

Exhibit No.:
Issues: Current transmission
system operation;
Post-Midwest ISO
Through GridAmerica
system operation
Witness: Mark C. Birk
Sponsoring Party: Union Electric Company
Type of Exhibit: Direct Testimony
Case No.: EO-2003-0271
Date Testimony Prepared: February 25, 2003

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EO-2003-0271

DIRECT TESTIMONY

OF

MARK C. BIRK

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a AmerenUE**

**St. Louis, Missouri
February 25, 2003**

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

In re: Application of Union Electric Company)	
for Authority to participate in the Midwest)	
ISO through a contractual relationship)	Case No. EO-2003-0271
with GridAmerica)	

AFFIDAVIT OF MARK C. BIRK

STATE OF MISSOURI

)	SS
CITY OF ST. LOUIS)	

Mark C. Birk, being first duly sworn on his oath, states:

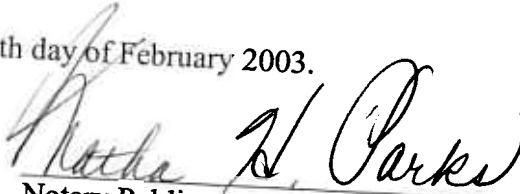
1 My name is Mark C. Birk. I work in the City of St. Louis, Missouri and I am employed by Ameren Services Company as Vice President of Energy Delivery Technical Services.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 14 pages, and attached Schedule 1, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

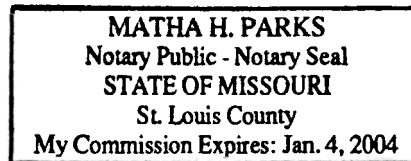
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.


Mark C. Birk

Subscribed and sworn to before me this 24th day of February 2003.


Notary Public

My Commission expires:



DIRECT TESTIMONY

OF

MARK C. BIRKCASE NO. EO-2003-0271

Q. Please state your name and business address.

A. My name is Mark Birk. My business address at Ameren Services Company (“Ameren Services”) is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri, 63103.

Q. What is your position with Ameren Services?

A. I am the General Manager, Energy Delivery Technical Services.

Q. Please describe your educational background and employment experience.

A. I received my B.S.E.E. from the University of Missouri-Rolla in 1986, and my M.S.E.E. from the same institution in 1991. I am a licensed engineer in the State of Missouri. I began my employment with Union Electric Company in 1986 as an assistant engineer in the nuclear function. In 1989, I transferred to Union Electric's Meramec Power Plant, as an electrical engineer. In 1996, I transferred to the Energy Supply Operations Group and became a Power Supply Supervisor. I became Manager of Energy Supply Operations in the Spring of 2000. I assumed my current position in the Fall of 2001.

Q. What are your responsibilities in your current position?

A. In my current position I am responsible for the management of the following Ameren Services groups which provide services to Ameren Corporation’s (“Ameren”) operating companies, AmerenUE, AmerenCIPS, and AmerenCILCO: Transmission

1 Planning and Services, Transmission and Distribution Design, Substations and Transmission
2 Maintenance, System Relay Services, Energy Supply Operations, Asset Management and
3 Vegetation, Fleet Services and Regulatory Development.

4 **Q. How long have you been employed by Ameren?**

5 A. I have been employed by Union Electric/Ameren Services for approximately 17
6 years.

7 **Q. What is the purpose of your Direct Testimony in this proceeding?**

8 A. The purpose of my testimony is to describe the Ameren transmission system
9 and how Ameren currently operates, plans for, and administers transmission service on, its
10 transmission system. I also will discuss how these responsibilities will be handled upon
11 transfer of functional control of the Ameren transmission system to the Midwest ISO through
12 GridAmerica.

13 **I. The Ameren Transmission System – Current Operation.**

14 **Q. Please describe the Ameren Transmission System.**

15 A. As of December 31, 2001, AmerenUE owned and operated, or partially
16 owned, approximately 2,648 miles of transmission lines, and had interconnection
17 arrangements with 15 investor-owned utilities, Associated Electric Cooperative, Inc., the City
18 of Columbia, Missouri, the Southwestern Power Administration and the Tennessee Valley
19 Authority ("TVA"). As of the same date, AmerenCIPS owned and operated approximately
20 1,908 miles of transmission lines, and had interconnection arrangements with 10 investor-
21 owned utilities, TVA, Wabash Valley Power Association, City Water, Light & Power of
22 Springfield, Illinois ("CWLP"), Illinois Municipal Electric Agency, Indiana Municipal Power
23 Agency, Soyland Power Cooperative and Southern Illinois Power Cooperative. Both

1 AmerenCIPS and AmerenUE are members of the Mid-America Interconnected Network, Inc.
2 (“MAIN”) reliability counsel. AmerenCIPS and AmerenUE operate their systems as a single
3 control area, subject to a single open access transmission tariff (“OATT”) approved by and
4 on file with the Federal Energy Regulatory Commission (“FERC”). In addition to the
5 AmerenCIPS and the AmerenUE transmission systems, on January 31, 2003, Ameren
6 acquired additional transmission facilities through the acquisition of CILCORP, Inc. the
7 holding company of Central Illinois Light Company (“CILCO”). A brief summary of the
8 AmerenCILCO system is described as follows. As of December 31, 2001, CILCO's
9 transmission system included approximately 333 miles of transmission lines. AmerenCILCO
10 operates its own control area and has interconnection arrangements with three investor-
11 owned utilities (Ameren, Illinois Power Company and Commonwealth Edison Company)
12 and CWLP. AmerenCILCO also is a member of MAIN. Since February 1, 2002, the date on
13 which the Midwest ISO commenced operations, transmission service on AmerenCILCO's
14 transmission facilities has been offered under the Midwest ISO OATT on file with the FERC.
15 CILCO continues to offer ancillary services pursuant to an Ancillary Services Tariff accepted
16 for filing in FERC Docket No. ER02-708-000. Similarly, once functional control of the
17 AmerenUE transmission system is transferred to the Midwest ISO through GridAmerica, I
18 anticipate that AmerenUE will continue to offer ancillary services pursuant to an Ancillary
19 Services Tariff filed with FERC.

20 **Q. What are Ameren Service’s primary responsibilities with regard to the**
21 **Ameren transmission system?**

22 A. In general, Ameren Services is responsible for: i) operating and maintaining
23 its transmission system in a safe and reliable manner; ii) planning appropriate expansions to

1 the Ameren transmission system to maintain adequate levels of reliability; and iii) providing
2 transmission service on a non-discriminatory basis to all users of the transmission system.

3 **Q. Could you describe in more detail how Ameren currently operates its**
4 **transmission system?**

5 A. Ameren currently operates one control area comprised of the AmerenUE and
6 AmerenCIPS transmission facilities. Ameren also operates the AmerenCILCO transmission
7 system as a separate control area. Since the AmerenCILCO transmission system will not be
8 affected in any way by AmerenUE's participation in the Midwest ISO through GridAmerica,
9 I will not focus on how that system is operated.

10 Ameren Services, within its Energy Supply Operations function, employs
11 Transmission Dispatchers (TDs) and Power Supply Supervisors (PSSs) (collectively "Grid
12 Operators") to control the real-time operations of the transmission system. The primary role
13 of the Grid Operators is to monitor the energy flows and voltage levels on the system,
14 dispatch generation to meet the load on the system, respond to emergencies that occur on the
15 transmission system and coordinate and approve various switching and outage requests
16 concerning the transmission system. Currently, Grid Operators in St. Louis control all
17 aspects of these operations on the AmerenUE transmission system. Some of the operations
18 on the AmerenCIPS transmission system are performed by personnel located in Mattoon, IL.

19 **Q. Do the Grid Operators in St. Louis that control AmerenUE's**
20 **transmission system have both functional control and jurisdictional control of the**
21 **AmerenUE transmission system?**

22 A. Yes, they do.

1 **Q. What is the difference between functional control and jurisdictional**
2 **control of the system?**

3 A. Functional control is the authority to actually direct/perform switching on the
4 transmission system provided that the proper jurisdictional authority has approved the
5 switching operation. Jurisdictional authority is the controlling authority that must be
6 obtained by the entity with functional control before implementing a switching operation.
7 Most vertically integrated utilities like Ameren have both functional and jurisdictional
8 control over most of the devices on their system. In some cases, functional control may be
9 delegated to a third party such as a cooperative or municipal utility if the field personnel for
10 such other utilities can perform the switching operations more expediently. However, the
11 entity with functional control cannot perform the operation without first obtaining approval
12 from the entity with jurisdictional authority.

13 **II. Ameren Transmission System – Post-Midwest ISO through GridAmerica.**

14 **a. Switching Operations.**

15 **Q. How will switching operations and outage scheduling be performed once**
16 **functional control of the Ameren transmission system is transferred to the Midwest ISO**
17 **through GridAmerica?**

18 A. Attached hereto as Schedule 1 is a table that identifies the breakdown of
19 functions and responsibilities of GridAmerica and the Midwest ISO. Throughout my
20 testimony I will be referring to this document in order to describe how the operation of
21 AmerenUE's system today will change due to AmerenUE's participation in the Midwest ISO
22 through GridAmerica.

1 As can be seen in Schedule 1, the Midwest ISO will have jurisdictional
2 authority over all of the critical elements of the AmerenUE transmission system. Ameren
3 Services will, however, maintain functional control of the actual switching operations. In
4 other words, when an entity, including AmerenUE needs an outage of a critical line on the
5 AmerenUE transmission system, that entity will have to request the outage from the Midwest
6 ISO. The Midwest ISO will then have to instruct Ameren Services when it is acceptable, or
7 if it is acceptable, to perform the actual switching operation. Once Ameren Services is
8 provided with the proper authority by the Midwest ISO, Ameren Services will perform the
9 switching operation.

10 **Q. What role will GridAmerica play in the switching process?**

11 A. GridAmerica will actually work as a contractor to the Midwest ISO to
12 coordinate the outage request activities within the GridAmerica footprint. The Midwest ISO,
13 however, will maintain the ultimate authority for determining whether a switching operation
14 may be performed on a critical element based on the Midwest ISO's assessment of the
15 impact such a switching operation will have on regional reliability and the transmission
16 service granted on the transmission system within the entire Midwest ISO footprint,
17 including the portion under GridAmerica's functional control.

18 **b. Emergency and Operational Issues.**

19 **Q. When there is an emergency or other operational concern involving one**
20 **of AmerenUE's lines, how do the Grid Operators handle the situation today?**

21 A. Ameren Services's Grid Operators continuously monitor the power flows on
22 the AmerenUE transmission system. When flows on any line approach the rating limitation

1 of such line, the Grid Operators contact MAIN (the reliability council) to discuss the
2 appropriate approach to alleviate or stabilize the loading of the line. If MAIN concurs that
3 the loadings on AmerenUE's line are approaching, or have reached, certain levels, MAIN
4 will order transmission line-loading relief (or TLR). Once MAIN issues a TLR, Ameren
5 Services can curtail transmission service, up to and including firm reservations in an effort to
6 alleviate the constrained line. Moreover, the TLR process is regional. All reservations, up to
7 and including firm reservations, that impact the constrained facility are subject to
8 curtailment.

9 **Q. How will this process differ once AmerenUE transfers functional control**
10 **of its system to the Midwest ISO through GridAmerica?**

11 A. Again, referencing Schedule 1, Ameren Services's Grid Operators will
12 continue to monitor loadings on the AmerenUE system. When loadings on any line within
13 the AmerenUE system approach a certain level, the Grid Operators will contact GridAmerica
14 to discuss options for alleviating the constraint. GridAmerica will work together with the
15 Midwest ISO to assess the line-loading situation and coordinate the recommended action for
16 alleviating the constraint.

17 **Q. Won't the additional approval from GridAmerica along with the**
18 **Midwest ISO add complexity to the assessment and alleviation of constraints on the**
19 **AmerenUE system?**

20 A. No. The GridAmerica operators will be continuously communicating with
21 the Midwest ISO operators to assess the activities and loadings on the transmission systems
22 within the Midwest ISO footprint and those within the GridAmerica footprint. Essentially,
23 the GridAmerica operators will serve the same role as the Midwest ISO operators. The only

1 difference is that the GridAmerica Operators are employed directly by GridAmerica to
2 operate the GridAmerica systems while the operators of the Midwest ISO will be monitoring
3 the Midwest ISO systems. If AmerenUE were participating directly in the Midwest ISO, the
4 AmerenUE system would be monitored by a Midwest ISO operator who would also have to
5 coordinate and assess loadings on the AmerenUE system with all of the other Midwest ISO
6 operators. Hence, AmerenUE's participation in the Midwest ISO through GridAmerica will
7 not be substantively different from a real-time operational standpoint than if AmerenUE were
8 to directly participate in the Midwest ISO. In fact, we believe that GridAmerica's ability to
9 focus on those systems within the GridAmerica footprint enhances the more efficient and
10 effective operation of the system, including specifically AmerenUE's system.

11 **c. Transmission Planning.**

12 **Q. Can you describe how planning for the expansion of the AmerenUE**
13 **transmission system is currently performed?**

14 **A.** Yes. Ameren Services has a transmission planning department that
15 continuously analyzes potential opportunities for expanding the AmerenUE transmission
16 system to support projected loadings on the AmerenUE transmission system. When the
17 planning engineers determine that projected loadings on the system will exceed the current
18 capability of the system, the planning engineers will develop an upgrade to address the
19 system needs. The transmission planning group also will work closely with other groups at
20 Ameren to finalize a design, to determine the amount of additional property that will be
21 needed and to secure the necessary regulatory approvals for construction. The planners also
22 analyze whether the proposed transmission system upgrade will impact third party systems.
23 If so, Ameren will coordinate its plan with the third-party owners of the other system. The

1 entire planning and construction process for new transmission facilities can take several years
2 to complete.

3 **Q. How will this process work once functional control of the AmerenUE**
4 **transmission system is transferred to the Midwest ISO through GridAmerica?**

5 A. The process will not be significantly different. The Ameren transmission
6 system planners will continue to analyze projected loadings on the AmerenUE system with
7 respect to local reliability criteria. Grid America will review the proposed AmerenUE
8 upgrades with respect to the Grid America footprint to determine if they are part of an
9 optimal expansion plan. In addition they will review the proposed expansion of the Grid
10 America footprint to assure that it is consistent with regional expansion plans. GridAmerica
11 also will coordinate the incorporation of the GridAmerica plan into the larger Midwest ISO
12 regional plan.

13 **Q. Will GridAmerica coordination efforts enhance the planning process?**

14 A. Yes. GridAmerica will enhance the process because it will be in a position to
15 more effectively coordinate and integrate the planning processes for the entire GridAmerica
16 footprint as it relates to all of the systems that are a part of the Midwest ISO. This enhanced
17 coordination should help reduce the construction of redundant facilities and facilitate
18 regional solutions where the cost can be spread over the entire region rather than on each
19 individual utility.

20 **d. Transmission Service.**

21 **Q. How does Ameren currently provide transmission service to itself and to**
22 **third-party users of the Ameren transmission system?**

1 A. Ameren provides non-discriminatory transmission service to all third-party
2 users, including Ameren’s marketing and trading affiliate companies, pursuant to the terms
3 and conditions of the Ameren OATT.

4 **Q. Please describe the process for receiving and accepting a transmission**
5 **reservation from a third-party wanting to use the Ameren transmission system.**

6 A. The first thing a third-party must do is place a request for transmission service
7 on Ameren’s open-access same-time information system (more commonly referred to as
8 “OASIS”). By entering the reservation on the OASIS, the third-party has placed itself in the
9 reservation queue. Ameren then has to assess whether the Ameren transmission system has
10 sufficient capacity to support the requested reservation. If Ameren determines that there is
11 sufficient capacity, Ameren will accept the reservation by indicating the same on the OASIS.
12 If Ameren determines that there is insufficient capacity to support the reservation request,
13 Ameren will deny the reservation by indicating the same on the OASIS.

14 **Q. How does Ameren determine what amount of transmission capacity exists**
15 **on the Ameren system?**

16 A. Ameren works with MAIN, Ameren’s OASIS provider and security
17 coordinator, to calculate the available transfer capability (“ATC”) of the Ameren
18 transmission system. This calculation is done by Ameren using a sophisticated model
19 developed by MAIN. The analysis incorporates line ratings that are supplied by Ameren
20 with anticipated generation flows on the Ameren and neighboring systems to determine the
21 ATC. The modeling also incorporates the existing transmission reservations that have been
22 confirmed on the system. ATC is posted by MAIN on a daily basis, sometimes several times

1 each day. Ameren uses the ATC model generated by MAIN to complete its analysis of
2 whether there is sufficient ATC to grant the requested reservation.

3 **Q. Are there any other factors included in the ATC analysis other than line**
4 **ratings, current reservations and expected generation flows?**

5 A. Yes. In addition to these factors, the ATC model incorporates two additional
6 factors. Transmission reliability margin (“TRM”) and capacity benefit margin (“CBM”).
7 The amount of these two additional factors are supplied by Ameren and incorporated into the
8 ATC model by MAIN. The purpose of these factors is to accommodate the inherent
9 inaccuracies that occur in the modeling process. Another purpose for these factors is to hold
10 open extra transmission capacity to allow generation to be imported to supply load, including
11 bundled retail load, within the control area during an emergency. The level of CBM and
12 TRM maintained are often the source of controversy. Obviously, if greater amounts of TRM
13 and CBM are maintained, there will be less ATC available for third-party users of the
14 system.

15 **Q. How will the transmission reservation process differ after functional**
16 **control of AmerenUE’s transmission system is transferred to the Midwest ISO through**
17 **GridAmerica?**

18 A. The process itself will not be significantly different. However, the parties
19 implementing the process will be completely different. As can be seen from the description
20 of the current process, Ameren is intimately involved in the process for allocating ATC to
21 potential users of the Ameren system. Because Ameren is a market participant (i.e. it also
22 owns generation), FERC Order 2000 requires Ameren to turn over functional control of its
23 system to an independent transmission system operator (here, the Midwest ISO). FERC

1 made this decision to eliminate alleged discrimination by transmission providers that are also
2 market participants in granting transmission service to third parties. Consequently, once
3 Ameren transfers functional control of its system, Ameren will no longer be the provider of
4 transmission service. It also will no longer be responsible for granting or denying
5 transmission service reservations and its OATT will be terminated. Transmission service
6 will then be offered under the Midwest ISO OATT.

7 **Q. Once jurisdictional control of the Ameren transmission system is**
8 **transferred to the Midwest ISO and functional control to the Midwest ISO through**
9 **GridAmerica, how will the transmission reservation process work?**

10 A. Once those transfers occur, the ATC model will be calculated by the Midwest
11 ISO using line-rating inputs supplied by Ameren. However, Ameren will no longer dictate
12 the levels of CBM and TRM that are used in the ATC modeling process. These factors will
13 instead be determined by the Midwest ISO. Moreover, Ameren will no longer maintain its
14 own OASIS site and users will access the Midwest ISO's OASIS. All reservations for
15 transmission service will be made on the Midwest ISO OASIS. The transmission reservation
16 requests will be analyzed, approved, or denied, as applicable, by the Midwest ISO.

17 **Q. What role will GridAmerica play in the reservation process?**

18 A. GridAmerica will have limited authority to grant transmission service
19 reservations when the reservation source and sink are within the GridAmerica footprint and
20 are determined not to impact facilities outside the GridAmerica footprint. For example,
21 when AmerenUE requests transmission service to serve its native load, this reservation may
22 be approved by GridAmerica.

1 **Q. Will AmerenUE have to acquire transmission service for its native**
2 **bundled retail load from the Midwest ISO pursuant to the Midwest ISO OATT?**

3 A. Yes. Pursuant to FERC order, all users of the Midwest ISO transmission
4 system must take service under the Midwest ISO OATT. This means that AmerenUE will
5 have to acquire network integration transmission service from the Midwest ISO once it
6 transfers its system to supply its native bundled retail load.

7 **Q. Would the transmission reservation process be different if Ameren**
8 **participated directly in the Midwest ISO instead of through GridAmerica?**

9 A. No. There would be no substantive difference.

10 **III. Conclusion.**

11 **Q. Can you summarize the differences that will occur once AmerenUE**
12 **transfers functional control of its transmission system to the Midwest ISO through**
13 **GridAmerica.**

14 A. The primary difference from today will be that Ameren personnel will not be
15 involved in the transmission reservation process. That process will be administered entirely
16 by the Midwest ISO pursuant to the Midwest ISO OATT. The actual planning and operation
17 of the AmerenUE system will not be significantly different. However, AmerenUE will have
18 to obtain approval from GridAmerica and the Midwest ISO prior to implementing certain
19 operations or constructing upgrades on the AmerenUE transmission system.

20
21 **Q. Do you anticipate a change in reliability or the quality of service to**
22 **transmission customers once functional control of the AmerenUE transmission system**
23 **is transferred to the Midwest ISO through GridAmerica?**

1 A. I do not anticipate any change in reliability or quality of service to transmission
2 customers concerning this transfer, particularly after the initial transition is made. One
3 might expect some minor problems as the Midwest ISO and GridAmerica begin to operate
4 the systems, but we anticipate any such problems to be short-term and minor in nature.
5 We plan to work with the Midwest ISO and GridAmerica to mitigate even those minor
6 problems by transferring control a few weeks prior to the peak Summer usage season, subject
7 to obtaining the necessary approvals from the Commission.

8

9 **Q. Does this conclude your Direct Testimony?**

10 A. Yes, it does.