

**Ameren Transmission Company of Illinois'
Response to ICC Staff Data Requests
Docket No. 12-0598**

Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in Various Counties in the State of Illinois.

Data Request Response Date: 12/12/2012

ENG 1.30

Mr. Kramer states that if ATXI builds the Project, construction of other reliability projects can be avoided. ATXI Ex. 2.0 at 29. With respect to this statement:

- a) Please describe and provide an estimate of the cost for each alternative reliability project that would likely be necessary between now and 2022 if ATXI did not construct the Project.
- b) Please indicate which utility would likely construct/own/operate each of the alternative projects identified in (a), and how the costs would be allocated.
- c) Please provide the results of the studies your company used to determine that the alternatives included in a) would be required if the Project is not completed.

RESPONSE

**Prepared By: Dennis D. Kramer
Title: Manager, Transmission Policy & Planning
Phone Number: 314-554-2238**

- a) The MVP portfolio, including the Illinois Rivers Project, was approved by the MISO Board of Directors in December 2011. Subsequently, the MVP lines and substations were included in the planning models used to identify system issues within the MISO footprint. The addition of the MVP portfolio and the Illinois Rivers Project to the system will address several future reliability issues in Illinois as discussed in ATXI Exhibit 2.0, pp. 25-29. Where future reliability issues are addressed by the Illinois Rivers Project in the required timeframe, Ameren Services has not performed a detailed analysis of alternative reliability projects that would be needed if the Illinois Rivers project is not constructed. Detailed analysis of alternatives for projects that would not be constructed is not needed because there are multiple processes to insure the MVP portfolio and the Illinois Rivers project will be constructed and the reliability benefits achieved.

However, Ameren Services has performed a review of previous system planning studies. The review verified that if the Illinois Rivers Project is not constructed, then additional projects will need to be constructed to address the anticipated future reliability issues in Illinois by 2022.

Below is a list of potential projects to address some of the identified reliability issues that will need to be mitigated by 2022 if the Illinois Rivers project is not constructed, and a high level estimate of the cost. This list is not exhaustive and is based upon the

information available from previous studies. Additional study through the MISO MTEP process would be needed to determine whether these would constitute the final approved projects and the expected in service date. ATXI notes that, if constructed, it is expected that most of the cost of these projects would be borne by Ameren Illinois customers, subject to the MISO Tariff language at the time of project approval by the MISO Board of Directors.

Projects	Reliability Issues	Possible In-Service Dates	High Level Estimated Cost
Palmyra Tap Substation, Palmyra tap - SE Quincy - Meredosia - Ipava 345 kV line, 345/138 kV transformer at SE Quincy, 345/138 kV transformer at Meredosia	Palmyra transformer contingency loading, voltage support to Quincy area and Meredosia area, relieve 138 kV contingency loadings.	2016 - 2017	\$384,000,000
Pana – Mt. Zion 345 kV line and Mt. Zion 345/138 kV transformer	Decatur Area voltage support and contingency loadings.	2016	\$125,000,000
Mt Zion - Oreana 345 kV (assumed 22 mile line length) and associated Oreana substation work	Decatur Area voltage support and contingency loadings.	2022	\$56,000,000
Sidney-Rising 345 kV line and associated substation work	Champaign area voltage support and contingency loadings.	2019	\$48,000,000
TOTAL			\$613,000,000

- b) The alternative projects would be needed to address local reliability issues and therefore may be classified as Baseline Reliability Projects (BRP) depending upon the language in the MISO tariff at that time. The current MISO tariff language allows that projects may be altered or combined, and depending upon the project attributes, a project may change classification to become a Market Efficiency Project or part of a Multi-Value Project portfolio. The determination of the likely constructor/owner/operator would be made when the final project classification is determined consistent with the MISO tariff language at that time.
 Cost allocation for the alternative projects would be per the MISO Tariff Attachment FF in effect at the time the alternative projects are approved by the MISO Board of Directors.
- c) The studies performed by Ameren Services and the results used to identify the transmission system issues were described at pages 25 through 29, lines 567 through 649, and Exhibits 2.5 through 2.18 of my testimony. As described on pages 26 and 27, lines 580 through 595, separate studies were performed to determine system conditions with shoulder load levels with a large expected renewable energy level and summer peak load levels with a small expected renewable energy level. The results of these studies indicate

that the system issues described in Exhibits 2.5 through 2.18 of my testimony will occur on or before 2021 if the Illinois Rivers project is not constructed.

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and Related Facilities in Various Counties in the State of Illinois.**

Data Request Response Date: 12/12/2012

ENG 1.02

Please provide an organizational chart for ATXI. Please include the number of ATXI employees that report to each position shown on the organizational chart.

RESPONSE

**Prepared By: Jeffrey V. Hackman
Title: Manager, Transmission Operations
Phone Number: 314-554-2839**

Maureen Borkowski is the President and Chief Executive Officer of ATXI. No employees report to her. As such, ATXI does not maintain an organizational chart.

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Data Request Response Date: 12/12/2012

ENG 1.35

Please provide the following information regarding how the Project fits into AIC's and ATXI's plans for future transmission system expansion:

- a) Details of AIC's or ATXI's plans to construct new electric transmission facilities or new substations within five miles of any part of the Project within five years of the Project's expected completion date.
- b) A map that shows the potential locations for possible future facilities identified in part ENG 1.35(a) above.
- c) State whether AIC and ATXI explored the possibility of combining some or all of the future plans identified in part ENG 1.35(a) above with the Project to reduce overall costs or to reduce necessary right-of-way requirements. If yes, please explain your results. If no, please explain why not.
- d) State whether ATXI provided information about AIC's and ATXI's future plans for transmission system expansion identified in ENG 1.35(a) at the public meetings held pursuant to Section 8-406.1(a)(3) of the Public Utilities Act.

RESPONSE

Response to subpart a) only:

Prepared By: Dennis D. Kramer

Title: Manager, Transmission Policy & Planning

Phone Number: 314-554-2238

ATXI objects to this request as overly broad, unduly burdensome and seeking information outside its possession and control. AIC is not a party to this case. ATXI also objects to this request to the extent it seeks information that is not relevant to this proceeding. Subject to and without waiving this objection, ATXI responds as follows.

- a) ATXI has no current plans to construct new electric transmission facilities or new substations within five miles of any part of the Project within five years of the Project's expected completion date. With respect to AIC, as discussed by Mr. Hackman at ATXI Ex. 3.0, pp. 16-17, certain electric transmission facilities will be constructed, extended, or relocated by AIC to integrate the Project with AIC's system. See list provided in the Company's response to Staff data request ENG 1.03.

Response to subpart b) and c) only:

Prepared By: Jeffrey V. Hackman

Title: Manager, Transmission Operations
Phone Number: 314-554-2839

- b) See ATXI Ex. 4.10.
- c) ATXI also objects to this request as vague with respect to what is meant by "possibility of combining" "future plans". ATXI believes the question could, for example, be interpreted variously as either referring to system planning or routing. See also the Company's response to subpart a) above.

Response to subpart d) only:
Prepared By: Donell Murphy
Title: Partner, Environmental Resource Management
Phone Number: 847-258-8912

- d) See the Company's response to subpart a) above. ATXI provided information about ATXI's future plans for transmission system expansion by displaying the Midwest Independent System Operator's map of Multi-Value Projects at the public meetings. ATXI also showed maps of substation siting areas that started as 3-mile radial circles centered on the existing substations in each respective area. As it relates to the Sidney-Rising area, AIC's Bondville-Southwest Campus project was also discussed.

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Data Request Response Date: 1/4/2013

ENG 3.01

ATXI's response to Staff data request ENG 1.3, including ENG 1.03 Attach, identifies work that other entities, including AIC, will need to perform to fully integrate the Project into the existing transmission system. Staff understands that the cost for this additional integration work to be performed by other entities is not included in the Project cost estimates that ATXI provided of \$1,091,600,000 for the primary route or \$1,167,500,000 for the alternate route. (ATXI Ex. 3.0, p. 18) With respect to this response:

- a) Please state whether the Project integration costs to be born by other entities are included in the estimate of Project costs that ATXI provided;
- b) Please identify any reliability benefits described by ATXI witness Dennis D. Kramer (ATXI Ex. 2.0, pp. 25-29) that depend upon the completion of integration work to be performed by other entities, including AIC;
- c) Please identify any operational benefits described by ATXI witness Jeffery V. Hackman (ATXI Ex. 3.0, pp.17-18) that depend upon the completion of integration work to be performed by other entities, including AIC;
- d) Please provide an estimate of the costs associated with each of the tasks listed in ENG 1.03 Attach, and an estimate of the costs associated with completing all of the tasks necessary to construct and fully integrate the Project. Please also identify the source of the cost estimates ATXI provides in this response.
- e) Please state whether ATXI witness Rodney Frame's (ATXI Ex. 9.0) benefit analysis assumes that AIC's 138 kV connections to ATXI's proposed substations are already in place. If it does, please explain in detail how Mr. Frame's analysis and conclusions (ATXI Ex. 9.0) regarding the economic benefits of ATXI's Project are affected by including all estimated costs to fully integrate the Project, as provided in response to ENG 3.1(d), above.

RESPONSE

Response to subparts a), c) and d) only:

Prepared By: Jeffrey V. Hackman

Title: Manager, Transmission Operations

Phone Number: 314-554-2839

- a) The expected value of \$1,091,600,000 for the primary route or \$1,167,500,000 for the alternate route, include estimates for the costs of the connections to the existing AIC system. These estimates would be updated once final substations sites are acquired and connection configurations determined. The estimates do not include the cost of any

- underbuild modifications or system improvements required by AIC or the costs of any non-Ameren transmission owning entity.
- c) See ATXI Response to 3.01 b). Connection of the Illinois Rivers Project with the existing transmission system is a part of the MVP portfolio, and is necessary to derive the operational benefits listed by Mr. Hackman, whether those connections are made by ATXI, AIC, Commonwealth Edison, or other entities.
 - d) Estimates of the costs of the connections of the existing AIC facilities to the new substations and related facilities as listed on page 1 of ENG 1.03 Attach are included in the cost estimates provided for each Illinois Rivers project segment as described in the testimony of Mr. Jeffrey Hackman. Individual task estimates are not available. There is currently no cost estimate available for the AIC underbuild projects listed on page 2 of ENG 1.03 Attach. However, the total costs of the tasks shown on ENG 1.03 Attach are expected to be *de minimis* in relation to the total Project cost. As stated in the response, these listings are subject to revision as the final Illinois Rivers line routing and substation locations are established and interconnection configurations are determined.

Response to subpart b) only:

Prepared By: Dennis D. Kramer

Title: Manager, Transmission Policy & Planning

Phone Number: 314-554-2238

- b) The set of reliability benefits described on ATXI Exhibit 2.0, pp. 25-29 will be fully realized when the Illinois River Project is completely constructed and integrated into the existing transmission system. However, as each line segment of the Project is completed and integrated into the 138 kV system, some reliability benefits will be provided. For example, local reliability needs were one of the inputs into the analysis to determine the preferred line and substation construction sequence as shown on ATXI Exhibit 2.4. The needs of the local areas influenced the scheduling of Sidney – Rising and Pana – Mt. Zion line segments and substations to be completed in 2016.

Response to subpart e) only:

Prepared By: Rodney Frame

Title: Affiliate, Analysis Group, Inc.

Phone Number: 202-530-3991

- e) It is not clear how a connection to a *proposed* substation already could be in place. That stated, Mr. Frame's analysis summarized in ATXI Exhibit 9.4 assumes investment costs for the Illinois Rivers Project of \$1.091 billion. It is Mr. Frame's understanding that this \$1.091 billion investment cost estimate includes amounts for 345 kV lines, 345 kV/138 kV transformers and connections from the transformers to the existing 138 kV system but not the cost of "underbuild" upgrades (see Response to 3.1(d)). Based on MISO's representation that the underbuild upgrade investment costs for the *entire* MVP portfolio would be only approximately \$70 M in comparison to investment costs for the entire MVP portfolio of approximately \$5.180 billion (i.e., less than 1.4 percent) (see, e.g., the MISO MVP Report at pages 82-3), Mr. Frame does not believe that including the underbuild costs for Illinois River in his analysis would materially change his results or conclusions. To be clear, Mr. Frame is not endorsing the \$70M value as the actual or even estimated cost and understands the Illinois Rivers' value will be refined when the final Illinois Rivers line routing and substation locations are established and interconnection configurations are determined.

ENG-MISO 1.1

MISO witness Jeffery R. Webb states that the MISO reliability analysis of the ATXI system and the Ameren Illinois (AIC) system identified numerous thermal loading, voltage, and stability issues that would occur if the Illinois Rivers Project is not completed. He further states: "The Illinois Rivers Project addresses these issues by strengthening supply to the existing 138 kV transmission system across south-central Illinois..." MISO Ex. 1.0, at 19-20. With respect to this testimony:

- a. Please state whether the fact that the Illinois Rivers Project excludes the connection of AIC's existing 138 kV transmission system to ATXI's proposed substations causes Mr. Webb to qualify the above statements. If yes, please describe the manner in which Mr. Webb would qualify these statements.
- b. Please state whether connecting AIC's existing 138 kV transmission system to ATXI's proposed substations is necessary in order for the Project to provide all the benefits to AIC's 138 kV transmission system shown in MISO's analysis of MISO MVP projects # 9, #10, and #11. If it is not, please explain why the Project includes installation of 345/138 kV substations.
- c. Please state whether MISO's 2011 Multi-Value Project (MVP) Portfolio includes the 138 kV transmission system connections to ATXI's proposed substations. If it does not, please state why it does not. If it does, please state when and through what process MISO believes those connections will occur.
- d. Please state whether MISO has had communications with Ameren Illinois Company regarding the connection of its existing 138 kV transmission lines to the 345/138 kV substations that ATXI proposes in its Project. If it has, please provide copies of those communications.
- e. Please provide the name and titles of the individuals who conducted the MISO reliability analysis discussed by Mr. Webb in his direct testimony. Please state whether any of these individuals are employed by ATXI, or any of its affiliates. If any, please explain each such individual's relationship with ATXI or its affiliate and the role in MISO's analysis that the individual had.
- f. If no direct connections between the Project and AIC's existing 138 kV transmission system were to occur, please state whether it is Mr. Webb's opinion that the Palmyra-Quincy-Meredosia-Ipava & Meredosia-Pawnee (Project #9), Pawnee-Pana (Project #10), and/or Pana-Mt. Zion-Kansas-Sugar Creek (Project #11) segments of the 345 kV transmission line that ATXI proposes in its petition would have been included within MISO's 2011 MVP Portfolio.

Response

- a. No. The end result of the Project will be the connection to the 138 kV transmission system as contemplated by MISO's 2011 MVP Portfolio described herein. Mr. Webb continues to believe that "The Illinois Rivers Project addresses these issues by strengthening supply to the existing 138 kV transmission system across south-central Illinois..." as stated in his pre-filed testimony.
- b. The Multi-Value Project (MVP) projects 9, 10, and 11 as approved by the MISO Board of Directors in MISO's Transmission Expansion Plan (MTEP) 2011 (MTEP11) include the installation of 345/138 kV transformers at each of the Quincy, Meredosia, Pawnee, Pana, Mt. Zion, and Kansas stations. As contemplated by MISO's 2011 MVP Portfolio described herein, to be effective these installations include connection of the transformers to the 138 kV facilities at or near these substations. Connecting AIC's existing 138 kV transmission system to ATXI's proposed substations will be necessary in order for the Project to provide all the benefits to AIC's 138 kV transmission system shown in MISO's analysis of MISO MVP projects 9, 10, and 11.
- c. Yes. MISO's 2011 MVP Portfolio includes the 138 kV transmission system connections to ATXI's proposed substations. MISO does not know through what processes ATXI or AIC may make these connections, but the connections should be made as soon as the 345 kV facilities are available for such connections.
- d. Objection: MISO objects to this request to the extent that it calls for a response that is covered under the common interest privilege, attorney-client privilege, and work product doctrine pursuant to a joint and common interest agreement. Subject to and without waiving this objection, MISO states the following:

No such specific communications with Ameren Illinois Company (AIC) exist, except as noted herein. AIC is a transmission owner (TO) member of MISO, and in accordance with the Agreement of the Midwest ISO Transmission Owners to form the Midwest ISO (Transmission Owner Agreement (TOA)), MISO performs a collaborative planning process with all of MISO's member TOs. This collaborative planning process includes ongoing communications between MISO and all TOs. Additionally, as a TO, AIC would have participated in MISO's Transmission Expansion Plan (MTEP) and MVP processes explained in detail in Mr. Webb's testimony at pages 8-9 and 17-19. For example, see the MTEP 2011 report (MTEP11) at Section 2.4, publicly available at: <https://www.midwestiso.org/PLANNING/TRANSMISSIONEXPANSIONPLANNING/Pages/MTEP11.aspx>. Also see, the MISO's Business Practices Manual, Transmission Planning, BPM-020-r6 at Section 2.6.2 (November 15, 2011); MVP Project Portfolio report at pages 33-34 and 40-42 (January 10, 2012), publically available at: <https://www.misoenergy.org/Library/Repository/Study/Candidate%20MVP%20Analysis/MVP%20Portfolio%20Analysis%20Full%20Report.pdf>.

- e. The names and titles of the individuals who conducted the MISO reliability analysis discussed by Mr. Webb in his direct testimony, all current MISO employees located at MISO's principal place of business, are as follows:
1. Digaunto Chatterjee – Manager, Expansion Planning
 2. Michael Dantzler – Senior Engineer, Expansion Planning
 3. Adam Solomon – Senior Engineer, Infrastructure Studies
- f. As stated previously, MISO's 2011 MVP Portfolio analysis assumed connections between the 345 kV and 138 kV systems in Illinois as described in MTEP11. Mr. Webb does not have an opinion and cannot speculate as to whether the transmission line segments included in MVPs 9, 10, and 11 would have been included in the MVP Portfolio if the subject connections were not to occur.

Objection Prepared By: MISO Counsel

Response Prepared By: Jeffrey R. Webb
Title: Senior Director, Expansion Planning
Telephone: 317-249-5412

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Docket No. 12-0598

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Data Request Response Date: 1/4/2013

ENG 3.05

Please state whether Ameren Services plans and designs transmission facilities for both ATXI and AIC.

RESPONSE

Prepared By: Maureen A. Borkowski

Title: Senior Vice President, Transmission, Ameren Services Company

Phone Number: 314-554-2050

Yes.

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Data Request Response Date: 12/12/2012

ENG 1.08

Why is ATXI proposing to construct and own the 345 kV line connecting Sidney and Rising Substations rather than AIC (or the entity identified in ATXI's response to Staff data request ENG 1.7)?

RESPONSE

**Prepared By: Jeffrey V. Hackman
Title: Manager, Transmission Operations
Phone Number: 314-554-2839**

The Sidney-Rising 345 kV line is part of the MISO-approved MVP project, the Illinois Rivers Project. ATXI is constructing that Project. Therefore, ATXI is proposing to construct that line..

**Ameren Transmission Company of Illinois's
Response to MCPO Data Requests
Docket No. 12-0598**

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Data Request Response Date: 12/20/2012**

MCPO-AIC 3.08

Please refer to the Direct Testimony of Jerry Murbarger at page 3 of 8 to page 6 of 8 and ATXI Exhibit 7.4.

- a) Please identify the range of route turning angles in degrees that can be supported by each of the three following structure types:
 - i) Tangent;
 - ii) Running Angle; and
 - iii) Deadend
- b) For each filed primary and alternate route, please provide the following information for the portions of the Illinois Rivers Project from Pana to Mt. Zion, Mt. Zion to Kansas and Kansas to Sugar Creek:
 - i) ATXI's best available estimate of number of tangent structures that will be used;
 - ii) ATXI's best available estimate of the number of running angle structures that will be used; and
 - iii) ATXI's best available estimate of the number deadend structures that will be used.
- c) Please provide the base line cost utilized by ATXI for each of the following components in order to develop the cost estimates contained in ATXI Exhibit 7.4:
 - i) Tangent Structures (on a dollars per structure basis);
 - ii) Running Angle Structures (on a dollars per structure basis); and
 - iii) Deadend Structures (on a dollars per structure basis)
- d) Please describe in detail any additional easement and/or workspace requirements ATXI expects when using deadend structures versus tangent or running angle structures.

RESPONSE

**Prepared By: Jerry A. Murbarger
Title: Transmission Design Specialist
Phone Number: 217-424-8794**

For Ameren standard structures, the angle criteria for structure selection are generally:

- a)
 - i) Tangent structures: 0° to 1
 - ii) Running Angles: 1° to 15°

iii) Deadend structures: 15° to 90°

There has been no detail engineering completed at this time. The quantities found below are estimates of the number of structures required.

b)

i)

Line Route	Primary	Alternate
Pana – Mt. Zion	198	223
Mt. Zion - Kansas	378	372
Kansas – Sugar Creek	197	180

ii)

Line Route	Primary	Alternate
Pana – Mt. Zion	2	4
Mt. Zion - Kansas	5	11
Kansas – Sugar Creek	2	9

iii)

Line Route	Primary	Alternate
Pana – Mt. Zion	13	24
Mt. Zion - Kansas	51	52
Kansas – Sugar Creek	17	13

- c) At this time ATXI does not have a detailed breakdown of cost by structure type. Pole height is obviously a significant factor and depends on route details. To the extent the average value in our estimating program is a surrogate for a base line, the average value for a tangent structure is approximately \$33,000, a running angle is approximately \$74,250, and a dead-end is approximately \$107,250, all exclusive of hardware and foundations. The foundations associated with these structures depend on soil characteristics, are always a significant cost, and can have an overwhelming impact on the total cost for any given location, for all structure types.
- d) At the locations of large angle structures or deadend structures, additional easements may be required for setting up equipment during the installation of the conductor. If needed, these additional easements may be permanent or temporary.

Illinois Rivers Project - Baseline Cost Estimate

<u>Portion</u>	<u>Primary</u>	<u>Alternate</u>
Mississippi River - Quincy	\$ 20,385,000	\$ 22,747,000
Quincy - Meredosia	\$ 105,957,000	\$ 104,264,000
Meredosia - Ipava	\$ 101,516,000	\$ 104,875,000
Meredosia - Pawnee	\$ 129,077,000	\$ 144,205,000
Pawnee - Pana*	\$ 65,868,000	\$ 78,780,000
Pana - Mt. Zion	\$ 62,869,000	\$ 72,182,000
Mt. Zion - Kansas	\$ 125,502,000	\$ 128,026,000
Kansas - Indiana State Line	\$ 68,236,000	\$ 63,919,000
Rising - Sidney	<u>\$ 40,482,000</u>	<u>\$ 65,122,000</u>
Total Cost	\$ 719,892,000	\$ 784,120,000.00

*Alternate 2 for this Portion only \$ 65,018,000

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Data Request Response Date: 2/21/2013**

ENG 5.01

For each of the following sites, please provide a scale map or drawing showing (i) existing 138 kV and 345 kV bus configurations/arrangements, (ii) the existing fence line and "inside the fence" dimensions, and (iii) the dimensions of the entire property, both fenced and unfenced:

- a) The existing Meredosia 138 kV switch yard site.
- b) The existing Ipava Substation site.
- c) The existing Pawnee Substation site.
- d) The existing Pana Substation site.
- e) The existing Kansas Substation site.
- f) The existing Rising Substation site.
- g) The existing Sidney Substation site.

RESPONSE

**Prepared By: Jeffrey V. Hackman
Title: Director, Transmission Operations
Phone Number: 314-554-2839**

ATXI objects to this request because it asks for information which is not relevant and which is not likely to lead to the discovery of admissible evidence and for information beyond ATXI's possession and control. ATXI does not possess or control a drawing or map showing, collectively, the requested information for each site identified in a) through g) above.

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Data Request Response Date: 12/28/2012**

ENG 2.10

With the exception of ATXI's proposed SE Quincy and Mt. Zion Substation sites, Staff understands that ATXI proposes to connect each of its proposed substations to both proposed and existing 345 kV transmission lines. At Mt. Zion Substation, Staff understands ATXI's intention is to provide a 138 kV source for the Decatur area from its proposed 345 kV line via a new 345/138 kV transformer.

- a) Please explain why ATXI elected to propose offering an additional 138 kV source for the Decatur area from a new substation in or near Mt. Zion rather than from a different source.
- b) If not provided in response to Staff data request ENG 2.8, please provide a map that indicates the location of all existing 138 kV transmission lines that supply the Decatur area, including an identification of the location of each line's source. Please clearly identify the 138 kV transmission line(s) that ATXI expects will get connected to its proposed Mt. Zion Substation.
- c) Please state the number of 138 kV circuits ATXI anticipates will originate from its proposed 345/138 kV Mt. Zion Substation and why those new 138 kV lines are not included in ATXI's request for a certificate of public convenience and necessity in this petition.
- d) If ATXI is not installing the future 138 kV line to supply the Decatur area, please explain why ATXI is extending its proposed 345 kV transmission line from Pana to Mt. Zion to provide an additional 138 kV source for the Decatur area. Could ATXI instead provide a new 138 kV source for the Decatur area by installing a new 345/138 kV substation along a straight line between ATXI's proposed Pana and Kansas substation sites?

RESPONSE

Response to Subparts a), c) and d) only:

Prepared By: Jeffrey V. Hackman

Title: Manager, Transmission Operations

Phone Number: 314-554-2839

- a) The proposal to offer an additional 138 kV source for the Decatur area from a new substation in or near Mt. Zion is based in part on the results of the MVP process. As stated in Mr. Kramer's testimony on Page 22, lines 473 – 481, it was established through MISO studies that a central Illinois route for a 345 kV line was the preferred line location. The substations selected as "drop-off" points provide access to numerous 138 kV lines and were identified through the RGOS and MVP studies as the preferred locations. Therefore, the need for a connection to the 345 kV system at Mt. Zion is not just to address the system needs in the Decatur area.

As described on page 35 of the MISO document "Multi Value Project Results and Analysis, January, 10, 2012"; analysis was performed which determined the Pawnee to Pana to Mt. Zion to Kansas to Sugar Creek 345kV Line and the associated transformers and connections to the 138 kV system is the preferred solution.

The 345 kV lines from the Pawnee to Sugar Creek in western Indiana will provide an outlet for wind generation in the western region to move toward the more densely populated load centers to the east. This 345 kV extension creates another 345 kV path across central Illinois to connect to the existing 345 kV network in Indiana at Sugar Creek. This provides access wind generation to all of Indiana, and supplies major load centers such as Indianapolis and the Chicago suburbs in northern Indiana. The new lines will provide a wind outlet and reliability benefits, by mitigating a number of contingent outage events during peak and shoulder periods, where the wind generation component is much higher. The addition of the 345 kV lines and step down transformers in this project will keep the power flow on the 345 kV system. Otherwise, it would be injected into the lower voltage transmission networks in Illinois if the 345kV additions are not made, which causes a number of lower voltage network constraints to be alleviated. This project will mitigate eight bulk electric system (BES) NERC Category B thermal constraints and 12 NERC Category C constraints.

As ATXI's response to Staff data request ENG 1.04 (dated December 12) stated, the MVP portfolio was approved in December, 2011 by the MISO Board of Directors. The MISO Owners Agreement (MISO Schedule 1) places an obligation to construct approved projects on the Owner(s) as well as provides a process to ensure that approved projects will be constructed if the constructing Owner(s) is unable to complete the project. The applicable text is located on pages 55, 56, 69 and 85 through 89. Therefore it is reasonable and appropriate to assume the MVP portfolio will be constructed.

There are also reliability benefits of offering an additional 138 kV source for the Decatur area from a 345/138 substation in or near Mt. Zion. The loading relief, reliability enhancements, provision of transmission support for certain multiple contingency events and/or reduction of the exposure to dropping large amounts of customer load due to potential low voltage conditions for the Decatur area from completion of the Mt. Zion 345/138 kV substation and transformer portion of the Illinois Rivers Project and AIC 138 kV connections are as set forth in Mr. Kramer's testimony on Page 23, lines 513 - 519

Further, ATXI's response to ICC Staff Data Request ENG 1.30-a stated that where future reliability issues are addressed by the Illinois Rivers Project in the required timeframe, Ameren Services has not performed a detailed analysis of alternative reliability projects that would be needed if the Illinois Rivers Project is not constructed. Detailed analysis of alternatives for projects that would not be constructed is not needed because there are multiple processes to insure the MVP portfolio and the Illinois Rivers Project will be constructed and the reliability benefits achieved.

- c) It is anticipated that the two existing AIC lines in the area will be extended/reconfigured/relocated by AIC to connect to the 345/138 kV Mt. Zion substation. These circuits are not included in ATXI's Petition in this case because they are expected to be constructed by AIC and their location and design (and whether a CPCN is needed at all) are dependent on the final route and substation location approved by the Commission in this proceeding. Once an Order is granted in this Docket 12-0598, the specific plans for this work, including the need for a CPCN, will be determined.

The work associated with the extension/reconfiguration/relocation of the AIC 138 kV lines is part of MISO MVP #9 and therefore AIC has an obligation to construct the lines as described in the MISO Owners Agreement and explained in response to ICC Data Request ENG 1.04. In addition, because the AIC 138 kV line work is part of MVP #9, the costs associated with the work will therefore be cost shared across the MISO footprint load.

Additional future lines that may connect at the 345/138 kV Mt. Zion substation will depend upon system conditions, load growth and other factors.

- d) No. As discussed in subpart a), the determination by ATXI to extend its proposed 345 kV transmission line from Pana to Mt. Zion to provide an additional 138 kV source for the Decatur area was made in part through the MISO MVP process. As stated in Mr. Kramer's testimony on Page 22, lines 473 – 481, it was established through MISO studies that a central Illinois route for a 345 kV line was the preferred line location. The substations selected as “drop-off” points provide access to numerous 138 kV lines and were identified through the RGOS and MVP studies as the preferred locations. Therefore, the need for a connection to the 345 kV system at Mt. Zion is not just to address the local system needs in the Decatur area.

The fact that AIC will be constructing the extension/reconfiguration/relocation of the AIC 138 kV lines as part of MISO MVP #9 does not impact the analysis of the desirability and benefits of having a new 345/138 kV substation south of Decatur. The ATXI and AIC systems are planned and designed in a coordinated manner and therefore the connections from the new 345/135 kV substation to the existing AIC 138 kV lines had been anticipated.

As described on page 12 of the MISO document “Multi Value Project Results and Analysis, January, 10, 2012”; the MVP portfolio was developed by considering regional system enhancements, from previous MISO analyses, that could potentially provide multiple types of value, including enhanced reliability, reduced congestion, increased market efficiency, reduced real power losses and the deferral of otherwise needed capital investments in transmission.”

Additionally as described on page 35 of the MISO document “Multi Value Project Results and Analysis, January, 10, 2012”; analysis was performed which determined the Pawnee to Pana to Mt. Zion to Kansas to Sugar Creek 345kV Line and the associated transformers and connections to the 138 kV system is the preferred solution.

As stated in Mr. Kramer's testimony on Page 6, lines 120 – 124, the higher voltage lines have greater load carrying capability than the lower voltage lines, and the higher voltage lines can deliver power over greater distances more efficiently, with less energy loss and less voltage drop, than lower voltage lines. As a result, extending higher voltage transmission facilities close to the load will minimize energy losses and improve the delivery voltage. Higher voltage lines have greater load carrying capability than the lower voltage lines.

See ENG 2.10 Attach.

Response to Subpart b) only:

Prepared By: Donell Murphy

Title: Partner, Environmental Resource Management

Phone Number: 847-258-8912

- b) The attached map depicts the existing 138 kV transmission lines in the Decatur area. Unlike radial facilities that have a source, transmission lines serve in a network fashion so there is no "source" to label as any end of a transmission line can serve as a source or sink depending on system conditions. The new Mt. Zion Substation will be connected to the existing substation located due north of the new substation site.

**Ameren Transmission Company of Illinois'
Response to ICC Staff Data Requests
Docket No. 12-0598**

**Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in Various Counties in the State of Illinois.
Data Request Response Date: 12/12/2012**

ENG 1.34

If ATXI's right-of-way width for 345 kV were 132 feet for some segments, rather than the 150 feet that ATXI desires, what changes in span length would need to occur in order to maintain all National Electrical Safety Code clearances? Please estimate the approximate cost difference, expressed in \$/mile, between using a 132 foot right-of-way width and a 150 foot right-of-way width over flat, unoccupied land.

RESPONSE

**Prepared By: Jerry A. Murbarger
Title: Transmission Design Specialist
Phone Number: 217-424-8794**

By using shorter structures and shorter span length of approximately 600 feet, the 132 feet wide right-of way is adequate. Using 850 feet to 1000 feet spans require a taller structure. Taller structures and longer spans require wider right-of-way for high wind conditions.

Using 600 foot spans, there would be nine structures per mile. Using 900 foot spans, there would be six structures per mile. Therefore, if a typical tangent structure cost is assumed to be \$25,000 each, the addition cost would be approximately \$75,000 per mile for construction of the line using the narrower right-of-way. Not only is the cost more, but there would be also be additional impacts to the landowner due to the location of additional structures on their property.