0.9988	98.69
17.5	383,063,873	470,055	0.0012	0.9988	98.57
18.5	380,629,146	218,906	0.0006	0.9994	98.45
19.5	377,680,585	689,526	0.0018	0.9982	98.39
20.5	371,848,004	167,048	0.0004	0.9996	98.21
21.5	368,020,865	798,485	0.0022	0.9978	98.17
22.5	366,116,180	852,283	0.0023	0.9977	97.95
23.5	357,970,710	94,967	0.0003	0.9997	97.73
24.5	322,645,761	293,582	0.0009	0.9991	97.70
25.5	314,814,025	269,668	0.0009	0.9991	97.61
26.5	304,082,664	1,244,050	0.0041	0.9959	97.53
27.5	301,435,044	17,899	0.0001	0.9999	97.13
28.5	296,560,476	389,025	0.0013	0.9987	97.12
29.5	292,573,145	507,119	0.0017	0.9983	97.00
30.5	289,198,429	627,495	0.0022	0.9978	96.83
31.5	286,148,294	1,244,120	0.0043	0.9957	96.62
32.5	284,585,198	454,539	0.0016	0.9984	96.20
33.5	281,581,737	1,004,784	0.0036	0.9964	96.04
34.5	279,663,777	618,280	0.0022	0.9978	95.70
35.5	277,475,595	235,608	0.0008	0.9992	95.49
36.5	223,784,209	39,097	0.0002	0.9998	95.41
37.5	222,829,727	532,699	0.0024	0.9976	95.39
38.5	220,729,241	1,091,039	0.0049	0.9951	95.16

DUKE ENERGY INDIANA

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	192,412,176	150,451	0.0008	0.9992	94.69
40.5	156,430,200	191,983	0.0012	0.9988	94.62
41.5	153,970,008	446,566	0.0029	0.9971	94.50
42.5	129,790,773	774,915	0.0060	0.9940	94.23
43.5	84,686,632	254,494	0.0030	0.9970	93.67
44.5	84,085,075	116,212	0.0014	0.9986	93.39
45.5	82,734,974	6,511	0.0001	0.9999	93.26
46.5	70,035,464	3,953	0.0001	0.9999	93.25
47.5	69,464,443	31,396	0.0005	0.9995	93.24
48.5	41,665,211	107,348	0.0026	0.9974	93.20
49.5	41,515,978	147,751	0.0036	0.9964	92.96
50.5	39,997,566	55,937	0.0014	0.9986	92.63
51.5	39,813,668	4,120	0.0001	0.9999	92.50
52.5	39,579,563	257,983	0.0065	0.9935	92.49
53.5	35,342,294	19,663	0.0006	0.9994	91.89
54.5	35,291,992	59,801	0.0017	0.9983	91.84
55.5	33,810,424		0.0000	1.0000	91.68
56.5	33,801,271	14,260	0.0004	0.9996	91.68
57.5	33,458,276	1,299	0.0000	1.0000	91.64
58.5	26,541,345	898	0.0000	1.0000	91.64
59.5	25,510,068	295,281	0.0116	0.9884	91.64
60.5	11,885,995		0.0000	1.0000	90.58
61.5	11,755,458		0.0000	1.0000	90.58
62.5	6,928,903	1,882	0.0003	0.9997	90.58
63.5	2,101,749		0.0000	1.0000	90.55
64.5	2,099,713	22,249	0.0106	0.9894	90.55
65.5	2,069,765		0.0000	1.0000	89.59
66.5	1,976,522		0.0000	1.0000	89.59
67.5	870,692	42,378	0.0487	0.9513	89.59
68.5	828,314	435	0.0005	0.9995	85.23
69.5	806,588	13	0.0000	1.0000	85.19
70.5	801,665	200	0.0002	0.9998	85.19
71.5	801,465		0.0000	1.0000	85.16
72.5	768,484	23,165	0.0301	0.9699	85.16
73.5	627,593	1,093	0.0017	0.9983	82.60
74.5	625,709		0.0000	1.0000	82.45
75.5	625,301		0.0000	1.0000	82.45
76.5	625,301	168	0.0003	0.9997	82.45
77.5	624,773	8,085	0.0129	0.9871	82.43
78.5	579,801	385	0.0007	0.9993	81.36

DUKE ENERGY INDIANA

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	528,443		0.0000	1.0000	81.31
80.5	527,890		0.0000	1.0000	81.31
81.5	527,890		0.0000	1.0000	81.31
82.5	527,681		0.0000	1.0000	81.31
83.5	527,681		0.0000	1.0000	81.31
84.5	527,681		0.0000	1.0000	81.31
85.5	262,006		0.0000	1.0000	81.31
86.5	262,006		0.0000	1.0000	81.31
87.5	262,006		0.0000	1.0000	81.31
88.5	262,006		0.0000	1.0000	81.31
89.5	262,006		0.0000	1.0000	81.31
90.5	262,006		0.0000	1.0000	81.31
91.5	262,006		0.0000	1.0000	81.31
92.5	262,006		0.0000	1.0000	81.31
93.5	1,630		0.0000	1.0000	81.31
94.5	1,630		0.0000	1.0000	81.31
95.5	1,630		0.0000	1.0000	81.31
96.5	1,630		0.0000	1.0000	81.31
97.5	1,630		0.0000	1.0000	81.31
98.5	1,630		0.0000	1.0000	81.31
99.5	1,630		0.0000	1.0000	81.31
100.5	1,630		0.0000	1.0000	81.31
101.5	1,630		0.0000	1.0000	81.31
102.5	1,630		0.0000	1.0000	81.31
103.5	1,630		0.0000	1.0000	81.31
104.5	1,630		0.0000	1.0000	81.31
105.5	1,630		0.0000	1.0000	81.31
106.5					81.31

DUKE ENERGY INDIANA

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	397,150,155		0.0000	1.0000	100.00
0.5	292,543,993		0.0000	1.0000	100.00
1.5	223,932,972		0.0000	1.0000	100.00
2.5	175,752,285	29,471	0.0002	0.9998	100.00
3.5	170,511,729	19,663	0.0001	0.9999	99.98
4.5	204,761,909	40,013	0.0002	0.9998	99.97
5.5	210,522,293	584,728	0.0028	0.9972	99.95
6.5	217,965,614	95,998	0.0004	0.9996	99.67
7.5	216,991,717	280,033	0.0013	0.9987	99.63
8.5	185,184,301	146,597	0.0008	0.9992	99.50
9.5	182,868,724	381,677	0.0021	0.9979	99.42
10.5	133,713,573	115,641	0.0009	0.9991	99.22
11.5	117,858,153	443,112	0.0038	0.9962	99.13
12.5	109,447,026	278,518	0.0025	0.9975	98.76
13.5	108,889,946	190,674	0.0018	0.9982	98.51
14.5	107,618,489	52,308	0.0005	0.9995	98.33
15.5	108,970,007	355,864	0.0033	0.9967	98.29
16.5	160,943,838	136,471	0.0008	0.9992	97.96
17.5	154,360,843	220,160	0.0014	0.9986	97.88
18.5	152,865,113	48,448	0.0003	0.9997	97.74
19.5	176,036,920	442,159	0.0025	0.9975	97.71
20.5	208,140,288	43,968	0.0002	0.9998	97.47
21.5	204,737,561	549,585	0.0027	0.9973	97.45
22.5	226,843,615	765,058	0.0034	0.9966	97.18
23.5	268,556,865	46,899	0.0002	0.9998	96.86
24.5	233,887,773	249,095	0.0011	0.9989	96.84
25.5	227,434,148	168,640	0.0007	0.9993	96.74
26.5	229,750,954	1,171,168	0.0051	0.9949	96.66
27.5	227,745,101	8,778	0.0000	1.0000	96.17
28.5	243,244,364	251,452	0.0010	0.9990	96.17
29.5	239,163,573	244,333	0.0010	0.9990	96.07
30.5	245,951,465	288,129	0.0012	0.9988	95.97
31.5	242,637,003	857,699	0.0035	0.9965	95.86
32.5	241,533,149	428,353	0.0018	0.9982	95.52
33.5	238,666,421	758,959	0.0032	0.9968	95.35
34.5	238,061,804	587,816	0.0025	0.9975	95.05
35.5	236,316,403	93,306	0.0004	0.9996	94.81
36.5	182,791,432	24,805	0.0001	0.9999	94.77
37.5	181,870,217	448,714	0.0025	0.9975	94.76
38.5	187,475,355	1,002,043	0.0053	0.9947	94.53

DUKE ENERGY INDIANA

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	160,001,216	98,499	0.0006	0.9994	94.02
40.5	134,153,779	65,868	0.0005	0.9995	93.96
41.5	132,337,104	408,458	0.0031	0.9969	93.92
42.5	110,161,852	674,164	0.0061	0.9939	93.63
43.5	65,160,779	234,919	0.0036	0.9964	93.06
44.5	68,215,228	115,183	0.0017	0.9983	92.72
45.5	71,868,400	6,226	0.0001	0.9999	92.56
46.5	59,172,546	3,953	0.0001	0.9999	92.56
47.5	60,047,130	31,396	0.0005	0.9995	92.55
48.5	36,081,285	107,348	0.0030	0.9970	92.50
49.5	37,274,286	147,751	0.0040	0.9960	92.23
50.5	35,759,376	55,937	0.0016	0.9984	91.86
51.5	35,580,178		0.0000	1.0000	91.72
52.5	35,363,770	255,205	0.0072	0.9928	91.72
53.5	31,706,666	19,663	0.0006	0.9994	91.05
54.5	32,798,419	57,775	0.0018	0.9982	91.00
55.5	32,722,841		0.0000	1.0000	90.84
56.5	32,777,357	14,260	0.0004	0.9996	90.84
57.5	32,434,959	1,299	0.0000	1.0000	90.80
58.5	25,518,041	898	0.0000	1.0000	90.79
59.5	24,487,724	39,587	0.0016	0.9984	90.79
60.5	11,236,709		0.0000	1.0000	90.64
61.5	11,106,173		0.0000	1.0000	90.64
62.5	6,279,618	1,882	0.0003	0.9997	90.64
63.5	1,452,464		0.0000	1.0000	90.62
64.5	1,450,428	22,249	0.0153	0.9847	90.62
65.5	1,420,480		0.0000	1.0000	89.23
66.5	1,327,687		0.0000	1.0000	89.23
67.5	222,410	42,378	0.1905	0.8095	89.23
68.5	180,032	236	0.0013	0.9987	72.23
69.5	159,087	13	0.0001	0.9999	72.13
70.5	154,571		0.0000	1.0000	72.13
71.5	154,571		0.0000	1.0000	72.13
72.5	387,265		0.0000	1.0000	72.13
73.5	306,593	1,093	0.0036	0.9964	72.13
74.5	363,702		0.0000	1.0000	71.87
75.5	363,295		0.0000	1.0000	71.87
76.5	363,295	168	0.0005	0.9995	71.87
77.5	362,767	8,085	0.0223	0.9777	71.83
78.5	317,795	385	0.0012	0.9988	70.23

DUKE ENERGY INDIANA

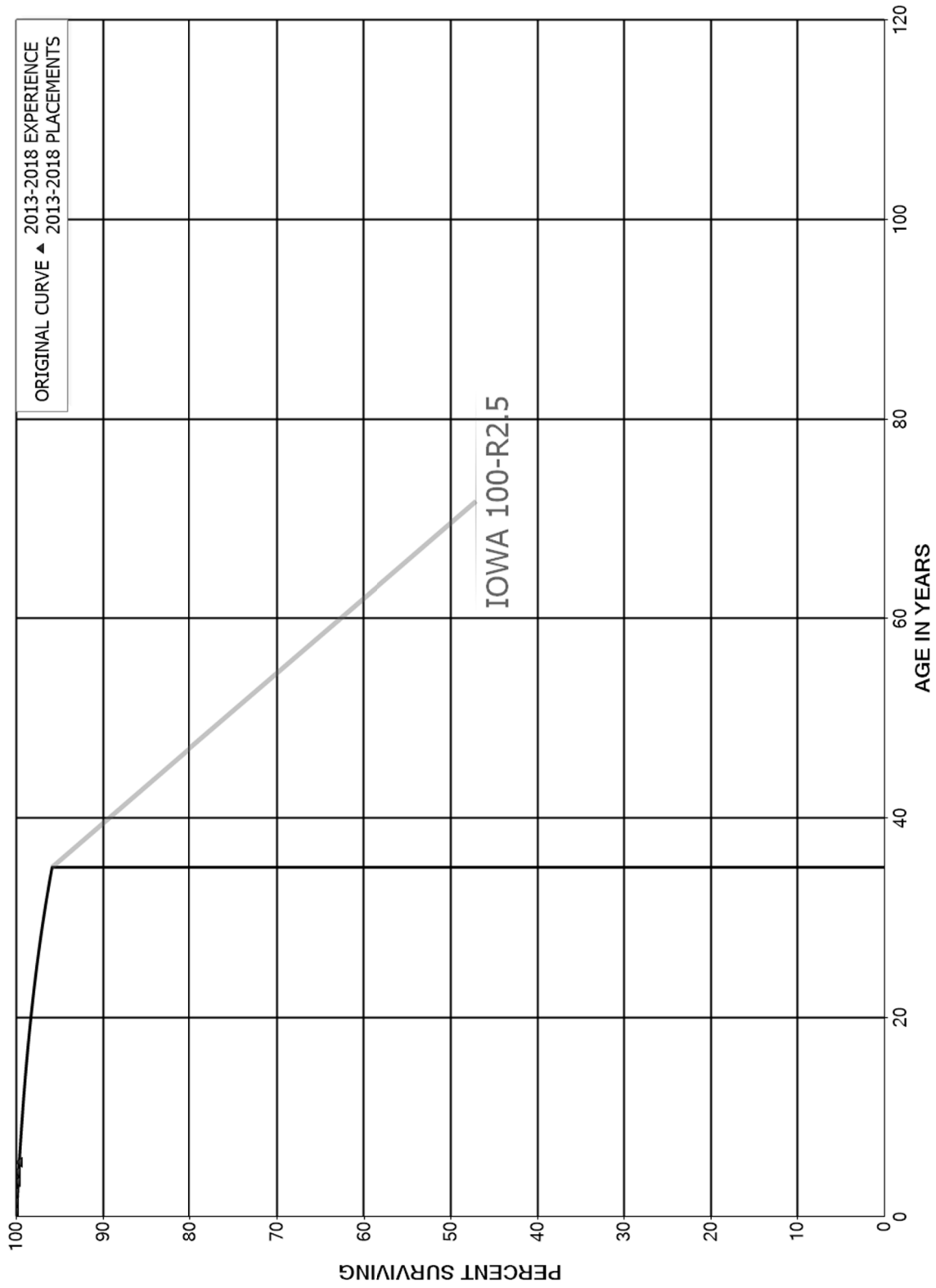
ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	266,436		0.0000	1.0000	70.15
80.5	526,259		0.0000	1.0000	70.15
81.5	526,259		0.0000	1.0000	70.15
82.5	526,051		0.0000	1.0000	70.15
83.5	526,051		0.0000	1.0000	70.15
84.5	526,051		0.0000	1.0000	70.15
85.5	260,376		0.0000	1.0000	70.15
86.5	260,376		0.0000	1.0000	70.15
87.5	260,376		0.0000	1.0000	70.15
88.5	262,006		0.0000	1.0000	70.15
89.5	262,006		0.0000	1.0000	70.15
90.5	262,006		0.0000	1.0000	70.15
91.5	262,006		0.0000	1.0000	70.15
92.5	262,006		0.0000	1.0000	70.15
93.5	1,630		0.0000	1.0000	70.15
94.5	1,630		0.0000	1.0000	70.15
95.5	1,630		0.0000	1.0000	70.15
96.5	1,630		0.0000	1.0000	70.15
97.5	1,630		0.0000	1.0000	70.15
98.5	1,630		0.0000	1.0000	70.15
99.5	1,630		0.0000	1.0000	70.15
100.5	1,630		0.0000	1.0000	70.15
101.5	1,630		0.0000	1.0000	70.15
102.5	1,630		0.0000	1.0000	70.15
103.5	1,630		0.0000	1.0000	70.15
104.5	1,630		0.0000	1.0000	70.15
105.5	1,630		0.0000	1.0000	70.15
106.5					70.15

DUKE ENERGY INDIANA
ACCOUNT 311.20 STRUCTURES AND IMPROVEMENTS - EDWARDSPORT IGCC
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

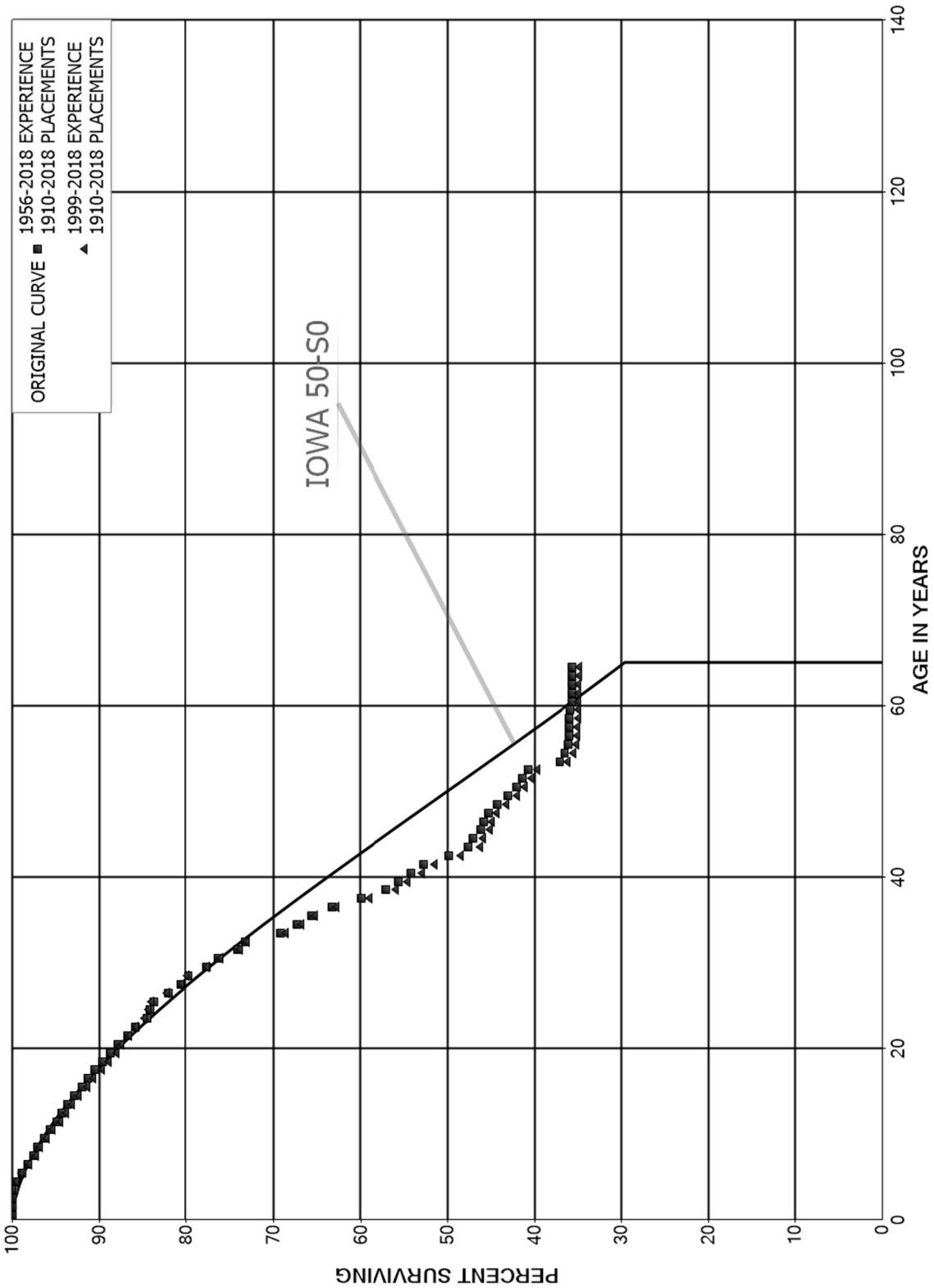
ACCOUNT 311.20 STRUCTURES AND IMPROVEMENTS - EDWARDSPORT IGCC

ORIGINAL LIFE TABLE

PLACEMENT BAND 2013-2018 EXPERIENCE BAND 2013-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	142,363,134		0.0000	1.0000	100.00
0.5	148,771,180		0.0000	1.0000	100.00
1.5	147,230,035		0.0000	1.0000	100.00
2.5	145,620,993	357,822	0.0025	0.9975	100.00
3.5	143,784,135		0.0000	1.0000	99.75
4.5	143,556,393	431,994	0.0030	0.9970	99.75
5.5					99.45

DUKE ENERGY INDIANA
ACCOUNT 312.00 BOILER PLANT EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	4,669,286,978		0.0000	1.0000	100.00
0.5	4,569,212,222	461,029	0.0001	0.9999	100.00
1.5	4,375,406,483	1,763,760	0.0004	0.9996	99.99
2.5	4,327,657,217	7,446,619	0.0017	0.9983	99.95
3.5	3,762,741,247	11,943,875	0.0032	0.9968	99.78
4.5	3,593,589,626	20,634,218	0.0057	0.9943	99.46
5.5	3,371,853,750	25,387,369	0.0075	0.9925	98.89
6.5	3,332,916,540	21,042,502	0.0063	0.9937	98.15
7.5	3,244,360,598	16,570,487	0.0051	0.9949	97.53
8.5	3,186,121,413	24,612,737	0.0077	0.9923	97.03
9.5	3,128,158,433	20,670,094	0.0066	0.9934	96.28
10.5	2,609,536,610	21,390,935	0.0082	0.9918	95.64
11.5	2,228,621,928	14,329,040	0.0064	0.9936	94.86
12.5	1,946,781,660	13,455,743	0.0069	0.9931	94.25
13.5	1,714,234,317	13,183,404	0.0077	0.9923	93.60
14.5	1,631,932,096	16,414,397	0.0101	0.9899	92.88
15.5	1,459,077,372	9,904,206	0.0068	0.9932	91.94
16.5	1,215,999,579	11,360,318	0.0093	0.9907	91.32
17.5	1,165,468,420	10,336,730	0.0089	0.9911	90.47
18.5	1,128,981,668	12,057,319	0.0107	0.9893	89.66
19.5	1,090,616,955	10,335,928	0.0095	0.9905	88.71
20.5	1,057,810,031	13,588,394	0.0128	0.9872	87.86
21.5	1,022,206,160	10,544,197	0.0103	0.9897	86.74
22.5	978,794,611	14,690,992	0.0150	0.9850	85.84
23.5	923,359,768	4,474,689	0.0048	0.9952	84.55
24.5	771,746,215	3,458,652	0.0045	0.9955	84.14
25.5	709,002,551	14,605,378	0.0206	0.9794	83.77
26.5	640,044,908	11,316,559	0.0177	0.9823	82.04
27.5	611,070,143	6,546,175	0.0107	0.9893	80.59
28.5	595,812,068	15,705,537	0.0264	0.9736	79.73
29.5	573,449,744	10,218,453	0.0178	0.9822	77.62
30.5	558,078,262	16,090,429	0.0288	0.9712	76.24
31.5	539,304,618	6,001,653	0.0111	0.9889	74.04
32.5	529,223,010	29,386,263	0.0555	0.9445	73.22
33.5	477,546,442	12,874,342	0.0270	0.9730	69.15
34.5	460,998,283	11,404,704	0.0247	0.9753	67.29
35.5	448,847,288	16,351,577	0.0364	0.9636	65.62
36.5	337,389,940	17,789,405	0.0527	0.9473	63.23
37.5	316,196,245	15,209,916	0.0481	0.9519	59.90
38.5	296,834,566	7,145,413	0.0241	0.9759	57.02

DUKE ENERGY INDIANA

ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	244,039,387	6,374,490	0.0261	0.9739	55.65
40.5	188,171,619	4,916,191	0.0261	0.9739	54.19
41.5	181,409,361	10,036,544	0.0553	0.9447	52.78
42.5	147,069,498	6,674,662	0.0454	0.9546	49.86
43.5	113,977,322	1,289,551	0.0113	0.9887	47.59
44.5	110,244,063	2,190,295	0.0199	0.9801	47.06
45.5	107,765,961	771,066	0.0072	0.9928	46.12
46.5	89,750,715	895,826	0.0100	0.9900	45.79
47.5	87,376,582	2,038,308	0.0233	0.9767	45.33
48.5	48,293,224	1,300,104	0.0269	0.9731	44.28
49.5	46,720,088	1,047,263	0.0224	0.9776	43.08
50.5	44,829,817	722,042	0.0161	0.9839	42.12
51.5	43,904,344	809,570	0.0184	0.9816	41.44
52.5	39,728,651	3,492,091	0.0879	0.9121	40.68
53.5	31,470,886	501,922	0.0159	0.9841	37.10
54.5	30,868,602	341,320	0.0111	0.9889	36.51
55.5	30,419,600	82,692	0.0027	0.9973	36.11
56.5	30,230,403	32,323	0.0011	0.9989	36.01
57.5	25,529,365	26,783	0.0010	0.9990	35.97
58.5	23,469,874	66,922	0.0029	0.9971	35.93
59.5	23,079,365	114,659	0.0050	0.9950	35.83
60.5	11,387,844	1,088	0.0001	0.9999	35.65
61.5	11,153,837		0.0000	1.0000	35.65
62.5	5,315,788	1,963	0.0004	0.9996	35.65
63.5	1,389,514	1,415	0.0010	0.9990	35.63
64.5	1,388,099	3,118	0.0022	0.9978	35.60
65.5	1,356,292	2,169	0.0016	0.9984	35.52
66.5	1,346,377		0.0000	1.0000	35.46
67.5	381,683	6,903	0.0181	0.9819	35.46
68.5	374,780	4,003	0.0107	0.9893	34.82
69.5	370,778	12,845	0.0346	0.9654	34.45
70.5	333,945		0.0000	1.0000	33.25
71.5	333,945		0.0000	1.0000	33.25
72.5	333,945		0.0000	1.0000	33.25
73.5	317,136		0.0000	1.0000	33.25
74.5	317,136		0.0000	1.0000	33.25
75.5	317,136	194,970	0.6148	0.3852	33.25
76.5	122,166		0.0000	1.0000	12.81
77.5	122,166		0.0000	1.0000	12.81
78.5	122,166		0.0000	1.0000	12.81

DUKE ENERGY INDIANA

ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	122,166		0.0000	1.0000	12.81
80.5	121,147		0.0000	1.0000	12.81
81.5	121,147		0.0000	1.0000	12.81
82.5	121,147		0.0000	1.0000	12.81
83.5	121,147		0.0000	1.0000	12.81
84.5	121,147		0.0000	1.0000	12.81
85.5	120,725		0.0000	1.0000	12.81
86.5	120,725		0.0000	1.0000	12.81
87.5	120,725		0.0000	1.0000	12.81
88.5	120,725		0.0000	1.0000	12.81
89.5	120,725		0.0000	1.0000	12.81
90.5	120,725		0.0000	1.0000	12.81
91.5	120,725		0.0000	1.0000	12.81
92.5	120,725		0.0000	1.0000	12.81
93.5	120,725		0.0000	1.0000	12.81
94.5	120,725		0.0000	1.0000	12.81
95.5	120,725		0.0000	1.0000	12.81
96.5	120,725		0.0000	1.0000	12.81
97.5	120,725		0.0000	1.0000	12.81
98.5	120,725		0.0000	1.0000	12.81
99.5	120,725		0.0000	1.0000	12.81
100.5	120,725		0.0000	1.0000	12.81
101.5	120,725		0.0000	1.0000	12.81
102.5	120,725		0.0000	1.0000	12.81
103.5	120,725		0.0000	1.0000	12.81
104.5	120,725		0.0000	1.0000	12.81
105.5	120,725		0.0000	1.0000	12.81
106.5	100,899		0.0000	1.0000	12.81
107.5	100,899		0.0000	1.0000	12.81
108.5					12.81

DUKE ENERGY INDIANA

ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,442,612,605		0.0000	1.0000	100.00
0.5	3,375,245,090	455,904	0.0001	0.9999	100.00
1.5	3,203,324,626	939,179	0.0003	0.9997	99.99
2.5	3,180,725,627	4,315,987	0.0014	0.9986	99.96
3.5	2,640,583,352	10,236,823	0.0039	0.9961	99.82
4.5	2,639,806,004	17,226,451	0.0065	0.9935	99.43
5.5	2,519,069,049	21,723,693	0.0086	0.9914	98.79
6.5	2,554,179,889	18,581,108	0.0073	0.9927	97.93
7.5	2,492,350,590	11,691,614	0.0047	0.9953	97.22
8.5	2,462,089,949	20,418,734	0.0083	0.9917	96.77
9.5	2,421,786,650	16,644,508	0.0069	0.9931	95.96
10.5	1,916,265,777	18,998,412	0.0099	0.9901	95.30
11.5	1,542,223,373	10,811,815	0.0070	0.9930	94.36
12.5	1,268,785,390	9,098,516	0.0072	0.9928	93.70
13.5	1,043,523,680	8,222,631	0.0079	0.9921	93.02
14.5	968,790,720	10,964,825	0.0113	0.9887	92.29
15.5	823,991,712	5,826,262	0.0071	0.9929	91.25
16.5	727,697,403	8,357,492	0.0115	0.9885	90.60
17.5	683,677,899	5,487,616	0.0080	0.9920	89.56
18.5	655,145,155	6,544,150	0.0100	0.9900	88.84
19.5	703,297,324	4,203,423	0.0060	0.9940	87.96
20.5	761,585,072	8,082,051	0.0106	0.9894	87.43
21.5	731,741,281	6,431,691	0.0088	0.9912	86.50
22.5	742,605,456	9,060,622	0.0122	0.9878	85.74
23.5	752,689,033	3,822,842	0.0051	0.9949	84.70
24.5	602,621,404	2,518,435	0.0042	0.9958	84.27
25.5	543,249,946	11,102,101	0.0204	0.9796	83.91
26.5	509,356,118	10,270,021	0.0202	0.9798	82.20
27.5	482,093,708	4,118,454	0.0085	0.9915	80.54
28.5	502,557,852	14,681,729	0.0292	0.9708	79.85
29.5	484,170,884	9,582,499	0.0198	0.9802	77.52
30.5	488,037,528	14,524,229	0.0298	0.9702	75.99
31.5	470,806,329	4,924,675	0.0105	0.9895	73.72
32.5	462,023,152	28,478,065	0.0616	0.9384	72.95
33.5	411,385,842	10,459,124	0.0254	0.9746	68.46
34.5	397,422,169	9,081,302	0.0229	0.9771	66.72
35.5	387,584,864	14,575,505	0.0376	0.9624	65.19
36.5	278,021,961	17,015,655	0.0612	0.9388	62.74
37.5	263,205,274	13,488,189	0.0512	0.9488	58.90
38.5	253,355,419	6,489,063	0.0256	0.9744	55.88

DUKE ENERGY INDIANA

ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	206,472,960	6,088,903	0.0295	0.9705	54.45
40.5	160,605,797	4,395,640	0.0274	0.9726	52.84
41.5	154,660,472	8,873,436	0.0574	0.9426	51.40
42.5	125,635,178	5,928,080	0.0472	0.9528	48.45
43.5	93,297,447	670,184	0.0072	0.9928	46.16
44.5	95,725,255	1,688,498	0.0176	0.9824	45.83
45.5	98,034,108	499,978	0.0051	0.9949	45.02
46.5	80,289,949	845,081	0.0105	0.9895	44.79
47.5	79,439,743	1,962,234	0.0247	0.9753	44.32
48.5	44,590,371	1,281,887	0.0287	0.9713	43.23
49.5	45,090,078	1,044,665	0.0232	0.9768	41.98
50.5	43,251,734	722,019	0.0167	0.9833	41.01
51.5	42,326,285	783,248	0.0185	0.9815	40.33
52.5	38,206,690	3,435,756	0.0899	0.9101	39.58
53.5	30,005,260	499,485	0.0166	0.9834	36.02
54.5	30,392,258	341,320	0.0112	0.9888	35.42
55.5	29,943,255	75,161	0.0025	0.9975	35.02
56.5	29,761,590	26,629	0.0009	0.9991	34.94
57.5	25,066,245	26,783	0.0011	0.9989	34.91
58.5	23,006,755	46,476	0.0020	0.9980	34.87
59.5	22,636,692	5,931	0.0003	0.9997	34.80
60.5	11,070,708	1,088	0.0001	0.9999	34.79
61.5	10,836,701		0.0000	1.0000	34.78
62.5	4,998,652	1,963	0.0004	0.9996	34.78
63.5	1,072,378	1,415	0.0013	0.9987	34.77
64.5	1,070,963	3,118	0.0029	0.9971	34.73
65.5	1,039,156	2,169	0.0021	0.9979	34.62
66.5	1,029,241		0.0000	1.0000	34.55
67.5	65,566	6,903	0.1053	0.8947	34.55
68.5	58,663	4,003	0.0682	0.9318	30.91
69.5	54,660	12,845	0.2350	0.7650	28.80
70.5	17,828		0.0000	1.0000	22.04
71.5	17,828		0.0000	1.0000	22.04
72.5	18,251		0.0000	1.0000	22.04
73.5	1,441		0.0000	1.0000	22.04
74.5	1,441		0.0000	1.0000	22.04
75.5	1,441		0.0000	1.0000	22.04
76.5	1,441		0.0000	1.0000	22.04
77.5	1,441		0.0000	1.0000	22.04
78.5	1,441		0.0000	1.0000	22.04

DUKE ENERGY INDIANA

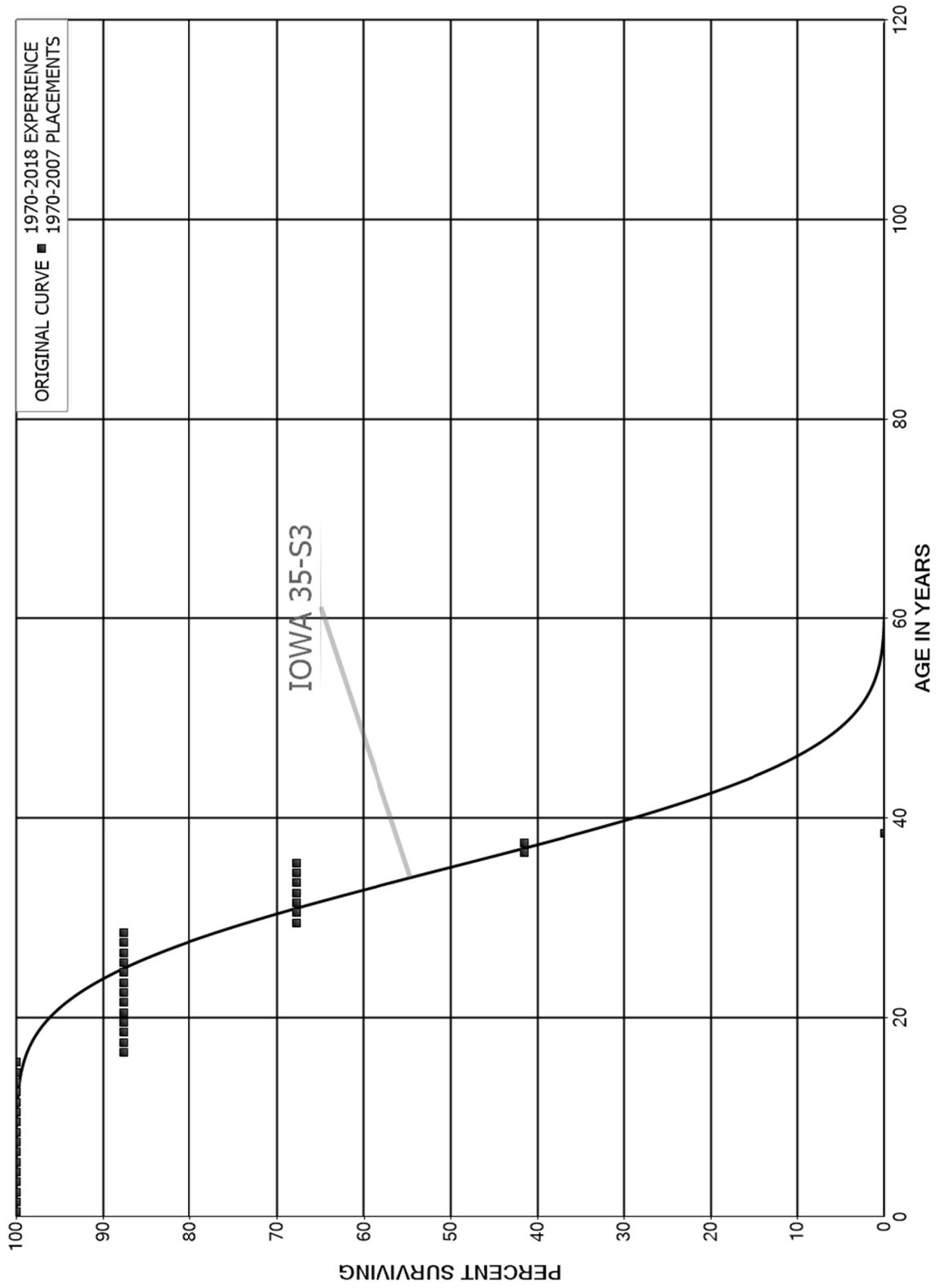
ACCOUNT 312.00 BOILER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	1,441		0.0000	1.0000	22.04
80.5	423		0.0000	1.0000	22.04
81.5	423		0.0000	1.0000	22.04
82.5	423		0.0000	1.0000	22.04
83.5	423		0.0000	1.0000	22.04
84.5	423		0.0000	1.0000	22.04
85.5					22.04
86.5					
87.5					
88.5	120,725		0.0000		
89.5	120,725		0.0000		
90.5	120,725		0.0000		
91.5	120,725		0.0000		
92.5	120,725		0.0000		
93.5	120,725		0.0000		
94.5	120,725		0.0000		
95.5	120,725		0.0000		
96.5	120,725		0.0000		
97.5	120,725		0.0000		
98.5	120,725		0.0000		
99.5	120,725		0.0000		
100.5	120,725		0.0000		
101.5	120,725		0.0000		
102.5	120,725		0.0000		
103.5	120,725		0.0000		
104.5	120,725		0.0000		
105.5	120,725		0.0000		
106.5	100,899		0.0000		
107.5	100,899		0.0000		
108.5					

DUKE ENERGY INDIANA
ACCOUNT 312.10 BOILER PLANT EQUIPMENT - COAL CARS
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

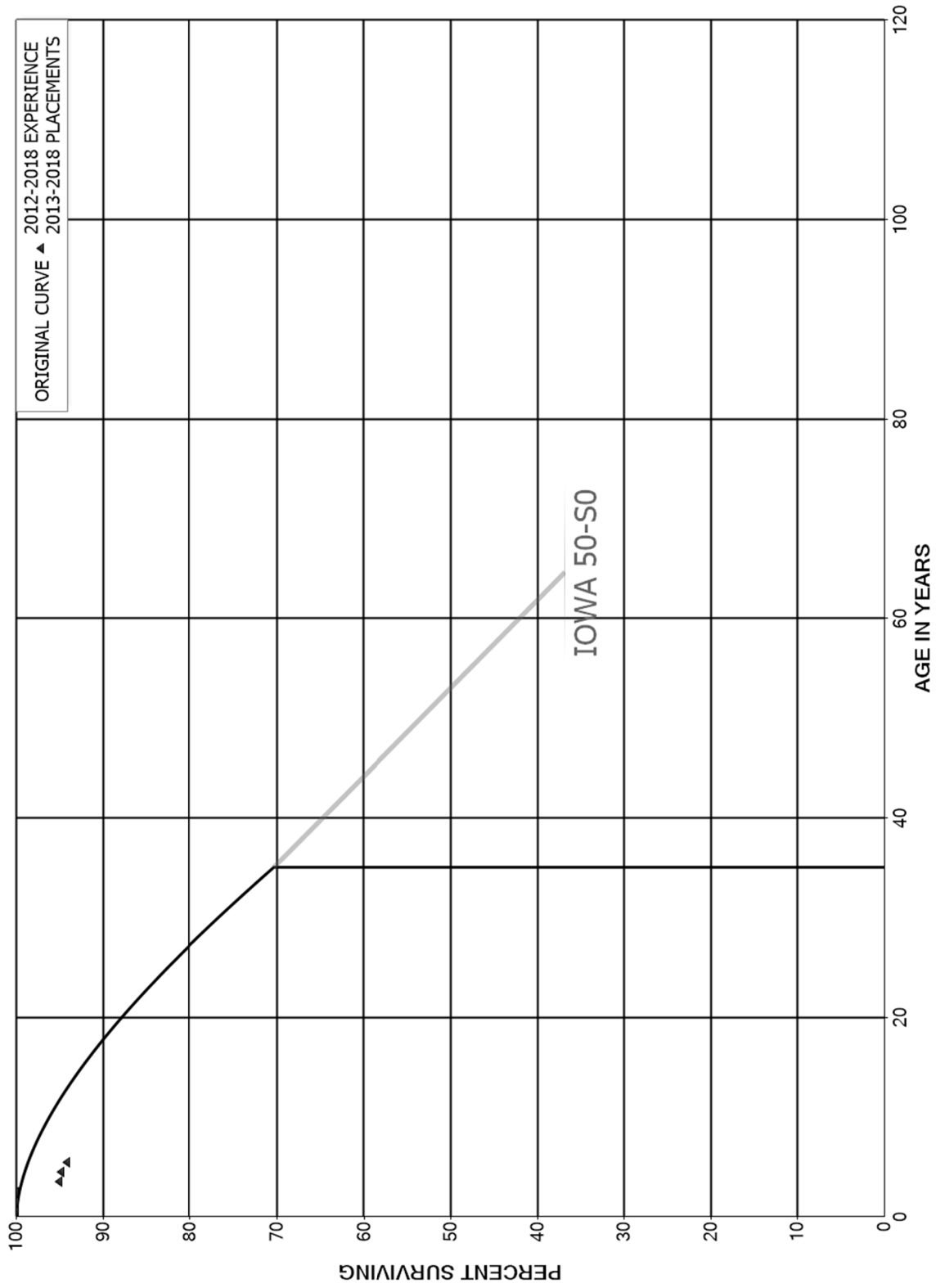
ACCOUNT 312.10 BOILER PLANT EQUIPMENT - COAL CARS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1970-2007 EXPERIENCE BAND 1970-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,140,466		0.0000	1.0000	100.00
0.5	3,140,466		0.0000	1.0000	100.00
1.5	9,295,282		0.0000	1.0000	100.00
2.5	9,295,282		0.0000	1.0000	100.00
3.5	10,875,498		0.0000	1.0000	100.00
4.5	10,875,498		0.0000	1.0000	100.00
5.5	10,875,498		0.0000	1.0000	100.00
6.5	10,875,498		0.0000	1.0000	100.00
7.5	10,875,498		0.0000	1.0000	100.00
8.5	10,875,498		0.0000	1.0000	100.00
9.5	9,378,451		0.0000	1.0000	100.00
10.5	9,378,451		0.0000	1.0000	100.00
11.5	9,295,282		0.0000	1.0000	100.00
12.5	9,295,282		0.0000	1.0000	100.00
13.5	9,295,282		0.0000	1.0000	100.00
14.5	9,295,282		0.0000	1.0000	100.00
15.5	9,295,282	1,146,785	0.1234	0.8766	100.00
16.5	8,148,497		0.0000	1.0000	87.66
17.5	4,824,896		0.0000	1.0000	87.66
18.5	4,824,896		0.0000	1.0000	87.66
19.5	1,993,681		0.0000	1.0000	87.66
20.5	1,993,681		0.0000	1.0000	87.66
21.5	1,993,681		0.0000	1.0000	87.66
22.5	1,993,681		0.0000	1.0000	87.66
23.5	1,993,681		0.0000	1.0000	87.66
24.5	1,993,681		0.0000	1.0000	87.66
25.5	1,993,681		0.0000	1.0000	87.66
26.5	1,993,681		0.0000	1.0000	87.66
27.5	1,993,681		0.0000	1.0000	87.66
28.5	1,993,681	453,314	0.2274	0.7726	87.66
29.5	1,540,367		0.0000	1.0000	67.73
30.5	1,540,367		0.0000	1.0000	67.73
31.5	1,540,367		0.0000	1.0000	67.73
32.5	1,540,367		0.0000	1.0000	67.73
33.5	1,540,367		0.0000	1.0000	67.73
34.5	1,540,367		0.0000	1.0000	67.73
35.5	1,540,367	596,646	0.3873	0.6127	67.73
36.5	943,721		0.0000	1.0000	41.50
37.5	943,721	943,721	1.0000		41.50
38.5					

DUKE ENERGY INDIANA
ACCOUNT 312.20 BOILER PLANT EQUIPMENT - EDWARDSPORT IGCC
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

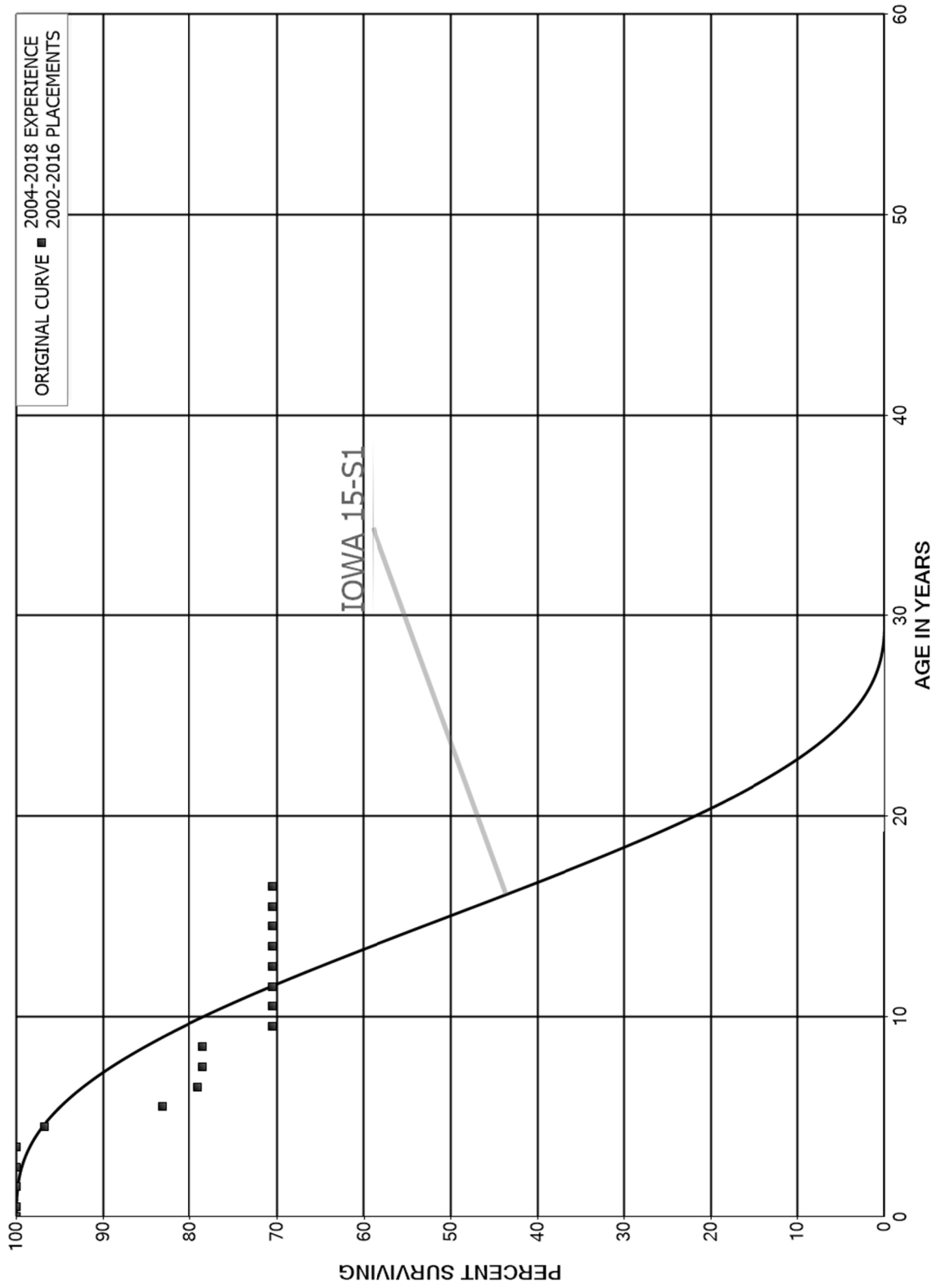
ACCOUNT 312.20 BOILER PLANT EQUIPMENT - EDWARDSPORT IGCC

ORIGINAL LIFE TABLE

PLACEMENT BAND 2013-2018 EXPERIENCE BAND 2012-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,934,864,962		0.0000	1.0000	100.00
0.5	1,910,105,354	159,415	0.0001	0.9999	100.00
1.5	1,900,908,380	290,414	0.0002	0.9998	99.99
2.5	1,798,331,365	89,723,984	0.0499	0.9501	99.98
3.5	1,691,178,393	5,446,322	0.0032	0.9968	94.99
4.5	1,684,083,703	10,052,594	0.0060	0.9940	94.68
5.5					94.12

DUKE ENERGY INDIANA
ACCOUNT 312.30 BOILER PLANT EQUIPMENT - SCR CATALYST
ORIGINAL AND SMOOTH SURVIVOR CURVES



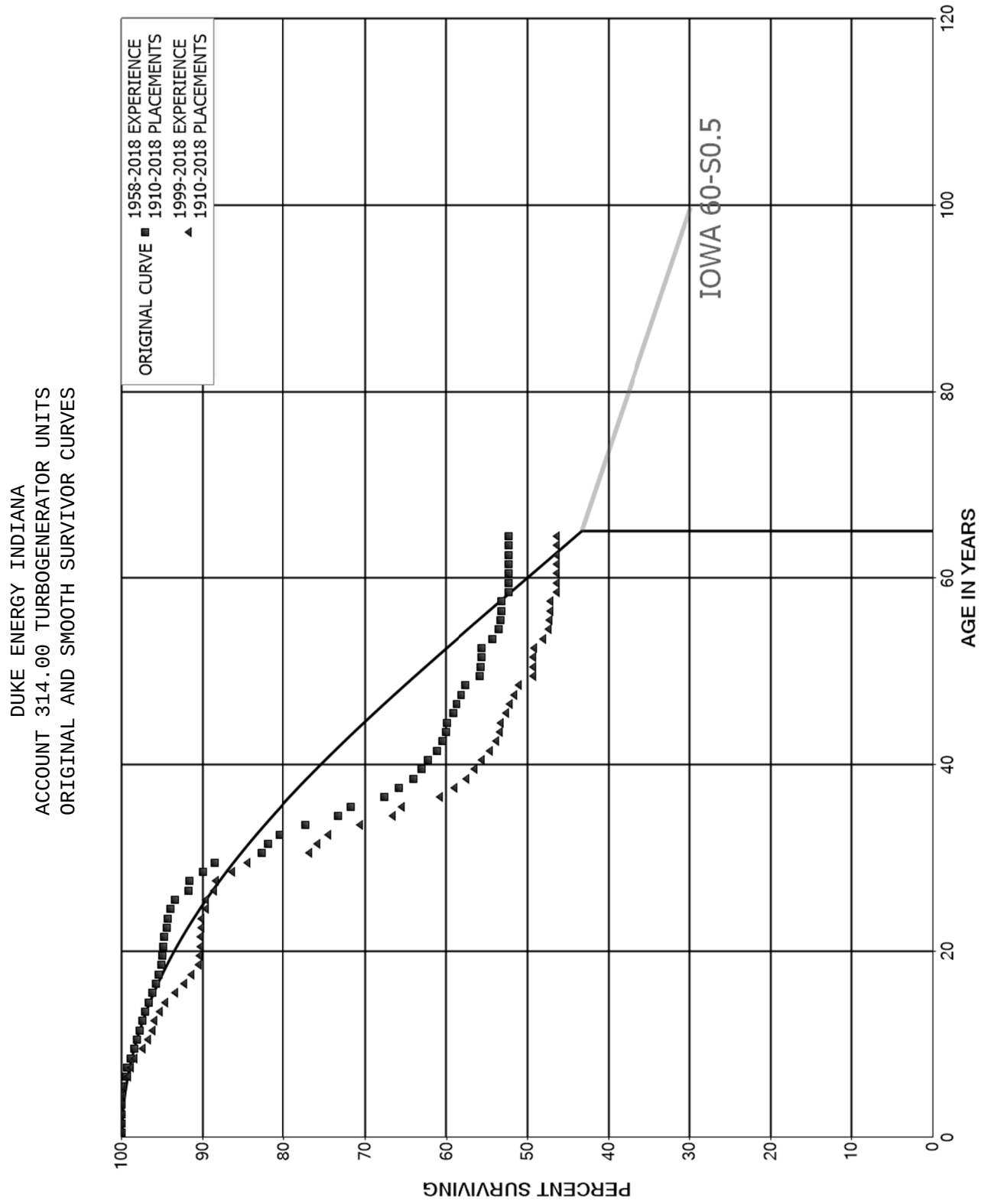
DUKE ENERGY INDIANA

ACCOUNT 312.30 BOILER PLANT EQUIPMENT - SCR CATALYST

ORIGINAL LIFE TABLE

PLACEMENT BAND 2002-2016 EXPERIENCE BAND 2004-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	12,360,236		0.0000	1.0000	100.00
0.5	12,360,236		0.0000	1.0000	100.00
1.5	23,588,585		0.0000	1.0000	100.00
2.5	22,473,699		0.0000	1.0000	100.00
3.5	25,445,453	830,230	0.0326	0.9674	100.00
4.5	29,934,044	4,203,042	0.1404	0.8596	96.74
5.5	25,050,769	1,244,841	0.0497	0.9503	83.15
6.5	19,638,237	122,831	0.0063	0.9937	79.02
7.5	19,515,406		0.0000	1.0000	78.53
8.5	17,783,381	1,808,323	0.1017	0.8983	78.53
9.5	15,975,057		0.0000	1.0000	70.54
10.5	15,024,838		0.0000	1.0000	70.54
11.5	13,034,712		0.0000	1.0000	70.54
12.5	12,048,629		0.0000	1.0000	70.54
13.5	11,108,102		0.0000	1.0000	70.54
14.5	11,108,102		0.0000	1.0000	70.54
15.5	11,108,102		0.0000	1.0000	70.54
16.5					70.54


DUKE ENERGY INDIANA
ACCOUNT 314.00 TURBOGENERATOR UNITS
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1958-2018 EXPERIENCE
1910-2018 PLACEMENTS
1999-2018 EXPERIENCE
1910-2018 PLACEMENTS
IOWA 60-S0.5
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

DUKE ENERGY INDIANA

ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1958-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	575,704,787		0.0000	1.0000	100.00
0.5	570,285,409		0.0000	1.0000	100.00
1.5	573,374,971	4,540	0.0000	1.0000	100.00
2.5	559,922,974	152,258	0.0003	0.9997	100.00
3.5	539,105,730	287,350	0.0005	0.9995	99.97
4.5	516,076,693	195,578	0.0004	0.9996	99.92
5.5	501,892,673	2,224,751	0.0044	0.9956	99.88
6.5	493,681,002	978,423	0.0020	0.9980	99.44
7.5	473,415,019	1,734,297	0.0037	0.9963	99.24
8.5	453,727,105	2,421,772	0.0053	0.9947	98.88
9.5	425,367,082	1,426,770	0.0034	0.9966	98.35
10.5	413,667,286	1,184,469	0.0029	0.9971	98.02
11.5	393,887,712	1,376,677	0.0035	0.9965	97.74
12.5	370,903,800	1,115,714	0.0030	0.9970	97.40
13.5	349,416,152	1,908,603	0.0055	0.9945	97.10
14.5	342,031,586	1,533,275	0.0045	0.9955	96.57
15.5	328,248,197	1,306,244	0.0040	0.9960	96.14
16.5	319,020,792	1,057,207	0.0033	0.9967	95.76
17.5	296,625,884	1,145,016	0.0039	0.9961	95.44
18.5	282,391,146	275,270	0.0010	0.9990	95.07
19.5	277,426,793	277,648	0.0010	0.9990	94.98
20.5	275,688,004	508,650	0.0018	0.9982	94.89
21.5	267,261,063	966,199	0.0036	0.9964	94.71
22.5	260,254,750	111,616	0.0004	0.9996	94.37
23.5	258,107,024	934,487	0.0036	0.9964	94.33
24.5	256,802,538	1,464,935	0.0057	0.9943	93.99
25.5	245,748,964	4,409,169	0.0179	0.9821	93.45
26.5	236,366,854	507,841	0.0021	0.9979	91.77
27.5	231,556,488	4,022,017	0.0174	0.9826	91.58
28.5	225,300,255	3,757,613	0.0167	0.9833	89.99
29.5	219,697,661	14,338,593	0.0653	0.9347	88.48
30.5	203,984,002	1,985,955	0.0097	0.9903	82.71
31.5	201,164,245	3,371,344	0.0168	0.9832	81.90
32.5	196,897,312	8,040,989	0.0408	0.9592	80.53
33.5	188,890,273	9,773,422	0.0517	0.9483	77.24
34.5	178,454,775	3,831,617	0.0215	0.9785	73.25
35.5	174,428,128	9,963,854	0.0571	0.9429	71.67
36.5	148,995,291	3,915,151	0.0263	0.9737	67.58
37.5	144,761,097	3,929,760	0.0271	0.9729	65.80
38.5	140,737,844	2,155,730	0.0153	0.9847	64.02

DUKE ENERGY INDIANA

ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1958-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	122,870,492	1,560,778	0.0127	0.9873	63.04
40.5	104,485,756	1,769,742	0.0169	0.9831	62.24
41.5	102,246,004	1,099,705	0.0108	0.9892	61.18
42.5	88,751,791	703,887	0.0079	0.9921	60.52
43.5	76,618,208	183,496	0.0024	0.9976	60.04
44.5	76,419,236	934,054	0.0122	0.9878	59.90
45.5	75,340,093	582,911	0.0077	0.9923	59.17
46.5	61,404,709	535,741	0.0087	0.9913	58.71
47.5	60,929,316	579,394	0.0095	0.9905	58.20
48.5	41,934,765	1,340,278	0.0320	0.9680	57.64
49.5	40,558,741	57,195	0.0014	0.9986	55.80
50.5	40,458,002	93,861	0.0023	0.9977	55.72
51.5	40,350,248	17,979	0.0004	0.9996	55.59
52.5	36,503,349	852,117	0.0233	0.9767	55.57
53.5	29,635,418	448,463	0.0151	0.9849	54.27
54.5	29,177,387	106,894	0.0037	0.9963	53.45
55.5	29,009,778	15,693	0.0005	0.9995	53.25
56.5	28,969,472		0.0000	1.0000	53.23
57.5	24,828,928	428,869	0.0173	0.9827	53.23
58.5	23,763,052	8,233	0.0003	0.9997	52.31
59.5	23,713,644	17,647	0.0007	0.9993	52.29
60.5	12,411,017		0.0000	1.0000	52.25
61.5	12,411,017		0.0000	1.0000	52.25
62.5	4,295,686		0.0000	1.0000	52.25
63.5	1,150,887		0.0000	1.0000	52.25
64.5	1,149,498		0.0000	1.0000	52.25
65.5	1,149,428		0.0000	1.0000	52.25
66.5	1,149,428		0.0000	1.0000	52.25
67.5	84,133		0.0000	1.0000	52.25
68.5	84,133		0.0000	1.0000	52.25
69.5	84,133		0.0000	1.0000	52.25
70.5	84,133		0.0000	1.0000	52.25
71.5	84,133		0.0000	1.0000	52.25
72.5	84,133		0.0000	1.0000	52.25
73.5	84,133		0.0000	1.0000	52.25
74.5	84,133		0.0000	1.0000	52.25
75.5	80,000		0.0000	1.0000	52.25
76.5	80,000		0.0000	1.0000	52.25
77.5	80,000		0.0000	1.0000	52.25
78.5	80,000		0.0000	1.0000	52.25

DUKE ENERGY INDIANA

ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1958-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	80,000		0.0000	1.0000	52.25
80.5	80,000		0.0000	1.0000	52.25
81.5	80,000		0.0000	1.0000	52.25
82.5	80,000		0.0000	1.0000	52.25
83.5	80,000		0.0000	1.0000	52.25
84.5	80,000		0.0000	1.0000	52.25
85.5	80,000		0.0000	1.0000	52.25
86.5	80,000		0.0000	1.0000	52.25
87.5	80,000		0.0000	1.0000	52.25
88.5	80,000		0.0000	1.0000	52.25
89.5	80,000		0.0000	1.0000	52.25
90.5	80,000		0.0000	1.0000	52.25
91.5	80,000		0.0000	1.0000	52.25
92.5	80,000		0.0000	1.0000	52.25
93.5	80,000		0.0000	1.0000	52.25
94.5	80,000		0.0000	1.0000	52.25
95.5	80,000		0.0000	1.0000	52.25
96.5	80,000		0.0000	1.0000	52.25
97.5	80,000		0.0000	1.0000	52.25
98.5	80,000		0.0000	1.0000	52.25
99.5	80,000		0.0000	1.0000	52.25
100.5	80,000		0.0000	1.0000	52.25
101.5	80,000		0.0000	1.0000	52.25
102.5	80,000		0.0000	1.0000	52.25
103.5	80,000		0.0000	1.0000	52.25
104.5	80,000		0.0000	1.0000	52.25
105.5	80,000		0.0000	1.0000	52.25
106.5					52.25

DUKE ENERGY INDIANA

ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	311,185,673		0.0000	1.0000	100.00
0.5	308,807,314		0.0000	1.0000	100.00
1.5	314,093,451	4,540	0.0000	1.0000	100.00
2.5	304,909,916	152,258	0.0005	0.9995	100.00
3.5	281,492,074	34,299	0.0001	0.9999	99.95
4.5	256,472,703	195,578	0.0008	0.9992	99.94
5.5	254,567,138	1,932,987	0.0076	0.9924	99.86
6.5	246,200,497	971,802	0.0039	0.9961	99.10
7.5	222,939,358	857,718	0.0038	0.9962	98.71
8.5	211,958,757	2,362,120	0.0111	0.9889	98.33
9.5	185,792,771	1,165,015	0.0063	0.9937	97.24
10.5	176,626,222	990,742	0.0056	0.9944	96.63
11.5	159,639,479	425,771	0.0027	0.9973	96.08
12.5	137,837,350	953,986	0.0069	0.9931	95.83
13.5	114,900,499	761,746	0.0066	0.9934	95.16
14.5	108,697,629	1,384,565	0.0127	0.9873	94.53
15.5	95,232,793	1,142,227	0.0120	0.9880	93.33
16.5	109,719,235	1,053,528	0.0096	0.9904	92.21
17.5	87,345,727	859,158	0.0098	0.9902	91.32
18.5	73,412,058	75,667	0.0010	0.9990	90.43
19.5	99,952,069	121,917	0.0012	0.9988	90.33
20.5	128,366,773	124,647	0.0010	0.9990	90.22
21.5	120,449,470	101,761	0.0008	0.9992	90.13
22.5	137,937,458	45,430	0.0003	0.9997	90.06
23.5	157,772,429	832,604	0.0053	0.9947	90.03
24.5	156,653,729	94,369	0.0006	0.9994	89.55
25.5	147,101,511	1,722,229	0.0117	0.9883	89.50
26.5	158,066,256	284,857	0.0018	0.9982	88.45
27.5	153,809,504	3,569,050	0.0232	0.9768	88.29
28.5	161,664,618	3,387,391	0.0210	0.9790	86.24
29.5	157,067,581	14,312,909	0.0911	0.9089	84.44
30.5	150,905,975	1,958,172	0.0130	0.9870	76.74
31.5	148,143,942	2,621,026	0.0177	0.9823	75.75
32.5	144,615,058	7,668,088	0.0530	0.9470	74.41
33.5	136,986,206	7,714,049	0.0563	0.9437	70.46
34.5	128,600,816	2,138,886	0.0166	0.9834	66.49
35.5	126,300,086	9,013,333	0.0714	0.9286	65.39
36.5	101,874,502	3,032,819	0.0298	0.9702	60.72
37.5	103,119,276	2,587,008	0.0251	0.9749	58.91
38.5	105,990,487	1,882,596	0.0178	0.9822	57.44

DUKE ENERGY INDIANA

ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	92,076,234	1,509,698	0.0164	0.9836	56.42
40.5	78,583,486	1,437,006	0.0183	0.9817	55.49
41.5	76,718,820	1,031,904	0.0135	0.9865	54.48
42.5	68,554,519	557,603	0.0081	0.9919	53.74
43.5	56,567,220	103,632	0.0018	0.9982	53.31
44.5	63,493,252	892,719	0.0141	0.9859	53.21
45.5	66,167,065	531,510	0.0080	0.9920	52.46
46.5	52,285,214	526,759	0.0101	0.9899	52.04
47.5	54,299,517	579,327	0.0107	0.9893	51.51
48.5	39,227,530	1,339,534	0.0341	0.9659	50.96
49.5	39,211,520	57,108	0.0015	0.9985	49.22
50.5	39,110,869	22,523	0.0006	0.9994	49.15
51.5	39,075,842	17,973	0.0005	0.9995	49.12
52.5	35,229,018	804,640	0.0228	0.9772	49.10
53.5	28,408,564	436,434	0.0154	0.9846	47.98
54.5	29,027,857	67,785	0.0023	0.9977	47.24
55.5	28,899,356	15,285	0.0005	0.9995	47.13
56.5	28,859,458		0.0000	1.0000	47.11
57.5	24,718,915	428,869	0.0173	0.9827	47.11
58.5	23,653,039		0.0000	1.0000	46.29
59.5	23,611,864		0.0000	1.0000	46.29
60.5	12,326,884		0.0000	1.0000	46.29
61.5	12,326,884		0.0000	1.0000	46.29
62.5	4,215,686		0.0000	1.0000	46.29
63.5	1,070,887		0.0000	1.0000	46.29
64.5	1,069,498		0.0000	1.0000	46.29
65.5	1,069,428		0.0000	1.0000	46.29
66.5	1,069,428		0.0000	1.0000	46.29
67.5	4,133		0.0000	1.0000	46.29
68.5	4,133		0.0000	1.0000	46.29
69.5	4,133		0.0000	1.0000	46.29
70.5	4,133		0.0000	1.0000	46.29
71.5	4,133		0.0000	1.0000	46.29
72.5	4,133		0.0000	1.0000	46.29
73.5	4,133		0.0000	1.0000	46.29
74.5	4,133		0.0000	1.0000	46.29
75.5					46.29
76.5					
77.5					
78.5					

DUKE ENERGY INDIANA

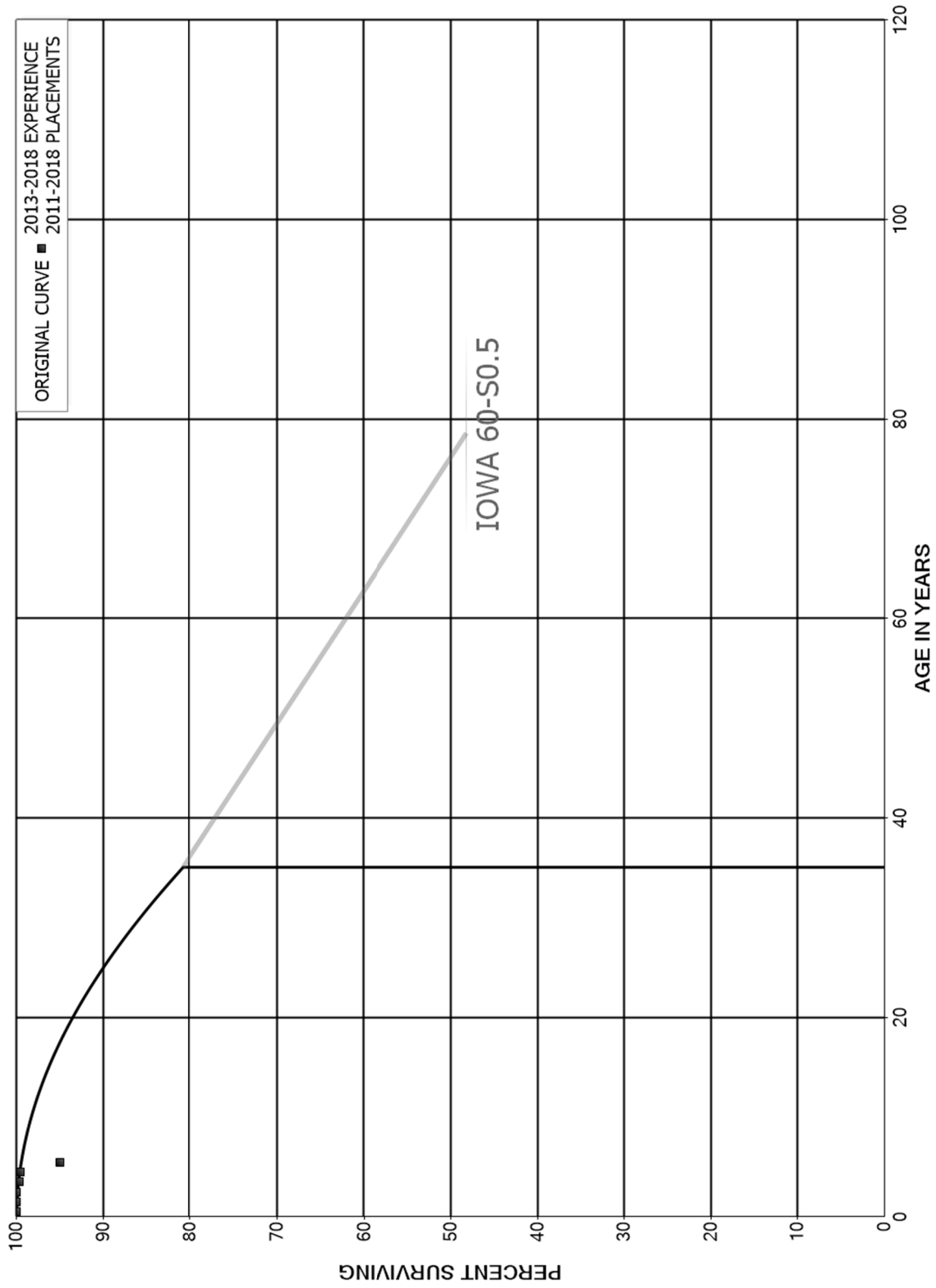
ACCOUNT 314.00 TURBOGENERATOR UNITS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5					
80.5					
81.5					
82.5					
83.5					
84.5					
85.5					
86.5					
87.5					
88.5	80,000		0.0000		
89.5	80,000		0.0000		
90.5	80,000		0.0000		
91.5	80,000		0.0000		
92.5	80,000		0.0000		
93.5	80,000		0.0000		
94.5	80,000		0.0000		
95.5	80,000		0.0000		
96.5	80,000		0.0000		
97.5	80,000		0.0000		
98.5	80,000		0.0000		
99.5	80,000		0.0000		
100.5	80,000		0.0000		
101.5	80,000		0.0000		
102.5	80,000		0.0000		
103.5	80,000		0.0000		
104.5	80,000		0.0000		
105.5	80,000		0.0000		
106.5					

DUKE ENERGY INDIANA
ACCOUNT 314.20 TURBOGENERATOR UNITS - EDWARDSPORT IGCC
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

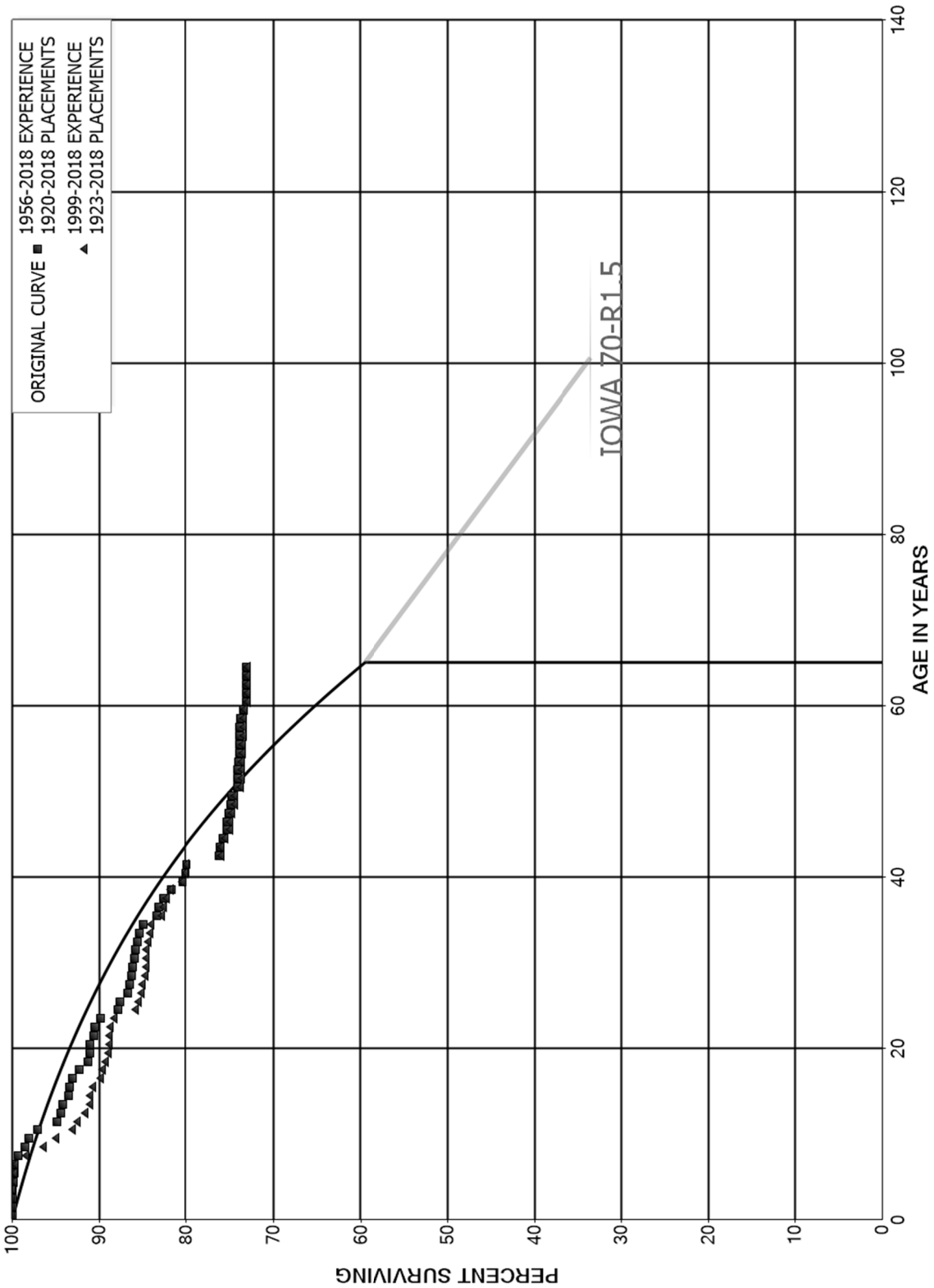
ACCOUNT 314.20 TURBOGENERATOR UNITS - EDWARDSPORT IGCC

ORIGINAL LIFE TABLE

PLACEMENT BAND 2011-2018 EXPERIENCE BAND 2013-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	690,148,440		0.0000	1.0000	100.00
0.5	655,678,926		0.0000	1.0000	100.00
1.5	653,348,508		0.0000	1.0000	100.00
2.5	651,770,541	2,313,324	0.0035	0.9965	100.00
3.5	636,965,908	1,241,369	0.0019	0.9981	99.65
4.5	604,740,517	27,081,924	0.0448	0.9552	99.45
5.5					95.00

DUKE ENERGY INDIANA
ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1920-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	174,559,354		0.0000	1.0000	100.00
0.5	167,246,922	487	0.0000	1.0000	100.00
1.5	163,247,310		0.0000	1.0000	100.00
2.5	155,612,856	108,528	0.0007	0.9993	100.00
3.5	144,460,439	69,968	0.0005	0.9995	99.93
4.5	140,445,559	178,194	0.0013	0.9987	99.88
5.5	140,847,156	44,940	0.0003	0.9997	99.75
6.5	141,220,437	572,333	0.0041	0.9959	99.72
7.5	134,683,741	1,043,994	0.0078	0.9922	99.32
8.5	133,013,400	664,213	0.0050	0.9950	98.55
9.5	132,020,696	1,294,092	0.0098	0.9902	98.06
10.5	130,116,208	3,095,205	0.0238	0.9762	97.10
11.5	127,059,673	475,341	0.0037	0.9963	94.79
12.5	126,420,757	328,854	0.0026	0.9974	94.43
13.5	125,908,124	847,580	0.0067	0.9933	94.19
14.5	125,092,847	256,867	0.0021	0.9979	93.55
15.5	121,789,248	423,172	0.0035	0.9965	93.36
16.5	120,889,030	958,080	0.0079	0.9921	93.04
17.5	119,670,479	1,285,817	0.0107	0.9893	92.30
18.5	118,308,165	269,590	0.0023	0.9977	91.31
19.5	117,637,270	105,665	0.0009	0.9991	91.10
20.5	117,079,690	481,701	0.0041	0.9959	91.02
21.5	115,815,273	165,386	0.0014	0.9986	90.64
22.5	115,296,087	877,439	0.0076	0.9924	90.51
23.5	110,456,891	2,384,166	0.0216	0.9784	89.82
24.5	98,576,676	300,500	0.0030	0.9970	87.88
25.5	94,183,472	953,664	0.0101	0.9899	87.62
26.5	89,569,840	249,703	0.0028	0.9972	86.73
27.5	87,346,780	232,062	0.0027	0.9973	86.49
28.5	86,446,298	124,313	0.0014	0.9986	86.26
29.5	86,109,485	189,397	0.0022	0.9978	86.13
30.5	84,976,529	143,957	0.0017	0.9983	85.94
31.5	84,547,213	188,402	0.0022	0.9978	85.80
32.5	84,352,023	204,932	0.0024	0.9976	85.61
33.5	83,442,698	477,004	0.0057	0.9943	85.40
34.5	82,961,950	1,508,813	0.0182	0.9818	84.91
35.5	81,119,672	210,563	0.0026	0.9974	83.37
36.5	65,048,431	394,783	0.0061	0.9939	83.15
37.5	64,388,841	679,846	0.0106	0.9894	82.65
38.5	63,176,779	1,072,123	0.0170	0.9830	81.77

DUKE ENERGY INDIANA

ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	54,422,882	194,373	0.0036	0.9964	80.39
40.5	38,861,568	63,486	0.0016	0.9984	80.10
41.5	37,899,295	1,783,723	0.0471	0.9529	79.97
42.5	30,486,184	67,792	0.0022	0.9978	76.20
43.5	22,706,906	82,223	0.0036	0.9964	76.03
44.5	22,586,525	132,873	0.0059	0.9941	75.76
45.5	22,354,177	15,794	0.0007	0.9993	75.31
46.5	19,118,460	52,642	0.0028	0.9972	75.26
47.5	18,888,329	61,684	0.0033	0.9967	75.05
48.5	11,554,685	6,548	0.0006	0.9994	74.81
49.5	11,486,713	100,032	0.0087	0.9913	74.77
50.5	11,121,253	12,282	0.0011	0.9989	74.11
51.5	11,038,554	3,272	0.0003	0.9997	74.03
52.5	10,154,420	4,691	0.0005	0.9995	74.01
53.5	8,194,745	11,966	0.0015	0.9985	73.98
54.5	8,172,695	2,795	0.0003	0.9997	73.87
55.5	8,167,798	2,124	0.0003	0.9997	73.84
56.5	8,160,333		0.0000	1.0000	73.82
57.5	7,159,121	7,464	0.0010	0.9990	73.82
58.5	6,794,450	31,310	0.0046	0.9954	73.75
59.5	6,589,971	30,372	0.0046	0.9954	73.41
60.5	3,734,428	5	0.0000	1.0000	73.07
61.5	3,703,644		0.0000	1.0000	73.07
62.5	1,911,321		0.0000	1.0000	73.07
63.5	333,572		0.0000	1.0000	73.07
64.5	333,442		0.0000	1.0000	73.07
65.5	332,267		0.0000	1.0000	73.07
66.5	329,960		0.0000	1.0000	73.07
67.5	111,651		0.0000	1.0000	73.07
68.5	111,468		0.0000	1.0000	73.07
69.5	106,783		0.0000	1.0000	73.07
70.5	106,727		0.0000	1.0000	73.07
71.5	106,727		0.0000	1.0000	73.07
72.5	101,753		0.0000	1.0000	73.07
73.5	101,753		0.0000	1.0000	73.07
74.5	101,551		0.0000	1.0000	73.07
75.5	101,551		0.0000	1.0000	73.07
76.5	101,551		0.0000	1.0000	73.07
77.5	542		0.0000	1.0000	73.07
78.5	542		0.0000	1.0000	73.07

DUKE ENERGY INDIANA

ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1920-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	542		0.0000	1.0000	73.07
80.5	542		0.0000	1.0000	73.07
81.5	542		0.0000	1.0000	73.07
82.5	542		0.0000	1.0000	73.07
83.5	542		0.0000	1.0000	73.07
84.5	542		0.0000	1.0000	73.07
85.5	7		0.0000	1.0000	73.07
86.5	7		0.0000	1.0000	73.07
87.5	7		0.0000	1.0000	73.07
88.5					73.07

DUKE ENERGY INDIANA

ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	55,788,293		0.0000	1.0000	100.00
0.5	49,039,715		0.0000	1.0000	100.00
1.5	43,893,722		0.0000	1.0000	100.00
2.5	34,410,942	74,849	0.0022	0.9978	100.00
3.5	24,184,786	47,996	0.0020	0.9980	99.78
4.5	28,852,994		0.0000	1.0000	99.58
5.5	33,322,054	43,334	0.0013	0.9987	99.58
6.5	37,103,835	431,701	0.0116	0.9884	99.45
7.5	33,595,137	689,355	0.0205	0.9795	98.30
8.5	35,838,236	527,358	0.0147	0.9853	96.28
9.5	36,405,831	714,776	0.0196	0.9804	94.86
10.5	36,059,436	218,041	0.0060	0.9940	93.00
11.5	35,618,214	364,615	0.0102	0.9898	92.44
12.5	35,203,637	215,795	0.0061	0.9939	91.49
13.5	34,823,163	320	0.0000	1.0000	90.93
14.5	34,525,369	121,760	0.0035	0.9965	90.93
15.5	32,258,888	320,167	0.0099	0.9901	90.61
16.5	48,459,670	126,446	0.0026	0.9974	89.71
17.5	48,827,071	140,529	0.0029	0.9971	89.48
18.5	48,845,771	221,136	0.0045	0.9955	89.22
19.5	56,357,997	31,844	0.0006	0.9994	88.82
20.5	71,932,505	16,554	0.0002	0.9998	88.77
21.5	71,136,355	143,207	0.0020	0.9980	88.75
22.5	77,697,993	335,441	0.0043	0.9957	88.57
23.5	83,612,513	2,309,921	0.0276	0.9724	88.18
24.5	71,837,770	255,708	0.0036	0.9964	85.75
25.5	67,902,803	283,624	0.0042	0.9958	85.44
26.5	67,413,125	129,719	0.0019	0.9981	85.09
27.5	65,416,926	214,504	0.0033	0.9967	84.92
28.5	69,078,755	81,742	0.0012	0.9988	84.64
29.5	68,923,691	30,000	0.0004	0.9996	84.54
30.5	71,532,171	13,984	0.0002	0.9998	84.51
31.5	71,304,646	144,975	0.0020	0.9980	84.49
32.5	71,151,547	191,082	0.0027	0.9973	84.32
33.5	70,288,090	128,372	0.0018	0.9982	84.09
34.5	70,219,905	1,029,325	0.0147	0.9853	83.94
35.5	68,862,298	209,553	0.0030	0.9970	82.71
36.5	52,821,951	203,549	0.0039	0.9961	82.46
37.5	53,349,205	300,595	0.0056	0.9944	82.14
38.5	53,746,694	878,456	0.0163	0.9837	81.68

DUKE ENERGY INDIANA

ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	46,261,367	194,372	0.0042	0.9958	80.34
40.5	32,306,885	52,685	0.0016	0.9984	80.00
41.5	31,395,564	1,572,771	0.0501	0.9499	79.87
42.5	25,005,739	29,000	0.0012	0.9988	75.87
43.5	17,265,253	81,570	0.0047	0.9953	75.78
44.5	18,483,739	132,828	0.0072	0.9928	75.43
45.5	19,835,040	15,794	0.0008	0.9992	74.88
46.5	16,605,009	52,367	0.0032	0.9968	74.82
47.5	16,871,846	61,684	0.0037	0.9963	74.59
48.5	10,602,918	6,548	0.0006	0.9994	74.32
49.5	11,115,912	100,032	0.0090	0.9910	74.27
50.5	10,750,596	12,282	0.0011	0.9989	73.60
51.5	10,668,027		0.0000	1.0000	73.52
52.5	9,793,315	4,691	0.0005	0.9995	73.52
53.5	7,835,946	11,966	0.0015	0.9985	73.48
54.5	8,038,825	2,795	0.0003	0.9997	73.37
55.5	8,034,111	850	0.0001	0.9999	73.34
56.5	8,032,606		0.0000	1.0000	73.34
57.5	7,132,458	7,464	0.0010	0.9990	73.34
58.5	6,767,786	5,396	0.0008	0.9992	73.26
59.5	6,589,221	30,372	0.0046	0.9954	73.20
60.5	3,733,679		0.0000	1.0000	72.86
61.5	3,703,102		0.0000	1.0000	72.86
62.5	1,910,779		0.0000	1.0000	72.86
63.5	333,030		0.0000	1.0000	72.86
64.5	332,900		0.0000	1.0000	72.86
65.5	331,725		0.0000	1.0000	72.86
66.5	329,418		0.0000	1.0000	72.86
67.5	111,109		0.0000	1.0000	72.86
68.5	110,926		0.0000	1.0000	72.86
69.5	106,241		0.0000	1.0000	72.86
70.5	106,185		0.0000	1.0000	72.86
71.5	106,185		0.0000	1.0000	72.86
72.5	101,747		0.0000	1.0000	72.86
73.5	101,747		0.0000	1.0000	72.86
74.5	101,544		0.0000	1.0000	72.86
75.5	101,551		0.0000	1.0000	72.86
76.5	101,551		0.0000	1.0000	72.86
77.5	542		0.0000	1.0000	72.86
78.5	542		0.0000	1.0000	72.86

DUKE ENERGY INDIANA

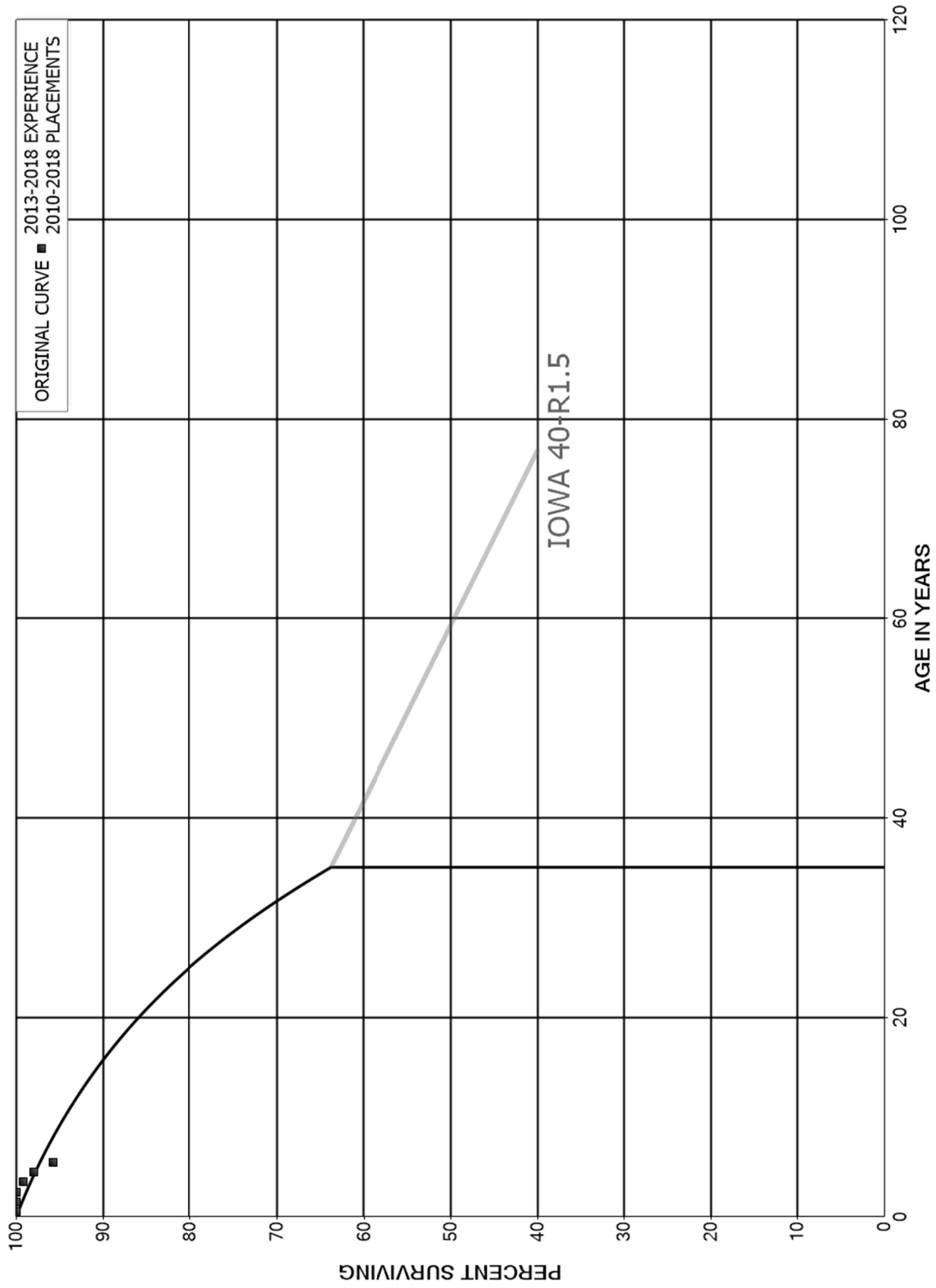
ACCOUNT 315.00 ACCESSORY ELECTRIC EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2018 EXPERIENCE BAND 1999-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	542		0.0000	1.0000	72.86
80.5	542		0.0000	1.0000	72.86
81.5	542		0.0000	1.0000	72.86
82.5	542		0.0000	1.0000	72.86
83.5	542		0.0000	1.0000	72.86
84.5	542		0.0000	1.0000	72.86
85.5	7		0.0000	1.0000	72.86
86.5	7		0.0000	1.0000	72.86
87.5	7		0.0000	1.0000	72.86
88.5					72.86

DUKE ENERGY INDIANA
ACCOUNT 315.20 ACCESSORY ELECTRIC EQUIPMENT - EDWARDSPORT IGCC
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

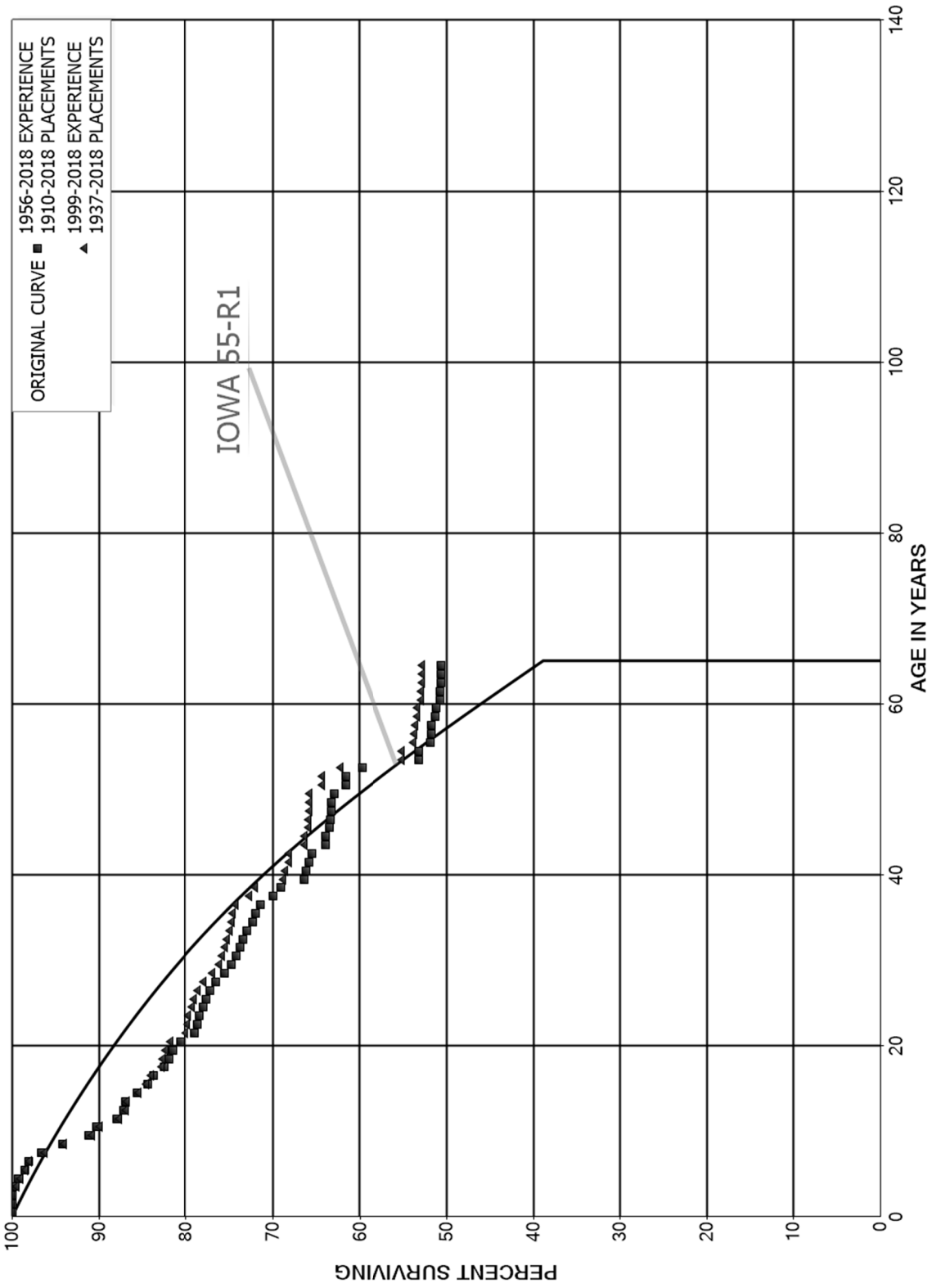
ACCOUNT 315.20 ACCESSORY ELECTRIC EQUIPMENT - EDWARDSPORT IGCC

ORIGINAL LIFE TABLE

PLACEMENT BAND 2010-2018 EXPERIENCE BAND 2013-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	45,294,692		0.0000	1.0000	100.00
0.5	44,079,193		0.0000	1.0000	100.00
1.5	43,878,387		0.0000	1.0000	100.00
2.5	43,546,338	342,558	0.0079	0.9921	100.00
3.5	42,570,609	558,622	0.0131	0.9869	99.21
4.5	41,752,740	927,499	0.0222	0.9778	97.91
5.5					95.74

DUKE ENERGY INDIANA
ACCOUNT 316.00 MISCELLANEOUS POWER PLANT EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



DUKE ENERGY INDIANA

ACCOUNT 316.00 MISCELLANEOUS POWER PLANT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	203,772,439	43,004	0.0002	0.9998	100.00
0.5	174,857,919	36,438	0.0002	0.9998	99.98
1.5	158,444,793	101,038	0.0006	0.9994	99.96
2.5	154,171,622	478,107	0.0031	0.9969	99.89
3.5	151,467,920	409,308	0.0027	0.9973	99.58
4.5	149,094,448	1,163,582	0.0078	0.9922	99.32
5.5	146,152,636	648,035	0.0044	0.9956	98.54
6.5	143,142,796	2,215,715	0.0155	0.9845	98.10
7.5	138,017,153	3,404,966	0.0247	0.9753	96.58
8.5	130,985,823	4,265,921	0.0326	0.9674	94.20
9.5	126,333,470	1,203,311	0.0095	0.9905	91.13
10.5	118,714,471	2,975,369	0.0251	0.9749	90.27
11.5	112,895,899	997,175	0.0088	0.9912	88.00
12.5	106,292,199	290,205	0.0027	0.9973	87.23
13.5	104,015,061	1,601,502	0.0154	0.9846	86.99
14.5	90,911,116	1,319,181	0.0145	0.9855	85.65
15.5	88,985,835	714,624	0.0080	0.9920	84.41
16.5	85,657,302	1,280,178	0.0149	0.9851	83.73
17.5	79,639,296	532,090	0.0067	0.9933	82.48
18.5	77,043,740	346,290	0.0045	0.9955	81.93
19.5	73,807,604	829,986	0.0112	0.9888	81.56
20.5	71,084,624	1,464,310	0.0206	0.9794	80.64
21.5	67,359,395	332,575	0.0049	0.9951	78.98
22.5	60,992,430	173,497	0.0028	0.9972	78.59
23.5	50,904,277	258,636	0.0051	0.9949	78.37
24.5	44,223,402	183,691	0.0042	0.9958	77.97
25.5	31,219,753	171,670	0.0055	0.9945	77.64
26.5	27,525,125	250,548	0.0091	0.9909	77.22
27.5	15,318,141	197,331	0.0129	0.9871	76.51
28.5	14,111,862	144,305	0.0102	0.9898	75.53
29.5	12,613,153	93,821	0.0074	0.9926	74.76
30.5	11,906,637	78,130	0.0066	0.9934	74.20
31.5	11,227,914	51,499	0.0046	0.9954	73.71
32.5	10,725,568	58,732	0.0055	0.9945	73.37
33.5	10,304,200	90,952	0.0088	0.9912	72.97
34.5	9,965,118	57,799	0.0058	0.9942	72.33
35.5	9,015,297	70,699	0.0078	0.9922	71.91
36.5	7,226,377	144,022	0.0199	0.9801	71.35
37.5	6,326,431	73,067	0.0115	0.9885	69.92
38.5	5,839,618	226,361	0.0388	0.9612	69.12

DUKE ENERGY INDIANA

ACCOUNT 316.00 MISCELLANEOUS POWER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	4,746,451	14,946	0.0031	0.9969	66.44
40.5	3,693,895	23,778	0.0064	0.9936	66.23
41.5	3,363,928	13,365	0.0040	0.9960	65.80
42.5	3,231,405	75,805	0.0235	0.9765	65.54
43.5	2,561,710	3,405	0.0013	0.9987	64.00
44.5	2,271,226	16,523	0.0073	0.9927	63.92
45.5	2,169,184	1,498	0.0007	0.9993	63.45
46.5	1,753,275	2,042	0.0012	0.9988	63.41
47.5	1,681,250	1,715	0.0010	0.9990	63.33
48.5	1,107,575	5,571	0.0050	0.9950	63.27
49.5	1,015,405	21,061	0.0207	0.9793	62.95
50.5	971,555	528	0.0005	0.9995	61.65
51.5	952,839	29,947	0.0314	0.9686	61.61
52.5	907,141	99,234	0.1094	0.8906	59.68
53.5	695,058	357	0.0005	0.9995	53.15
54.5	663,668	15,654	0.0236	0.9764	53.12
55.5	636,788	1,876	0.0029	0.9971	51.87
56.5	621,008	213	0.0003	0.9997	51.71
57.5	599,293	5,348	0.0089	0.9911	51.70
58.5	512,420	874	0.0017	0.9983	51.24
59.5	479,973	4,277	0.0089	0.9911	51.15
60.5	327,182		0.0000	1.0000	50.69
61.5	317,438	316	0.0010	0.9990	50.69
62.5	213,701		0.0000	1.0000	50.64
63.5	126,950	18	0.0001	0.9999	50.64
64.5	119,589	4,934	0.0413	0.9587	50.64
65.5	102,837	790	0.0077	0.9923	48.55
66.5	97,240	1,371	0.0141	0.9859	48.17
67.5	61,577		0.0000	1.0000	47.49
68.5	47,505	346	0.0073	0.9927	47.49
69.5	44,702	218	0.0049	0.9951	47.15
70.5	42,860	31	0.0007	0.9993	46.92
71.5	10,832	84	0.0078	0.9922	46.88
72.5	9,395		0.0000	1.0000	46.52
73.5	5,426		0.0000	1.0000	46.52
74.5	4,811		0.0000	1.0000	46.52
75.5	4,690		0.0000	1.0000	46.52
76.5	4,567		0.0000	1.0000	46.52
77.5	3,382		0.0000	1.0000	46.52
78.5	2,680	606	0.2263	0.7737	46.52

DUKE ENERGY INDIANA

ACCOUNT 316.00 MISCELLANEOUS POWER PLANT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1956-2018

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	952		0.0000	1.0000	35.99
80.5	823	141	0.1717	0.8283	35.99
81.5					29.82