

Exhibit No.:
Issue: Transmission Operations
Witness: Dennis A. Florom
Sponsoring Party: UtiliCorp United Inc.
Case No.: EM-2000-369
Date Prepared: August 23, 2000

MISSOURI PUBLIC SERVICE COMMISSION
Case No. EM-2000-369

Surrebuttal Testimony

of

Dennis A. Florom

Jefferson City, Missouri

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
SURREBUTTAL TESTIMONY OF DENNIS A. FLOROM
ON BEHALF OF UTILICORP UNITED INC.**

CASE NO. EM-2000-369

1 Q. Please state your name, title, and business address.

2 A. My name is Dennis A. Florom. My title is System Planning Engineer and my business
3 address is 10750 E. 350 Hwy., Kansas City, MO 64138.

4 Q. Please summarize your qualifications.

5 A. I hold a Bachelor of Science degree in Electrical Engineering from the University of
6 Nebraska, a Master of Science degree in Electrical Engineering from Kansas State
7 University, and a Masters in Business Administration from Rockhurst College. I have
8 worked as a transmission-planning engineer for over 10 years. From 1990 to 1997, I
9 worked for St. Joseph Light & Power Company ("SJLP") as a transmission-planning
10 engineer. Since 1997, I have worked as a transmission-planning engineer at UtiliCorp
11 United, Inc. ("UCU"). I am a registered Professional Engineer in the state of Missouri
12 (since 1994).

13 Q. What is the purpose of your surrebuttal testimony?

14 A. The purpose of my surrebuttal testimony is to respond to rebuttal testimony filed by
15 Whitfield A. Russell on behalf of Springfield, Missouri City Utilities ("Springfield").

16 Q. Do you sponsor any Schedules associated with this application?

17 A. Yes. I am sponsoring the following: DAF-1 which is documentation of the current SPP
18 planning criteria, and DAF-2 which are voltage reports of the SPP 2000 Summer Peak
19 and 2001 Summer Peak cases.

20 Q. Do you have any overall observations with respect to his testimony?

1 A. Yes. Mr. Russell shows some confusion in his understanding of the facts related to
2 transmission standards. He also shows inconsistency in his interpretation of previously
3 submitted exhibits. Additionally, some of the conditions he is proposing to impose on
4 this merger are unprecedented and unduly restrictive.

5 Q. Could you give examples of this?

6 A. Yes. On page 18 of his rebuttal testimony, Mr. Russell recommends proposed conditions
7 that include:

8 "The merged companies be required (i) to reserve transmission capacity on the relevant
9 OASIS for purposes of carrying out any internal dispatch"... "(ii) to implement real-time
10 monitoring of intra-company flows associated with real-time dispatch, (iii) to report
11 continuously the amount of such flows on the OASIS"

12 This request is unprecedented in nature in requesting a company to reserve transmission
13 service on the OASIS to serve its own retail customers. This is not the purpose of the
14 OASIS system as defined by the Federal Energy Regulatory Commission's ("FERC")
15 Order 889.

16 Q. What is the purpose of the OASIS System?

17 A. The purpose, as defined by FERC, is to provide real time information, regarding the
18 available transmission capacity (ATC) of the transmission grid by the owner for
19 simultaneous view by other entities to ensure fair and open access to transmission service.

20 If FERC had intended OASIS to report internal transmission events, it could and would
21 have so provided in Order 889. It did not. Therefore, I believe Mr. Russell's proposal
22 goes beyond any conditions required by FERC and is unduly restrictive since no
23 companies are required to do what he is proposing.

1 Q. In your opinion, how would these OASIS restrictions on UtiliCorp benefit Springfield?

2 A. Mr. Russell continues his testimony on page 19 when he requests,

3 "c. If the burdens on Springfield attributable to internal dispatch of the Applicants turn
4 out to be substantial (i.e. substantial increase in curtailments of Springfield's firm
5 schedules from Montrose), the merged company should be required to reimburse
6 Springfield for the incremental costs to Springfield of re-dispatching Springfield's
7 generating resources that are attributable to the post-merger integrated operations of
8 Applicants' separate systems."

9 I believe that Mr. Russell is interested in some form of "protection" against possible costs
10 to Springfield of future upgrades.

11 Q. Please explain.

12 A. If Springfield's load increases or if they were to join an RTO, such as SPP, and subscribe
13 to its network service tariff, Springfield may incur expenditures to upgrade their own
14 facilities. With this proposed condition by Mr. Russell, UCU would mitigate these costs
15 that Springfield would have to bear later.

16 Q. Do you have other examples of excessive restrictions that Springfield would impose as
17 conditions of the merger?

18 A. Yes. On page 29 of his rebuttal testimony, Mr. Russell requests that loadflow analysis be
19 completed using a "+/- 5% range of nominal voltage under base case conditions, heavy
20 transfer conditions and under all single contingency outage conditions."

21 As I will discuss later in this testimony, UCU has already performed the necessary studies
22 to determine the impact of the proposed UCU interconnection plan (Nevada – Asbury
23 line).

1 Mr. Russell makes the statement on page 29 of his testimony that "The SPP region
2 requires this level of voltage support to provide reliability." The voltage level referred to
3 here is the +/- 5% of nominal voltage. This voltage range is too restrictive for
4 contingency analysis and is recognized as such by the SPP. In May of 2000, the SPP
5 approved changing their planning standards to allow for +/- 10% of nominal voltage (for
6 contingency conditions) as used in the UCU interconnection studies. Schedule DAF-1
7 is a page from the SPP Criteria manual and presents evidence of this criteria change at the
8 SPP.

9 Q. What would be the impact of using a voltage planning criteria higher than that
10 recommended by the SPP?

11 A. Requiring UCU to maintain a voltage planning criteria of +/- 5% (higher than the SPP
12 criteria) could require UCU to perform unnecessary system upgrades. The costs for these
13 unnecessary upgrades would be passed onto UCU ratepayers and eventually increase
14 transmission service rates.

15 Q. What other concerns do you have regarding Mr. Russell's testimony?

16 A. Reviewing Mr. Russell's testimony I found statements that were in error or that were
17 inconsistent.

18 Q. Would you please give examples of this?

19 A. Yes. On page 3 of his testimony, Mr. Russell makes the declaration that
20 "Our studies indicate that the Missouri Public Service...transmission system is weak and
21 unreliable by prevailing engineering standards." He attempts to clarify in the
22 accompanying footnote (1) on page 3 that reads "In engineering terms, our studies show
23 that criteria violations can be expected on the UtiliCorp transmission system under

1 conditions predicted to occur at peak (base case) in both the Summer 2000 and Summer
2 2001.” He reiterates these statements on pages 32 and 33 of his testimony.

3 Q. In your opinion, how are these statements in error?

4 A. The SPP Base Cases for Summer 2000 and Summer 2001 (provided to all SPP members
5 including Springfield) do not show any criteria violations in the MPS transmission
6 system. Schedule DAF-2 provides a sorted voltage table of the MPS system for Summer
7 2000 and Summer 2001. These tables are sorted by the column titled “-V-PU-“, which
8 represents the calculated voltage for the bus name and number in that row. These tables
9 show that the minimum voltage in the MPS system in the summer of 2000 is 97.99% of
10 nominal. The minimum voltage in the summer of 2001 is similar, 97.59%.

11 These voltages are the lowest voltages calculated for the base cases in the SPP model for
12 2000 and 2001. These are healthy voltages and are not in violation of the UtiliCorp and
13 SPP criteria of 95% for base case voltages (non-contingency). Additionally, these models
14 also do not reveal any overloaded facilities in the MPS system.

15 Q. In what manner does Mr. Russell’s testimony contain inconsistencies?

16 A. One of the primary inconsistencies in his testimony is his use of the SPP System Impact
17 Study. Throughout Mr. Russell’s testimony, he makes references to the study performed
18 by the SPP and draws comparisons to other studies or system situations that are not
19 equivalent in nature. These comparisons lead him to conclusions that are not applicable
20 to the situations that he has composed.

21 Q. Can you give examples of this?

22 A. Yes. However, I think that it is important to first define the SPP System Impact Study.

23 Q. Please explain.

1 A. The SPP System Impact Study, performed by SPP professional staff, was an attempt to
2 determine the impact to the SPP system of implementing an SJLP, MPS, EDE, WPEK
3 (West Plains Energy – Kansas division) merger via the use of the SPP Network
4 Transmission Service Tariff. UtiliCorp contracted with SPP and paid for this study. In
5 this study, the Missouri utilities (SJLP, MPS, and EDE) were considered one control area
6 and WPEK was considered a separate control area.

7 It is important to note that this study did not include the system upgrades proposed by
8 UCU for interconnecting the control areas of SJLP, EDE, and MPS. This is a significant
9 difference---that of proposed new transmission construction--- that drastically affects the
10 ability of the system to transfer energy between the separate operating systems.

11 Throughout his testimony, Mr. Russell seems to overlook this distinction. The
12 interconnection studies performed by UCU did include the proposed system upgrades
13 under the expected dispatch scenarios.

14 Q. Can you give examples of Mr. Russell using the results of the SPP System Impact Study,
15 in your opinion, incorrectly or inconsistently?

16 A. Yes. One pages 8-9 of his testimony Mr. Russell states,
17 “The study provided by the Applicants...analyzes four options for interconnecting the
18 merging companies...However, it appears from the SPP System Impact Study that none
19 of these three physical interconnecting options is likely to alleviate all problems in the
20 broader region affected by the Applicants’ plan to integrate their operations.” Mr. Russell
21 is attempting to use the SPP System Impact Study as a resource to show that the options
22 considered by UCU for merging the Missouri systems will not alleviate all of the
23 transmission constraints. However, the SPP System Impact Study cannot be used for this

1 comparison, because it did not contain any of the transmission options proposed by UCU
2 for merging the Missouri systems.

3 Q. Is it appropriate then to use the SPP System Impact Study as a reference for what would
4 result from physically interconnecting the Missouri systems as described in the UCU
5 interconnection studies?

6 A. No. As I stated previously in this testimony, the purpose of the SPP System Impact
7 Study was to determine the feasibility of operating the UCU divisions using the SPP
8 Network Service without any physical interconnections. Mr. Russell's comparison here
9 is inappropriate.

10 Q. Are there other examples in Mr. Russell's testimony where he applies the results of the
11 SPP System Impact Study incorrectly?

12 A. Yes. On page 35 of his testimony Mr. Russell states,
13 "Q. Please explain the discrepancy in results between the SPP analysis and your
14 analysis, and suggest which more accurately reflect the likely impacts upon the post-
15 merger system.

16 A. The load flow cases provided to us by Applicants did not reflect the combined
17 operation of the Applicants' control areas. Consequently, my study analyzes the
18 transmission system in Missouri that simulates pre-merger conditions. The SPP study
19 simulates transfers of the type associated with combined operation of the Applicants'
20 systems. Therefore, the results of the SPP study reflect the more severe conditions that
21 can be expected to occur in the post-merger period."

22 In this part of his testimony, Mr. Russell comes close to identifying the difficulty in using
23 the SPP System Impact Study as a comparison with a study using physical

1 interconnections. However, he still fails to mention the primary difference. The SPP
2 System Impact Study did not include any facilities to physically interconnect the system
3 The only reason that Mr. Russell found any similarities between his study and the SPP
4 System Impact Study (as on page 34 of his testimony) is that he chose to focus on a
5 portion of the transmission system in the MPS system that is primarily affected by the
6 amount of local generation nearby.

7 Q. What about Mr. Russell's assertion that UCU's studies did not reflect the combined
8 operation of the UCU and EDE systems?

9 A. The issue that Mr. Russell is referring to is the question of what generation dispatch is
10 appropriate for use in the models when considering the operation of the combined
11 entities.

12 Q. In your opinion, is it fair to assume that the dispatch between the companies will be
13 different after the merger?

14 A. During off-peak times, this is likely to be true due to economic dispatch. However, for
15 these entities, a post-merger dispatch at peak will not vary significantly, if at all, from the
16 pre-merger dispatch.

17 Q. Why?

18 A. Both UCU and EDE are generation deficient companies (i.e. required to buy generation
19 capacity at peak in order to fulfill their load and reserve requirements). Neither UCU nor
20 EDE has adequate, owned generation at peak times. Because of this, in a pre-merger case,
21 both companies have already loaded all of their facilities that are considered inexpensive,
22 base-load generation. They have also loaded all or most of their intermediate price
23 generation and peaking generation. This will be true in the post-merger case as well.

1 Therefore, all of the same units will be on at peak providing roughly the same amount of
2 generation to the grid under either scenario. Therefore, modeling the system at peak for a
3 post-merger scenario using a pre-merger dispatch is appropriate.

4 Q. What other concerns do you have with Mr. Russell's testimony?

5 A. I am concerned that some of the conditions of the merger that Mr. Russell is proposing
6 would be detrimental to the native load customers in the region.

7 Q. Which of Mr. Russell's proposed conditions might cause this to happen?

8 A. On page 14 of his testimony, Mr. Russell lists several conditions of the merger that would
9 limit UCU's ability to provide native load priority on the transmission system. Limiting
10 the right to exercise native load priority puts the native load at risk, potentially placing
11 other transmission service being used for market or economic purposes ahead of that
12 transmission service being used for serving native load.

13 Q. Are there any other conditions proposed by Mr. Russell that would put native load
14 customers at risk?

15 A. Yes. On page 46 of his testimony, Mr. Russell requests that UCU be required to,
16 "(a) not set aside transmission capacity for Capacity Benefit Margin ("CBM") and
17 Transmission Reserve Margin ("TRM") and (b) to waive any future claims for CBM and
18 TRM."

19 The definition of CBM as provided by NERC (National Electric Reliability Council) is,
20 "That amount of transmission transfer capability reserved by load serving entities to
21 ensure access to generation from interconnected systems to meet generation reliability
22 requirements."

1 The definition of TRM as provided by NERC is "That amount of transmission transfer
2 capability necessary to ensure that the interconnected transmission network is secure
3 under a reasonable range of uncertainties in system conditions."

4 By definition, waiving rights to CBM and TRM could jeopardize the interconnected
5 transmission network and the reliability to native load customers. The purpose of
6 allowing CBM and TRM is to help maintain a secure, reliable transmission system. UCU
7 should not be required to waive any claims to CBM and TRM.

8 Q. What else do you notice regarding Mr. Russell's testimony?

9 A. On pages 35-36 of his testimony, Mr. Russell describes how he analyzed the SPP
10 OASIS curtailment log and found 3 curtailments that "*may not have been* imposed if
11 Applicants had been merged."

12 Q. In your opinion, is this an accurate statement?

13 A. First, it's important to note that these curtailments may or may not have been imposed
14 post-merger.

15 Secondly, it's important to put Mr. Russell's findings into perspective. If it can be
16 assumed that these curtailments would not have been imposed, the question to be asked is
17 "at what cost?" The only statement made by Mr. Russell regarding this is on page 36 of
18 his testimony where he states, "A repeat of these transactions and conditions after
19 Applicants have merged would almost certainly impose higher costs on entities other than
20 Applicants..."

21 In these three curtailments that Mr. Russell found over a span of 1½ years, he found a
22 total curtailment of 52 MWs. Even using a high displacement cost of \$100/MWH, the
23 total cost of these curtailments is \$5,200 over a span of 1½ years. Again, assuming that

1 these curtailments wouldn't still be imposed, this cost is hardly significant in comparison
2 to the benefits of the merger.

3 Q. Do you have any more observations regarding Mr. Russell's testimony?

4 A. Yes. On pages 23-39 of his testimony, Mr. Russell attempts to show that the UCU
5 interconnection studies for EDE and SJLP are, in his view, inadequate. For example, he
6 comments on page 24 of his testimony that, "In summary, Applicants appear not to have
7 conducted studies necessary to indicate the likely impacts of their planned uses of the
8 regional system upon other transmission users."

9 However, on page 44 of his testimony he proposes,

10 "I recommend that the Applicants be ordered to take immediate steps to permit and
11 construct the Nevada-Asbury line (7)..."

12 His footnote (7) on page 44 reads,

13 "Applicants conducted a study analyzing the interconnection between UtiliCorp and
14 Empire...UtiliCorp recommended addition of a 161kV line between Nevada (UtiliCorp)
15 and Asbury generating station (Empire) that parallels the limiting facility, Stockton-
16 Morgan. The Nevada-Asbury line provides back-up transfer capacity. If UtiliCorp
17 constructs the line between Nevada and Asbury, it will relieve the limiting section
18 (Stockton-Morgan) and increase the transfer capability of a part of the Missouri system
19 that is important to transferring Montrose power to Springfield"

20 Apparently, Mr. Russell is inconsistent in his opinion of the studies' value. He
21 alternately discredits and endorses the same study's findings.

22 Q. In your opinion, are any of the conditions proposed by Mr. Russell valid conditions to
23 place on the UCU – EDE merger?

1 A. I found several conditions proposed by Mr. Russell to be reasonable, although I would
2 still propose modifications to these conditions as well.

3 Q. Please define which conditions you find to be reasonable including your modifications.

4 A. On page 22 of his testimony, Mr. Russell recommends "that the merged company put all
5 of its transmission facilities in Missouri and Kansas under the control of the SPP
6 ISO/RTO...". UCU is committed to place its transmission facilities under RTO/ISO
7 jurisdiction that best suits its native load customers. This issue will be discussed in-depth
8 by UCU witness John McKinney.

9 Q. Is there another condition that you would find reasonable?

10 A. On page 44 of his testimony, Mr. Russell recommends, "that Applicants be ordered to
11 take immediate steps to permit and construct the Nevada-Asbury line..."

12 UCU is committed to construct the Nevada-Asbury line following the merger.

13 Q. Are there any other conditions that are reasonable?

14 A. No. These are the only conditions (including the modifications provided) that I found in
15 Mr. Russell's testimony to be reasonable.

16 Q. Does this conclude your testimony?

17 A. Yes, at this time.

The transmission systems should be planned to avoid excessive dependence on any one transmission circuit, structure, right-of-way, or substation.

3.3.1 Planning Criteria

Individual members may develop Planning Criteria that shall, at a minimum, conform to *NERC Planning Standards* and *SPP Criteria*. Individual member Criteria shall consider the following:

- a. Excessive concentration of power being carried on any single transmission circuit, multi-circuit transmission line, or right-of-way, as well as through any single transmission station shall be avoided.
- b. Intra-regional inter-regional, and trans-regional power flows shall not result in excessive risk to the electric system under normal and contingency conditions as outlined in this criteria.
- c. Switching arrangements shall be planned to permit effective maintenance of equipment without excessive risk to the electric system.
- d. Switching arrangements and associated protective relay systems shall be planned to not limit the capability of a transmission path to the extent of causing excessive risk to the electric system.
- e. Sufficient reactive capacity shall be planned within the SPP electric system at appropriate places to maintain transmission system voltages within plus or minus 10% of nominal on load serving buses or as determined by the transmission owner and user under contingency conditions.
- f. Facilities shall be rated as assigned in *SPP Criteria* section 12.

3.3.2 Planning Assessment Studies

Individual transmission owners shall perform individual transmission planning studies and shall cooperate in SPP and Inter-Regional studies. These planning studies are for the purposes of identifying any planning criteria violations that may exist and developing plans to mitigate such violations. Members shall contact the Transmission Assessment Working Group whenever new facilities are in the conceptual planning stage so that optimal integration of any new facilities and potentially benefiting parties can be identified. Studies affecting more than one system owner or user will be conducted on a joint system basis. Reliability studies will examine post-contingency steady-state

1-2000 SOUTHWEST POWER POOL BASE CASE POWER FLOW MODEL

2000 SUMMER PEAK - FINAL MODEL

NO-	NAME	KV	TP	VSCHED	-V-PU-	-DEG-	-AR	ZONE	-Vmax-	-Vmin-
59277	WARSAW 2	69.00	1	0.9797	0.9799	-25.99	540	400	0.0000	0.0000
59290	BELTONS2	69.00	1	0.9815	0.9815	-23.46	540	400	0.0000	0.0000
59312	LAMAR 2	69.00	1	0.9851	0.9848	-27.77	540	400	0.0000	0.0000
59289	BELTON 2	69.00	1	0.9853	0.9853	-23.24	540	400	0.0000	0.0000
59228	WBURGE 5	161.00	1	0.9855	0.9857	-19.46	540	400	0.0000	0.0000
59234	WAFB 5	161.00	1	0.9874	0.9876	-19.30	540	400	0.0000	0.0000
59291	FREEMAN2	69.00	1	0.9877	0.9877	-22.83	540	400	0.0000	0.0000
59288	RGAFB 2	69.00	1	0.9881	0.9882	-23.02	540	400	0.0000	0.0000
59208	NEVADA 5	161.00	1	0.9896	0.9893	-21.54	540	400	0.0000	0.0000
59310	3M 2	69.00	1	0.9905	0.9902	-28.24	540	400	0.0000	0.0000
59201	SIBLEY 7	345.00	1	0.9905	0.9908	-11.92	540	400	0.0000	0.0000
59200	PHILL 7	345.00	1	0.9914	0.9914	-10.41	540	400	0.0000	0.0000
59276	COLECMP2	69.00	1	0.9928	0.9929	-25.23	540	400	0.0000	0.0000
59229	ODESSA 5	161.00	1	0.9936	0.9939	-17.93	540	400	0.0000	0.0000
59209	SEDALIA5	161.00	1	0.9951	0.9953	-18.51	540	400	0.0000	0.0000
59227	OAKGRV 5	161.00	1	0.9950	0.9953	-17.92	540	400	0.0000	0.0000
59238	LKWOOD 5	161.00	1	0.9952	0.9954	-18.80	540	400	0.0000	0.0000
59241	SEDEAST5	161.00	1	0.9953	0.9955	-18.03	540	400	0.0000	0.0000
59237	BLSPW 5	161.00	1	0.9953	0.9955	-18.34	540	400	0.0000	0.0000
59306	APCITY 2	69.00	1	0.9959	0.9958	-24.69	540	400	0.0000	0.0000
59309	METZ 2	69.00	1	0.9965	0.9962	-27.90	540	400	0.0000	0.0000
59219	RAYTOWN5	161.00	1	0.9970	0.9972	-18.94	540	400	0.0000	0.0000
59216	BUTLER_5	161.00	1	0.9976	0.9974	-19.06	540	400	0.0000	0.0000
59205	BLSPE 5	161.00	1	0.9975	0.9977	-17.74	540	400	0.0000	0.0000
59232	LEX161 5	161.00	1	0.9978	0.9982	-16.81	540	400	0.0000	0.0000
59262	LIBERTY2	69.00	1	0.9981	0.9988	-17.21	540	400	0.0000	0.0000
59211	BLSPS 5	161.00	1	0.9988	0.9991	-17.86	540	400	0.0000	0.0000
59220	FROSTRD5	161.00	1	1.0003	1.0004	-18.86	540	400	0.0000	0.0000
59235	DUNCAN 5	161.00	1	1.0001	1.0005	-16.96	540	400	0.0000	0.0000
59236	RICHMND5	161.00	1	1.0007	1.0012	-15.92	540	400	0.0000	0.0000
59224	LNGVW 5	161.00	1	1.0013	1.0014	-18.34	540	400	0.0000	0.0000
59305	URICH 2	69.00	1	1.0015	1.0015	-23.04	540	400	0.0000	0.0000
59206	PRALEE 5	161.00	1	1.0014	1.0015	-17.93	540	400	0.0000	0.0000
59261	STALEY 2	69.00	1	1.0001	1.0018	-17.90	540	400	0.0000	0.0000
59249	HOOKRD 5	161.00	1	1.0021	1.0022	-18.14	540	400	0.0000	0.0000
59222	WSTELEC5	161.00	1	1.0024	1.0025	-18.40	540	400	0.0000	0.0000
59223	GRDVWE 5	161.00	1	1.0030	1.0031	-17.62	540	400	0.0000	0.0000
59243	LKWINGB5	161.00	1	1.0033	1.0034	-17.88	540	400	0.0000	0.0000
59233	LEESUM 5	161.00	1	1.0033	1.0034	-17.65	540	400	0.0000	0.0000
59284	GRDVWTP2	69.00	1	1.0034	1.0034	-22.16	540	400	0.0000	0.0000
59240	ADRIAN 5	161.00	1	1.0040	1.0039	-17.71	540	400	0.0000	0.0000
59304	URICHTP2	69.00	1	1.0040	1.0039	-22.93	540	400	0.0000	0.0000
59285	GRDWCTY2	69.00	1	1.0040	1.0040	-22.15	540	400	0.0000	0.0000
59225	PHILL 5	161.00	1	1.0054	1.0055	-17.49	540	400	0.0000	0.0000
59210	MARTCTY5	161.00	1	1.0063	1.0063	-16.83	540	400	0.0000	0.0000

1-2000 SOUTHWEST POWER POOL BASE CASE POWER FLOW MODEL

2001 SUMMER PEAK - FINAL MODEL

NO-	NAME	KV	TP	VSCHED	-V-PU-	-DEG-	-AR	ZONE	-Vmax-	-Vmin-
59277	WARSAW 2	69.00	1	0.9757	0.9759	-21.03	540	400	0.0000	0.0000
59312	LAMAR 2	69.00	1	0.9803	0.9792	-22.59	540	400	0.0000	0.0000
59208	NEVADA 5	161.00	1	0.9823	0.9811	-16.05	540	400	0.0000	0.0000
59290	BELTONS2	69.00	1	0.9800	0.9830	-17.19	540	400	0.0000	0.0000
59310	3M 2	69.00	1	0.9859	0.9848	-23.08	540	400	0.0000	0.0000
59228	WBURGE 5	161.00	1	0.9859	0.9859	-13.82	540	400	0.0000	0.0000
59289	BELTON 2	69.00	1	0.9847	0.9872	-16.91	540	400	0.0000	0.0000
59234	WAFB 5	161.00	1	0.9876	0.9877	-13.84	540	400	0.0000	0.0000
59276	COLECMP2	69.00	1	0.9892	0.9894	-20.24	540	400	0.0000	0.0000
59288	RGAFB 2	69.00	1	0.9880	0.9902	-16.64	540	400	0.0000	0.0000
59309	METZ 2	69.00	1	0.9922	0.9910	-22.72	540	400	0.0000	0.0000
59291	FREEMAN2	69.00	1	0.9882	0.9915	-16.52	540	400	0.0000	0.0000
59306	APCITY 2	69.00	1	0.9926	0.9923	-19.45	540	400	0.0000	0.0000
59209	SEDALIA5	161.00	1	0.9946	0.9949	-13.40	540	400	0.0000	0.0000
59241	SEDEAST5	161.00	1	0.9951	0.9954	-13.06	540	400	0.0000	0.0000
59229	ODESSA 5	161.00	1	0.9970	0.9965	-11.59	540	400	0.0000	0.0000
59201	SIBLEY 7	345.00	1	0.9947	0.9971	-6.92	540	400	0.0000	0.0000
59216	BUTLER 5	161.00	1	0.9991	0.9974	-12.66	540	400	0.0000	0.0000
59262	LIBERTY2	69.00	1	0.9978	0.9980	-11.83	540	400	0.0000	0.0000
59227	OAKGRV 5	161.00	1	1.0001	0.9989	-11.12	540	400	0.0000	0.0000
59305	URICH 2	69.00	1	0.9990	0.9989	-17.77	540	400	0.0000	0.0000
59261	STALEY 2	69.00	1	0.9980	0.9994	-12.88	540	400	0.0000	0.0000
59238	LKWOOD 5	161.00	1	1.0021	0.9998	-11.42	540	400	0.0000	0.0000
59237	BLSPW 5	161.00	1	1.0018	0.9999	-11.10	540	400	0.0000	0.0000
59161	TWA#2	13.00	2	1.0200	1.0005	-13.41	540	400	0.0000	0.0000
59232	LEX161 5	161.00	1	1.0009	1.0010	-10.75	540	400	0.0000	0.0000
59160	TWA#1	13.00	2	1.0200	1.0013	-13.30	540	400	0.0000	0.0000
59304	URICHTP2	69.00	1	1.0016	1.0015	-17.66	540	400	0.0000	0.0000
59200	PHILL 7	345.00	1	0.9960	1.0015	-6.13	540	400	0.0000	0.0000
59219	RAYTOWN5	161.00	1	1.0043	1.0017	-11.44	540	400	0.0000	0.0000
59205	BLSPE 5	161.00	1	1.0037	1.0020	-10.62	540	400	0.0000	0.0000
59211	BLSPS 5	161.00	1	1.0057	1.0034	-10.38	540	400	0.0000	0.0000
59236	RICHMND5	161.00	1	1.0038	1.0042	-10.00	540	400	0.0000	0.0000
59278	HOLDEN 2	69.00	1	1.0015	1.0046	-17.36	540	400	0.0000	0.0000
59235	DUNCAN 5	161.00	1	1.0059	1.0048	-10.16	540	400	0.0000	0.0000
59220	FROSTRD5	161.00	1	1.0079	1.0051	-11.26	540	400	0.0000	0.0000
59240	ADRIAN 5	161.00	1	1.0074	1.0054	-11.03	540	400	0.0000	0.0000
59206	PRALEE 5	161.00	1	1.0092	1.0062	-9.99	540	400	0.0000	0.0000
59270	KNOSTER2	69.00	1	1.0060	1.0065	-18.26	540	400	0.0000	0.0000
59224	LNGVW 5	161.00	1	1.0095	1.0065	-10.54	540	400	0.0000	0.0000
59284	GRDVWTP2	69.00	1	1.0060	1.0066	-15.61	540	400	0.0000	0.0000
59311	NEVJCT 2	69.00	1	1.0077	1.0067	-21.78	540	400	0.0000	0.0000
59285	GRDWCTY2	69.00	1	1.0066	1.0072	-15.62	540	400	0.0000	0.0000
59213	FRLVW 5	161.00	1	0.9965	1.0073	-10.81	540	400	0.0000	0.0000
59222	WSTELEC5	161.00	1	1.0104	1.0074	-10.55	540	400	0.0000	0.0000

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

In the Matter of the Joint Application of)
UtiliCorp United Inc. and The Empire)
District Electric Company for Authority to)
Merge The Empire District Electric)
Company with and into UtiliCorp United)
Inc., and, in Connection Therewith, Certain)
Other Related Transactions.)

Case No. EM-2000-369

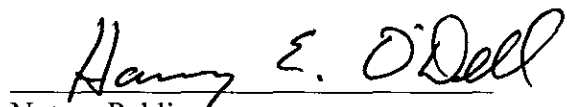
County of Jackson)
)
State of Missouri)

AFFIDAVIT OF DENNIS A. FLOROM

Dennis A. Florom, **being first duly sworn**, deposes and says that he is the witness who sponsors the accompanying testimony entitled surrebuttal testimony; that said testimony was prepared by him and or under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.


Dennis A. Florom

Subscribed and sworn before me this 21st day of AUGUST, 2000.


Notary Public

My Commission Expires:

HARRY E. ODELL
Notary Public - State of Missouri
Commissioned in Jackson County
My Commission Expires 4/11/04