

Public Counsel Witness Kind's Scenario C Workpapers

Scenario C is the same as the revenue requirement analysis described in the Direct Testimony of UE witness Richard Voytas for the Metro East Transfer option and the combustion turbine generator (CTG) option except that the cost per kW of installed combustion turbine generator (CTG) capacity in the CTG option analysis has been reduced from \$471/kW to \$450/kW.

Note – The adjustment that Public Counsel witness Kind made to UE witness Voytas's revenue requirement analysis in Scenario C was made to correct some very obvious deficiencies in Mr. Voytas's analysis (Scenario A). Public Counsel witness Kind believes that the assumptions upon which Scenario C is based are much more reasonable than the assumptions made in Mr. Voytas's analysis. However, Public Counsel believes there are additional unreasonable assumptions made in Mr. Voytas's analysis, such as assuming in the Metro East transfer option analysis that the costs of compliance with environmental regulations will remain unchanged for the next 25 years, and these additional unreasonable assumptions were not addressed in Scenarios C.

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APR 16 2004

Missouri Public
Service Commission

83
Exhibit No. _____
Case No(s). EO-2004-0108
Date 4-8-04 Rptr TU

AmerenUE Financial Assumptions

SHORT TERM DEBT RATIO	0.00%
LONG TERM DEBT RATIO	45.00%
PREFERRED STOCK RATIO	0.00%
COMMON EQUITY RATIO	55.00%
INTEREST RATE - SHORT TERM DEBT	0.00%
INTEREST RATE - LONG TERM DEBT	8.00%
PREFERRED RATE	N/A
RETURN ON COMMON	12.61%
FEDERAL INCOME TAX RATE	35.00%
MISSOURI INCOME ALLOCATION	100.00%
MISSOURI INCOME TAX RATE	6.25%
FEDERAL TAX DEDUCTIBLE	50.00%
ILLINOIS INCOME ALLOCATION	0.00%
ILLINOIS INCOME TAX RATE	7.30%
FEDERAL TAX DEDUCTIBLE	0.00%
TAX TO BOOK RATIO	100.00%
PROPERTY TAX RATE	1.80%
<u>Derived Parameters</u>	
RATE OF RETURN	10.63%
DISCOUNT RATE (AFTER TAX)	9.50213%

Annual Fixed Charge Rate

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
0.206819	0.196707	0.187167	0.178144	0.169585	0.161444	0.153679	0.145914	0.13814876	0.130384	0.122619	0.114854	0.107089	0.099324	0.091559	0.083794	0.079415	0.075035	0.070656	0.066277	0.061897	0.057518	0.053138	0.048759	0.044379

UE/ILL Transfer Results Year 2004

With Joint Dispatch				
	No Transfer	With UE-ILL Transfer	Difference Transfer - No Transfer	Savings
Net fuel & purchase \$ including revenues from SET *	\$319,868,196	\$263,762,959	-\$56,105,237	
SET SO2 Adjustment #	-\$4,002,450	-\$6,056,600	-\$2,054,150	
Adjusted \$	\$315,865,746	\$257,706,359	-\$58,159,387	
UE Net Output - MWH	39,251,164	35,135,817	-4,115,347	
Rate	\$8.05	\$7.33	\$0.71	
Savings				\$25,041,970
Savings = Rate Reduction x Remaining Net Output				
	No Transfer	With Transfer	Difference	% of Trans
SET From Gen to UE	20,800	700	-20,100	
SET From UE to Gen	8,025,700	12,113,900	4,088,200	-99%
*SET \$ includes variable O&M only and needs adjustment for SO2 costs. SO2 costs estimated to be \$.50/mwh # SET SO2 Adjustment = (UE SET MWH - GEN SET MWH) x \$.50/MWH, where SO2 is valued at \$.50/mwh				

July 14, 2004 Modified 7/24/03
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AmerenUE
Illinois Generation Rate Base and Revenue Requirement
Adjusted Twelve Months Ending December 31, 2002
Without AmerenUE Illinois Asset Transfer

Rate Base	Generation Total AmerenUE	Generation AmerenUE-ILL	AmerenUE-ILL Allocated to Wholesale	AmerenUE-IL Allocated to AmerenUE-MO	AmerenUE-IL Allocated to AmerenUE-MO
Production Plant	\$5,480,084,533	\$346,251,401	\$7,028,903	\$339,222,498	\$339,222,498
Allocation of General Plant	289,170,439	22,555,294	482,683	22,072,611	22,072,611
Total Plant	5,769,254,972	368,806,695	7,511,587	361,295,109	361,295,109
Depreciation Reserve - Production Plant	2,261,231,813	143,707,140	2,917,255	140,789,885	140,789,885
Depreciation Reserve - General Plant	82,329,592	6,421,708	137,425	6,284,284	6,284,284
Total Reserve	2,343,561,405	150,128,848	3,054,679	147,074,169	147,074,169
Net Plant	3,425,693,567	218,677,847	4,456,907	214,220,940	214,220,940
Unburned Nuclear Fuel in Reactor	60,729,909	5,751,122	131,126	5,619,997	5,619,997
Fuel (Fossil)	55,066,411	5,214,789	118,897	5,095,892	5,095,892
Materials and Supplies	65,170,078	6,171,606	140,713	6,030,894	6,030,894
Prepayments	4,597,634	403,213	8,871	394,342	394,342
Accumulated Deferred Income Taxes	(562,358,851)	(36,609,561)	(743,174)	(35,866,387)	(35,866,387)
Total Rate Base	<u>\$3,048,898,748</u>	<u>\$199,609,016</u>	<u>\$4,113,339</u>	<u>\$195,495,677</u>	<u>\$195,495,677</u>
Fuel and Purchased Power For Load (1)	\$385,077,420	\$36,466,832	\$831,444	\$35,635,388	\$35,635,388
Other Production Expenses (1)	310,650,540	27,766,026	633,065	27,132,961	26,425,243
Fuel and Purchased Power For Interchange	127,712,586	12,094,382	275,752	11,818,630	0
Interchange Sales	(163,724,350)	(15,504,696)	(353,507)	(15,151,189)	0
Total Production Expenses	659,716,196	60,822,544	1,386,754	59,435,790	62,060,631
Administrative & General Expenses (2)	137,197,167	10,701,379	229,010	10,472,370	10,472,370
Depreciation Expense - Production Plant	155,038,655	9,635,535	195,601	9,439,934	9,439,934
Depreciation Expense - General Plant	6,242,012	486,877	10,419	476,458	476,458
Taxes Other Than Income	67,665,534	4,606,042	93,503	4,512,539	4,512,539
Income Taxes	138,791,979	9,619,429	387,764	9,231,664	9,231,664
Return	287,419,685	18,817,142	198,227	18,618,915	18,618,915
Total Revenue Requirement	<u>\$1,452,071,228</u>	<u>\$114,688,947</u>	<u>\$2,501,279</u>	<u>\$112,187,669</u>	<u>\$114,812,510</u>

(1) The Production O&M Expenses included the cost of Callaway Refuel 12. Since the refuelings only occur every 18 months the above Production O&M Expenses were adjusted to only include 2/3 (12 months) of the Callaway Refuel 12 expenses.(Total \$10 m Purchased Power and \$35 m Other).

(2) The Administrative & General Expenses included \$65,201,317 one time costs related the VRP and the Venice Plant shutdown. These expenses were removed.

SO₂ Allowance

\$/ton 170

from Tony Artman

2001	tons	rev/cost
sold	145,000	\$24,650,000
bought	40,000	\$6,800,000
net	105,000	\$17,850,000

2002	tons	rev/cost
sold	70,014	\$11,902,380
bought	10,000	\$1,700,000
net	60,014	\$10,202,380

2001 reflects a more typical year than 2002, so we should make an adjustment

	AmerenUE	AmerenUE-IL	AmerenUE-WSL	AmerenUE-MO	portion of IL	
net	44,986	7,647,620	724,230	16,512	0	0
		0.0947	0.0228	0.9772		

AmerenUE
Missouri Generation Rate Base and Revenue Requirement
Twelve Months Ending December 31, 2007

	1	2	3	4	5	6	7	8	9	10	11	12	13	
	12/31/2004	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016
	Generation	Impact on												
	AmerenUE-MO	AmerenUE-MO												
Rate Base	With Transfer	With Transfer												
Production Plant	\$5,480,084,533	\$339,222,498												
Allocation of General Plant	289,170,439	22,072,611												
Total Plant	5,769,254,972	361,295,109												
Depreciation Reserve - Production Plant	2,261,231,813	140,789,885												
Depreciation Reserve - General Plant	82,329,592	6,284,284												
Total Reserve	2,343,561,405	147,074,169												
Net Plant	3,425,693,567	214,220,940												
Unburned Nuclear Fuel in Reactor	60,729,909	5,619,997												
Fuel (Fossil)	55,066,411	5,095,892												
Materials and Supplies	65,170,078	6,030,894												
Prepayments	4,597,634	394,342												
Accumulated Deferred Income Taxes	(562,358,851)	(35,866,387)												
		0												
Total Rate Base	\$3,048,898,748	\$195,495,677	\$185,579,286	\$175,662,894	\$165,746,503	\$155,830,111	\$145,913,720	\$135,997,329	\$126,080,937	\$116,164,546	\$106,248,154	\$96,331,763	\$86,415,372	\$76,498,980
Fuel and Purchased Power	\$385,077,420	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388
Other Production Expenses	310,650,540	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243
Fuel and Purchased Power For Interchange	127,712,586	-	-	-	-	-	-	-	-	-	-	-	-	-
Interchange Sales	(163,724,350)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Production Expenses	659,716,196	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631
Administrative & General Expenses	137,197,167	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370
Depreciation Expense - Production Plant	155,038,655	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934
Depreciation Expense - General Plant	6,242,012	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458
Taxes Other Than Income	67,665,534	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539
Income Taxes	138,791,979	9,231,664	8,295,124	7,826,854	7,358,584	6,890,313	6,422,043	5,953,773	5,485,503	5,017,233	4,548,962	4,080,692	3,612,422	3,144,152
Return	287,419,885	18,616,915	17,674,482	16,730,050	15,785,617	14,841,185	13,896,753	12,952,320	12,007,888	11,063,456	10,119,023	9,174,591	8,230,159	7,285,726
Total Revenue Requirement	\$1,452,071,228	\$114,812,510	\$113,399,808	\$111,987,105	\$110,574,403	\$109,161,700	\$107,748,998	\$106,336,295	\$104,923,593	\$103,510,890	\$102,098,188	\$100,685,485	\$99,272,782	\$97,860,080
			14	15	16	17	18	19	20	21	22	23	24	25
			12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028
Total Rate Base			\$66,582,588	\$66,666,197	\$66,749,806	\$66,833,415	\$66,917,023	\$67,000,631	\$67,084,239	\$67,167,848	\$67,251,456	\$67,335,064	\$67,418,672	\$67,502,280
Fuel and Purchased Power			\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388	\$35,635,388
Other Production Expenses			26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243	26,425,243
Interchange Sales			0	0	0	0	0	0	0	0	0	0	0	0
Total Production Expenses			62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631	62,060,631
Administrative & General Expenses			10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370	10,472,370
Depreciation Expense - Production Plant			9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934	9,439,934
Depreciation Expense - General Plant			476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458	476,458
Taxes Other Than income			4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539	4,512,539
Income Taxes			3,144,152	2,675,882	2,207,612	1,739,341	1,271,071	809,435	809,435	809,435	809,435	809,435	809,435	809,435
Return			6,341,294	5,396,861	4,452,429	3,507,997	2,563,564	1,632,512	1,632,512	1,632,512	1,632,512	1,632,512	1,632,512	1,632,512
Total Revenue Requirement			\$96,447,377	\$95,034,675	\$93,621,972	\$92,209,270	\$90,796,567	\$89,403,879	\$89,403,879	\$89,403,879	\$89,403,879	\$89,403,879	\$89,403,879	\$89,403,879
NPV of Total Revenue Requirements			\$959,642,323											
Equivalent Annuity			(\$103)											

Economic Analysis of Purchase of AEG CTG's

Reserve Margin	0.17
Capacity	596.7 MW
Capital cost	450 \$/Kw
fixed cost	7.80 \$/Kw-yr
nonvariable fuel transportation cost	\$762,000

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Capital	55,534,095	52,818,660	50,257,174	47,834,243	45,536,010	43,350,006	41,265,009	39,180,011	37,095,013	35,010,016	32,925,018	30,840,020	28,755,023	26,670,025	24,585,027	22,500,030	21,324,087	20,148,144	18,972,201	17,796,258	16,620,315	15,444,372	14,268,429	13,092,486	11,916,543
O&M	5,416,260	5,509,345	5,604,292	5,701,138	5,799,921	5,900,679	6,003,453	6,108,282	6,215,207	6,324,272	6,435,517	6,548,987	6,664,727	6,782,782	6,903,197	7,026,021	7,151,302	7,279,088	7,409,429	7,542,378	7,677,986	7,816,305	7,957,391	8,101,299	8,248,085
Total	60,950,355	58,328,005	55,861,466	53,535,381	51,335,931	49,250,685	47,268,461	45,288,293	43,310,221	41,334,287	39,360,535	37,389,008	35,419,750	33,452,807	31,488,225	29,526,051	28,475,388	27,427,231	26,381,630	25,338,636	24,298,300	23,260,677	22,225,820	21,193,785	20,164,628

* This tolling contract only covers June through September for the years, 2002-2010.

NPV	\$424,617,065
PMT	(\$44,999,740)

Transfer UE-IL Service Territory																											
	Annuitly	PV	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25
Revenue Requirements	(103.80)	(1007.3)	(114.8)	(113.4)	(112.0)	(110.6)	(109.2)	(107.7)	(106.3)	(104.9)	(103.5)	(102.1)	(100.7)	(99.3)	(97.9)	(96.4)	(95.0)	(93.6)	(92.2)	(90.8)	(89.4)	(89.4)	(85.5)	(79.5)	(79.5)	(79.5)	
Annual Production Cost Savings	\$35.6	345.8	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	
Annual Variable Production Cost Savings	25.0	243.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
	(43.1)	(418.4)	(54.1)	(52.7)	(51.3)	(49.9)	(48.5)	(47.1)	(45.7)	(44.2)	(42.8)	(41.4)	(40.0)	(38.6)	(37.2)	(35.8)	(34.4)	(32.9)	(31.5)	(30.1)	(28.7)	(28.7)	(28.7)	(24.8)	(18.8)	(18.8)	(18.8)
Capital and Fixed Cost	\$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Margin on Energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Cost	(43.1)	(418.4)	(54.1)	(52.7)	(51.3)	(49.9)	(48.5)	(47.1)	(45.7)	(44.2)	(42.8)	(41.4)	(40.0)	(38.6)	(37.2)	(35.8)	(34.4)	(32.9)	(31.5)	(30.1)	(28.7)	(28.7)	(28.7)	(24.8)	(18.8)	(18.8)	(18.8)

Purchase CTG																											
	Annuity	PV	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25
Revenue Requirements	\$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Production Cost Savings	\$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Variable Production Cost Savings	\$0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital and Fixed Cost	(45.00)	(424.6)	(61.0)	(58.3)	(55.9)	(53.5)	(51.3)	(49.3)	(47.3)	(45.3)	(43.3)	(41.3)	(39.4)	(37.4)	(35.4)	(33.5)	(31.5)	(29.5)	(28.5)	(27.4)	(26.4)	(25.3)	(24.3)	(23.3)	(22.2)	(21.2)	(20.2)
Margin on Energy	\$1.3	12.3	0.1	0.3	0.6	1.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	(43.7)	(412.3)	(60.8)	(58.0)	(55.3)	(52.4)	(49.6)	(47.5)	(45.6)	(43.6)	(41.6)	(39.6)	(37.6)	(35.7)	(33.7)	(31.7)	(29.8)	(27.8)	(26.8)	(25.7)	(24.7)	(23.6)	(22.6)	(21.5)	(20.5)	(19.5)	(18.5)
Total Cost	(43.7)	(412.3)	(60.8)	(58.0)	(55.3)	(52.4)	(49.6)	(47.5)	(45.6)	(43.6)	(41.6)	(39.6)	(37.6)	(35.7)	(33.7)	(31.7)	(29.8)	(27.8)	(26.8)	(25.7)	(24.7)	(23.6)	(22.6)	(21.5)	(20.5)	(19.5)	(18.5)

transfer is less by
(Transfer - CTG)

Annuit PV 1/1/03
0.6 (6.1)

Ameren-UE Illinois Service Territory Transfer vs. CTG Options

Impact on AmerenUE-Missouri

	Transfer UE-IL Service Territory	Purchase CTG
Annual Revenue Requirements	(103.8)	0.0
Annual Production Cost Savings	35.6	0.0
Annual Variable Production Cost Savings	<u>25.0</u>	<u>0.0</u>
	(43.1)	0.0
Annual Demand Charges	0.0	(45.0)
Annual Margin on Energy	<u>0.0</u>	<u>1.3</u>
	0.0	(43.7)
Total	<u><u>(43.1)</u></u>	<u><u>(43.7)</u></u>