

Exhibit No.:  
Issues: Depreciation; Cost of Removal;  
Production Plant Retirement Dates;  
and Accumulated Depreciation  
Reserve Imbalances  
Depreciation Reserve  
Witness: Rosella L. Schad, PE  
Sponsoring Party: MoPSC Staff  
Type of Exhibit: Rebuttal Testimony  
Case Nos.: GR-2004-0072  
Date Testimony Prepared: February 13, 2004

**MISSOURI PUBLIC SERVICE COMMISSION**  
**UTILITY SERVICES DIVISION**

**FILED**<sup>3</sup>

JUN 21 2004

**REBUTTAL TESTIMONY** Missouri Public  
Service Commission

**OF**

**ROSELLA L. SCHAD, PE**

**AQUILA, INC. d/b/a AQUILA NETWORKS-MPS (GAS)  
AND AQUILA NETWORKS - L&P (GAS)**

**CASE NO. GR-2004-0072**

*Jefferson City, Missouri*  
*February 2004*

Exhibit No. 54  
Date 3-30-04 Case No. GR-2004-0072  
Reporter KF

**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

In the Matter of Aquila, Inc. d/b/a Aquila    )  
Networks-MPS and Aquila Networks-L&P,    )  
Natural Gas General Rate Increase         )

Case No. GR-2004-0072

AFFIDAVIT OF ROSELLA L. SCHAD, PE

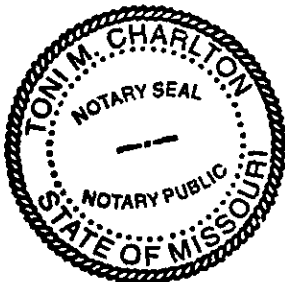
STATE OF MISSOURI     )  
                                  )     ss.  
COUNTY OF COLE     )

Rosella L. Schad, PE, being of lawful age, on her oath states: that she has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 16 pages to be presented in the above case; that the answers in the following Rebuttal Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of her knowledge and belief.

Rosella L. Schad PE  
Rosella L. Schad, PE

Subscribed and sworn to before me this 13<sup>th</sup> day of February 2004.

Toni M. Charlton  
Notary



TONI M. CHARLTON  
NOTARY PUBLIC STATE OF MISSOURI  
COUNTY OF COLE  
My Commission Expires December 28, 2004

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ROSELLA L. SCHAD, PE  
AQUILA, INC.**

**d/b/a AQUILA NETWORKS-MPS (Gas)  
and AQUILA NETWORKS-L&P (Gas)**

**CASE NO. GR-2004-0072**

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1 **REBUTTAL TESTIMONY**

2 **OF**

3 **ROSELLA L. SCHAD, PE**

4 **AQUILA, INC.**

5 **d/b/a AQUILA NETWORKS-MPS (Gas)**

6 **and AQUILA NETWORKS-L&P (Gas)**

7 **CASE NO. GR-2004-0072**

8 Q. Please state your name and business address.

9 A. Rosella L. Schad, P. O. Box 360, Jefferson City, MO 65102.

10 Q. By whom are you employed and in what capacity?

11 A. I am employed by the Missouri Public Service Commission (Commission) as  
12 an Engineer in the Engineering and Management Services Department.

13 Q. Are you the same Rosella L. Schad who has previously filed direct testimony  
14 on behalf of the Staff of the Missouri Public Service Commission in this case?

15 A. Yes.

16 Q. What is the purpose of your rebuttal testimony?

17 A. I will respond to the Company's position on depreciation and cost of removal.  
18 Specifically, I will respond to the direct testimonies of Ronald E. White, the Company's  
19 depreciation consultant.

20 Q. What are the issues in depreciation and cost of removal that you will address?

21 A. I will address:

- 22       ▪ Interim Costs of Removal Amounts  
23       ▪ Where to Book Cost of Removal and Salvage

Rebuttal Testimony  
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- 1                   ▪ Broad-group Procedure v. Vintage-group Procedure and Whole Life
- 2                   Technique v. Remaining-life Technique
- 3                   ▪ Accumulated Depreciation Reserve Imbalances
- 4                   ▪ Corporate Plant Average Service Lives

5     **FINAL COST OF REMOVAL OF MASS PROPERTY PLANT**

6           Q.     What is cost of removal and salvage?

7           A.     Cost of removal is incurred when utility property is retired and removed from  
8 service. Generally, removing property from service causes the utility to incur costs to  
9 abandon, physically dismantle, tear down or otherwise remove the property from its site.

10          Salvage is the proceeds received from the residual value or scrap that some property  
11 has when it is dismantled and removed from utility service. After a piece of property is  
12 dismantled or removed from service, utilities can in some instances sell or receive some  
13 value for the displaced properties. Utilities track the removal costs and salvage value on an  
14 ongoing annual basis.

15          Typically, removal costs exceed salvage value, resulting in a net expense to the  
16 utility. The net effect of cost of removal and salvage was included in Staff's determination  
17 of the overall revenue requirement for the Company.

18          Q.     What is interim cost of removal of plant?

19          A.     Staff refers to interim cost of removal for two kinds of removal events. One  
20 kind is final cost of removal of mass property plant. These removal costs are for those  
21 expenses incurred when mass property, i.e., mains or meters, are removed or abandoned in  
22 place. The second kind is interim cost of removal of life span plant components, i.e., boiler  
23 tubes or water filtration beds.

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1 Q. Does Mr. White's current depreciation study include a methodology for  
2 estimating removal costs that result in the Company's recovering through depreciation  
3 expense a level of net cost of removal that is more than the Company's actual net cost of  
4 removal expense currently incurred?

5 A. Yes. The Company, in its depreciation estimates, has included estimated  
6 future and unknown (prospective) interim costs of removal.

7 Q. Do you agree with Company's position regarding estimated future interim  
8 costs of removal?

9 A. No. The Company did not provide support for its level of estimated future  
10 interim costs of removal. Staff is opposed to the inclusion in rates of amounts that are not  
11 known and measurable, but rather, rely on estimated retirements and estimated cost of  
12 removal rates for those retirements. There is a high probability that the costs that customers  
13 will be charged will not match the actual costs the Company will incur in the future. Given  
14 this uncertainty, current customers should not pay a future estimated cost for removal  
15 expenses.

16 Q. Please illustrate the Company's remaining life depreciation rate.

17 A. The Company's formulation of a remaining life depreciation rate is:

18 
$$\text{Accrual Rate} = [(1.0 - \text{Reserve Ratio} - \text{Future Net Salvage Rate}) / (\text{Remaining Life})]$$

19 Q. How does the Staff's position minimize the effects of intergenerational in-  
20 equity?

21 A. The effects of intergenerational inequity are minimized because Staff's  
22 methodology recovers those costs that are known and measurable, the effects of  
23 intergenerational inequity are minimized. Staff's methodology assures that proper actual

Rebuttal Testimony  
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1 costs of original investments are charged over the life of the investments to the customers  
2 benefiting from those investments. Staff does not estimate future interim costs of removal of  
3 mass property because of the speculative nature of such estimates. Such estimates can be  
4 quite excessive as demonstrated in the current case, rather than tied to a known and  
5 measurable amount. The intergenerational concept only works in practice for items that are  
6 known and measurable while not subject to changing circumstances. The same is true of the  
7 maintenance and removal costs of these assets.

8         Current net costs of removal are identified by Staff and recovered as an expense item  
9 in current rates, as are maintenance costs. As with any other expense item that substantially  
10 changes in providing service over time, removal costs will be reassessed in future rate cases.  
11 Changes are made as new information indicates the need to do so.

12         Staff's method provides a recovery mechanism for customers to provide the  
13 Company monies, commensurate with the assets' removal costs. The Company proposes a  
14 method to force customers to pay more than the Company's current expenditures for cost of  
15 removal with no certainty that this situation will ever be reversed (the Company spends more  
16 for cost of removal than is collected in rates), or that the funds will be available in the  
17 unlikely event that the need to spend these monies actually occur. Aquila will spend these  
18 excess funds for other purposes, possibly non-regulated activities. The certainty that the  
19 funds will be available is totally dependent on the Company's financial condition, which can  
20 be substantially weakened by Company activities outside the purview of the Commission.

21         Q.     How does the Company's position on the effects of intergenerational inequity  
22 differ from Staff?

Rebuttal Testimony  
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1           A.     The Company's position has two aspects with which Staff takes exception.  
2     The first aspect is in regard to what components are being included in the Company's  
3     depreciation rates, identified by the formula previously shown on page 3 of my rebuttal  
4     testimony. Mr. White includes in depreciation rates a future net salvage rate, for the purpose  
5     of collecting revenue today for estimated future costs of removal. This component represents  
6     a revenue collection at an estimated and arbitrary level, not reflective of a known and  
7     measurable amount.

8           The second aspect is in regard to stability of rates. Formulating the net salvage  
9     percentage in the depreciation rate formula has been based on different hypotheses in recent  
10    years, depending on the depreciation analyst. Each approach has quantified the net salvage  
11    percentage in a different manner. Each approach generates a widely varying amount for  
12    recovery of interim costs of removal. One approach looked at recent interim costs of  
13    removal and compared this to the associated retirement dollars; another approach looked at  
14    recent interim costs of removal and compared this to surviving dollars; yet another approach  
15    looked at estimated future additions and applied an estimated future cost of removal rate  
16    against those additions. It is possible to combine any of these hypotheses to project a net  
17    salvage percentage to be incorporated in the depreciation formula.

18    **INTERIM COST OF REMOVAL AMOUNTS**

19           Q.     Is there a reasonable certainty that the dollars a regulated gas utility has  
20     collected in the depreciation reserve for future costs of removal will be available when the  
21     Company's current plant assets retire?

22           A.     No. Aquila only proposes that future costs of removal be collected from its  
23     existing customers. The only fund that is guaranteed to exist when plant assets actually



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1 retires is the decommissioning fund for nuclear generation facilities, which is not an issue in  
2 this case. The amounts for decommissioning of nuclear generation facilities are retained in a  
3 trust fund and are specifically identified for only the decommissioning of those units.  
4 However, the utility does not guarantee that cost of removal dollars it has collected in the  
5 depreciation reserve will be available even five years from now, much less many years or  
6 decades into the future. Not only are the dollar amounts commingled in the depreciation  
7 reserve resulting in an inability to even identify how much revenue for costs of removal have  
8 been collected from customers versus how much has been collected for recovery of capital  
9 plant cost, there is no assurance the cash needed for removal will be available when the  
10 property is retired.

11 Basing cost of removal on Aquila's current expenditures is the only basis that  
12 reasonably assures that the Company will actually spend the monies collected on cost of  
13 removal.

14 Q. Do the Company's proposed depreciation rates provide for interim costs of  
15 removal that are known and measurable?

16 A. No. As shown on both Statements D and E to the depreciation studies for  
17 Aquila Networks-MPS and L&P (Gas and Common), Mr. White arrives at an "Average Net  
18 Salvage Rate".

19 Q. Does Staff have concerns with Mr. White's future estimated interim costs of  
20 removal amounts?

21 A. Yes. Estimated future interim costs of removal amounts do not have any  
22 relation to the amounts the Company is currently incurring. On page 11, lines 9-11 of his  
23 direct testimony, Mr. White states, "The average net salvage rate for an account was

Rebuttal Testimony  
Rosella L. Schad, PE

1 estimated using direct dollar weighting of historical retirements with the historical net  
2 salvage rate, and future retirements (i.e. surviving plant) with the estimated future net salvage  
3 rate."

4 The Company's use of the historical net salvage rate and estimated future net salvage  
5 rate are both inappropriate for determining the level of revenue to be recovered in rates for  
6 costs of removal because neither generates an amount of revenue that ties to the amount the  
7 Company is actually spending. The level of interim costs that should be recovered needs to  
8 reflect the current level of removal costs that the Company is incurring. In the Commission's  
9 Report and Order in Case No. ER-97-394, it was noted, "The Commission has also found  
10 interim costs to be sufficient for purposes of recovery."

11 Q. What is the effect of the Company's proposal for including estimated interim  
12 costs of removal in depreciation rates?

13 A. The effect of including estimated interim costs of removal in depreciation  
14 rates is to increase depreciation expense, which will achieve increased revenue requirements.

15 Q. What is Staff's recommendation in this case regarding estimated interim costs  
16 of removal in current depreciation rates?

17 A. Staff recommends that estimated interim costs of removal not be included in  
18 current depreciation rates because they are speculative and not known and measurable.

19 **WHERE TO BOOK COST OF REMOVAL AND SALVAGE**

20 Q. What other concerns does Staff have with the costs of removal estimates built  
21 into Mr. White's depreciation rates?

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1           A.     These costs of removal percentage estimates will generate an ever-increasing  
2 depreciation expense as plant balances grow, not a defined level identified in Mr. White's  
3 depreciation study.

4           Q.     What is the benefit to the Company of large prospective "negative net cost of  
5 removal percentages" in the depreciation rates?

6           A.     The benefit to the Company is that they have more cash to spend in any  
7 manner they wish. Large prospective "negative net cost of removal percentages" in the  
8 depreciation rates results in the Company collecting more money each year from customers  
9 than it spends for cost of removal.

10          Q.     Is this the first time that Staff has noted concerns regarding the level of costs  
11 of removal and salvage that is being accrued through depreciation rates relative to the actual  
12 amounts that are booked?

13          A.     No. Staff has addressed concerns regarding this in previous Aquila cases. On  
14 page 13, lines 23-26 in Staff witness Melvin T. Love's direct testimony in Case  
15 No. ER-93-37, he states, "If comparisons are made to the amounts of salvage and costs of  
16 removal booked in a particular year to the amounts which are accrued, the calculation is  
17 overstated." Staff has consistently reviewed the actual amounts booked and tried to insure  
18 that the Company is collecting for interim costs of removal at levels that are known and  
19 measurable.

20          Q.     Has the Commission ordered depreciation rates that did not include a  
21 component for interim costs of removal, i.e. a net salvage percentage?

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1           A.    Yes. This methodology was incorporated in the depreciation rates ordered for  
2 The Empire District Electric Company in Case No. ER-2001-299 and for Northeast Missouri  
3 Rural Telephone Company in Case No. TR-2001-344.

4           Q.    What is the effect of Staff's methodology of expensing interim costs of  
5 removal?

6           A.    The effect of Staff's methodology of expensing interim costs of removal is  
7 that it allocates known and measurable costs to the appropriate recovery period and more  
8 accurately reflects the amount that the Customers should pay to the Company for removal of  
9 the Company's assets from service.

10          Q.    What is Staff's recommendation to maintain recovery of interim costs of  
11 removal at known and measurable amounts?

12          A.    Staff's recommendation is to expense interim costs of removal at levels the  
13 Company is currently experiencing as recommended by Staff witness Cary Featherstone in  
14 his direct testimony.

15 **BROAD-GROUP PROCEDURE VS. VINTAGE-GROUP PROCEDURE AND**  
16 **WHOLE LIFE TECHNIQUE VS. REMAINING-LIFE TECHNIQUE**

17          Q.    Would you please describe the depreciation system currently approved by the  
18 Commission for both Aquila-Networks-MPS and L&P (Gas and Common)?

19          A.    Yes. Both divisions of Aquila are presently using a depreciation system  
20 composed of the straight-line method, broad-group procedure, whole-life technique.

21          Q.    What do the terms vintage-group procedure and remaining-life technique  
22 describe?

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1           A.     Vintage-group procedure describes a process of using a unique survivor curve  
2 for each vintage of plant in an account for retirement analysis, and is highly dependent on the  
3 accuracy of the continuing property records. Remaining-life technique describes a process of  
4 incorporating an amortization (positive or negative) of the variation between the theoretical  
5 reserve and the accumulated depreciation reserve automatically, over the calculated  
6 remaining life of the current plant in service at the time of the depreciation study. As  
7 described earlier, the Company's remaining life depreciation rate also incorporates recovery  
8 of an estimated future cost of removal amount.

9           Q.     What are the problems with the Company's proposal to change from a broad-  
10 group procedure, whole life technique?

11          A.     One problem is the absence of verifiable justification for making a change to  
12 the vintage-group procedure and remaining-life technique. The Company's position, that the  
13 objectives of depreciation accounting can be more nearly achieved using the vintage-group  
14 procedure combined with the remaining-life technique, has not been supported with  
15 substantive evidence. The Company has not shown how the Commission's long-standing  
16 use of the straight-line method, broad-group procedure, whole-life technique has failed to  
17 achieve the objectives of depreciation accounting.

18          The present depreciation system (straight-line method, broad-group procedure,  
19 whole-life technique) develops depreciation rates that are the same for all future years, until a  
20 re-evaluation is performed. The vintage-group procedure, remaining-life technique develops  
21 a series of depreciation rates that are highest in the current year and are less in subsequent  
22 years. However, there is not a mechanism to incorporate the annual decreases in depreciation  
23 rates in ratemaking proceedings.

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1           Because the vintage group procedure, remaining life technique uses only the highest  
2 number in a series of depreciation rates for all future years, customer rates are higher than the  
3 theory suggests is correct. Use of the vintage-group procedure, remaining-life technique  
4 unreasonably and incorrectly increases the Company's revenue requirement.

5           Also, because the remaining life calculation is for plant currently in service, its  
6 applicability to new plant placed in service tomorrow is significantly limited. For example,  
7 L&P's Account 375, Structures and Improvements, has a remaining life of less than 19 years  
8 proposed in Mr. White's depreciation study. Under the Company's proposal, new plant  
9 placed in service tomorrow is subjected to a remaining life calculation of less than 19 years  
10 until a new life analysis is performed and new depreciation rates adopted. The problem with  
11 the Company's use of the vintage-group procedure, remaining-life technique is that it  
12 overstates depreciation of new plant.

13           Staff agrees that the remaining-life technique deals with the recovery of a theoretical  
14 reserve imbalance. However, as I noted in my direct testimony, the Company currently  
15 retains an over-accrued reserve balance that should be addressed, giving consideration to  
16 other factors. Before the Commission changes depreciation parameters to the vintage group  
17 procedure and remaining life technique, the Company must identify shortcomings of the  
18 current method in Missouri.

19           Q.     What is the basis for the Company's proposal to alter a long-standing  
20 Commission policy?

21           A.     Mr. White proposes that the Commission alter a long-standing policy  
22 regarding MPS on page 13, lines 4-6 of his direct testimony, "It is the opinion of Foster  
23 Associates that the objectives of depreciation accounting can be more nearly achieved using

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1 the vintage-group procedure combined with the remaining-life technique." The same  
2 statement is made in Mr. White's testimony regarding SJLP on page 19, lines 14-16.

3 Q. What is the effect of the Company's proposal to switch from the straight-line  
4 method, broad-group procedure, whole-life technique to straight-line method, vintage-group  
5 procedure, remaining-life technique.

6 A. The effect of the Company's proposal to switch from the straight-line method,  
7 broad-group procedure, whole-life technique to straight-line method, vintage-group  
8 procedure, remaining-life technique is to increase depreciation expense to achieve an  
9 increased revenue.

10 Q. What is Staff's recommendation on the Company's proposal to switch from  
11 the straight-line method, broad-group procedure, whole-life technique to straight-line  
12 method, vintage-group procedure, remaining-life technique?

13 A. Staff's recommendation is that the Commission order the depreciation system  
14 currently approved, the straight-line method, broad-group procedure, whole-life technique.

15 **ACCUMULATED DEPRECIATION RESERVE IMBALANCES**

16 Q. For the Aquila-Networks-MPS-Electric & Common accumulated depreciation  
17 reserve imbalance noted by Mr. White in his direct testimony on page 15, lines 11-12, does  
18 Staff agree with the magnitude of his determination of the reserve imbalance?

19 A. No. Staff's determination of the accumulated depreciation reserve imbalance  
20 is an over-accrual of approximately \$3.5 million; Mr. White's determination of this  
21 imbalance is an under-accrual is approximately \$5.5 million. Staff and Mr. White differ by  
22 approximately \$9 million.

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1 Q. What are the factors that create such a difference between the Company and  
2 Staff as to the level of accrued depreciation reserve imbalance?

3 A. First, these differences arise due to the different depreciation parameters  
4 utilized, as noted above. Staff's average service lives (ASLs), developed using the broad-  
5 group procedure and whole-life technique, are considerably different than the Company's use  
6 of remaining lives (RLs) using the vintage-group procedure and remaining-life technique.  
7 The Company's remaining lives cause the Company's level for theoretical, or computed  
8 reserve to be calculated higher than Staff's.

9 Second, the Company's use of estimated future interim removal costs in the  
10 depreciation rate increases the Company's theoretical reserve level as well. This approach  
11 masks a significant amount of the Missouri ratepayer depreciation overcharges identified in  
12 current analysis of this area.

13 Consequently, the Company's theoretical reserve determination is substantially  
14 higher than Staff's and, therefore, the amount of the reserve imbalance stated by the  
15 Company in its analysis is significantly different than Staff's.

16 Q. Please explain the term theoretical reserve.

17 A. Theoretical reserve can be viewed as the **difference** between the original  
18 booked cost of plant presently in service and the summation of annual depreciation expense  
19 collected between now and the date of final retirement of that plant, using the ASL and  
20 dispersion characteristics of the Iowa-type curve selected as the basis for the future  
21 depreciation rates. Theoretically, this **difference** is the amount that should be the current  
22 booked depreciation reserve.



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1 Q. What is the effect of the Company's use of a theoretical reserve determination  
2 that is significantly higher than Staff's?

3 A. The effect is that the depreciation expense is increased, achieving increased  
4 revenue requirements.

5 Q. Does Staff have a recommendation at this time on the over-accrued  
6 accumulated depreciation reserve?

7 A. Staff's recommendation is to address the magnitude of the total reserve  
8 imbalance after another depreciation study is conducted and trends identified in the  
9 over-accrual.

10 **CORPORATE PLANT AVERAGE SERVICE LIVES**

11 Q. What is Corporate Plant?

12 A. Corporate plant refers to plant specifically used at the Company's corporate  
13 headquarters at 20 West 9<sup>th</sup> St., Kansas City, MO, and allocated to each utility division. The  
14 corporate headquarters is where the corporate executive's offices and the corporate computer  
15 system are located.

16 Q. Have ASLs for Corporate Plant Accounts been specifically ordered in  
17 previous cases?

18 A. No.

19 Q. Does Staff have any concerns regarding the Company's formulation of ASLs  
20 for its Corporate Plant Accounts?

21 A. Yes. On page 24, lines 6-9 of Mr. White's testimony he states, "Absent  
22 meaningful indications from the analysis of historical retirement activity, the service life

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1 statistics recommended in this study were based largely on judgment and a consideration of  
2 the parameters approved for similar assets managed by other Aquila business units."

3 Q. Has the Company provided support for what those other business units are?

4 A. Yes. In Data Request No. 622, the Company identified these business units as  
5 entities in Michigan and Minnesota.

6 Q. Does Staff agree that parameters approved in other states represent the best  
7 indicators to use to assign depreciation rates for corporate assets in Missouri?

8 A. No. Staff's recommends its life analysis of the MPS' "General" plant  
9 accounts be utilized to set depreciation rates for the Company's "Corporate General" plant  
10 accounts because the historical retirement activity should be similar.

11 Q. What is the overall effect of basing ASLs for the Company's Corporate plant  
12 assets on other Aquila business units in other states?

13 A. The overall effect of basing ASLs for the Company's "Corporate General"  
14 plant assets on other Aquila business units in other states is increased depreciation expense to  
15 achieve increased revenue requirements.

16 Q. What is Staff's recommendation for ASLs for the Company's "Corporate  
17 General" plant assets?

18 A. Staff's recommendation for ASLs for the Company's "Corporate General"  
19 plant assets is that they should reflect average service lives of similar plant of the Company's  
20 regulated business units in Missouri.

21 Q. In summary, please provide Staff's recommendations.

22 A. Staff's recommendations are:

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- 1                   1)    Recovery of interim costs of removal should tie to known and  
2                                    measurable amounts.
- 3                   2)    A depreciation system that incorporates the straight-line method,  
4                                    broad-group procedure, whole-life technique should continue to be  
5                                    used for Missouri regulated utilities.
- 6                   3)    The magnitude of the total reserve imbalance between the theoretical  
7                                    and booked accumulated depreciation reserve should be addressed  
8                                    after another depreciation study is conducted and trends identified in  
9                                    the over-accrual.
- 10                  4)    "Corporate General" plant ASLs should reflect average service lives of  
11                                    similar plant of the Company's regulated business units in Missouri.

12           Q.    Does this conclude your rebuttal testimony?

13           A.    Yes.