Exhibit No.
Witness: James T. Selecky
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Missouri Industrial Energy Consumers
Case No. EC-2002-1
Subject: Depreciation Rates

**Before the**
**Missouri Public Service Commission**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | **Case No. EC-2002-1** |
| **v.** | ) | |
| **Union Electric Company, d/b/a AmerenUE** | ) | |
| **Respondent.** | ) | |

Surrebuttal Testimony and Schedules of

**James T. Selecky**

On Behalf of

**Missouri Industrial Energy Consumers**

June 24, 2002
Project 7651

Exhibit No. 13
Date 7/10/02 Case No. EC-2002-1
Reporter KLM

BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

**Before the Public Service Commission**
**of the State of Missouri**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | |
| **v.** | ) | **Case No. EC-2002-1** |
| **Union Electric Company, d/b/a AmerenUE** | ) | |
| **Respondent.** | ) | |

**STATE OF MISSOURI** )
) **SS**
**COUNTY OF ST. LOUIS** )

## Surrebuttal Affidavit of James T. Selecky

James T. Selecky, being first duly sworn, on his oath states:

1. My name is James T. Selecky. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. EC-2002-1.

3. I hereby swear and affirm that the surrebuttal testimony is true and correct and shows the matters and things it purports to show.

James T. Selecky

Subscribed and sworn to before this 21st day of June 2002.

CAROL SCHULZ
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: Feb. 26, 2004

Notary Public

My Commission Expires February 26, 2004.

Before the
Missouri Public Service Commission

| | | |
|---|---|---|
| Staff of the Missouri Public Service Commission<br>Complainant | ) | |
| v. | ) | Case No. EC-2002-1 |
| Union Electric Company, d/b/a AmerenUE<br>Respondent. | ) | |

## Surrebuttal Testimony of James T. Selecky

1 Q **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A James T. Selecky; 1215 Fern Ridge Parkway, Suite 208; St. Louis, MO 63141-2000.

3 Q **ARE YOU THE SAME JAMES T. SELECKY WHO HAS PREVIOUSLY SUBMITTED**
4 **REBUTTAL TESTIMONY IN THIS PROCEEDING?**

5 A Yes.

6 Q **ON WHAT SUBJECTS WILL YOU TESTIFY?**

7 A I will address AmerenUE's (UE or Company) rebuttal testimony on the treatment of
8 net salvage as it relates to book depreciation rates. Primarily, I will be addressing the
9 net salvage issues presented by UE Witness William M. Stout.

10 Q **HOW IS UE PROPOSING TO TREAT THE NET SALVAGE ASSOCIATED WITH**
11 **BOOK DEPRECIATION?**

12 A UE wants to include the net salvage ratios in the development of the book
13 depreciation rates. The MPSC Staff is proposing to exclude the net salvage from the

deprecation rates and include an expense provision for net salvage in UE's revenue requirement or cost of service. I support the Staff approach.

**Q HOW MUCH NET SALVAGE IS UE SEEKING IN THIS PROCEEDING?**

A UE is seeking to include $51.4 million of net salvage expense in its book depreciation rates. The proposed net salvage accrual of $51.4 million is approximately $25 million greater than the amount of net salvage currently included in UE's depreciation rates. Of the $54.1 million of net salvage, $29.8 million is attributable to the transmission, distribution and general plant functions. For these three plant functions, UE is essentially seeking a net salvage ratio of a negative 39% to include in its depreciation rates.

**Q HOW DOES UE'S NET SALVAGE EXPENSE INCLUDED IN ITS PROPOSED DEPRECIATION RATES COMPARE WITH THE NET SALVAGE EXPENSE UE HAS ACTUALLY INCURRED?**

A Table 1 below shows UE's net salvage experience for the last 20 years. It should be noted that since 1986 data was not available, 1981 data was used to complete the 20-year history. Also, the data are shown as negative amounts because UE's removal cost exceeds the gross salvage. That is, UE incurs cost to retire plant investment.

As Table 1 shows, UE's net salvage history using a five-year rolling average has ranged from approximately $5.9 million to $10.5 million annually, and $6.6 million to $10.3 million using the ten-year rolling average. UE's actual net salvage history has been considerably less than what UE is seeking in this proceeding. Therefore, UE's request in this proceeding appears excessive and inconsistent with trends over the last 20 years.

TABLE 1

UE's Actual Net Salvage Experience

| Year | Net Salvage ($000) | 5-Year Average ($000) | 10-Year Average ($000) |
|---|---|---|---|
| 2001 | $ (21,426) | $ (10,378) | $ (10,252) |
| 2000 | (12,502) | (8,137) | (9,043) |
| 1999 | (7,701) | (8,024) | (8,609) |
| 1998 | (576) | (8,820) | (8,465) |
| 1997 | (9,686) | (10,521) | (8,977) |
| 1996 | (10,221) | (10,125) | (8,722) |
| 1995 | (11,938) | (9,950) | (8,522) |
| 1994 | (11,679) | (9,194) | (7,933) |
| 1993 | (9,081) | (8,109) | (7,303) |
| 1992 | (7,708) | (7,434) | (6,989) |
| 1991 | (9,342) | (7,320) | (6,609) |
| 1990 | (8,159) | (7,094) | |
| 1989 | (6,256) | (6,672) | |
| 1988 | (5,706) | (6,497) | |
| 1987 | (7,135) | (6,544) | |
| 1986 | N/A | N/A | |
| 1985 | (8,215) | (5,899) | |
| 1984 | (6,050) | | |
| 1983 | (5,379) | | |
| 1982 | (5,940) | | |
| 1981 | (3,909) | | |
| Average | $ (8,430) | $ (8,170) | $ (8,311) |

**Q DO ANY OTHER COMMISSIONS ACCOUNT FOR NET SALVAGE SIMILAR TO THE METHOD THAT STAFF HAS PROPOSED IN THIS CASE?**

A Yes. Pages 157-158 of the Public Utility Depreciation Practices published in August 1996 by the National Association of Regulatory Utility Commissioners (NARUC) states:

> "Some commissions have abandoned the above procedure and moved to current-period accounting for gross salvage and/or cost of removal. In some jurisdictions gross salvage and cost of removal are accounted for as income and expense, respectively, when they are realized. Other jurisdictions consider only gross salvage in depreciation rates, with the cost of removal being expensed in the year incurred.
>
> Determining a reasonably accurate estimate of the average or future net salvage is not an easy task; estimates can be the subject of considerable discussion and controversy between regulators and utility personnel. This is one of the reasons advanced in support of current-period accounting for these items. When estimating future net salvage, every effort should be made to ensure that the estimate is as accurate as possible. Normally, the process should start by analyzing past salvage and cost of removal data and by using the results of this analysis to project future gross salvage and cost of removal."

This quote indicates the method proposed by the Staff in this proceeding is consistent with the method used by other jurisdictions and is acceptable to NARUC.

**Q IN YOUR REBUTTAL TESTIMONY FILED ON MAY 17, 2002 YOU INDICATED THAT THE DISPARITY BETWEEN THE NET SALVAGE EXPENSE INCLUDED IN DEPRECIATION RATES AND UE'S ACTUAL NET SALVAGE EXPERIENCE IS IN PART PRODUCED BY THE FACT THAT THE NET SALVAGE COMPONENT INCLUDED IN THE DEPRECIATION RATES INCLUDES THE IMPACT OF FUTURE INFLATION. PLEASE ELABORATE.**

A To develop the net salvage component of the depreciation rates, UE analyzes the net salvage cost it experiences when retiring plant investment. UE develops its net salvage percentage to be included in its depreciation rates by dividing the net salvage cost associated with retiring an asset by the original cost of the asset. In this instance, the net salvage cost is expressed in current dollars, while the original cost of the asset is stated in the dollars for the year the asset was originally placed in service. For example, UE's transmission and distribution plant accounts have an average service life in excess of 45 years. Therefore, if an asset is retired in 2000, UE compares the cost to remove the asset in year 2000 dollars with the cost to install

the asset in 1955 dollars in order to develop a net salvage ratio. This net salvage ratio is used to develop the current depreciation rates. Therefore, UE's net salvage percentages require today's ratepayers to pay the estimated costs of future inflation based on historic trends.

**Q WHAT WOULD BE THE IMPACT ON NET SALVAGE ASSOCIATED WITH INCLUDING FUTURE INFLATION IN THE DEVELOPMENT OF NET SALVAGE RATIOS?**

A Using Mr. Stout's example on Page 12 of his Rebuttal Testimony, let us assume that the asset has a 45-year life and a cost to remove of $4,050. If we simply discount the $4,050 at a 3% rate, the present-day cost to remove that asset is approximately $1,071. Under UE's proposal, today's ratepayers would see the 45-year amortization of the $4,050 in their depreciation rates. Therefore, by including future inflation in the development of the net salvage ratio, UE is requiring today's ratepayers to pick up the cost of inflation that it estimates will occur over the next 45 years. That is, the net salvage that is built into the depreciation rates does not reflect a current cost, but an estimate of a cost that it is expected to incur in 45 years.

**Q ON PAGES 11-13 OF MR. STOUT'S TESTIMONY, HE PROVIDES AN EXAMPLE THAT INDICATES USING THE STAFF'S APPROACH IS NOT EQUITABLE AND VIOLATES THE PRINCIPLE THAT CUSTOMERS SHOULD PAY THE COST OF THE PLANT THAT PROVIDES SERVICE TO THEM. DO YOU AGREE WITH THAT EXAMPLE?**

A No. In his example, Mr. Stout has only reflected the cost of the net salvage. He has not included the impact of the return on the investment and associated income taxes. Therefore, Mr. Stout's example does not capture the true cost to Customers A and B.

**Q PLEASE SUMMARIZE THE EXAMPLE MR. STOUT PRESENTS IN HIS TESTIMONY.**

A Mr. Stout analyzes the net salvage costs associated with a customer taking service from a pole line that does not provide service to other customers. The pole line has an installed cost of $4,500, an estimated service life of 45 years, and an estimated net salvage of negative 90%. Customer A takes service from this pole line for 30 years then moves out, and Customer B takes service for a like period. Because the pole line only has a 45-year life, at the end of year 45, a new pole line is installed at the same original cost. In Mr. Stout's example, Customer B, under the Staff's proposed treatment of net salvage, is incurring additional cost that, in his opinion, should be allocated to Customer A. Mr. Stout concludes that this approach is not equitable and violates the principle that customers should pay the cost of the plant that provides service to them.

**Q DO YOU AGREE WITH MR. STOUT'S ANALYSIS?**

A No. Mr. Stout's analysis is only partial. The analysis does not reflect the return on rate base and associated taxes that each customer will experience during this 60-year time period. The analysis does not reflect the true cost to the customer. Factoring in the return on rate base and associated taxes, the Staff's approach to net salvage is more equitable than UE's approach.

**Q HAVE YOU PERFORMED AN ANALYSIS TO DEMONSTRATE THIS POINT?**

A Yes. Schedule 1 develops an annual revenue requirement using Mr. Stout's life and net salvage assumptions and UE's proposed treatment of net salvage. The annual revenue requirement applies a pre-tax rate of return to the undepreciated investment used to serve the customer. This represents the annual cost to serve the customer. Schedule 1 models UE's method of including the net salvage ratio in the deprecation rates and collecting net salvage over the life of the asset.

As the example shows, Customer A, for the first 30 years of the life of the asset, will have a total cost under UE's approach of including future net salvage costs in the depreciation rates of $14,133 and on a present value basis a total cost of $6,618. Over the next 30 years, Customer B has a total cost of $9,751 and on a present value a total cost of $2,378. It should be noted that the present value for each customer is determined when the customer commences service.

When Customer A leaves after 30 years, Customer B will have very low cost to serve during the remaining 15 years of the original asset's life because of the contributions to net salvage that Customer A has made during the first 30 years. The example assumes that in year 45, the pole line is replaced and a new pole line is installed at the same cost. Customer B remains taking service for an additional 15 years, so each customer has taken service for 30 years.

As the example shows, under UE's proposed treatment of net salvage, the revenue requirement or cost to serve Customer A is $14,133 over the 30-year period, while the revenue requirement or cost to serve Customer B over the second 30-year period is $9,751, or 69% of Customer A's costs. Comparing the present value costs, Customer B's cost of $2,378 is 36% of Customer A's cost of $6,618. This analysis shows that Customer B benefits substantially from Customer A as a result of treating net salvage as recommended by UE.

**Q HAVE YOU MODIFIED THE EXAMPLE TO SHOW CUSTOMER A AND CUSTOMER B COSTS USING THE STAFF'S METHOD AS PRESENTED BY MR. STOUT?**

A Yes. Schedule 2 provides the same example except that Customer B incurs all the removal cost associated with removal of the pole line in year 45. Under this scenario, Customer A's total cost is $14,417, and on a present value basis is $6,325. Customer B's total cost is $15,660 and on a present value basis is $5,041. It should be noted that this is a hypothetical example. In reality, Customer A would incur an annual net salvage cost under the Staff method. This would increase costs to Customer A and decrease the costs to Customer B. Finally, although the total cost appears higher under the Staff's treatment, to get an accurate picture, costs need to be discounted to present value. Using the after-tax cost of capital as a discount rate, both net salvage treatments produce the same present value of revenue requirement over a life cycle.

**Q WHAT IS UE'S POSITION FOR THE NET SALVAGE PERCENTAGE FOR ITS STEAM PRODUCTION PLANT?**

A UE is proposing significant negative net salvage percentages for its steam production plants. For all accounts, excluding the Boiler Plant Equipment – Aluminum Cars account, UE is proposing net salvage percentages that range from a negative 26% to a negative 52% for its steam production plants. The negative net salvage percentages are based on dismantling and demolition studies for UE's steam production power plants. The net salvage ratios that UE wants to include in its steam production depreciation rates produce significantly more negative net salvage expense than is currently in UE's steam production depreciation rates.

**Q PLEASE COMMENT ON UE'S PROPOSED NET SALVAGE FACTORS FOR ITS STEAM PRODUCTION PLANTS.**

A UE is proposing net salvage ratios that are much more negative than those historically used by the Commission. More negative net salvage rates mean higher depreciation rates and expense, all other factors being equal.

UE based its recommendations on dismantling studies that do not recognize the value of the generating sites. A generating site should be valuable because the sites have access to the electric transmission system. Because of this access, these sites should be valuable to UE and/or an independent power producer for the next generation of power plants. This should provide a positive benefit that needs to be considered when the net salvage is developed.

Finally, these sites also have infrastructure in place that makes these sites valuable. For example, these sites have access to water, railroads and/or roads, and the transmission system, all of which provide value to the existing generating site. Also, costs associated with siting and permitting major electric generating plant at an alternative site could enhance the value of the current site. Therefore, if these types of positive salvage considerations are included in the estimate to determine net salvage, dismantling studies would have to be adjusted and the net salvage ratios would be less negative.

**Q WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING REGARDING THE NET SALVAGE FOR STEAM PRODUCTION?**

A Because it is uncertain how these sites will be used, I recommend the Commission set the net salvage percentages at zero for the steam production plants, which is consistent with the net salvage ratios in UE's current depreciation rates. The Commission should not at this time impose higher costs on ratepayers when it is

conceivable that sometime in the future, the sites can be used to develop the next generation of power plants.

**Q WHAT IS YOUR RECOMMENDED TREATMENT OF UE'S NET SALVAGE?**

A UE's net salvage percentage used to calculate its depreciation rates should be set equal to zero. The Commission could then either reflect a five-year average history, or a ten-year average history of UE's actual net salvage expense in UE's revenue requirement. This would be treated as an expense item. Table 1 clearly shows that there is not much volatility associated with using a five-year or ten-year average history. In my Rebuttal Testimony, I recommended using a five-year history.

**Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

A Yes, it does.

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Ratio In Depreciation Rates

**Assumptions:**
Life = 45 years
Net Salvage = -90%
Tax Rate = 38.5%

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Net Salvage Deferred Tax | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|---|
| 1 | $4,500 | $190 | ($35) | $562 | $752 | $14,113 | $6,618 | $6,676 |
| 2 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 3 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 4 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 5 | 3,879 | 190 | (35) | 484 | 674 | | | |
| 6 | 3,723 | 190 | (35) | 465 | 655 | | | |
| 7 | 3,568 | 190 | (35) | 445 | 635 | | | |
| 8 | 3,413 | 190 | (35) | 426 | 616 | | | |
| 9 | 3,257 | 190 | (35) | 406 | 596 | | | |
| 10 | 3,102 | 190 | (35) | 387 | 577 | | | |
| 11 | 2,947 | 190 | (35) | 368 | 558 | | | |
| 12 | 2,791 | 190 | (35) | 348 | 538 | | | |
| 13 | 2,636 | 190 | (35) | 329 | 519 | | | |
| 14 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 15 | 2,325 | 190 | (35) | 290 | 480 | | | |
| 16 | 2,170 | 190 | (35) | 271 | 461 | | | |
| 17 | 2,014 | 190 | (35) | 251 | 441 | | | |
| 18 | 1,859 | 190 | (35) | 232 | 422 | | | |
| 19 | 1,704 | 190 | (35) | 213 | 403 | | | |
| 20 | 1,548 | 190 | (35) | 193 | 383 | | | |
| 21 | 1,393 | 190 | (35) | 174 | 364 | | | |
| 22 | 1,238 | 190 | (35) | 154 | 344 | | | |
| 23 | 1,082 | 190 | (35) | 135 | 325 | | | |
| 24 | 927 | 190 | (35) | 116 | 306 | | | |
| 25 | 772 | 190 | (35) | 96 | 286 | | | |
| 26 | 616 | 190 | (35) | 77 | 267 | | | |
| 27 | 461 | 190 | (35) | 58 | 248 | | | |
| 28 | 306 | 190 | (35) | 38 | 228 | | | |
| 29 | 150 | 190 | (35) | 19 | 209 | | | |
| 30 | (5) | 190 | (35) | (1) | 189 | | | |
| **31** | **(160)** | **$190** | **($35)** | **($20)** | **$170** | **$9,751** | **$2,378** | |
| 32 | (316) | 190 | (35) | (39) | 151 | | | |
| 33 | (471) | 190 | (35) | (59) | 131 | | | |
| 34 | (627) | 190 | (35) | (78) | 112 | | | |
| 35 | (782) | 190 | (35) | (98) | 92 | | | |
| 36 | (937) | 190 | (35) | (117) | 73 | | | |
| 37 | (1,093) | 190 | (35) | (136) | 54 | | | |
| 38 | (1,248) | 190 | (35) | (156) | 34 | | | |
| 39 | (1,403) | 190 | (35) | (175) | 15 | | | |
| 40 | (1,559) | 190 | (35) | (194) | (4) | | | |
| 41 | (1,714) | 190 | (35) | (214) | (24) | | | |
| 42 | (1,869) | 190 | (35) | (233) | (43) | | | |
| 43 | (2,025) | 190 | (35) | (253) | (63) | | | |
| 44 | (2,180) | 190 | (35) | (272) | (82) | | | |
| 45 | (2,335) | 190 | (35) | (291) | (101) | | | |
| 46 | 4,500 | 190 | (35) | 562 | 752 | | | |
| 47 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 48 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 49 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 50 | 3,879 | 190 | (35) | 484 | 674 | | | |
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| 58 | 2,636 | 190 | (35) | 329 | 519 | | | |
| 59 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 60 | 2,325 | 190 | (35) | 290 | 480 | | | |

Schedule 1

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Expense - Staff Recommendation

**Assumptions:**
Life = 45 years
Net Salvage = -90%
Tax Rate = 38.5%

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|
| **1** | **$4,500** | **$100** | **$562** | **$662** | **$14,417** | **$6,325** | **$6,676** |
| 2 | 4,400 | 100 | $549 | 649 | | | |
| 3 | 4,300 | 100 | $537 | 637 | | | |
| 4 | 4,200 | 100 | $524 | 624 | | | |
| 5 | 4,100 | 100 | $512 | 612 | | | |
| 6 | 4,000 | 100 | $499 | 599 | | | |
| 7 | 3,900 | 100 | $487 | 587 | | | |
| 8 | 3,800 | 100 | $474 | 574 | | | |
| 9 | 3,700 | 100 | $462 | 562 | | | |
| 10 | 3,600 | 100 | $449 | 549 | | | |
| 11 | 3,500 | 100 | $437 | 537 | | | |
| 12 | 3,400 | 100 | $424 | 524 | | | |
| 13 | 3,300 | 100 | $412 | 512 | | | |
| 14 | 3,200 | 100 | $399 | 499 | | | |
| 15 | 3,100 | 100 | $387 | 487 | | | |
| 16 | 3,000 | 100 | $374 | 474 | | | |
| 17 | 2,900 | 100 | $362 | 462 | | | |
| 18 | 2,800 | 100 | $349 | 449 | | | |
| 19 | 2,700 | 100 | $337 | 437 | | | |
| 20 | 2,600 | 100 | $324 | 424 | | | |
| 21 | 2,500 | 100 | $312 | 412 | | | |
| 22 | 2,400 | 100 | $299 | 399 | | | |
| 23 | 2,300 | 100 | $287 | 387 | | | |
| 24 | 2,200 | 100 | $275 | 375 | | | |
| 25 | 2,100 | 100 | $262 | 362 | | | |
| 26 | 2,000 | 100 | $250 | 350 | | | |
| 27 | 1,900 | 100 | $237 | 337 | | | |
| 28 | 1,800 | 100 | $225 | 325 | | | |
| 29 | 1,700 | 100 | $212 | 312 | | | |
| 30 | 1,600 | 100 | $200 | 300 | | | |
| **31** | **$1,500** | **$100** | **$187** | **$287** | **$15,660** | **$5,041** | |
| 32 | 1,400 | 100 | $175 | 275 | | | |
| 33 | 1,300 | 100 | $162 | 262 | | | |
| 34 | 1,200 | 100 | $150 | 250 | | | |
| 35 | 1,100 | 100 | $137 | 237 | | | |
| 36 | 1,000 | 100 | $125 | 225 | | | |
| 37 | 900 | 100 | $112 | 212 | | | |
| 38 | 800 | 100 | $100 | 200 | | | |
| 39 | 700 | 100 | $87 | 187 | | | |
| 40 | 600 | 100 | $75 | 175 | | | |
| 41 | 500 | 100 | $62 | 162 | | | |
| 42 | 400 | 100 | $50 | 150 | | | |
| 43 | 300 | 100 | $37 | 137 | | | |
| 44 | 200 | 100 | $25 | 125 | | | |
| 45 | 100 | 4,150 | $12 | 4,162 | | | |
| 46 | 4,500 | 100 | $562 | 662 | | | |
| 47 | 4,400 | 100 | $549 | 649 | | | |
| 48 | 4,300 | 100 | $537 | 637 | | | |
| 49 | 4,200 | 100 | $524 | 624 | | | |
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| 58 | 3,300 | 100 | $412 | 512 | | | |
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| 60 | 3,100 | 100 | $387 | 487 | | | |

Schedule 2

| | |
|---|---|
| Exhibit No. | |
| Witness: | James T. Selecky |
| Type of Exhibit: | Surrebuttal Testimony |
| Sponsoring Party: | Missouri Industrial Energy Consumers |
| Case No. | EC-2002-1 |
| Subject: | Depreciation Rates |

**Before the**
**Missouri Public Service Commission**

| | | |
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| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | **Case No. EC-2002-1** |
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| **Union Electric Company, d/b/a AmerenUE** | ) | |
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Surrebuttal Testimony and Schedules of

**James T. Selecky**

On Behalf of

**Missouri Industrial Energy Consumers**

June 24, 2002
Project 7651

BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

**Before the Public Service Commission**
**of the State of Missouri**

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**STATE OF MISSOURI** )
) **SS**
**COUNTY OF ST. LOUIS** )

## Surrebuttal Affidavit of James T. Selecky

James T. Selecky, being first duly sworn, on his oath states:

1. My name is James T. Selecky. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. EC-2002-1.

3. I hereby swear and affirm that the surrebuttal testimony is true and correct and shows the matters and things it purports to show.

James T. Selecky

Subscribed and sworn to before this 21st day of June 2002.

CAROL SCHULZ
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: Feb. 26, 2004

Notary Public

My Commission Expires February 26, 2004.

**Before the**
**Missouri Public Service Commission**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | |
| **v.** | ) | **Case No. EC-2002-1** |
| **Union Electric Company, d/b/a AmerenUE** | ) | |
| **Respondent.** | ) | |

## Surrebuttal Testimony of James T. Selecky

1 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A James T. Selecky; 1215 Fern Ridge Parkway, Suite 208; St. Louis, MO 63141-2000.

3 **Q ARE YOU THE SAME JAMES T. SELECKY WHO HAS PREVIOUSLY SUBMITTED**
4 **REBUTTAL TESTIMONY IN THIS PROCEEDING?**

5 A Yes.

6 **Q ON WHAT SUBJECTS WILL YOU TESTIFY?**

7 A I will address AmerenUE's (UE or Company) rebuttal testimony on the treatment of
8 net salvage as it relates to book depreciation rates. Primarily, I will be addressing the
9 net salvage issues presented by UE Witness William M. Stout.

10 **Q HOW IS UE PROPOSING TO TREAT THE NET SALVAGE ASSOCIATED WITH**
11 **BOOK DEPRECIATION?**

12 A UE wants to include the net salvage ratios in the development of the book
13 depreciation rates. The MPSC Staff is proposing to exclude the net salvage from the

deprecation rates and include an expense provision for net salvage in UE's revenue requirement or cost of service. I support the Staff approach.

**Q HOW MUCH NET SALVAGE IS UE SEEKING IN THIS PROCEEDING?**

A UE is seeking to include $51.4 million of net salvage expense in its book depreciation rates. The proposed net salvage accrual of $51.4 million is approximately $25 million greater than the amount of net salvage currently included in UE's depreciation rates. Of the $54.1 million of net salvage, $29.8 million is attributable to the transmission, distribution and general plant functions. For these three plant functions, UE is essentially seeking a net salvage ratio of a negative 39% to include in its depreciation rates.

**Q HOW DOES UE'S NET SALVAGE EXPENSE INCLUDED IN ITS PROPOSED DEPRECIATION RATES COMPARE WITH THE NET SALVAGE EXPENSE UE HAS ACTUALLY INCURRED?**

A Table 1 below shows UE's net salvage experience for the last 20 years. It should be noted that since 1986 data was not available, 1981 data was used to complete the 20-year history. Also, the data are shown as negative amounts because UE's removal cost exceeds the gross salvage. That is, UE incurs cost to retire plant investment.

As Table 1 shows, UE's net salvage history using a five-year rolling average has ranged from approximately $5.9 million to $10.5 million annually, and $6.6 million to $10.3 million using the ten-year rolling average. UE's actual net salvage history has been considerably less than what UE is seeking in this proceeding. Therefore, UE's request in this proceeding appears excessive and inconsistent with trends over the last 20 years.

**TABLE 1**

**UE's Actual Net Salvage Experience**

| Year | Net Salvage ($000) | 5-Year Average ($000) | 10-Year Average ($000) |
|---|---|---|---|
| 2001 | $ (21,426) | $ (10,378) | $ (10,252) |
| 2000 | (12,502) | (8,137) | (9,043) |
| 1999 | (7,701) | (8,024) | (8,609) |
| 1998 | (576) | (8,820) | (8,465) |
| 1997 | (9,686) | (10,521) | (8,977) |
| 1996 | (10,221) | (10,125) | (8,722) |
| 1995 | (11,938) | (9,950) | (8,522) |
| 1994 | (11,679) | (9,194) | (7,933) |
| 1993 | (9,081) | (8,109) | (7,303) |
| 1992 | (7,708) | (7,434) | (6,989) |
| 1991 | (9,342) | (7,320) | (6,609) |
| 1990 | (8,159) | (7,094) | |
| 1989 | (6,256) | (6,672) | |
| 1988 | (5,706) | (6,497) | |
| 1987 | (7,135) | (6,544) | |
| 1986 | N/A | N/A | |
| 1985 | (8,215) | (5,899) | |
| 1984 | (6,050) | | |
| 1983 | (5,379) | | |
| 1982 | (5,940) | | |
| 1981 | (3,909) | | |
| Average | $ (8,430) | $ (8,170) | $ (8,311) |

**Q DO ANY OTHER COMMISSIONS ACCOUNT FOR NET SALVAGE SIMILAR TO THE METHOD THAT STAFF HAS PROPOSED IN THIS CASE?**

A Yes. Pages 157-158 of the Public Utility Depreciation Practices published in August 1996 by the National Association of Regulatory Utility Commissioners (NARUC) states:

> "Some commissions have abandoned the above procedure and moved to current-period accounting for gross salvage and/or cost of removal. In some jurisdictions gross salvage and cost of removal are accounted for as income and expense, respectively, when they are realized. Other jurisdictions consider only gross salvage in depreciation rates, with the cost of removal being expensed in the year incurred.
>
> Determining a reasonably accurate estimate of the average or future net salvage is not an easy task; estimates can be the subject of considerable discussion and controversy between regulators and utility personnel. This is one of the reasons advanced in support of current-period accounting for these items. When estimating future net salvage, every effort should be made to ensure that the estimate is as accurate as possible. Normally, the process should start by analyzing past salvage and cost of removal data and by using the results of this analysis to project future gross salvage and cost of removal."

This quote indicates the method proposed by the Staff in this proceeding is consistent with the method used by other jurisdictions and is acceptable to NARUC.

**Q IN YOUR REBUTTAL TESTIMONY FILED ON MAY 17, 2002 YOU INDICATED THAT THE DISPARITY BETWEEN THE NET SALVAGE EXPENSE INCLUDED IN DEPRECIATION RATES AND UE'S ACTUAL NET SALVAGE EXPERIENCE IS IN PART PRODUCED BY THE FACT THAT THE NET SALVAGE COMPONENT INCLUDED IN THE DEPRECIATION RATES INCLUDES THE IMPACT OF FUTURE INFLATION. PLEASE ELABORATE.**

A To develop the net salvage component of the depreciation rates, UE analyzes the net salvage cost it experiences when retiring plant investment. UE develops its net salvage percentage to be included in its depreciation rates by dividing the net salvage cost associated with retiring an asset by the original cost of the asset. In this instance, the net salvage cost is expressed in current dollars, while the original cost of the asset is stated in the dollars for the year the asset was originally placed in service. For example, UE's transmission and distribution plant accounts have an average service life in excess of 45 years. Therefore, if an asset is retired in 2000, UE compares the cost to remove the asset in year 2000 dollars with the cost to install

the asset in 1955 dollars in order to develop a net salvage ratio. This net salvage ratio is used to develop the current depreciation rates. Therefore, UE's net salvage percentages require today's ratepayers to pay the estimated costs of future inflation based on historic trends.

**Q WHAT WOULD BE THE IMPACT ON NET SALVAGE ASSOCIATED WITH INCLUDING FUTURE INFLATION IN THE DEVELOPMENT OF NET SALVAGE RATIOS?**

A Using Mr. Stout's example on Page 12 of his Rebuttal Testimony, let us assume that the asset has a 45-year life and a cost to remove of $4,050. If we simply discount the $4,050 at a 3% rate, the present-day cost to remove that asset is approximately $1,071. Under UE's proposal, today's ratepayers would see the 45-year amortization of the $4,050 in their depreciation rates. Therefore, by including future inflation in the development of the net salvage ratio, UE is requiring today's ratepayers to pick up the cost of inflation that it estimates will occur over the next 45 years. That is, the net salvage that is built into the depreciation rates does not reflect a current cost, but an estimate of a cost that it is expected to incur in 45 years.

**Q ON PAGES 11-13 OF MR. STOUT'S TESTIMONY, HE PROVIDES AN EXAMPLE THAT INDICATES USING THE STAFF'S APPROACH IS NOT EQUITABLE AND VIOLATES THE PRINCIPLE THAT CUSTOMERS SHOULD PAY THE COST OF THE PLANT THAT PROVIDES SERVICE TO THEM. DO YOU AGREE WITH THAT EXAMPLE?**

A No. In his example, Mr. Stout has only reflected the cost of the net salvage. He has not included the impact of the return on the investment and associated income taxes. Therefore, Mr. Stout's example does not capture the true cost to Customers A and B.

**Q PLEASE SUMMARIZE THE EXAMPLE MR. STOUT PRESENTS IN HIS TESTIMONY.**

A Mr. Stout analyzes the net salvage costs associated with a customer taking service from a pole line that does not provide service to other customers. The pole line has an installed cost of $4,500, an estimated service life of 45 years, and an estimated net salvage of negative 90%. Customer A takes service from this pole line for 30 years then moves out, and Customer B takes service for a like period. Because the pole line only has a 45-year life, at the end of year 45, a new pole line is installed at the same original cost. In Mr. Stout's example, Customer B, under the Staff's proposed treatment of net salvage, is incurring additional cost that, in his opinion, should be allocated to Customer A. Mr. Stout concludes that this approach is not equitable and violates the principle that customers should pay the cost of the plant that provides service to them.

**Q DO YOU AGREE WITH MR. STOUT'S ANALYSIS?**

A No. Mr. Stout's analysis is only partial. The analysis does not reflect the return on rate base and associated taxes that each customer will experience during this 60-year time period. The analysis does not reflect the true cost to the customer. Factoring in the return on rate base and associated taxes, the Staff's approach to net salvage is more equitable than UE's approach.

**Q HAVE YOU PERFORMED AN ANALYSIS TO DEMONSTRATE THIS POINT?**

A Yes. Schedule 1 develops an annual revenue requirement using Mr. Stout's life and net salvage assumptions and UE's proposed treatment of net salvage. The annual revenue requirement applies a pre-tax rate of return to the undepreciated investment used to serve the customer. This represents the annual cost to serve the customer. Schedule 1 models UE's method of including the net salvage ratio in the deprecation rates and collecting net salvage over the life of the asset.

As the example shows, Customer A, for the first 30 years of the life of the asset, will have a total cost under UE's approach of including future net salvage costs in the depreciation rates of $14,133 and on a present value basis a total cost of $6,618. Over the next 30 years, Customer B has a total cost of $9,751 and on a present value a total cost of $2,378. It should be noted that the present value for each customer is determined when the customer commences service.

When Customer A leaves after 30 years, Customer B will have very low cost to serve during the remaining 15 years of the original asset's life because of the contributions to net salvage that Customer A has made during the first 30 years. The example assumes that in year 45, the pole line is replaced and a new pole line is installed at the same cost. Customer B remains taking service for an additional 15 years, so each customer has taken service for 30 years.

As the example shows, under UE's proposed treatment of net salvage, the revenue requirement or cost to serve Customer A is $14,133 over the 30-year period, while the revenue requirement or cost to serve Customer B over the second 30-year period is $9,751, or 69% of Customer A's costs. Comparing the present value costs, Customer B's cost of $2,378 is 36% of Customer A's cost of $6,618. This analysis shows that Customer B benefits substantially from Customer A as a result of treating net salvage as recommended by UE.

**Q HAVE YOU MODIFIED THE EXAMPLE TO SHOW CUSTOMER A AND CUSTOMER B COSTS USING THE STAFF'S METHOD AS PRESENTED BY MR. STOUT?**

A Yes. Schedule 2 provides the same example except that Customer B incurs all the removal cost associated with removal of the pole line in year 45. Under this scenario, Customer A's total cost is $14,417, and on a present value basis is $6,325. Customer B's total cost is $15,660 and on a present value basis is $5,041. It should be noted that this is a hypothetical example. In reality, Customer A would incur an annual net salvage cost under the Staff method. This would increase costs to Customer A and decrease the costs to Customer B. Finally, although the total cost appears higher under the Staff's treatment, to get an accurate picture, costs need to be discounted to present value. Using the after-tax cost of capital as a discount rate, both net salvage treatments produce the same present value of revenue requirement over a life cycle.

**Q WHAT IS UE'S POSITION FOR THE NET SALVAGE PERCENTAGE FOR ITS STEAM PRODUCTION PLANT?**

A UE is proposing significant negative net salvage percentages for its steam production plants. For all accounts, excluding the Boiler Plant Equipment – Aluminum Cars account, UE is proposing net salvage percentages that range from a negative 26% to a negative 52% for its steam production plants. The negative net salvage percentages are based on dismantling and demolition studies for UE's steam production power plants. The net salvage ratios that UE wants to include in its steam production depreciation rates produce significantly more negative net salvage expense than is currently in UE's steam production depreciation rates.

**Q PLEASE COMMENT ON UE'S PROPOSED NET SALVAGE FACTORS FOR ITS STEAM PRODUCTION PLANTS.**

A UE is proposing net salvage ratios that are much more negative than those historically used by the Commission. More negative net salvage rates mean higher depreciation rates and expense, all other factors being equal.

UE based its recommendations on dismantling studies that do not recognize the value of the generating sites. A generating site should be valuable because the sites have access to the electric transmission system. Because of this access, these sites should be valuable to UE and/or an independent power producer for the next generation of power plants. This should provide a positive benefit that needs to be considered when the net salvage is developed.

Finally, these sites also have infrastructure in place that makes these sites valuable. For example, these sites have access to water, railroads and/or roads, and the transmission system, all of which provide value to the existing generating site. Also, costs associated with siting and permitting major electric generating plant at an alternative site could enhance the value of the current site. Therefore, if these types of positive salvage considerations are included in the estimate to determine net salvage, dismantling studies would have to be adjusted and the net salvage ratios would be less negative.

**Q WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING REGARDING THE NET SALVAGE FOR STEAM PRODUCTION?**

A Because it is uncertain how these sites will be used, I recommend the Commission set the net salvage percentages at zero for the steam production plants, which is consistent with the net salvage ratios in UE's current depreciation rates. The Commission should not at this time impose higher costs on ratepayers when it is

conceivable that sometime in the future, the sites can be used to develop the next generation of power plants.

**Q WHAT IS YOUR RECOMMENDED TREATMENT OF UE'S NET SALVAGE?**

A UE's net salvage percentage used to calculate its depreciation rates should be set equal to zero. The Commission could then either reflect a five-year average history, or a ten-year average history of UE's actual net salvage expense in UE's revenue requirement. This would be treated as an expense item. Table 1 clearly shows that there is not much volatility associated with using a five-year or ten-year average history. In my Rebuttal Testimony, I recommended using a five-year history.

**Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

A Yes, it does.

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Ratio In Depreciation Rates

**Assumptions:**
Life = 45 years
Net Salvage = -90%
Tax Rate = 38.5%

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Net Salvage Deferred Tax | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|---|
| 1 | $4,500 | $190 | ($35) | $562 | $752 | $14,113 | $6,618 | $6,676 |
| 2 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 3 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 4 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 5 | 3,879 | 190 | (35) | 484 | 674 | | | |
| 6 | 3,723 | 190 | (35) | 465 | 655 | | | |
| 7 | 3,568 | 190 | (35) | 445 | 635 | | | |
| 8 | 3,413 | 190 | (35) | 426 | 616 | | | |
| 9 | 3,257 | 190 | (35) | 406 | 596 | | | |
| 10 | 3,102 | 190 | (35) | 387 | 577 | | | |
| 11 | 2,947 | 190 | (35) | 368 | 558 | | | |
| 12 | 2,791 | 190 | (35) | 348 | 538 | | | |
| 13 | 2,636 | 190 | (35) | 329 | 519 | | | |
| 14 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 15 | 2,325 | 190 | (35) | 290 | 480 | | | |
| 16 | 2,170 | 190 | (35) | 271 | 461 | | | |
| 17 | 2,014 | 190 | (35) | 251 | 441 | | | |
| 18 | 1,859 | 190 | (35) | 232 | 422 | | | |
| 19 | 1,704 | 190 | (35) | 213 | 403 | | | |
| 20 | 1,548 | 190 | (35) | 193 | 383 | | | |
| 21 | 1,393 | 190 | (35) | 174 | 364 | | | |
| 22 | 1,238 | 190 | (35) | 154 | 344 | | | |
| 23 | 1,082 | 190 | (35) | 135 | 325 | | | |
| 24 | 927 | 190 | (35) | 116 | 306 | | | |
| 25 | 772 | 190 | (35) | 96 | 286 | | | |
| 26 | 616 | 190 | (35) | 77 | 267 | | | |
| 27 | 461 | 190 | (35) | 58 | 248 | | | |
| 28 | 306 | 190 | (35) | 38 | 228 | | | |
| 29 | 150 | 190 | (35) | 19 | 209 | | | |
| 30 | (5) | 190 | (35) | (1) | 189 | | | |
| 31 | (160) | $190 | ($35) | ($20) | $170 | $9,751 | $2,378 | |
| 32 | (316) | 190 | (35) | (39) | 151 | | | |
| 33 | (471) | 190 | (35) | (59) | 131 | | | |
| 34 | (627) | 190 | (35) | (78) | 112 | | | |
| 35 | (782) | 190 | (35) | (98) | 92 | | | |
| 36 | (937) | 190 | (35) | (117) | 73 | | | |
| 37 | (1,093) | 190 | (35) | (136) | 54 | | | |
| 38 | (1,248) | 190 | (35) | (156) | 34 | | | |
| 39 | (1,403) | 190 | (35) | (175) | 15 | | | |
| 40 | (1,559) | 190 | (35) | (194) | (4) | | | |
| 41 | (1,714) | 190 | (35) | (214) | (24) | | | |
| 42 | (1,869) | 190 | (35) | (233) | (43) | | | |
| 43 | (2,025) | 190 | (35) | (253) | (63) | | | |
| 44 | (2,180) | 190 | (35) | (272) | (82) | | | |
| 45 | (2,335) | 190 | (35) | (291) | (101) | | | |
| 46 | 4,500 | 190 | (35) | 562 | 752 | | | |
| 47 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 48 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 49 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 50 | 3,879 | 190 | (35) | 484 | 674 | | | |
| 51 | 3,723 | 190 | (35) | 465 | 655 | | | |
| 52 | 3,568 | 190 | (35) | 445 | 635 | | | |
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| 55 | 3,102 | 190 | (35) | 387 | 577 | | | |
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| 57 | 2,791 | 190 | (35) | 348 | 538 | | | |
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| 59 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 60 | 2,325 | 190 | (35) | 290 | 480 | | | |

Schedule 1

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Expense - Staff Recommendation

**Assumptions:**
Life = 45 years
Net Salvage = -90%
Tax Rate = 38.5%

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|
| 1 | $4,500 | $100 | $562 | $662 | $14,417 | $6,325 | $6,676 |
| 2 | 4,400 | 100 | $549 | 649 | | | |
| 3 | 4,300 | 100 | $537 | 637 | | | |
| 4 | 4,200 | 100 | $524 | 624 | | | |
| 5 | 4,100 | 100 | $512 | 612 | | | |
| 6 | 4,000 | 100 | $499 | 599 | | | |
| 7 | 3,900 | 100 | $487 | 587 | | | |
| 8 | 3,800 | 100 | $474 | 574 | | | |
| 9 | 3,700 | 100 | $462 | 562 | | | |
| 10 | 3,600 | 100 | $449 | 549 | | | |
| 11 | 3,500 | 100 | $437 | 537 | | | |
| 12 | 3,400 | 100 | $424 | 524 | | | |
| 13 | 3,300 | 100 | $412 | 512 | | | |
| 14 | 3,200 | 100 | $399 | 499 | | | |
| 15 | 3,100 | 100 | $387 | 487 | | | |
| 16 | 3,000 | 100 | $374 | 474 | | | |
| 17 | 2,900 | 100 | $362 | 462 | | | |
| 18 | 2,800 | 100 | $349 | 449 | | | |
| 19 | 2,700 | 100 | $337 | 437 | | | |
| 20 | 2,600 | 100 | $324 | 424 | | | |
| 21 | 2,500 | 100 | $312 | 412 | | | |
| 22 | 2,400 | 100 | $299 | 399 | | | |
| 23 | 2,300 | 100 | $287 | 387 | | | |
| 24 | 2,200 | 100 | $275 | 375 | | | |
| 25 | 2,100 | 100 | $262 | 362 | | | |
| 26 | 2,000 | 100 | $250 | 350 | | | |
| 27 | 1,900 | 100 | $237 | 337 | | | |
| 28 | 1,800 | 100 | $225 | 325 | | | |
| 29 | 1,700 | 100 | $212 | 312 | | | |
| 30 | 1,600 | 100 | $200 | 300 | | | |
| 31 | $1,500 | $100 | $187 | $287 | $15,660 | $5,041 | |
| 32 | 1,400 | 100 | $175 | 275 | | | |
| 33 | 1,300 | 100 | $162 | 262 | | | |
| 34 | 1,200 | 100 | $150 | 250 | | | |
| 35 | 1,100 | 100 | $137 | 237 | | | |
| 36 | 1,000 | 100 | $125 | 225 | | | |
| 37 | 900 | 100 | $112 | 212 | | | |
| 38 | 800 | 100 | $100 | 200 | | | |
| 39 | 700 | 100 | $87 | 187 | | | |
| 40 | 600 | 100 | $75 | 175 | | | |
| 41 | 500 | 100 | $62 | 162 | | | |
| 42 | 400 | 100 | $50 | 150 | | | |
| 43 | 300 | 100 | $37 | 137 | | | |
| 44 | 200 | 100 | $25 | 125 | | | |
| 45 | 100 | 4,150 | $12 | 4,162 | | | |
| 46 | 4,500 | 100 | $562 | 662 | | | |
| 47 | 4,400 | 100 | $549 | 649 | | | |
| 48 | 4,300 | 100 | $537 | 637 | | | |
| 49 | 4,200 | 100 | $524 | 624 | | | |
| 50 | 4,100 | 100 | $512 | 612 | | | |
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Schedule 2

Exhibit No.
Witness: James T. Selecky
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Missouri Industrial Energy Consumers
Case No. EC-2002-1
Subject: Depreciation Rates

**Before the**
**Missouri Public Service Commission**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | **Case No. EC-2002-1** |
| **v.** | ) | |
| **Union Electric Company, d/b/a AmerenUE** | ) | |
| **Respondent.** | ) | |

Surrebuttal Testimony and Schedules of

**James T. Selecky**

On Behalf of

**Missouri Industrial Energy Consumers**

June 24, 2002
Project 7651

BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

**Before the Public Service Commission**
**of the State of Missouri**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | |
| **v.** | ) | **Case No. EC-2002-1** |
| **Union Electric Company, d/b/a AmerenUE** | ) | |
| **Respondent.** | ) | |

**STATE OF MISSOURI** )
) **SS**
**COUNTY OF ST. LOUIS** )

## Surrebuttal Affidavit of James T. Selecky

James T. Selecky, being first duly sworn, on his oath states:

1. My name is James T. Selecky. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. EC-2002-1.

3. I hereby swear and affirm that the surrebuttal testimony is true and correct and shows the matters and things it purports to show.

James T. Selecky

Subscribed and sworn to before this 21st day of June 2002.

CAROL SCHULZ
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: Feb. 26, 2004

Notary Public

My Commission Expires February 26, 2004.

**Before the**
**Missouri Public Service Commission**

| | | |
|---|---|---|
| **Staff of the Missouri Public Service Commission** | ) | |
| **Complainant** | ) | |
| **v.** | ) | **Case No. EC-2002-1** |
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| **Respondent.** | ) | |

## Surrebuttal Testimony of James T. Selecky

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8 net salvage as it relates to book depreciation rates. Primarily, I will be addressing the
9 net salvage issues presented by UE Witness William M. Stout.

10 **Q HOW IS UE PROPOSING TO TREAT THE NET SALVAGE ASSOCIATED WITH**
11 **BOOK DEPRECIATION?**

12 A UE wants to include the net salvage ratios in the development of the book
13 depreciation rates. The MPSC Staff is proposing to exclude the net salvage from the

deprecation rates and include an expense provision for net salvage in UE's revenue requirement or cost of service. I support the Staff approach.

**Q HOW MUCH NET SALVAGE IS UE SEEKING IN THIS PROCEEDING?**

A UE is seeking to include $51.4 million of net salvage expense in its book depreciation rates. The proposed net salvage accrual of $51.4 million is approximately $25 million greater than the amount of net salvage currently included in UE's depreciation rates. Of the $54.1 million of net salvage, $29.8 million is attributable to the transmission, distribution and general plant functions. For these three plant functions, UE is essentially seeking a net salvage ratio of a negative 39% to include in its depreciation rates.

**Q HOW DOES UE'S NET SALVAGE EXPENSE INCLUDED IN ITS PROPOSED DEPRECIATION RATES COMPARE WITH THE NET SALVAGE EXPENSE UE HAS ACTUALLY INCURRED?**

A Table 1 below shows UE's net salvage experience for the last 20 years. It should be noted that since 1986 data was not available, 1981 data was used to complete the 20-year history. Also, the data are shown as negative amounts because UE's removal cost exceeds the gross salvage. That is, UE incurs cost to retire plant investment.

As Table 1 shows, UE's net salvage history using a five-year rolling average has ranged from approximately $5.9 million to $10.5 million annually, and $6.6 million to $10.3 million using the ten-year rolling average. UE's actual net salvage history has been considerably less than what UE is seeking in this proceeding. Therefore, UE's request in this proceeding appears excessive and inconsistent with trends over the last 20 years.

**TABLE 1**

**UE's Actual Net Salvage Experience**

| Year | Net Salvage ($000) | 5-Year Average ($000) | 10-Year Average ($000) |
|---|---|---|---|
| 2001 | $ (21,426) | $ (10,378) | $ (10,252) |
| 2000 | (12,502) | (8,137) | (9,043) |
| 1999 | (7,701) | (8,024) | (8,609) |
| 1998 | (576) | (8,820) | (8,465) |
| 1997 | (9,686) | (10,521) | (8,977) |
| 1996 | (10,221) | (10,125) | (8,722) |
| 1995 | (11,938) | (9,950) | (8,522) |
| 1994 | (11,679) | (9,194) | (7,933) |
| 1993 | (9,081) | (8,109) | (7,303) |
| 1992 | (7,708) | (7,434) | (6,989) |
| 1991 | (9,342) | (7,320) | (6,609) |
| 1990 | (8,159) | (7,094) | |
| 1989 | (6,256) | (6,672) | |
| 1988 | (5,706) | (6,497) | |
| 1987 | (7,135) | (6,544) | |
| 1986 | N/A | N/A | |
| 1985 | (8,215) | (5,899) | |
| 1984 | (6,050) | | |
| 1983 | (5,379) | | |
| 1982 | (5,940) | | |
| 1981 | (3,909) | | |
| Average | $ (8,430) | $ (8,170) | $ (8,311) |

**Q DO ANY OTHER COMMISSIONS ACCOUNT FOR NET SALVAGE SIMILAR TO THE METHOD THAT STAFF HAS PROPOSED IN THIS CASE?**

A Yes. Pages 157-158 of the Public Utility Depreciation Practices published in August 1996 by the National Association of Regulatory Utility Commissioners (NARUC) states:

"Some commissions have abandoned the above procedure and moved to current-period accounting for gross salvage and/or cost of removal. In some jurisdictions gross salvage and cost of removal are accounted for as income and expense, respectively, when they are realized. Other jurisdictions consider only gross salvage in depreciation rates, with the cost of removal being expensed in the year incurred.

Determining a reasonably accurate estimate of the average or future net salvage is not an easy task; estimates can be the subject of considerable discussion and controversy between regulators and utility personnel. This is one of the reasons advanced in support of current-period accounting for these items. When estimating future net salvage, every effort should be made to ensure that the estimate is as accurate as possible. Normally, the process should start by analyzing past salvage and cost of removal data and by using the results of this analysis to project future gross salvage and cost of removal."

This quote indicates the method proposed by the Staff in this proceeding is consistent with the method used by other jurisdictions and is acceptable to NARUC.

**Q IN YOUR REBUTTAL TESTIMONY FILED ON MAY 17, 2002 YOU INDICATED THAT THE DISPARITY BETWEEN THE NET SALVAGE EXPENSE INCLUDED IN DEPRECIATION RATES AND UE'S ACTUAL NET SALVAGE EXPERIENCE IS IN PART PRODUCED BY THE FACT THAT THE NET SALVAGE COMPONENT INCLUDED IN THE DEPRECIATION RATES INCLUDES THE IMPACT OF FUTURE INFLATION. PLEASE ELABORATE.**

A To develop the net salvage component of the depreciation rates, UE analyzes the net salvage cost it experiences when retiring plant investment. UE develops its net salvage percentage to be included in its depreciation rates by dividing the net salvage cost associated with retiring an asset by the original cost of the asset. In this instance, the net salvage cost is expressed in current dollars, while the original cost of the asset is stated in the dollars for the year the asset was originally placed in service. For example, UE's transmission and distribution plant accounts have an average service life in excess of 45 years. Therefore, if an asset is retired in 2000, UE compares the cost to remove the asset in year 2000 dollars with the cost to install

the asset in 1955 dollars in order to develop a net salvage ratio. This net salvage ratio is used to develop the current depreciation rates. Therefore, UE's net salvage percentages require today's ratepayers to pay the estimated costs of future inflation based on historic trends.

**Q WHAT WOULD BE THE IMPACT ON NET SALVAGE ASSOCIATED WITH INCLUDING FUTURE INFLATION IN THE DEVELOPMENT OF NET SALVAGE RATIOS?**

A Using Mr. Stout's example on Page 12 of his Rebuttal Testimony, let us assume that the asset has a 45-year life and a cost to remove of $4,050. If we simply discount the $4,050 at a 3% rate, the present-day cost to remove that asset is approximately $1,071. Under UE's proposal, today's ratepayers would see the 45-year amortization of the $4,050 in their depreciation rates. Therefore, by including future inflation in the development of the net salvage ratio, UE is requiring today's ratepayers to pick up the cost of inflation that it estimates will occur over the next 45 years. That is, the net salvage that is built into the depreciation rates does not reflect a current cost, but an estimate of a cost that it is expected to incur in 45 years.

**Q ON PAGES 11-13 OF MR. STOUT'S TESTIMONY, HE PROVIDES AN EXAMPLE THAT INDICATES USING THE STAFF'S APPROACH IS NOT EQUITABLE AND VIOLATES THE PRINCIPLE THAT CUSTOMERS SHOULD PAY THE COST OF THE PLANT THAT PROVIDES SERVICE TO THEM. DO YOU AGREE WITH THAT EXAMPLE?**

A No. In his example, Mr. Stout has only reflected the cost of the net salvage. He has not included the impact of the return on the investment and associated income taxes. Therefore, Mr. Stout's example does not capture the true cost to Customers A and B.

**Q PLEASE SUMMARIZE THE EXAMPLE MR. STOUT PRESENTS IN HIS TESTIMONY.**

A Mr. Stout analyzes the net salvage costs associated with a customer taking service from a pole line that does not provide service to other customers. The pole line has an installed cost of $4,500, an estimated service life of 45 years, and an estimated net salvage of negative 90%. Customer A takes service from this pole line for 30 years then moves out, and Customer B takes service for a like period. Because the pole line only has a 45-year life, at the end of year 45, a new pole line is installed at the same original cost. In Mr. Stout's example, Customer B, under the Staff's proposed treatment of net salvage, is incurring additional cost that, in his opinion, should be allocated to Customer A. Mr. Stout concludes that this approach is not equitable and violates the principle that customers should pay the cost of the plant that provides service to them.

**Q DO YOU AGREE WITH MR. STOUT'S ANALYSIS?**

A No. Mr. Stout's analysis is only partial. The analysis does not reflect the return on rate base and associated taxes that each customer will experience during this 60-year time period. The analysis does not reflect the true cost to the customer. Factoring in the return on rate base and associated taxes, the Staff's approach to net salvage is more equitable than UE's approach.

Q **HAVE YOU PERFORMED AN ANALYSIS TO DEMONSTRATE THIS POINT?**

A Yes. Schedule 1 develops an annual revenue requirement using Mr. Stout's life and net salvage assumptions and UE's proposed treatment of net salvage. The annual revenue requirement applies a pre-tax rate of return to the undepreciated investment used to serve the customer. This represents the annual cost to serve the customer. Schedule 1 models UE's method of including the net salvage ratio in the deprecation rates and collecting net salvage over the life of the asset.

As the example shows, Customer A, for the first 30 years of the life of the asset, will have a total cost under UE's approach of including future net salvage costs in the depreciation rates of $14,133 and on a present value basis a total cost of $6,618. Over the next 30 years, Customer B has a total cost of $9,751 and on a present value a total cost of $2,378. It should be noted that the present value for each customer is determined when the customer commences service.

When Customer A leaves after 30 years, Customer B will have very low cost to serve during the remaining 15 years of the original asset's life because of the contributions to net salvage that Customer A has made during the first 30 years. The example assumes that in year 45, the pole line is replaced and a new pole line is installed at the same cost. Customer B remains taking service for an additional 15 years, so each customer has taken service for 30 years.

As the example shows, under UE's proposed treatment of net salvage, the revenue requirement or cost to serve Customer A is $14,133 over the 30-year period, while the revenue requirement or cost to serve Customer B over the second 30-year period is $9,751, or 69% of Customer A's costs. Comparing the present value costs, Customer B's cost of $2,378 is 36% of Customer A's cost of $6,618. This analysis shows that Customer B benefits substantially from Customer A as a result of treating net salvage as recommended by UE.

**Q HAVE YOU MODIFIED THE EXAMPLE TO SHOW CUSTOMER A AND CUSTOMER B COSTS USING THE STAFF'S METHOD AS PRESENTED BY MR. STOUT?**

A Yes. Schedule 2 provides the same example except that Customer B incurs all the removal cost associated with removal of the pole line in year 45. Under this scenario, Customer A's total cost is $14,417, and on a present value basis is $6,325. Customer B's total cost is $15,660 and on a present value basis is $5,041. It should be noted that this is a hypothetical example. In reality, Customer A would incur an annual net salvage cost under the Staff method. This would increase costs to Customer A and decrease the costs to Customer B. Finally, although the total cost appears higher under the Staff's treatment, to get an accurate picture, costs need to be discounted to present value. Using the after-tax cost of capital as a discount rate, both net salvage treatments produce the same present value of revenue requirement over a life cycle.

**Q WHAT IS UE'S POSITION FOR THE NET SALVAGE PERCENTAGE FOR ITS STEAM PRODUCTION PLANT?**

A UE is proposing significant negative net salvage percentages for its steam production plants. For all accounts, excluding the Boiler Plant Equipment – Aluminum Cars account, UE is proposing net salvage percentages that range from a negative 26% to a negative 52% for its steam production plants. The negative net salvage percentages are based on dismantling and demolition studies for UE's steam production power plants. The net salvage ratios that UE wants to include in its steam production depreciation rates produce significantly more negative net salvage expense than is currently in UE's steam production depreciation rates.

**Q PLEASE COMMENT ON UE'S PROPOSED NET SALVAGE FACTORS FOR ITS STEAM PRODUCTION PLANTS.**

A UE is proposing net salvage ratios that are much more negative than those historically used by the Commission. More negative net salvage rates mean higher depreciation rates and expense, all other factors being equal.

UE based its recommendations on dismantling studies that do not recognize the value of the generating sites. A generating site should be valuable because the sites have access to the electric transmission system. Because of this access, these sites should be valuable to UE and/or an independent power producer for the next generation of power plants. This should provide a positive benefit that needs to be considered when the net salvage is developed.

Finally, these sites also have infrastructure in place that makes these sites valuable. For example, these sites have access to water, railroads and/or roads, and the transmission system, all of which provide value to the existing generating site. Also, costs associated with siting and permitting major electric generating plant at an alternative site could enhance the value of the current site. Therefore, if these types of positive salvage considerations are included in the estimate to determine net salvage, dismantling studies would have to be adjusted and the net salvage ratios would be less negative.

**Q WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING REGARDING THE NET SALVAGE FOR STEAM PRODUCTION?**

A Because it is uncertain how these sites will be used, I recommend the Commission set the net salvage percentages at zero for the steam production plants, which is consistent with the net salvage ratios in UE's current depreciation rates. The Commission should not at this time impose higher costs on ratepayers when it is

conceivable that sometime in the future, the sites can be used to develop the next generation of power plants.

**Q WHAT IS YOUR RECOMMENDED TREATMENT OF UE'S NET SALVAGE?**

A UE's net salvage percentage used to calculate its depreciation rates should be set equal to zero. The Commission could then either reflect a five-year average history, or a ten-year average history of UE's actual net salvage expense in UE's revenue requirement. This would be treated as an expense item. Table 1 clearly shows that there is not much volatility associated with using a five-year or ten-year average history. In my Rebuttal Testimony, I recommended using a five-year history.

**Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

A Yes, it does.

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Ratio In Depreciation Rates

**Assumptions:**
**Life = 45 years**
**Net Salvage = -90%**
**Tax Rate = 38.5%**

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Net Salvage Deferred Tax | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|---|
| **1** | **$4,500** | **$190** | **($35)** | **$562** | **$752** | **$14,113** | **$6,618** | **$6,676** |
| 2 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 3 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 4 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 5 | 3,879 | 190 | (35) | 484 | 674 | | | |
| 6 | 3,723 | 190 | (35) | 465 | 655 | | | |
| 7 | 3,568 | 190 | (35) | 445 | 635 | | | |
| 8 | 3,413 | 190 | (35) | 426 | 616 | | | |
| 9 | 3,257 | 190 | (35) | 406 | 596 | | | |
| 10 | 3,102 | 190 | (35) | 387 | 577 | | | |
| 11 | 2,947 | 190 | (35) | 368 | 558 | | | |
| 12 | 2,791 | 190 | (35) | 348 | 538 | | | |
| 13 | 2,636 | 190 | (35) | 329 | 519 | | | |
| 14 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 15 | 2,325 | 190 | (35) | 290 | 480 | | | |
| 16 | 2,170 | 190 | (35) | 271 | 461 | | | |
| 17 | 2,014 | 190 | (35) | 251 | 441 | | | |
| 18 | 1,859 | 190 | (35) | 232 | 422 | | | |
| 19 | 1,704 | 190 | (35) | 213 | 403 | | | |
| 20 | 1,548 | 190 | (35) | 193 | 383 | | | |
| 21 | 1,393 | 190 | (35) | 174 | 364 | | | |
| 22 | 1,238 | 190 | (35) | 154 | 344 | | | |
| 23 | 1,082 | 190 | (35) | 135 | 325 | | | |
| 24 | 927 | 190 | (35) | 116 | 306 | | | |
| 25 | 772 | 190 | (35) | 96 | 286 | | | |
| 26 | 616 | 190 | (35) | 77 | 267 | | | |
| 27 | 461 | 190 | (35) | 58 | 248 | | | |
| 28 | 306 | 190 | (35) | 38 | 228 | | | |
| 29 | 150 | 190 | (35) | 19 | 209 | | | |
| 30 | (5) | 190 | (35) | (1) | 189 | | | |
| **31** | **(160)** | **$190** | **($35)** | **($20)** | **$170** | **$9,751** | **$2,378** | |
| 32 | (316) | 190 | (35) | (39) | 151 | | | |
| 33 | (471) | 190 | (35) | (59) | 131 | | | |
| 34 | (627) | 190 | (35) | (78) | 112 | | | |
| 35 | (782) | 190 | (35) | (98) | 92 | | | |
| 36 | (937) | 190 | (35) | (117) | 73 | | | |
| 37 | (1,093) | 190 | (35) | (136) | 54 | | | |
| 38 | (1,248) | 190 | (35) | (156) | 34 | | | |
| 39 | (1,403) | 190 | (35) | (175) | 15 | | | |
| 40 | (1,559) | 190 | (35) | (194) | (4) | | | |
| 41 | (1,714) | 190 | (35) | (214) | (24) | | | |
| 42 | (1,869) | 190 | (35) | (233) | (43) | | | |
| 43 | (2,025) | 190 | (35) | (253) | (63) | | | |
| 44 | (2,180) | 190 | (35) | (272) | (82) | | | |
| 45 | (2,335) | 190 | (35) | (291) | (101) | | | |
| 46 | 4,500 | 190 | (35) | 562 | 752 | | | |
| 47 | 4,345 | 190 | (35) | 542 | 732 | | | |
| 48 | 4,189 | 190 | (35) | 523 | 713 | | | |
| 49 | 4,034 | 190 | (35) | 503 | 693 | | | |
| 50 | 3,879 | 190 | (35) | 484 | 674 | | | |
| 51 | 3,723 | 190 | (35) | 465 | 655 | | | |
| 52 | 3,568 | 190 | (35) | 445 | 635 | | | |
| 53 | 3,413 | 190 | (35) | 426 | 616 | | | |
| 54 | 3,257 | 190 | (35) | 406 | 596 | | | |
| 55 | 3,102 | 190 | (35) | 387 | 577 | | | |
| 56 | 2,947 | 190 | (35) | 368 | 558 | | | |
| 57 | 2,791 | 190 | (35) | 348 | 538 | | | |
| 58 | 2,636 | 190 | (35) | 329 | 519 | | | |
| 59 | 2,480 | 190 | (35) | 310 | 500 | | | |
| 60 | 2,325 | 190 | (35) | 290 | 480 | | | |

**Schedule 1**

## AmerenUE Customer Revenue Requirement Analysis
## Net Salvage Expense - Staff Recommendation

**Assumptions:**
Life = 45 years
Net Salvage = -90%
Tax Rate = 38.5%

| Type | Amount | Cost | Wgt Cost | Pre Tax Return |
|---|---|---|---|---|
| Debt | 48.0% | 7.5% | 3.60% | 3.600% |
| Equity | 52.0% | 10.5% | 5.46% | 8.878% |
| | 100.0% | | 9.06% | 12.478% |

| Year | Rate Base | Dep Exp | Return & Tax | Rev Req | 30-Yr Sum Rev Req | PV @ 7.674% 30-Yr Rev Req | PV @ 7.674% 45-Yr Life Rev Req |
|---|---|---|---|---|---|---|---|
| 1 | $4,500 | $100 | $562 | $662 | $14,417 | $6,325 | $6,676 |
| 2 | 4,400 | 100 | $549 | 649 | | | |
| 3 | 4,300 | 100 | $537 | 637 | | | |
| 4 | 4,200 | 100 | $524 | 624 | | | |
| 5 | 4,100 | 100 | $512 | 612 | | | |
| 6 | 4,000 | 100 | $499 | 599 | | | |
| 7 | 3,900 | 100 | $487 | 587 | | | |
| 8 | 3,800 | 100 | $474 | 574 | | | |
| 9 | 3,700 | 100 | $462 | 562 | | | |
| 10 | 3,600 | 100 | $449 | 549 | | | |
| 11 | 3,500 | 100 | $437 | 537 | | | |
| 12 | 3,400 | 100 | $424 | 524 | | | |
| 13 | 3,300 | 100 | $412 | 512 | | | |
| 14 | 3,200 | 100 | $399 | 499 | | | |
| 15 | 3,100 | 100 | $387 | 487 | | | |
| 16 | 3,000 | 100 | $374 | 474 | | | |
| 17 | 2,900 | 100 | $362 | 462 | | | |
| 18 | 2,800 | 100 | $349 | 449 | | | |
| 19 | 2,700 | 100 | $337 | 437 | | | |
| 20 | 2,600 | 100 | $324 | 424 | | | |
| 21 | 2,500 | 100 | $312 | 412 | | | |
| 22 | 2,400 | 100 | $299 | 399 | | | |
| 23 | 2,300 | 100 | $287 | 387 | | | |
| 24 | 2,200 | 100 | $275 | 375 | | | |
| 25 | 2,100 | 100 | $262 | 362 | | | |
| 26 | 2,000 | 100 | $250 | 350 | | | |
| 27 | 1,900 | 100 | $237 | 337 | | | |
| 28 | 1,800 | 100 | $225 | 325 | | | |
| 29 | 1,700 | 100 | $212 | 312 | | | |
| 30 | 1,600 | 100 | $200 | 300 | | | |
| 31 | $1,500 | $100 | $187 | $287 | $15,660 | $5,041 | |
| 32 | 1,400 | 100 | $175 | 275 | | | |
| 33 | 1,300 | 100 | $162 | 262 | | | |
| 34 | 1,200 | 100 | $150 | 250 | | | |
| 35 | 1,100 | 100 | $137 | 237 | | | |
| 36 | 1,000 | 100 | $125 | 225 | | | |
| 37 | 900 | 100 | $112 | 212 | | | |
| 38 | 800 | 100 | $100 | 200 | | | |
| 39 | 700 | 100 | $87 | 187 | | | |
| 40 | 600 | 100 | $75 | 175 | | | |
| 41 | 500 | 100 | $62 | 162 | | | |
| 42 | 400 | 100 | $50 | 150 | | | |
| 43 | 300 | 100 | $37 | 137 | | | |
| 44 | 200 | 100 | $25 | 125 | | | |
| 45 | 100 | 4,150 | $12 | 4,162 | | | |
| 46 | 4,500 | 100 | $562 | 662 | | | |
| 47 | 4,400 | 100 | $549 | 649 | | | |
| 48 | 4,300 | 100 | $537 | 637 | | | |
| 49 | 4,200 | 100 | $524 | 624 | | | |
| 50 | 4,100 | 100 | $512 | 612 | | | |
| 51 | 4,000 | 100 | $499 | 599 | | | |
| 52 | 3,900 | 100 | $487 | 587 | | | |
| 53 | 3,800 | 100 | $474 | 574 | | | |
| 54 | 3,700 | 100 | $462 | 562 | | | |
| 55 | 3,600 | 100 | $449 | 549 | | | |
| 56 | 3,500 | 100 | $437 | 537 | | | |
| 57 | 3,400 | 100 | $424 | 524 | | | |
| 58 | 3,300 | 100 | $412 | 512 | | | |
| 59 | 3,200 | 100 | $399 | 499 | | | |
| 60 | 3,100 | 100 | $387 | 487 | | | |

Schedule 2