Exhibit No.:	*1101*
Issues:	*Depreciation and Accumulated Depreciation Reserve*
Witness:	*Rosella L. Schad*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Direct Testimony*
Case No.:	*ER-2004-0034*

Date Testimony Prepared: December 16, 2003 as modified February 27, 2004

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

DIRECT TESTIMONY

OF

ROSELLA L. SCHAD

FILED[3]
MAY 1 0 2004
Missouri Public
Service Commission

AQUILA, INC. d/b/a AQUILA NETWORKS-MPS (Electric)

CASE NO. ER-2004-0034

Exhibit No. 1101
Case No(s). ER-2004-0034
Date 2-1-04 Rptr JT

Jefferson City, Missouri
December 2003

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Aquila, Inc. d/b/a Aquila Networks L&P and Aquila Networks MPS to implement a general rate increase in electricity.	)))	Case No. ER-2004-0034

AFFIDAVIT OF ROSELLA L. SCHAD, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

Rosella L. Schad, PE, of lawful age, on her oath states: that she has participated in the preparation of the following direct testimony as modified on February 27, 2004, in question and answer form, consisting of 16 pages to be presented in the above case; that the answers in the following direct testimony as modified on February 27, 2004, 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 27th day of February 2004.

Toni M Charlton
Notary Public

TONI M. CHARLTON
NOTARY SEAL
NOTARY PUBLIC
STATE OF MISSOURI

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

TABLE OF CONTENTS OF

DIRECT TESTIMONY OF

ROSELLA L. SCHAD

AQUILA, INC. d/b/a AQUILA NETWORKS-MPS (Electric)

CASE NO. ER-2004-0034

DIRECT TESTIMONY

OF

ROSELLA L. SCHAD

AQUILA, INC. D/B/A AQUILA NETWORKS-MPS (ELECTRIC)

CASE NO. ER-2004-0034

Q. Please state your name and business address.

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

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

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

Q. Please describe your educational training and professional background.

A. I received a Bachelor of Science degree (1978) in Mechanical Engineering from the University of Missouri-Columbia. I am a Licensed Professional Engineer in the State of Missouri. I am a member of the National Society of Professional Engineers and the Society of Depreciation Professionals. I was employed by Union Electric (now AmerenUE) as an Engineer Intern during the summer of 1977. I was employed as a Mechanical Engineer by Union Electric in its Nuclear Construction Department from 1978 to 1980. I have been with the Missouri Public Service Commission's Staff since 1999. In my current position I have completed training in depreciation concepts, attended numerous industry seminars for electric, natural gas, telecommunications, water, and wastewater and made on-site tours of many of the electric, natural gas, telecommunications, water, and wastewater utilities operating in the State of Missouri.

Q. Please describe your duties while employed by the Commission.

A. I am responsible for engineering analyses and depreciation rate determinations of companies regulated by the Commission.

Q. Have you previously filed testimony before this Commission?

A. Yes. As shown in Schedule 1, attached to my testimony, is a list in which I have previously filed testimony and the issues that I addressed.

DEPRECIATION ISSUES

Q. Please state the purpose of your testimony in this case.

A. The purpose of my testimony is to make recommendations for Aquila, Inc. d/b/a Aquila Networks-MPS (Electric) (Company) concerning the depreciation rates that will allow the Company to collect the original cost of its investment over the life of these assets. I will also offer testimony regarding the treatment of the plant depreciation reserves.

Staff's proposal in this case is:

1. That Staff's Proposed Depreciation Rates based on Staff's Average Service Lives (ASLs), as shown in the attached Schedule 3-1, be effective on the date of the Commission's order in this case.
2. That the relative magnitude of the Company's over-accrued depreciation reserve be noted but not reduced at this time.

Q. What expert knowledge, skill, experience, training or education do you have in these matters?

A. I have acquired general knowledge of these topics through my experience and analyses in prior rate cases before this Commission as noted above and as I assisted in Staff's

filings in Case Nos. GR-2000-512, WR-2000-844, ER-2001-299, and ER-2001-672. I have also reviewed prior Commission decisions with regard to depreciation issues. I have reviewed the testimony, workpapers and responses to Staff's data requests addressing these issues in prior cases.

I have attended the National Conference of Regulatory Commission Engineers' meeting and symposiums offered on-site on current topics of regulation. I have received formal depreciation training offered by Depreciation Programs, Inc., the Society of Depreciation Professionals, and Gannett Fleming Valuation and Rate Consultants, Inc. I have had on-going discussions with Gannett Fleming technical personnel regarding the functionality of the software, including data input requirements and statistical analysis and interpretation and application of the user's manual.

I have attended electric utility IRP (Integrated Resources Planning) meetings with Staff, where resource planning, capacity upgrades, and proposed generation additions are discussed. I have toured all the major generating facilities of all regulated electric companies in the state of Missouri and met with their engineers, operating personnel and management to discuss plant operations, both past and present, as well as any future activities being considered.

I am currently enrolled at the University of Missouri in a Masters of Public Administration with an anticipated completion date of March 2004. My coursework has included accounting, statistics, research methods, and economics classes. Finally, I successfully passed the Professional Engineering Exam for Mechanical Engineers, which covers engineering design and analysis principles, as well as standards and codes.

Q. When were depreciation rates for the Company last adopted by a Commission order?

A. Depreciation rates were last adopted for the Company by a Stipulation And Agreement in Case Nos. ER-2001-672 and EC-2002-265, effective March 21, 2002 for plant assets of Aquila Networks-MPS-Electric.

DEPRECIATION STUDY

Q. What is the definition of depreciation?

A. Depreciation is the loss, not restored by current maintenance, which is due to all factors causing the ultimate retirement of the property. These factors embrace wear and tear, decay, inadequacy and obsolescence. Annual depreciation is the loss that takes place in a year. Thus, annual depreciation expense, distributed over the life of each asset, yields the full recovery of the original cost of the utility's assets.

Q. Please describe the depreciation study of the Company's electric and steam property that you conducted in this case.

A. I performed a broad group-average life depreciation study. Under the broad group (BG) procedure, all units of plant within a particular depreciation category, usually a plant account or sub account, are considered to be one group. Development of accrual rates is based upon assets' placement history, an estimation of the average service lives (ASL), and dispersion characteristics of the assets' retirements. ASL is a dynamic feature of assets in a plant account, and therefore must be periodically analyzed and revised. The ASL, stated in

units of years, is the average expected life of all units of the group regardless of the placement date. The ASL is determined by an analysis of records of actual annual additions and retirements by vintage (year of placement).

Q. What are the steps involved in life estimation?

A. The four primary steps involve: (1) reviewing the Company's historical placement and retirement plant data for reasonableness and adequacy of sufficient data; (2) touring Company facilities and meeting with Company engineers and plant operations personnel, as well as other Staff, to discuss current developments that may affect the life of plant in service; (3) performing a statistical life analysis of the plant's retirement experience using the Gannett Fleming Depreciation Analysis Software; and (4) applying experience and informed judgment to the results of the software analysis for reasonableness of the ASL results.

Q. If the data are insufficient or the results of the analysis are unreasonable, how does Staff make life estimations?

A. Staff uses informed judgment and recognition of current developments to make a recommendation for life estimation.

Q. How does the Gannett Fleming Depreciation Software develop an ASL?

A. The Company's historical plant data for an account are inputs to the depreciation analyses software. Plant data are plant additions ($) by calendar year, called a vintage, and retirements ($) from each vintage, by calendar year. The software uses a mathematical computation to derive the percentage of dollars surviving, as a function of age, for all vintages combined. The results are graphed as a survivor plot and, using a least

squares method, the results are mathematically fitted to an Iowa-type curve (defined below). A numerical integration of the area under the curve determines the ASL.

Q. What are the Iowa-type curves?

A. The Iowa curves are widely used models of the life characteristics of utility property. The system of Iowa curves is a family of curve shapes empirically derived from analysis of mortality data of 176 types of utility and industrial property. The curves were developed at the Iowa Engineering Experiment Station at what is presently known as Iowa State University. The Iowa curves were first published in 1935 and reconfirmed in 1980.

Q. What are some developments that may be potential reasons that an account's ASL may change over time?

A. Current developments such as technology changes, environmental regulations, regulatory requirements or accounting changes can modify an account's ASL. Changes in the materials from which different vintages of plant were manufactured or changes in the construction process to place these different vintages of plant may affect the number of years newer plant remains in service. This would affect the ASL.

Q. Please describe the depreciation system used by Staff.

A. A depreciation system can be defined with three components: a method, a procedure and a technique. The system used in Staff's depreciation study is the Straight Line Method, a Broad Group Procedure, and the Whole Life Technique. Parameters estimated from service life studies, selection of an appropriate depreciation system, experience and informed knowledge are all utilized to develop an annual depreciation accrual rate.

Q. Why should depreciation studies be conducted periodically?

A. Depreciation studies are needed to assess the continuing reasonableness of parameters and accrual rates derived from prior estimates. Property accounts contain many vintages of plant, placed in service over many years. While the plant function may be the same, the material and construction process may change significantly over time. Other factors that might affect ASL are accounting system changes for designation of unit of property or changes in the method of recording construction costs as current expense or capital investment.

Q. How is an ASL used to establish the annual depreciation expense?

A. An account's ASL divided into 100% (100% / ASL), where the 100% represents all of the plant in service for the account being studied, is the account's depreciation rate, expressed as a percentage. The depreciation rate is used for recovery of original cost of plant over the used and useful life of each account's plant. The Company's annual depreciation expense is the sum of each account's depreciation rate multiplied by the original cost of assets currently in that plant account for each year.

Q. Why is Staff's process for developing an appropriate annual depreciation accrual rate significant to both the Company and the ratepayer?

A. Annual depreciation expense is a portion of the Company's revenue requirement. Allocating costs to the appropriate recovery period is important because it spreads the Company's capital costs over the years that the Company's assets provide services. Development of appropriate depreciation expense is important because the depreciation rates significantly influence the amount that customers will pay to the Company for the capital plant used to provide service.

DEPRECIATION STUDY OF AQUILA NETWORKS-MPS (ELECTRIC)

Q. Did you perform a depreciation study of the Company's capital plant?

A. Yes.

Q. Please describe the assignment of the Company's capital plant to the different operating divisions.

A.

Aquila Networks-MPS Electric is Total MPS Electric and identifies total MPS electric operations, including Electric, Common, and an allocation of Corporate facilities.

Q. Please describe the assignment of general plant to "General," "Common General," and "Corporate General."

A. Assignment of plant to the function "General" is plant specifically used by the utility division for the operation of that service, i.e. electric service. Assignment of plant to the function "Common General" is plant specifically used by the utility division for the shared operation of multiple services in a jurisdiction, i.e. gas, electric . The Company's administrative offices are located in Raytown, MO . Assignment of plant to the function "Corporate General" is plant specifically used at the Company's corporate headquarters at 20 West 9th St, Kansas City, MO. and allocated to each utility division. The corporate headquarters is where the corporate executive's offices and the corporate computer system are located.

Q. How did Staff make a life estimate for the Company's "Steam Production" accounts?

A. Staff made life estimates by using judgment and statistical life analyses of the Sibley steam production plant accounts.

Staff recommends its life analyses of the Sibley steam production accounts be utilized to set depreciation rates for the Company's "Steam Production" plant accounts. Given that the plant assets in the respective accounts should be similar, the historical retirement activity should also be similar.

Q. How did Staff make a life estimate for the Company's "Other Production," "Transmission," "Distribution," and "General" plant accounts?

A. Staff made life estimates by using judgment and statistical life analyses of the MPS facilities, with the exception of two transmission plant accounts, Account 357.000, Underground Conduit, and Account 358.000, Underground Conductors and Devices. These two accounts had insufficient historical placement and retirement activity for a software analysis. Staff recommends its life analyses of two distribution plant accounts with comparable plant assets, Account 366.000, Underground Conduit, and Account 367.000, Underground Conductors and Devices, be utilized to set depreciation rates for the two transmission plant accounts. Given that the plant assets should be comparable, the historical retirement activity should be comparable.

Staff recommends its life analyses of the MPS' "Other Production," "Transmission," "Distribution," and "General" plant accounts be utilized to set depreciation rates for the Company's "Other Production," "Transmission," "Distribution," and "General" plant accounts.

Q. How did Staff make a life estimate for the Company's "Common General" and "Corporate General" plant accounts?

A.

Staff recommends its life analyses of the MPS' general plant accounts be utilized to set depreciation rates for the Company's "Common General" and "Corporate General" plant accounts. Given that the plant assets in the respective accounts should be similar, the historical retirement activity should also be similar.

Q. Has Staff provided the Company the details of Staff's work?

A. Yes. On December 9, 2003 Staff provided the Company a copy of the Schedule 3-1 identifying plant accounts; their respective proposed depreciation rates; proposed ASLs and Iowa Curve selections; currently ordered depreciation rates; the difference in annual depreciation accrual between Staff's proposed depreciation rates and currently ordered depreciation rates as of September 30, 2003; and analysis of the accrued depreciation reserve and theoretical reserve (discussed below) as of December 31, 2002 for corporate accounts and as of December 31, 2001 for the remaining accounts. Staff has also provided the Company on December 9, 2003 a copy of Staff's depreciation study and workpapers.

Q. In summary, what is Staff's recommendation for depreciation rates for the Company's plant accounts?

A. Staff's recommended depreciation rates for the Company's plant assets are presented in Schedule 2-1.

DEPRECIATION RESERVE ANALYSIS

Q. What other analyses are performed in a depreciation study?

A. Another analysis performed in a depreciation study is an examination of the adequacy of the booked depreciation reserve and identification of any reserve over- or under-recovery.

Q. Why does Staff examine the booked depreciation reserve?

A. The analysis is performed to measure how the actual depreciation reserve compares to the dollars that should be in the depreciation reserve based on currently determined ASLs and curve types for each account.

Q. Why is the analysis significant to consumers?

A. This analysis allows the analyst to detect whether prior depreciation estimates have differed significantly from actual experience. Based on this information, the analyst determines whether the cost of service needs adjustment to reflect and correct a significant historical deviation. Cost of service adjustments are reflected in consumer rates.

Q. Did Staff perform an analysis of the booked depreciation reserve?

A. Yes.

Q. Please describe the analysis.

A. An analysis of the booked depreciation reserve is performed by comparing the amount of the booked depreciation reserve as of a certain date to a theoretical depreciation

reserve amount that is determined with the revised average service life and dispersion characteristics of the selected Iowa-type curve on that same date for each account. The theoretical depreciation reserve can be viewed as the **difference** between the original booked cost of plant presently in service and the summation of annual depreciation expense collected between now and the date of final retirement of that plant, using the ASL and dispersion characteristics of the Iowa-type curve selected as the basis for the future depreciation rates. Theoretically, this **difference** is the amount that should be the current booked depreciation reserve, theoretically.

DEPRECIATION RESERVE ANALYSIS FOR AQUILA NETWORKS-MPS (ELECTRIC)

Q. What were the results of Staff's examination of the Company's booked depreciation reserve?

A. Staff's results found an approximate $168 million over-accrual of the depreciation accrued reserve for the MPS-Electric and Common plant.

Staff results found an approximate $10 million under-accrual of the depreciation accrued reserve for MPS' "Corporate General" plant.

Q. What are Staff's bases for adjustment for any booked reserve imbalance?

A. The need for, the magnitude of, and the timing of the actual adjustment should be based upon consideration of several factors: the characteristics of the account, the causes of the difference, and the year-to-year volatility of the accumulated provision for depreciation

as well as the magnitude of the imbalance. Future service life cannot be estimated to a degree of certainty that guarantees that the actual life will not be different. In fact, it is possible that the currently determined ASL will differ from the ASL that occurs.

Q. Can Staff identify any factors that created the $168 million dollar over-accrual in the booked reserve for MPS' Electric and Common plant?

A. Yes. Past depreciation rates included a component for cost of removal and gross salvage. The magnitude of this collection was several times the actual amount spent annually. As an example of this, the component of the depreciation rates for cost of removal multiplied times the plant balance for 12-31-2001 generated over $14.5 million annually for cost of removal. As indicated in Staff witness Cary G. Featherstone's direct testimony, the average net amount, for the five years 1998-2002, spent annually for cost of removal was approximately $1.5 million. For interim cost of removal, the Company was on average charging to its MPS-Electric customers over $13 million annually more than the net amount actually spent.

Q. Can Staff identify any factors that created the $10 million under-accrual in the booked reserve for MPS' "Corporate General" plant?

A. Yes. The ordered depreciation rate from Case No. ER-97-394 for "Common General" computer plant accounts was 0%. The ordered depreciation rate from Case No. ER-2001-672 for "Common General" computer plant accounts continued at 0%. It is my understanding that the Company used this ordered rate for the MPS "Corporate General" plant account, creating the existing under-accrual.

Q. What are Staff's recommendations regarding the booked reserve?

A. Staff's first recommendation is that the over-accrual of the booked reserve for the Company's electric, common assets be noted, but that no adjustment to the reserve made at this time because of the dynamics of depreciation estimation process. After another depreciation study is conducted, trends in the over-accrual can be identified and appropriate steps can be proposed. Evaluation of these booked reserves should be made in future rate filings and, if appropriate, addressed if the relative magnitude changes.

Staff's second recommendation at this time is that the under-accrual of the booked reserve for MPS' "Corporate General" plant assets be noted, but that no adjustment to the reserve made at this time. Again, after another depreciation study is conducted, trends in the under-accrual can be identified and appropriate steps can be proposed. Evaluation of these booked reserves should be made in future rate filings and, if appropriate, a transfer of dollars from over-accrued accounts to under-accrued accounts be proposed.

Q. Are there any other issues for Staff to address regarding the booked reserve for the Company's "Corporate General" plant accounts?

A. Yes. Staff is currently conducting additional discovery on the booked reserve for these accounts. For further discussion, see Staff witness Steve M. Traxler's direct testimony. Again, Staff is recommending no additional adjustments to the booked reserve be made at this time.

STAFF'S RECOMMENDATIONS

Q. Can you provide a summary of Staff's proposals for depreciation rates and accumulated depreciation reserve?

A. Yes. Staff recommends the Commission order that Staff's Proposed Depreciation Rates based on Staff's ASLs, as shown in the attached Schedule 3-1, be effective on the date of the Commission's order in this case.

Q. Does Staff have any further concerns relating to the Company's depreciation issues?

A. Yes. Staff's concern with the relative magnitude of the Company's net over-accrued depreciation reserve should be noted, but Staff is recommending that the net over-recovery not be reduced at this time. After another depreciation study is conducted, trends in the net over-accrual can be identified and appropriate steps can be proposed. Evaluation of the Company's booked reserves should be made in future rate filings.

Q. Does this conclude your direct testimony?

A. Yes, it does.

CASE PROCEEDING PARTICIPATION

ROSELLA L. SCHAD

COMPANY	CASE NO./ FILING	ISSUES
Union Electric Company d/b/a AmerenUE	GR-2003-0517	Depreciation; Retirement of Production Plant
Northeast Missouri Rural Telephone Company and Modern Telecommunications Company	TM-2002-465 Rebuttal	Depreciation; Plant Upgrades and Improvements
Laclede Gas Company	GR-2002-356 Rebuttal	Decommissioning
Laclede Gas Company	GR-2002-356 Direct	Depreciation
Union Electric Company d/b/a AmerenUE	EC-2002-1 Surrebuttal	Depreciation; Steam Production Plant Retirement Dates; Decommissioning Costs; Callaway Interim Additions
Laclede Gas Company	GR-2001-629 Direct	Depreciation
Ozark Telephone Company	TC-2001-402 Direct	Depreciation Rates
Northeast Missouri Rural Telephone Company	TR-2001-344 Direct, Surrebuttal	Depreciation Rates
Oregon Farmers Mutual Telephone Company	TT-2001-328 Rebuttal	Depreciation Rates
KLM Telephone Company	TT-2001-120 Rebuttal	Depreciation Rates
Holway Telephone Company	TT-2001-119 Rebuttal	Depreciation Rates
Peace Valley Telephone Company	TT-2001-118 Rebuttal	Depreciation Rates
Iamo Telephone Company	TT-2001-116 Rebuttal	Depreciation Rates
Osage Water Company	WR-2000-557 Direct	Depreciation
Osage Water Company	SR-2000-556 Direct	Depreciation

AQUILA, INC. d/b/a AQUILA NETWORKS-MPS (Electric) CASE NO. ER-2004-0034		
ACCOUNT NUMBER	ACCOUNT	Depreciation Rates (%) Staff Proposed
	ER-2004-0034	
	STEAM PRODUCTION PLANT	
311.000	Structures and Improvements	2.22
312.000	Boiler Plant Eq.	2.22
314.000	Turbogenerator Units	2.22
315.000	Accessory Electric Eq.	2.63
316.000	Miscellaneous Power Plant Eq.	2.86
	STEAM DISTRIBUTION PLANT	
375.009	Structures and Improvements	2.22
376.009	Mains	2.27
379.009	Measuring and Regulating Station Eq.-City Gate	2.27
380.009	Services	2.27
381.009	Meters	4.00
	OTHER PRODUCTION PLANT	
341.000	Structures and Improvements	1.67
342.000	Fuel Holders and Accessories	2.86
343.000	Prime Movers	3.33
344.000	Generators	3.33
345.000	Accessory Electric Eq.	2.63
346.000	Miscellaneous Power Plant Eq.	2.86
	TRANSMISSION PLANT	
352.000	Structures and Improvements	1.67
353.000	Station Eq.	1.92
354.000	Towers and Fixtures	1.85
355.000	Poles and Fixtures	1.85
356.000	Overhead Conductors and Devices	1.67
357.000	Underground Conduit	1.43
358.000	Underground Conductors and Devices	1.92

AQUILA, INC. d/b/a AQUILA NETWORKS-MPS (Electric) CASE NO. ER-2004-0034		
ACCOUNT NUMBER	**ACCOUNT**	**Depreciation Rates (%) Staff Proposed**
	ER-2004-0034	
	DISTRIBUTION PLANT	
361.000	Structures and Improvements	1.67
362.000	Station Eq.	1.92
364.000	Poles, Towers and Fixtures	2.27
365.000	Overhead Conductors and Devices	1.82
366.000	Underground Conduit	1.43
367.000	Underground Conductors and Devices	1.92
368.000	Line Transformers	3.23
369.001	Overhead Services	2.27
369.002	Underground Services	2.27
370.001	Meters	2.00
370.002	Load Research Meters	8.33
371.000	Installations on Customers Premises	4.17
373.000	Street Lighting and Signal Systems	3.33
	GENERAL PLANT	
390.001	Structures and Improvements	2.22
391.001	Office Furniture and Eq.	4.55
391.003	Computer Hardware	14.29
391.004	Computer Software	14.29
391.005	Computer Systems Development	14.29
392.000	Transportation Eq.	8.33
393.000	Stores Eq.	3.70
394.000	Tools, Shop and Garage Eq.	3.70
395.000	Laboratory Eq.	3.45
396.000	Power Operated Eq.	6.25
397.000	Communications Eq.	3.45
398.000	Miscellaneous Eq.	4.35

Aquila, Inc. dba Aquila Networks-MPS (Depreciation Rates ER-2004-0034)

ACCOUNT NUMBER	ACCOUNT	Adjusted Jurisdictional Plant Balance ($) 09/30/03	Average Service Life (Years) Staff Proposed	Average Service Life (Years) Company Proposed	Iowa Curve Staff Proposed	Depreciation Rates (%) Ordered	Depreciation Rates (%) Staff Proposed	Depreciation Rates (%) Company Proposed	Annual Accrual (Ordered Depreciation Rates) ($) 9/30/03	Annual Accrual (Staff Proposed Depreciation Rates) ($) 9/30/03	Annual Accrual (Company Proposed Depreciation Rates) ($) 9/30/03	Plant Balance ($) 12/31/01	Accrued Reserve ($) 12/31/01	Theoretical Reserve ($) 12/31/01	(Accrued - Theoretical Reserve) Difference ($) 12/31/01
	ER-2004-0034 MPS ELECTRIC														
	MPS ELECTRIC														
	STEAM PRODUCTION PLANT														
	JEFFREY ENERGY CENTER PLANT														
311.000	Structures and Improvements	18,021,105	45	39.39	R0.5	3.23	2.22	2.34	582,082	400,069	421,694	18,228,211	12,530,615	4,868,731	7,661,884
312.000	Boiler Plant Eq.	58,268,059	45	37.25	R2	2.58	2.22	2.44	1,503,316	1,293,551	1,421,741	58,347,427	38,461,008	20,965,923	17,495,085
314.000	Turbogenerator Units	17,438,656	45	31.75	R4	3.70	2.22	3.06	645,230	387,138	533,623	16,905,473	7,346,698	5,323,497	2,023,201
315.000	Accessory Electric Eq.	6,282,221	38	44.07	R1.5	3.46	2.63	1.91	217,365	165,222	119,990	5,920,401	3,827,584	2,206,171	1,621,413
316.000	Miscellaneous Power Plant Eq.	1,501,241	35	28.17	R5	3.13	2.86	3.78	46,989	42,935	56,747	1,462,927	373,430	394,298	(20,868)
	Jeffrey Energy Center Steam Production Plant:	101,511,282							2,994,982	2,288,915	2,553,795	100,864,439	62,539,335	33,758,620	28,780,715
	SIBLEY PLANT														
311.000	Structures and Improvements	36,733,820	45	24.68	R0.5	3.23	2.22	4.58	1,186,502	815,491	1,682,409	38,543,083	22,471,308	8,384,301	14,087,007
312.000	Boiler Plant Eq.	137,225,849	45	23.36	R2	2.43	2.22	4.98	3,334,588	3,046,414	6,833,847	132,699,434	66,732,757	36,344,012	30,388,745
314.000	Turbogenerator Units	54,113,141	45	21.28	R4	2.60	2.22	5.37	1,406,942	1,201,312	2,905,876	57,803,236	28,000,921	18,113,825	9,887,096
315.000	Accessory Electric Eq.	14,581,584	38	23.29	R1.5	3.46	2.63	4.86	504,523	383,496	708,665	17,977,336	8,451,115	5,910,595	2,540,520
316.000	Miscellaneous Power Plant Eq.	556,583	35	28.72	R5	3.13	2.86	3.86	17,484	15,975	21,561	610,605	380,481	337,255	43,226
	Sibley Steam Production Plant:	243,212,977							6,450,039	5,462,688	12,152,358	247,633,694	126,036,582	69,089,988	56,946,594
	OTHER PRODUCTION PLANT														
341.000	Structures and Improvements	1,319,412	60	23.25	R2	2.49	1.67	3.34	32,853	22,034	44,068	2,133,946	952,953	296,731	656,222
342.000	Fuel Holders and Accessories	468,703	35	21.81	R5	3.06	2.86	3.58	14,342	13,405	16,780	1,286,981	985,824	352,802	633,022
343.000	Prime Movers	6,676,157	30	19.46	R2	4.15	3.33	4.78	277,061	222,316	319,120	10,957,158	2,990,982	1,464,042	1,526,940
343.001	Wind Turbines	179,373	30	23.45	R2	4.15	3.33	4.22	7,444	5,973	7,570	179,373	20,756	13,399	7,357
344.000	Generators	8,682,169	30	23.43	R5	3.13	3.33	3.39	271,752	289,116	294,326	11,133,659	5,939,906	3,438,867	2,501,039
345.000	Accessory Electric Eq.	1,996,503	38	21.58	R1.5	3.19	2.63	3.70	63,688	52,508	73,871	3,049,611	1,492,284	582,807	909,477
346.000	Miscellaneous Power Plant Eq.	20,000	35	13.66	R5	2.75	2.86	7.13	550	572	1,426	851,895	(36,277)	17,507	(53,784)
	Other Production Plant:	19,342,317							667,691	605,924	757,160	29,592,623	12,346,428	6,166,155	6,180,273
	GREENWOOD ENERGY CENTER PLANT														
341.000	Structures and Improvements	1,940,749	60	23.25	R2	2.49	1.67	3.34	48,325	32,411	64,821	0	0		
342.000	Fuel Holders and Accessories	1,949,278	35	21.81	R5	3.06	2.86	3.58	59,648	55,749	69,784	0	0		
343.000	Prime Movers	28,128,541	30	19.46	R2	4.15	3.33	4.78	1,167,334	936,680	1,344,544	0	0		
344.000	Generators	6,656,186	30	23.43	R5	3.13	3.33	3.39	208,339	221,651	225,645	0	0		
345.000	Accessory Electric Eq.	4,875,977	38	21.58	R1.5	3.19	2.63	3.70	155,544	128,238	180,411	0	0		
346.000	Miscellaneous Power Plant Eq.	0	35	13.66	R5	2.75	2.86	7.13	0	0	0	0	0		
	Greenwood Energy Center Plant:	43,550,731							1,639,189	1,374,729	1,885,205	0	0		
	TRANSMISSION PLANT														
352.000	Structures and Improvements	2,816,863	60	60.36	S6	2.22	1.67	1.60	62,534	47,042	45,070	2,641,211	1,060,357	894,446	165,911
353.000	Station Eq.	70,732,971	52	60.17	R1.5	2.00	1.92	1.63	1,414,659	1,358,073	1,152,947	70,387,348	23,303,271	16,101,158	7,202,113
354.000	Towers and Fixtures	319,399	54	53.92	L5	1.82	1.85	1.35	5,813	5,909	4,312	332,143	265,873	178,905	86,968
355.000	Poles and Fixtures	45,766,593	54	55.05	S0.5	2.08	1.85	2.71	951,945	846,682	1,240,275	40,942,159	13,674,165	8,523,615	5,150,550
356.000	Overhead Conductors and Devices	39,817,040	60	59.92	R2	1.85	1.67	2.12	736,615	664,945	844,121	36,918,960	15,581,196	9,095,284	6,485,912
357.000	Underground Conduit	0	70		R2		1.43		0	0	0	0	0		0
358.000	Underground Conductors and Devices	57,200	52	60.27	L2	3.13	1.92	1.69	1,790	198	967	57,959	37,602	23,075	14,527
	Transmission Plant:	159,510,066							3,173,358	2,923,749	3,287,692	151,279,780	53,922,464	34,816,483	19,105,981

Aquila, Inc. dba Aquila Networks-MPS (Depreciation Rates ER-2004-0034)

ACCOUNT NUMBER	ACCOUNT	Adjusted Jurisdictional Plant Balance ($) 09/30/03	Average Service Life (Years) Staff Proposed	Average Service Life (Years) Company Proposed	Iowa Curve Staff Proposed	Depreciation Rates (%) Ordered	Depreciation Rates (%) Staff Proposed	Depreciation Rates (%) Company Proposed	Annual Accrual (Ordered Depreciation Rates) ($) 9/30/03	Annual Accrual (Staff Proposed Depreciation Rates) ($) 9/30/03	Annual Accrual (Company Proposed Depreciation Rates) ($) 9/30/03	Plant Balance ($) 12/31/01	Accrued Reserve ($) 12/31/01	Theoretical Reserve ($) 12/31/01	(Accrued - Theoretical Reserve) Difference ($) 12/31/01
	DISTRIBUTION PLANT														
361.000	Structures and Improvements	4,431,460	60	60.04	R3	2.33	1.67	1.82	103,253	74,005	80,653	3,354,806	955,391	747,013	208,378
362.000	Station Eq.	62,330,057	52	54.62	R1	2.27	1.92	1.89	1,414,892	1,196,737	1,178,038	56,207,405	16,606,811	9,841,286	6,765,525
364.000	Poles, Towers and Fixtures	106,567,056	44	43.16	L4	2.50	2.27	4.03	2,664,176	2,419,072	4,294,652	96,704,253	45,902,961	32,358,677	13,544,284
365.000	Overhead Conductors and Devices	63,276,199	55	54.82	R2	2.00	1.82	2.36	1,265,524	1,151,627	1,493,318	59,931,318	23,158,544	14,742,573	8,415,971
366.000	Underground Conduit	27,122,517	70	54.91	R2	1.82	1.43	2.00	493,630	387,852	542,450	22,660,951	4,350,642	2,601,935	1,748,707
367.000	Underground Conductors and Devices	73,336,707	52	44.91	L2	2.70	1.92	2.66	1,980,091	1,408,065	1,950,756	66,527,910	18,350,441	12,250,922	6,099,519
368.000	Line Transformers	110,051,478	31	30.02	R2.5	3.45	3.23	3.60	3,796,776	3,554,663	5,181,956	99,095,931	31,934,540	31,757,096	177,444
369.001	Overhead Services	12,115,199	44	55.07	R5	2.08	2.27	4.58	251,996	275,015	554,876	11,774,224	9,420,248	5,358,032	4,062,216
369.002	Underground Services	39,996,050	44	35.05	S3	3.57	2.27	3.26	1,427,859	907,910	1,303,870	36,748,862	15,010,918	8,802,640	6,208,278
370.001	Meters	22,909,713	50	50.18	R3	2.50	2.00	2.08	572,743	458,194	476,522	21,420,615	10,142,768	7,051,265	3,091,503
370.002	Load Research Meters	2,036,703	12	12.16	S6	10.00	8.33	7.95	203,670	169,657	161,918	2,045,596	1,081,366	1,239,048	(157,682)
371.000	Installations on Customers Premises	12,001,385	24	24.97	R2	5.00	4.17	5.19	600,069	500,458	622,872	11,384,984	4,968,709	3,437,371	1,531,338
373.000	Street Lighting and Signal Systems	19,929,409	30	30.36	L1	3.70	3.33	3.59	737,388	663,649	715,466	18,265,202	6,237,359	4,496,592	1,740,767
	Distribution Plant:	556,103,933							15,512,068	13,166,904	17,557,349	506,122,057	188,120,698	134,684,450	53,436,248
	GENERAL PLANT														
390.001	Structures and Improvements	8,846,812	45	40.26	R1.5	2.22	2.22	2.74	196,399	196,399	242,403	8,627,571	847,289	2,092,511	(1,245,222)
391.001	Office Furniture and Eq.	1,197,081	22	18.17	L4	3.60	4.55	4.76	43,095	54,467	56,981	643,885	90,631	216,147	(125,516)
391.003	Computer Hardware	1,600,957	7	5.99	S2	10.00	14.29	13.10	160,096	228,777	209,725	1,981,733	108,350	851,544	(743,194)
391.004	Computer Software	226,663	7	6.02	S2	10.00	14.29	8.33	22,666	32,390	18,881	247,261	45,720	116,614	(70,894)
391.005	Computer Systems Development	39,699	7		S2		14.29		0	5,673	0	0	0	0	0
392.000	Transportation Eq.	1,966,925	12	13.46	S5	0.00	8.33	5.38	0	163,845	105,821	466,243	262,289	198,356	63,933
393.000	Stores Eq.	90,682	27	26.25	L1	5.56	3.70	3.09	5,042	3,355	2,802	98,332	61,831	35,341	26,490
394.000	Tools, Shop and Garage Eq.	3,032,056	27	23.37	L0	6.25	3.70	3.79	189,504	112,186	114,915	2,467,415	2,105,229	597,735	1,507,494
395.000	Laboratory Eq.	1,879,224	29	27.98	R2.5	4.00	3.45	2.94	75,169	64,833	55,249	1,805,261	920,506	591,852	328,654
396.000	Power Operated Eq.	3,504,203	16	14.65	S6	0.00	6.25	5.42	0	219,013	189,928	2,583,837	1,119,345	1,262,893	(143,548)
397.000	Communications Eq.	6,915,177	29	26.50	S2	6.25	3.45	3.08	432,199	238,574	212,987	5,962,555	5,091,471	2,287,200	2,804,271
398.000	Miscellaneous Eq.	133,162	23	22.41	L4	5.00	4.35	3.23	6,658	5,793	4,301	121,170	92,462	53,523	38,939
	General Plant:	29,432,641							1,130,827	1,325,305	1,213,993	25,205,263	10,745,123	8,303,716	2,441,407
	MPS Electric Utility Plant	1,152,663,947							31,568,154	27,148,214	39,407,552	1,060,697,856	453,710,630	286,819,412	166,891,218
	MPS ELECTRIC COMMON GENERAL UTILITY														
390.001	Structures and Improvements	6,093,869	45	39.73	R1.5	2.22	2.22	2.44	135,284	135,284	148,690	6,226,235	1,038,051	1,322,663	(284,612)
391.001	Office Furniture and Eq.	1,039,834	22	19.72	L4	7.69	4.55	3.88	79,953	47,312	40,346	1,241,962	900,971	689,908	211,063
391.003	Computer Hardware	401,322	7	10.04	S2	0.00	14.29	7.65	0	57,349	30,701	150,782	102,362	47,901	54,461
391.004	Computer Software	1,288	7		S2	0.00	14.29		0	184	0	0	0	0	0
391.005	Computer Systems Development	0	7		S2		14.29		0	0	0	0	0	0	0
392.000	Transportation Eq.	1,327,961	12	11.23	S5	11.11	8.33	3.13	147,536	110,619	41,565	7,043,398	6,093,508	5,180,162	913,346
393.000	Stores Eq.	(91,571)	27	15.91	L1	5.56	3.70	4.33	0	0	0	14,724	4,337	6,247	(1,910)
394.000	Tools, Shop and Garage Eq.	137,159	27	15.77	L0		3.70	3.19	0	5,075	4,375	141,872	115,570	28,430	87,140
395.000	Laboratory Eq.	18,139	29	15.20	R2.5		3.45	4.40	0	626	798	17,867	6,203	3,742	2,461
396.000	Power Operated Eq.	145,847	16	13.11	R6	6.67	6.25	4.59	9,728	9,115	6,694	1,408,853	1,104,358	826,014	278,344
397.000	Communications Eq.	1,616,019	29	26.31	S2	5.00	3.45	2.83	80,801	55,753	45,733	2,755,152	1,247,278	1,044,721	202,557
398.000	Miscellaneous Eq.	(42,897)	23	24.79	L4	5.56	4.35	3.01	(2,360)	(1,862)	(1,288)	67,991	55,945	39,656	16,289
	MPS Electric Common General Plant:	10,647,060							450,932	419,455	317,314	19,070,836	10,668,583	9,189,444	1,479,139
	MPS Electric and Common Utility Plant:	1,163,311,007							32,019,086	27,567,669	39,724,866	1,079,768,692	464,379,213	296,008,856	168,370,357

Aquila, Inc. dba Aquila Networks-MPS (Depreciation Rates ER-2004-0034)

ACCOUNT NUMBER	ACCOUNT	Adjusted Jurisdictional Plant Balance ($) 09/30/03	Average Service Life (Years) Staff Proposed	Average Service Life (Years) Company Proposed	Iowa Curve Staff Proposed	Depreciation Rates (%) Ordered	Depreciation Rates (%) Staff Proposed	Depreciation Rates (%) Company Proposed	Annual Accrual (Ordered Depreciation Rates) ($) 9/30/03	Annual Accrual (Staff Proposed Depreciation Rates) ($) 9/30/03	Annual Accrual (Company Proposed Depreciation Rates) ($) 9/30/03	Plant Balance ($) 12/31/01	Accrued Reserve ($) 12/31/01	Theoretical Reserve ($) 12/31/01	(Accrued - Theoretical Reserve) Difference ($) 12/31/01
	MPS ELECTRIC CORPORATE PLANT											12/31/02	MO %12/31/2002	MO %12/31/2002	MO %12/31/2002
	GENERAL PLANT														
390.001	Structures and Improvements	11,879,817	45	44.97	R1.5	2.22	2.22	2.44	263,732	263,732	289,868	16,586,756	1,126,697	1,356,030	(229,333)
391.001	Office Furniture and Eq.	2,848,821	22	19.95	L4	7.69	4.55	5.78	219,074	129,621	164,662	3,283,822	289,291	536,306	(247,015)
391.003	Computers-Hardware	3,298,270	7	4.95	S2		14.29	33.16	0	471,323	1,093,706	3,847,681	(465,078)	1,097,260	(1,562,338)
391.004	Computers-Software	18,492,597	7	9.85	S2		14.29	13.74	0	2,642,592	2,540,883	21,104,602	2,608,430	7,991,550	(5,383,120)
391.005	Computer Systems Development	5,223,306	7	9.37	S2		14.29	19.87	0	746,410	1,037,871	5,636,230	1,249,231	3,655,660	(2,406,429)
392.004	Transportation Eq.	5,183	12	11.27	S5	11.11	8.33	48.33	576	432	2,505	5,688	(2,813)	2,247	(5,060)
393.000	Stores Eq.	0	27		L1		3.70		0	0	0	0	0	0	0
394.000	Tools, Shop and Garage Eq.	68,753	27	20.39	L0		3.70	7.70	0	2,544	5,294	83,065	66,090	17,080	49,010
395.000	Laboratory Eq.	14,764	29	15.11	R2.5		3.45	15.25	0	509	2,252	16,201	1,867	4,800	(2,933)
396.000	Power Operated Eq.	0	16		R6		6.25		0	0	0	0	0	0	0
397.000	Communication Eq.	2,507,367	29	9.97	S2	5.00	3.45	16.01	125,368	86,504	401,429	2,065,696	220,960	314,716	(93,756)
398.000	Miscellaneous Eq.	113,111	23	10.07	L4	5.56	4.35	16.58	6,289	4,920	18,754	146,187	74,307	29,899	44,408
	MPS Electric Corporate General Plant:	44,451,989							615,039	4,348,587	5,557,224	52,775,928	5,168,982	15,005,550	(9,836,568)
	Total MPS Electric Utility Plant:	1,207,762,996							32,634,125	31,916,256	45,282,090	1,132,544,620	469,548,195	311,014,406	158,533,789