Ameren Transmission Company of Illinois's
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.
Revised Data Request on Rehearing Response Date: 12/10/2013

ENG 2.14R

ATXI witness Jeffrey V. Hackman explains that ATXI's proposed Pawnee Substation and Pana Substation sites were selected after ATXI learned about and observed mine subsidence in the area caused by a roof-and-pillar mine. (ATXI Ex. 3.0 (Rev.) at 14-15.)

a) Are AIC's existing substation at Pawnee and/or Pana in the area of observed mining subsidence discussed by Mr. Hackman?
b) When were AIC's existing substations at Pawnee and Pana initially constructed?
c) Historically, has AIC, Ameren Services, or ATXI determined that mining subsidence caused problems at AIC's existing substation at Pawnee or Pana? If yes, please identify and explain those problems. If no, please identify and explain any specific potential concerns associated with mining subsidence that caused ATXI to select alternative substation sites rather than sites that are adjacent to AIC's existing substations at Pawnee and Pana.

RESPONSE

Prepared By: Jeffrey V. Hackman
Title: Senior Director, Transmission Operations & Project Management
Phone Number: 314-554-2839

a) Yes
b) In his role as Senior Director of Transmission Operations and Project Management for Ameren Services, Mr. Hackman understands that the substations at Pana and Pawnee were constructed in approximately 1949 and 1972, respectively.
c) Ameren Services personnel, on behalf of ATXI, reviewed time-lapse evidence which showed subsidence and consulted with experts who counseled that the construction of a major Bulk Electric System facility on the old mine area was ill-advised without stabilization, and as discussed in ATXI Exhibit 3.0, a new site was preferable to stabilization. Ameren Services made AIC aware of the mine subsidence. AIC now intends to relocate all of the functions of the AIC existing substations at both Pawnee and Pana. ATXI does not have knowledge of the entirety of the history of AIC's operations, including historical determinations by AIC regarding mining subsidence at Pawnee or Pana.

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Data Request on Rehearing Response Date: 11/27/2013

ENG 12.04

At lines 188-201 of ATXI Ex. 1.0 (RH), Mr. Kramer discusses the need for rebuilding AIC's existing Pana Substation due to mine subsidence. Please identify the date upon which ATXI determined it would include relocation and rebuilding of AIC's transmission and distribution equipment as part of this proceeding. Please include an updated response to Staff data request ENG 2.14 along with the response to this data request.

RESPONSE

Prepared By: Jeffrey V. Hackman
Title: Senior Director – Transmission Operations and Project Management
Phone Number: 314.554.2839

ATXI did not determine it would relocate or rebuild AIC's transmission and distribution equipment, and relocation / rebuilding of AIC's transmission and distribution equipment is not part of the Project. This docket involves ATXI's Project, for which ATXI will build ATXI-owned facilities. AIC will be responsible for AIC facilities impacted by the Project. ATXI notes, however that costs incurred by AIC for relocation or rebuilding of AIC equipment at Pana are eligible for MVP cost recovery, if ATXI's Pana substation is included in the MVP.

As described in testimony, during the process of substation design layout, mine subsidence was identified as a threat to reliability and it was determined that transmission facilities in the Pana area should be located outside the mine subsidence area. Records do not reflect an exact date of the decision to pursue a new site but most probably it occurred between September 25, 2012 and October 29, 2012. No updates to ENG 2.14 are necessary.

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Data Request on Rehearing Response Date: 12/16/2013

ENG 13.03

Referring to ATXI EX. 4.1 (RH) to ATXI Ex. 4.4 (RH), please explain in detail how ATXI determined the Decatur area load for the years 2016-2018 assumed in each of its power flow studies. Is this the same Decatur area load associated with ATXI Ex. 11.1? If no, please explain why ATXI assumed a different Decatur area load.

RESPONSE

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

Per Ameren Transmission Planning Criteria and Guidelines: "The Ameren system peak loads used in general purpose power flow models are based on the peak corporate load forecast, which assumes a statistical probability of one occurrence in two years (50/50 load forecast). Sensitivity of other system conditions should be considered, including but not limited to variations in system load (shoulder peak load, light load, 1 in 10 years load) or non-coincident local area load conditions, high bias and different transfer scenarios, different resource dispatch scenarios (such as Taum Sauk operating in pumping mode during off peak conditions), and system conditions reflecting historical operating experience. Inclusion of peaking generation in base case dispatch may be omitted if a critical system condition would occur as a result of the CTG(s) in question being offline. The use of a 90/10 load forecast for an area may be used as a sensitivity to adjust the scope and timing for a transmission project."

For consistency, the Decatur area loads assumed in the analysis reflected by ATXI Ex. 4.1 (RH) through 4.4 (RH) were the same as the loads used in the analysis reflected by ATXI Ex. 11.1. These loads represent a summer peak (90/10) load level which is consistent with the previously described Ameren Transmission Planning Criteria and Guidelines.

The models and assumed loads used for these analysis were developed prior to finalizing the service agreement with a major customer (ADM) to significantly increase their load (70 MVA or approximately 54 MW) by 2016. Therefore, for purposes of consistent analysis, the loads assumed in the models do not reflect this significant customer load addition. The 2021 Summer peak model is a good representation of the 2013-2018 summer (90/10) peak conditions when the significant customer load increase that will occur by 2016 is excluded from the forecast. This additional customer load in 2016 will increase the exposure to voltage collapse and loss of load for the outage of the Oreana 345/138 kV transformers beyond that which is shown in the analysis.

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Data Request on Rehearing Response Date: 12/16/2013

ENG 13.07

Referring to lines 209 – 212 of ATXI Ex. 4.0, please explain why bus voltages in the Decatur area due to voltage drop on two hypothetical 138 kV lines from a 345 kV source at Staff's proposed substation site near Moweaqua are lower than bus voltages due to voltage drop on the two hypothetical 30-mile 138 kV lines modeled in the power flow analysis associated with ATXI 11.1.

RESPONSE

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

In ATXI Ex 11.1, the post contingency voltage at the Oreana substation 138 kV bus is 93.4% for the outage of both Oreana 345/138 kV transformers when the new Mt Zion area substation is sited far south of the Decatur area and located near and connected to a hypothetical 345 kV line between Pana and Kansas, as suggested by Mr. Rockrohr in his original direct testimony. This far south substation site necessitates connecting to the Decatur area PPG substation via two approximately 30 mile long 138 kV lines.

In ATXI Ex 4.4 (RH), the post contingency voltage at the Oreana substation 138 kV bus is 92.9% for the outage of both Oreana 345/138 kV transformers when the new Mt Zion area substation is located at the Moweaqua site suggested by Mr. Rockrohr in his direct testimony (rehearing). In this analysis the Moweaqua substation is supplied by a radial 345 kV line from the Pana substation. The Moweaqua substation connects to the existing 138 kV line which terminates at the Decatur Route 51 substation. The Moweaqua substation also uses a rebuilt section of 138 kV line from Moweaqua tap to Moweaqua North plus a new 15 mile 138 kV line from Moweaqua North substation to the Mt Zion PPG substation.

The difference in the post contingency Oreana 138 kV bus voltages is approximately 0.5% and is due to the different transmission system configurations.

For example, because a 345 kV connection between Kincaid and a Moweaqua substation cannot be placed in service in 2016, the analysis reflected in EX 4.4 (RH) uses a 345 kV line from Pana to supply the Moweaqua substation in 2016 and eliminates the Pawnee-Pana 345 kV line and a second Pana 345/138 kV transformer. The Pawnee-Pana 345 kV line and a second Pana 345/138 kV transformer are eliminated from the analysis because they are not included in Mr. Rockrohr's description of his Kincaid system configuration. Eliminating these system improvements reduces the amount of post contingency

voltage support that would be provided to the Decatur area by a Moweaqua substation compared to the system configuration analyzed for Ex 11.1.