

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

ILLINOIS POWER COMPANY d/b/a :  
AmerenIP :  
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 Petition for Certificate of Public : Docket No. 10-0079  
Convenience and Necessity, :  
pursuant to Section 8-406 of the :  
Illinois Public Utilities Act, to :  
construct, operate and maintain a :  
new 345,000 volt electric line in :  
Macon County, Illinois. :

**DRAFT ORDER**

Albert D. Sturtevant  
CARPENTER LIPPS & LELAND LLP  
22 W. Washington, Suite 1500  
Chicago, IL 60602  
(312) 854-8049  
sturtevant@carpenterlipps.com

Edward C. Fitzhenry  
Matthew R. Tomc  
AMEREN SERVICES COMPANY  
One Ameren Plaza  
1901 Chouteau Avenue  
St. Louis, Missouri 63166  
(314) 554-3533  
(314 554-4014 (fax)  
efitzhenry@ameren.com  
mtomc@ameren.com

DATED: March 11, 2011

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## **I. PROCEDURAL HISTORY**

On January 29, 2010, Illinois Power Company d/b/a AmerenIP now known as Ameren Illinois Company d/b/a Ameren Illinois (“Ameren Illinois”, “AIC” or “Petitioner”)<sup>1</sup> filed a Petition with the Illinois Commerce Commission (“Commission”) for a Certificate of Public Convenience and Necessity (“Certificate”) pursuant to Section 8-406 of the Public Utilities Act (“Act”), 220 ILCS 5/8-406, authorizing Ameren Illinois to construct, operate, and maintain a new 345 kilovolt (“kV”) electric line (the “Transmission Line”), in an area north of Decatur, Illinois. The Transmission Line will connect AIC’s existing Oreana Substation and a new tap location to be located along the existing AIC Clinton to Latham 345 kV electrical transmission line. In addition, substation modifications at the existing Oreana and Latham Substations (which, together with the Transmission Line, constitute the “Project”) will also be required. AIC also requested an order pursuant to Section 8-503 of the Act, 220 ILCS 5/8-503, directing that the Project be built.

Illinois Central Railroad Company entered an appearance in the proceeding.

Curtis E. Stepanek, Roger D. Nelson, David Endorf, Donnell Murphy, and Darrell E. Hughes, submitted testimony on behalf of Petitioner. Mona Elsaid and Janis Freetly testified on behalf of the Commission Staff. An evidentiary hearing was held on February 16, 2011, after which the record was marked Heard and Taken. Staff and AIC submitted an agreed draft order on March 11, 2011.

## **II. BACKGROUND**

AIC is a public utility within the meaning of Section 3-105 of the Act, 220 ILCS 5/3-105, is an electric utility within the meaning of Section 16-102 of the Act, 220 ILCS 5/16-102, and is engaged in the business of supplying electric power and energy throughout its certificated service territory within the State of Illinois.

Petitioner, in its petition and testimony, explained that the Transmission Line is necessary for Ameren Illinois to provide adequate, reliable, and efficient service to the Project area. In April 2005, the North American Electric Reliability Corporation (“NERC”) implemented a Reliability Standard associated with system performance following an outage event that could result in the loss of two or more bulk electric system elements (TPL-003-0). Compliance with this Reliability Standard, which is also an Ameren Transmission Planning Criteria, requires the simulation or modeling of such an outage event, and the development of a solution that would prevent the loss of system

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<sup>1</sup> Effective October 1, 2010, Illinois Power Company d/b/a AmerenIP, Central Illinois Light Company d/b/a AmerenCILCO and Central Illinois Public Service Company d/b/a AmerenCIPS merged, with Central Illinois Public Service Company d/b/a AmerenCIPS (“AmerenCIPS”) as the surviving entity. AmerenCIPS was thereafter renamed Ameren Illinois Company d/b/a Ameren Illinois (“AIC”). AIC is the legal entity succeeding Illinois Power Company d/b/a AmerenIP in this cause.

elements should such an event occur. Construction of the proposed Transmission Line will enable Ameren Illinois to comply with this NERC Standard in the Decatur area.

### **III. STATUTORY CRITERIA**

Section 8-406(b) of the Act, 220 ILCS 5/8-406(b), requires that, in pertinent part:

The Commission shall determine that proposed construction will promote the public convenience and necessity only if the utility demonstrates: (1) that the proposed construction is necessary to provide adequate, reliable, and efficient service to its customers and is the least-cost means of satisfying the service needs of its customers or that the proposed construction will promote the development of an effectively competitive electricity market that operates efficiently, is equitable to all customers, and is the least-cost means of satisfying those objectives; (2) that the utility is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision thereof; and (3) that the utility is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers.

Section 8-503 of the Act, 220 ILCS 5/8-503 requires that, in pertinent part:

Whenever the Commission, after a hearing, shall find that additions, extensions, repairs or improvements to, or changes in, the existing plant, equipment, apparatus, facilities or other physical property of any public utility or of any 2 or more public utilities are necessary and ought reasonably to be made or that a new structure or structures is or are necessary and should be erected, to promote the security or convenience of its employees or the public or promote the development of an effectively competitive electricity market, or in any other way to secure adequate service or facilities, the Commission shall make and serve an order authorizing or directing that such additions, extensions, repairs, improvements or changes be made, or such structure or structures be erected at the location, in the manner and within the time specified in said order.

### **IV. POSITIONS OF THE PARTIES**

#### **A. Section 8-406 Certificate**

##### **1. Position of Petitioner**

##### **Need for Project**

Petitioner has requested authority from this Commission to construct, operate, and maintain a new 345 kV electric line, the Transmission Line, in an area north of Decatur, Illinois, connecting AIC's existing Oreana substation and a new tap location along the existing AIC Clinton to Latham 345 kV electrical transmission line.

Petitioner stated that the proposed Transmission Line is necessary for AIC to provide adequate, reliable, and efficient service to the Project area. Compliance with the new NERC Reliability Standard, which is also an Ameren Transmission Planning Criteria, requires the simulation or modeling of such an outage event and the development of a solution that would prevent the loss of system elements should such an event occur. Construction of the proposed Transmission Line will enable AIC to comply with this NERC Standard in the Decatur area.

Petitioner explained that the transmission system in the Decatur regional area is heavily dependent on single substations and tower-line corridors. AIC reviewed the system performance of the transmission system in this region for the contingencies described in standard TPL-003 and identified concerns regarding low system voltages during certain contingency conditions and the need for AIC to shed a large amount of load to meet the system performance requirements of the standard. The proposed system reinforcement requires the establishment of the Transmission Line, which will consist of approximately 9.3 miles of 345 kV line to the Oreana 345/138 kV Substation on a separate transmission right-of-way. AIC also proposed the addition of 345 kV circuit breakers at the Oreana Substation to keep the Oreana 345/138 kV transformers in service and supplied by the new transmission lines for tower-line outages.

Petitioner further explained that the Decatur area load is supplied by a network of 138 kV transmission lines from 345/138 kV substation sources at Oreana, Latham, Lanesville, and Pana Substations. The Oreana Substation is the strongest source to the Decatur area because of its double-circuit connection and proximity to the Clinton Nuclear Plant, and the substation supplies approximately 63% of the Decatur load with all facilities in service. The Latham and Lanesville 345/138 kV Substations supply approximately 19% and 8% of the Decatur load, respectively. The Pana 345/138 kV Substation supplies approximately 12% of the Decatur load. An additional 138 kV line (line 1313-1372) connects the Decatur area to the Bloomington area and serves customer load between these two major load centers. AIC testified that, with all transmission facilities in service, this line is a weak source to the Bloomington area. However, during transmission contingencies, the flow direction on this networked line can reverse such that the line would be a weak source to the Decatur area.

Based on studies performed a few years ago and annually assessed since that time, it is expected that by 2012, part of the Decatur regional area load, approximately 100 MW, would need to be dropped during peak load conditions or a large part of the Decatur area load would be subject to low-voltage conditions and possible voltage collapse should an outage event occur that results in the loss of two or more bulk electric system elements. AIC stated that the two particular system elements that may be affected would include the existing Clinton to Latham 345 kV line 4571 and Clinton to Goose Creek 345 kV line 4545. These two lines occupy common transmission structures and supply the Oreana 345/138 kV Substation.

Petitioner testified that it explored the addition of reactive supply to the large bulk and distribution substations with poor power factor in the Decatur regional area, but

rejected that alternative because reactive supply additions alone are not adequate to support the growing demand in the Decatur regional area for the long term. AIC therefore concluded that these larger load pockets in the Decatur regional area require more robust transmission support to comply with the NERC Reliability Standards and Ameren Transmission Planning Criteria. The proposed system reinforcement involves the establishment of the Transmission Line – a third 345 kV line to the Oreana 345/138 kV Substation on a separate transmission right-of-way. AIC stated that construction of the Transmission Line would ensure continued reliable service to customers within the Decatur regional area.

On rebuttal, Petitioner updated and refined its modeling of the loads and distribution capacitor banks in the Decatur area. Petitioner responded to Staff's position that with a load level of 620 MW in the year 2016, without any load additions, AIC would not need the proposed Transmission Line to comply with Ameren Transmission Criteria. As Mr. Stepanek testified, AIC based its analysis of the need for the Latham-Oreana Line on the resultant contingency voltages in the Decatur area associated with load forecasts developed in 2006, that showed 660 MW of load in the Decatur area by 2013. AIC conceded that Staff is correct that more recent load projections show lower forecasted loads in the 2013-2016 period, with a 620 MW load level projected for 2016.

AIC took the position that Staff's analysis in determining the need for the Latham-Oreana Line, however, focuses on the question of projected load growth and does not fully address the exposure to a voltage collapse for the Decatur area. Due to the risk of voltage collapse in the Decatur area, AIC believes that the Latham-Oreana Line is required to eliminate the risk of voltage collapse for the double-circuit outage condition.

Petitioner explained that electric utility engineers use the term "voltage collapse" to describe a scenario where an area of the interconnected system experiences rapidly declining voltages followed by a total loss of electric service. A typical voltage collapse occurs when the system is at a high load level and there is a sudden change in the source(s) of electric supply to an area. The change could be the loss of a large generator or one or more transmission lines. As Mr. Stepanek testified, in either case the remaining sources for the area cannot provide adequate voltage support, and voltages at both the transmission and distribution levels of the system drop significantly below normal values. The sudden drop of voltage causes the characteristics of the loads to change. Electric motors stall, which results in a significant increase of real power load and a drastic increase in reactive power load. The increased load from the stalled motors drives the voltages even lower. At this point, current flow on the entire system supplying the area is increased, resulting in increased voltage drop to the loads and a spiraling downward of system voltages as more motors stall. Ultimately, the voltages collapse as the transmission and distribution system can no longer support the increased area load. Under these situations, as the collapse develops, flows on distribution, subtransmission, or transmission circuits will exceed the settings of the protective relays, resulting in a total outage to the area. In many instances, the voltage collapse event is precipitated by a fault on a transmission line. During the time the fault is connected to the system, voltages at both the transmission and distribution levels of

the system are very low. Although this period of very low voltage may be relatively short, perhaps only 5-10 cycles (0.083-0.167 seconds), some loads connected to the system can change drastically and not return to the pre-fault status when circuit breakers open and disconnect the faulted line from the system. Mr. Stepanek stated the drastic change in load characteristic might cause a voltage collapse to occur in situations where, absent the effect of the fault, a collapse would have been avoided.

Mr. Stepanek testified that a voltage collapse is generally caused by the outage of transmission and/or generation equipment. The outage of transmission equipment effectively reduces the number of transmission paths and results in increased impedances from the generation resources to the load. Because of the reduced number of paths, the current flow over these remaining paths increases, which results in increased electrical losses and voltage drop. A voltage collapse can also be caused by the outage of local generation equipment. The outage of generation equipment reduces the real and reactive power supply in a given area, and replacement power might move over transmission lines from resources farther away from the load resulting in higher losses and increased voltage drop over the longer distance and higher impedance paths.

Additionally, according to Mr. Stepanek, for a fast-acting voltage collapse involving an outage to a transmission line or generator, the transformer load tap-changers (LTCs) will not act quickly enough to avert a voltage collapse. As explained by Mr. Stepanek, LTCs and regulators will not have time to react. Most LTCs or regulators have a time delay of at least 15 seconds, and then take about a second to move each tap step. The voltage collapse event could be over before the LTCs would start to move. For a fast-acting voltage collapse involving an outage to a transmission line or generator, system operators will not be able to respond quickly enough to avert a voltage collapse. The protective relaying systems are not designed to prevent a voltage collapse from occurring.

Further, Petitioner explained that, if a voltage collapse event occurred, most of the outaged load would be out of service for many hours. Operating personnel would have to determine the cause of the event and then begin restoring segments of the system in a gradual manner. Depending on the duration of the outage and the ambient temperatures, hot load pick-up might be a concern where the duration of the outage has exhausted all of the load diversity. In that situation, AIC would need to restore customer service feeder by feeder, or perhaps tap by tap, to avoid overloading equipment or being subject to extreme low voltages and another voltage collapse. AIC also stated that a second voltage collapse event could occur, particularly during the system restoration if the double-circuit 345 kV line is still out-of-service.

To better illustrate the voltage collapse issue, AIC updated and refined its modeling of the loads and distribution capacitor banks in the Decatur area. AIC maintains that the results of the updated model clearly show that, at the projected load level in 2016, there is a significant risk of voltage collapse and therefore, in accordance with the Ameren Transmission Planning Criteria, construction of the Latham-Oreana

Line is required to provide adequate and reliable service to the Decatur area. As discussed by Ameren witness David Endorf, based on this updated analysis, coupled with a review of the construction schedule, AIC determined that it should revise the in-service date for the Latham-Oreana Line to December 2015.

Petitioner stated the outage of the double-circuit 345 kV tower line involving the Clinton-Latham 345 kV line 4571 and the Clinton-Goose Creek 345 kV line 4545 will severely impact the strength of the transmission supply and cause a voltage collapse in the Decatur area if the outage occurs during summer peak conditions. These lines share common transmission structures for approximately 16 miles between the Clinton Nuclear Plant and the Oreana 345/138 kV substation. In addition, each circuit is a three-terminal line. The west circuit has a terminal at Clinton, one at Latham, and one at Oreana. The east circuit has a terminal at Clinton, one at Goose Creek, and one at Oreana. This supply arrangement is vulnerable to a single weather or other event involving a common structure resulting in the outage of both of the lines. The double-circuit outage condition would render the remaining transmission system inadequate to support the forecast load of 620 MW by 2016 or before, exposing the Decatur area to voltage collapse. Therefore, Petitioner also argues that it needs to construct additional facilities to meet system performance requirements and maintain reliable service.

Petitioner testified that it considered concerns about voltage collapse in its planning and analysis of the Decatur area transmission system. Mr. Stepanek explained that the voltage criteria used in AIC's transmission system planning has been developed to provide voltages to the customer consistent with the 83 Illinois Administrative Code Part 410, Standards of Service for Electric Utilities. The distribution system planning criteria sets maximum and minimum steady state voltage limit guidelines at the low-voltage bus of distribution and customer substations and at 34.5 kV and above customer delivery points for normal and contingency outage conditions. AIC investigates voltages below these limits to ensure adequate voltage on the distribution feeders. Considering the above voltage requirements for the subtransmission and distribution systems, AIC has established transmission system low-voltage limits of 95% of nominal. Voltages below this threshold would initiate discussion with the distribution system planner to ensure that the system would provide adequate distribution voltages for normal and single contingency conditions. For conditions beyond single contingencies, AIC would investigate transmission voltages below 95% further to determine what actions, if any, are required so that the contingencies would not result in widespread outages.

As explained by Mr. Stepanek in direct testimony, using conventional load modeling techniques, AIC expected by 2012, that a large part of the Decatur area load would be subject to low-voltage conditions and voltage collapse should an outage event occur that results in the loss of two or more bulk electric system elements during peak load conditions. The Clinton to Latham 345 kV line 4571 and the Clinton to Goose Creek 345 kV line 4545 share common transmission structures for approximately 16 miles between the Clinton Nuclear Plant and the Oreana 345/138 kV substation. If the outage of these circuits would occur during high load conditions, the analysis showed

that the voltages would be so low that motors would stall resulting in a voltage collapse and dropping of a large amount of load in the Decatur area. Under the 2006 load projections and conventional power flow modeling used for planning purposes at the time of preparation of direct testimony, the amount of load that would be dropped for this double-circuit outage event at time of summer peak conditions caused concerns from an Ameren planning perspective. The amount of load exposed to being dropped for more than 15 minutes due to the system topology and/or the natural response of the system in a voltage collapse event would exceed 300 MW. With the new Latham-Oreana line and the circuit breaker additions at Oreana Substation, the outage of the tower-line circuits that presently supply the Oreana Substation will no longer cause low voltages in the Decatur area.

AIC identified the Decatur area as possibly being vulnerable to a voltage collapse during its periodic analyses of its system, using conventional modeling assumptions. A study that AIC performed in 2007-2008 confirmed that the area was vulnerable to a voltage collapse. At that time, the load forecast for the Decatur area showed a total load of 660 MW in 2013. The analysis indicated that the area would be clearly exposed to a voltage collapse in 2013 or before. In response to this study, AIC evaluated mitigation options and identified the addition of a 345 kV line from Latham to Oreana as the best solution. Due to lead time constraints, the target in-service date for the new Latham-Oreana line was set as 2014. Because the need for the line was so clear-cut at that time, there was no reason to consider more in-depth modeling of the area.

Petitioner also explained that there were aspects of the electric system that conventional modeling does not reflect. Generally, power flow models used to evaluate the transmission system do not explicitly represent the details of the distribution system. Typically, the model explicitly shows only the transformers at distribution substations connected to the transmission system, with all of the downstream distribution system shown simply as a net load. The model may or may not net capacitors connected to the low-side bus of the distribution substation with the load. The power flow model used in the analysis to support Mr. Stepanek's direct testimony related to the Latham-Oreana Project, for example, used a net load representation at many of the low-side load buses for all substations connected to the transmission system. The model did explicitly include large 34 kV capacitor banks at those substations that have 34 kV capacitor banks. However, the model represented the entirety of the rest of the distribution system simply as lumped net load.

Petitioner's Transmission Planning staff reviewed the model used in the initial evaluation of the Decatur area and determined that some assumptions made in the development of the model resulted in under-stating the exposure to voltage collapse. Petitioner concluded that it could improve the model by showing more detailed information for the underlying distribution system. AIC decided that one key improvement would be to explicitly model the capacitors on the underlying distribution system instead of showing a net reactive load representation.

Petitioner explained that, to include the effects of distribution capacitors, a power flow model was developed considering a 620 MW load level in the Decatur area expected by 2016, without the addition of new large customer loads. AIC modeled the distribution capacitors that it had previously netted against reactive power load as discrete items at all relevant distribution buses in the model. A side-by-side comparison of the bus voltages in the Decatur area for the double circuit outage of the Clinton-Latham 345 kV line 4571 and the Clinton-Goose Creek 345kV line 4545 shows that modeling the distribution shunt compensation capacitors explicitly produces lower voltages as compared to the conventional net load model.

Further, with the slightly more detailed representation to specifically model the distribution system capacitors, this steady-state analysis still does not consider the added impact of load characteristic change due to a transmission fault. Although the industry has not yet developed a Good Utility Practice that would provide a framework for including this aspect, the phenomenon is present and would make the voltage situation worse than indicated by the steady-state analysis. Petitioner suggests that the refined model used by AIC is conservative in its results.

Petitioner explained that the Decatur area would be vulnerable to a voltage collapse during summer peak conditions before 2016. Petitioner based this conclusion on its more detailed load modeling that shows distribution bus voltages at less than 89%, knowing that the voltages would be up to 7% lower downstream from these buses, and understanding that such conditions assure a voltage collapse.

Petitioner stated that the existing transmission system in the Decatur area, without the double-circuit tower line that supplies the Oreana 345/138 kV substation, is inadequate to support the Decatur area load in the near term. Further, the existing transmission system would not be able to support possible large load additions while providing adequate voltages to customers during contingencies. Based on the revised power flow analysis of the Decatur area, which shows many distribution bus voltages between 86% and 89% (levels that carry a significant risk for voltage collapse) and a few distribution bus voltages below 85% (the level at which a voltage collapse is essentially assured) for the double-circuit tower line outage, and knowing that the voltages would be up to 7% lower downstream from these buses, AIC concluded that the Decatur area will be exposed to voltage collapse by 2016 (or before). Petitioner stated a review of the low voltages indicates that the voltage collapse would result in the loss of service to most, if not all, of the load in the Decatur area. Petitioner contends that a loss of this magnitude far exceeds the limit in Ameren's Transmission Planning Criteria for load dropped by the natural response of the system. Finally, AIC concludes that to avoid exposure to this outage and to comply with Ameren's Transmission Planning Criteria, it should complete the Latham-Oreana 345 kV Project by 2015.

Although construction of the proposed Transmission Line is not the only system upgrade that AIC could install to avert a voltage collapse in the Decatur area, Petitioner explained that this is the least-cost option available. AIC considered several possible 345 kV line extensions to Oreana Substation from the nearest 345 kV sources in central

Illinois. In addition, Ameren Illinois considered the installation of static-var-compensators. However, the cost estimates for other alternatives were \$18 million to \$100 million higher than the cost of the proposed Latham-Oreana Line. The proposed option to build a short 8-10 mile Latham to Oreana 345 kV line is the least-cost method to meet the requirements of NERC Standard TPL-003 and Ameren Transmission Planning Criteria. Petitioner pointed out that it does not make engineering or economic sense to build a much longer line and create a larger impact to the public when a simple modification to the connection arrangement of the existing Clinton-Latham line 4571 and a short-line extension will suffice.

Petitioner also stated that it is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision thereof. AIC has built lines and projects of this magnitude and has recently received approval from the Commission in Docket 06-0179 to construct a 345 kV line in downstate Illinois. The Transmission Line will primarily consist of single shaft self-supported steel poles designed for this 345 kV circuit. AIC estimates that these poles range from 90 to 130 feet in height. These facilities are consistent with industry-wide standards. AIC confirmed that it is capable of efficiently managing and supervising construction of the Project. AIC will construct the Transmission Line according to all applicable federal and state regulations and orders of the Commission, including 83 Ill. Admin. Code Part 305, and the National Electrical Safety Code.

### **Route Selection**

Petitioner conducted its study of the potential routes associated with the Transmission Line through an integrated process, where participation by stakeholders and the general public was incorporated into route development and selection as described by Ameren Illinois witness Donell Murphy. The process included holding meetings associated with the stakeholder/public process, collecting input as to what factors may be considered for route development and selection, gathering input as to locations of such considerations, and allowing feedback regarding routing decisions as they have been made at each milestone phase of route development. Each of these milestone phases of route development included a corresponding stakeholder working group and at least one public open house. The integrated route development/selection and stakeholder/public process was intended to be an open and transparent process aimed at engaging potentially affected parties early and at regular intervals as routing decisions are made. This has facilitated not only an understanding by stakeholders and the public of the process itself, but also the need for the Project. AIC derived the final Preferred Route for the Transmission Line from this process.

Ms. Murphy testified that, from the route siting analysis, five Proposed Routes emerged as the optimum locations for the proposed Transmission Line where the potential for environmental impacts could be reduced or minimized; or, if there was no measurable advantage for incurring additional line length in an effort to offset potential environmental impacts, then line length and other constructability considerations that

require additional cost were reduced. The Proposed Routes include Alternate Route A, which is also the Preferred Route, Alternate Route B, Alternate Route C, Alternate Route D, and Alternate Route E. AIC selected the Preferred Route as the optimum route among the Proposed Routes. The Preferred Route represents the least potential for impact with regard to environmental (human and natural) and constructability or construction related consideration, while also being the least-cost option.

Ms Murphy explained that the Preferred Route was selected as such because it is (i) the shortest route; (ii) the route having the lowest potential overall impact to agricultural land uses (shorter length assumes fewer structures and therefore less overall ground disturbance); (iii) the route having a lower potential overall impact to residential land uses (reduced proximity to existing residences without increasing length, the number of angle structures, or major roadway crossings) land uses; and (iv) the least-cost route (as a function of shortest length and reduced angle structures).

Petitioner further explained that the right-of-way for the Transmission Line will be 150 feet in width. This is the typical right-of-way for a 345 kV transmission line of this design and is the minimum width needed to construct and safely maintain the Transmission Line. On those portions of the route where the Transmission Line parallels existing road right-of-way, a portion of the transmission right-of-way may be included in the road right-of-way. Mr. Nelson testified that approximately 51 parcels will be affected, involving approximately 49 landowners.

Mr. Nelson also testified that AIC will send any landowners along the Preferred Route a certified letter and "Statement of Information from the Illinois Commerce Commission Concerning Acquisition of Rights of Way by Illinois Utilities" at least 14 days prior to any contact by Petitioner's representatives seeking right-of-way. The information contained in the letter and the Statement of Information will comply with the requirements of 83 Ill. Administrative Code Part 300. Additionally, Petitioner representatives will, subsequent to the 14-day notices, contact landowners, in person if possible, and discuss the Project in detail and inform them of the reason for the contact and the purpose of the Project. AIC will provide to contacted landowners a written Project purpose statement, a small scale map, and aerial photocopy of the easement area, as well as information regarding the type and location of proposed facilities. AIC will offer compensation and explain the basis of that compensation. AIC will base compensation for the easement rights along the Preferred Route on valuation data that a third party independent appraiser will provide. The acreage and length of the proposed easement and a copy of the proposed option to purchase easement agreement and easement document will be in the information that AIC will provide to landowners. Petitioner's representatives will be available for discussion and negotiations as required by each landowner.

According to Petitioner, construction of the Project, including the Transmission Line, will not have adverse financial consequences for AIC or its customers. The total estimated cost of the Project is between \$20 million (Preferred Route including substation) and \$24 million (alternative routes including substation). The scale of the

Project does not significantly add to the overall level of construction financing that AIC will undertake during the 2010 to 2014 timeframe. The amount of financing required to support the Project during construction (“AFUDC”) would be modest. The Project can be financed with a combination of short-term debt, long-term debt, and equity. In addition, transmission revenue recovery would begin once the Project is in-service. Increased transmission revenue would provide adequate cash flow to fully support the amount of debt and equity that was used to finance the Project during construction. Petitioner further explained that assuming that AIC’s current financial conditions are representative of the future, there would be no anticipated impact on credit ratings or limits on capital availability that would bring financial harm to AIC or its customers due to this Project.

## **2. Position of Staff**

In direct testimony, Staff witness Mona Elsaid initially opposed the issuance of the Certificate to Petitioner, stating that AIC indicates that constructing the proposed Transmission Line is necessary to comply with NERC Reliability Standards and Ameren Transmission Planning Criteria. She stated that AIC claims that the construction of the proposed Transmission Line should prevent low-voltage conditions during a certain contingency event and should eliminate the drop of a large load amount in the Decatur area that would be dropped to mitigate those low-voltage conditions. AIC used load forecast information to determine the need for the proposed Transmission Line in its initial filing. However, according to Staff, the aforementioned load forecast information does not reflect the most recent AIC load forecast information for the Decatur area load, as AIC indicates in response to a Staff data request. AIC’s need for its proposed Project by the year 2014 currently depends on whether large customers add load soon to drive up the load level of the Decatur area. While AIC provided an example that a certain industrial customer expects to add load increments and drive the Decatur area load up, Staff believed that AIC was not able to determine the probability of the load additions and did not provide a definite commitment date of when this customer will make these incremental load additions. Therefore, Staff concluded that AIC could not demonstrate a need for its proposed Transmission Line by the year 2014. Furthermore, from AIC’s most recent load forecast, it is apparent that, without load additions, AIC’s Decatur area load will not reach the necessary level within an acceptable lead-time to support the proposed Transmission Line at this time.

Staff also testified that AIC was not able to prove that the amount of load that the utility might drop to mitigate the outage of the Clinton to Latham and Clinton to Goose Creek 345 kV transmission lines would exceed Ameren Transmission Planning Criteria on a specific date. While Ameren witness Stepanek indicated in his testimony that NERC Standard TPL-003, Category C5, permits AIC to drop customer load to mitigate low-voltage conditions, he provides power flow diagrams to show the voltage conditions in the Decatur area in the year 2013 before an outage, during an outage, and after an outage of the Clinton to Latham and Clinton to Goose Creek 345 kV transmission lines. Petitioner testified that the resulting low-voltage conditions in the Decatur area during the outage of the Clinton to Latham and Clinton to Goose Creek 345 kV transmission lines would require the proposed Transmission Line to comply with Ameren

Transmission Planning Criteria. Based on the most recent load forecast information, Staff argued that it expected the Decatur area summer peak load in the year 2013 to be much less. Mr. Stepanek indicates that potential new load additions from large customers can occur in relatively short time. However, the exact commitment date of these load additions and the probability of adding these load additions by this particular customer are unknown to AIC at this time. Mr. Stepanek responds that, with a load level of 620 MW in the year 2016 (six years from now), without any load additions, AIC would not need the proposed Transmission Line to comply with Ameren Transmission Planning Criteria.

Based on all of this, Staff concluded that, in the event of the outage of Clinton to Latham and Clinton to Goose Creek 345 kV transmission lines, AIC will not need the proposed Transmission Line, to comply with Ameren Transmission Planning Criteria, for at least six years, unless the aforementioned load additions actually occur. In addition, without considering the potential large customer load additions, the Decatur area load will not reach the necessary load level until after the year 2021. Therefore, the need for the Project by the year 2014 depends on the addition of large electric loads by large customers who have not yet committed to adding these large loads. Staff further concluded that AIC failed to demonstrate a need for the proposed Transmission Line by the year 2014 to comply with Ameren Transmission Planning Criteria as AmerenIP claims in its petition.

Staff also stated that AIC failed to provide evidence to support its need for the proposed Transmission Line to be in service by the end of 2014. With the peak summer load level expected by AIC during the year 2014, AIC will not violate any of Ameren Transmission Planning Criteria or NERC Standards to keep its transmission system within acceptable voltage limits, in the event of the outage of the Clinton to Latham and Clinton to Goose Creek 345 kV transmission lines.

On rebuttal, after reviewing Petitioner's revised power flow analysis of the Decatur area that shows unacceptable low-voltage levels on many distribution buses, Staff agrees with Petitioner that the proposed Transmission Line is necessary by 2015, to comply with Ameren Transmission Planning Criteria. The proposed Transmission Line should hedge against unacceptable low-voltage conditions that might happen in the event of the outage of the Clinton to Latham 345 kV transmission line and the Clinton to Goose Creek 345 kV transmission line under a quick voltage collapse scenario.

Staff witness Elsaid performed an inspection of the alternative routes and agreed with Petitioner that Route A, AIC's primary route, is the least-cost and best route and is the least-cost means of satisfying customer needs. Staff also agrees that AIC is capable of efficiently managing and supervising the construction of the Transmission Line and has taken sufficient action to ensure adequate and efficient construction and supervision. Additionally, Staff witness Freetly testified that AIC has access to a variety of funds to finance this Project and is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers.

Staff recommends that the Commission grant AIC a Certificate of Public Convenience and Necessity, pursuant to Section 8-406 of the Public Utilities Act, 220 ILCS 5/8-406.

### **3. Commission Conclusion**

Based on the evidence presented by the Petitioner regarding the need for the Transmission Line, and Staff's evidence and concurrence that the Transmission Line is necessary and in the public interest, the Commission determines that the construction of the Transmission Line by AIC will promote the public convenience and is necessary to provide adequate, reliable, and efficient electric power service to the Project area and is the least-cost means of satisfying this electric power service need. Further, the Commission concludes that construction along the proposed preferred route (Route A) is the least-cost route and should be approved and that the 150-foot proposed minimum right-of-way width is reasonable and appropriate. The Commission further determines that the Petitioner is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision thereof and that the Petitioner is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers.

Therefore, the Commission concludes that Petitioner has met the criteria for the issuance of a Certificate of Public Convenience and Necessity under Section 8-406 of the Act, and said Certificate should be issued to Ameren Illinois for the Transmission Line and related facilities along the preferred Route A with a 150-foot minimum right-of-way width.

#### **B. Section 8-503 Order**

##### **1. Position of Petitioner**

Section 8-503 of the Act, 220 ILCS 5/8-503, allows the Commission to issue an order, after a hearing, authorizing or directing the construction of new facilities or improvement, repair, modification or extension of existing facilities. Petitioner explained that it has demonstrated the need for the Project and that the proposed construction of the Transmission Line is necessary to provide adequate, reliable, and efficient service and is the least-cost means of satisfying the service needs of its customers, thereby being in the public interest, and so an order under Section 8-503 is warranted.

##### **2. Position of Staff**

Staff recommends that the Commission authorize AIC to construct the proposed Project, pursuant to Section 8-503 of the Act, 220 ILCS 5/8-503, by the year 2015.

### 3. Commission Conclusion

The Commission concludes that, based on the record, AIC has demonstrated that the Commission should issue an order under Section 8-503 of the Act authorizing the Project, including the construction of the Transmission Line, at the locations and in the manner described in this Order.

### V. FINDING AND ORDERING PARAGRAPHS

The Commission having examined the entire record herein, and being fully advised in the premise, is of the opinion and finds that:

- 1) Petitioner is an Illinois corporation engaged in the business of furnishing electric service in the State of Illinois and is a public utility within the meaning of Section 3-105 of the Act;
- 2) The Commission has jurisdiction over Petitioner and the subject matter herein;
- 3) The recitals of fact and conclusions of law reached in the prefatory portion of this Order are supported by the record and are hereby adopted as findings of fact and conclusions of law for purposes of this Order;
- 4) Petitioner proposes to construct, operate and maintain a new 345 kilovolt ("kV") electric line in an area north of Decatur, Illinois, connecting AIC's existing Oreana substation and a new tap location along the existing AIC Clinton to Latham 345 kV electrical transmission line;
- 5) Petitioner has demonstrated that the proposed Transmission Line is necessary, meets the requirements of Section 8-406 of the Act, and represents the best and the least-cost means of constructing the facilities and providing adequate and reliable and efficient electric service to Petitioner's customers;
- 6) Petitioner has demonstrated that it is capable of efficiently managing and supervising the construction process and has taken sufficient action to ensure adequate and efficient construction and supervision thereof;
- 7) Petitioner has demonstrated that the utility is capable of financing the proposed construction without significant adverse financial consequences for the utility or its customers;
- 8) Petitioner has demonstrated that the Transmission Line Route A, as shown on Ameren Exhibit 4.1 and legally described on Ameren Exhibit 2.1, is the least-cost route, is reasonable, and should be approved;

- 9) The 150-foot proposed minimum right-of-way width is reasonable and appropriate and should be approved;
- 10) The Project, including substation modifications at the existing Oreana and Latham Substations as well as the construction of the new Transmission Line as described in this Order, is necessary and ought reasonably to be made to promote the security or the convenience of the public and to secure adequate electric service or facilities to the Petitioner's customers, and Petitioner should be authorized to construct the Project, pursuant to Section 8-503 of the Act; and
- 11) Because of the recent merger, the Certificate of Public Convenience and Necessity granted by this Order should be issued to the successor public utility, Ameren Illinois Company d/b/a Ameren Illinois.

IT IS THEREFORE, ORDERED by the Illinois Commerce Commission that Ameren Illinois Company's Petition seeking a Certificate of Public Convenience and Necessity be and is hereby granted. Said certificate shall read as:

#### **CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY**

IT IS HEREBY CERTIFIED that the public convenience and necessity require: (1) construction, operation and maintenance by Ameren Illinois Company of a transmission line as legally described in Exhibit A attached hereto and shown on the Map identified as Exhibit B attached hereto, together with such related facilities, ties to adjacent transmission lines, or repairs, as are or may become reasonably necessary to promote the public convenience and necessity and to secure adequate service; and (2) the transaction of an electric public utility business in connection therewith, all as herein before set forth.

IT IS FURTHER ORDERED that the Transmission Line preferred Route A, as legally described on Ameren Exhibit 2.1 and shown on Ameren Exhibit 4.1, and as adopted herein as Exhibits A and B of this Order respectively, is hereby approved, and the minimum right-of-way width on such route shall be 150 feet;

IT IS FURTHER ORDERED that Ameren Illinois is authorized, under Section 8-503 of the Act, to construct the Project herein, including substation modifications at the existing Oreana and Latham Substations and the construction of the Transmission Line, at the locations and in the manner described in this Order, together with such related facilities as are or may become reasonably necessary to promote the public convenience and necessity and to secure adequate service;

IT IS FURTHER ORDERED that, subject to the provisions of Section 10-113 of the Act and 83 Illinois Administrative Code 200.880, this Order is final and is not subject

to the Administrative Review Law.

Dated: March 11, 2011

Ameren Illinois Company

/s/ Albert D. Sturtevant

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Albert D. Sturtevant  
CARPENTER LIPPS & LELAND LLP  
22 W. Washington, Suite 1500  
Chicago, IL 60602  
(312) 854-8049  
sturtevant@carpenterlipps.com

Edward C. Fitzhenry  
Matthew R. Tomc  
AMEREN SERVICES COMPANY  
One Ameren Plaza  
1901 Chouteau Avenue  
St. Louis, Missouri 63166  
(314) 554-3533  
(314 554-4014 (fax)  
efitzhenry@ameren.com  
mtomc@ameren.com

**CERTIFICATE OF SERVICE**

I, Albert Sturtevant, certify that on March 11, 2011, I served a copy of the foregoing Draft Order by electronic mail to the individuals on the Commission's Service List for Docket 10-0079.

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/s/ Albert D. Sturtevant  
Attorney for Ameren Illinois Company