

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Ameren Illinois Company	:	
d/b/a Ameren Illinois	:	
	:	18-0211
Petition for Approval of Voltage	:	
Optimization Plan pursuant to	:	
Section 8-103B(b-20).	:	

ORDER

By the Commission:

I. PROCEDURAL HISTORY

On January 25, 2018, Ameren Illinois Company d/b/a Ameren Illinois (“Ameren Illinois,” “AIC,” or the “Company”) filed with the Illinois Commerce Commission (“Commission”) its Petition for Approval of its Voltage Optimization Plan (“VO Plan”) pursuant to Section 8-103B of the Public Utilities Act (the “Act”), 220 ILCS 5/1-101 *et seq.* The verified Petition (“Petition”) seeks approval of AIC’s VO Plan, which identifies the cost-effective voltage optimization investments the Company plans to undertake through December 31, 2024, including investments designed to provide meaningful energy savings to low- to moderate-income customers on all cost-effective circuits through the Ameren Illinois service territory, along with related estimated time and budget information; the proposed adjustments to be made to the unmodified and modified energy savings goals approved pursuant to Section 8-103B in Docket No. 17-0311; and the evaluation, measurement and verification of the savings achieved by the VO investments made by the Company. With its Petition, the Company also submitted the direct testimony and exhibits of Ameren Illinois witnesses Michael Abba (Ameren Exs. 1.0-1.2) and Andrew Cottrell (Ameren Exs. 2.0-2.1), who presented testimony and exhibits in support of the Company’s Petition and requested relief.

The People of the State of Illinois (“AG”) filed an appearance. The Natural Resources Defense Council (“NRDC”), Citizens Utility Board (“CUB”), Environmental Defense Fund (“EDF”), and Environmental Law and Policy Center (“ELPC”) filed petitions to intervene, which were granted.

Pursuant to due notice as required by law and by the rules and regulations of the Commission, a prehearing conference was held on February 13, 2018 before a duly authorized Administrative Law Judge (“ALJ”) of the Commission.

Pursuant to the schedule ordered by the ALJ, on March 6, 2018, Staff of the Commission (“Staff”), AG, NRDC, CUB, and EDF submitted their direct testimony. Staff witness Jennifer Morris presented testimony and exhibits addressing the Company’s proposed Evaluation Measurement & Verification (“EM&V”) plan (Staff Exs. 1.0-1.3). AG

witness Maximilian Chang presented testimony and exhibits addressing the prioritization of VO circuit implementation for low-income customers and the Company's proposed EM&V plan (AG Exs. 1.0C-1.1). NRDC, CUB, and EDF jointly filed the testimony of NRDC/CUB/EDF witness Christopher Neme, who presented testimony and exhibits addressing the prioritization of VO circuit implementation for low-income customers and the Company's proposed EM&V plan (NRDC/CUB/EDF Exs. 1.0-1.5).

On March 20, 2018, ELPC withdrew from this proceeding. On March 22, 2018, the Company submitted the rebuttal testimony and exhibits of Company witness Michael Abba (Ameren Exs. 3.0-3.2), which included an executed Settlement Stipulation (Ameren Ex. 3.2) resolving the contested issues in the docket and reflecting modifications to the Company's VO Plan agreed to by the Company, Staff, AG, NRDC, CUB, and EDF.

An evidentiary hearing was held on March 23, 2018, at which the written testimony and the exhibits of the Company, Staff, AG, and NRDC/CUB/EDF were admitted into the record via affidavit and without objection. There were no contested issues at the completion of the hearing. Ameren Illinois filed an Agreed Draft Proposed Order with the Commission on April 20, 2018, which all parties reviewed.

II. STATUTORY AUTHORITY

Section 8-103B of the Act sets forth the requirements for electric utilities to identify the cost-effective voltage optimization investments the electric utility plans to undertake through December 31, 2024 as part of its energy efficiency and demand response plan. Specifically, Section 8-103B(b-20) of the Act provides:

Each electric utility subject to this Section may include cost-effective voltage optimization measures in its plans submitted under subsections (f) and (g) of this Section, and the costs incurred by a utility to implement the measures under a Commission-approved plan shall be recovered under the provisions of Article IX or Section 16-108.5 of this Act.

...

Within 270 days after the effective date of this amendatory Act of the 99th General Assembly, an electric utility that serves less than 3,000,000 retail customers but more than 500,000 retail customers in the State shall file a plan with the Commission that identifies the cost-effective voltage optimization investment the electric utility plans to undertake through December 31, 2024. The Commission, after notice and hearing, shall approve or approve with modification the plan within 120 days after the plan's filing and, in the order approving or approving with modification the plan, the Commission shall adjust the applicable cumulative persisting annual savings goals set forth in subsection (b-15) to reflect any amount of cost-effective energy savings approved by the Commission that is greater than or less than the following

cumulative persisting annual savings values attributable to voltage optimization for the applicable year:

(1) 0.0% of cumulative persisting annual savings for the year ending December 31, 2018;

(2) 0.17% of cumulative persisting annual savings for the year ending December 31, 2019;

(3) 0.17% of cumulative persisting annual savings for the year ending December 31, 2020;

(4) 0.33% of cumulative persisting annual savings for the year ending December 31, 2021;

(5) 0.5% of cumulative persisting annual savings for the year ending December 31, 2022;

(6) 0.67% of cumulative persisting annual savings for the year ending December 31, 2023;

(7) 0.83% of cumulative persisting annual savings for the year ending December 31, 2024; and

(8) 1.0% of cumulative persisting annual savings for the year ending December 31, 2025.

220 ILCS 5/9-103B(b-20).

III. AMEREN ILLINOIS' VO PLAN

A. Ameren Illinois' Position

The Company states that its VO Plan meets the requirements of Section 8-103B(b-20) of the Act. As described in Ameren Exhibits 1.0-1.2, 2.0-2.1, and 3.0-3.2, the Company explains that its VO Plan properly identifies the cost effective voltage optimization the Company plans to undertake through December 31, 2024, and sets forth a prudent plan to design, deploy, and operate those cost effective voltage optimization measures on the Ameren Illinois primary distribution system. The Company further explains that its VO Plan proposes a reasonable and appropriate EM&V strategy in light of the complex nature of deploying voltage optimization measures and the fact that energy savings approved in the VO Plan will ultimately affect the overall energy efficiency savings goals recently approved by the Commission pursuant to the Act.

AIC witness Michael Abba presented testimony describing the process the Company used in the development of the VO Plan. Mr. Abba explains that the Company piloted VO on four test circuits in 2012 and 2013, proving the feasibility of using voltage reduction to reduce energy consumption on its circuits. Mr. Abba further explains that the Company, based on this experience, began reviewing the specific VO requirements identified in Section 8-103B(b-20) of the Act, and began analyzing the potential circuits on which VO could be feasibly applied in light of those requirements. This analysis included an estimation of the fixed costs for computer and other systems that would be needed regardless of how many circuits were implemented, an estimation of the automation and communication investments that would be needed on each circuit, an

estimation of the average circuit enhancement investments that would be needed on each circuit, an estimation of the yearly cost to operate and maintain VO on each circuit for the 15 year life of the measure, an estimation of the average voltage reduction that could be achieved on each circuit, and an estimation of the reduced energy (MWh) consumption that could be realized from such a voltage reduction. Mr. Abba further explains that the Company engaged the external firm Accenture to support the Company's cost and savings estimates, the CVR factor, and percent voltage reduction used in the analysis. The Company's VO Plan proposed to confirm these estimates through ongoing EM&V, including in 2020 a test of the CVR factor and other appropriate parameters using appropriate analysis methods on a representative sample of the estimated 130 circuits deployed in 2019. Mr. Abba also explains that the Company's VO Plan was designed to provide meaningful savings to low- to moderate-income customers on all cost-effective circuits through the Ameren Illinois service territory, and that the 1,047 circuits estimated to be cost effective provide energy savings to customers in the top 20 Tier One communities, Ameren Illinois' proxy for geographic areas serving Ameren Illinois' low-income customers.

Finally, in Ameren Exhibit 3.0, Mr. Abba proposes that the savings adjustments to the unmodified savings goals and the modified savings goals approved in Docket No. 17-0311, be filed as part of an updated compliance filing in Docket No. 17-0311. As a basis for those adjustments, Mr. Abba proposes to use the figures in the following Table 1, which was excerpted from Ameren Exhibit 1.1 and modified to reflect the last two rows. This Table 1 provides a comparison of the estimated percent annual cumulative persisting savings of the VO Plan with the cumulative persisting savings established in Section 8-103B(b-20) of the Act, and its values reflect the exempt customer list used during this docket:

TABLE 1:

Year Ending	2018	2019	2020	2021	2022	2023	2024	2025
Estimated Cumulative Persisting Annual Savings (MWh) in VO Plan	0	7,650	59,994	128,433	201,725	275,006	348,287	421,568
% Cumulative Persisting Annual Savings in VO Plan	0.00%	0.03%	0.21%	0.46%	0.72%	0.98%	1.25%	1.50%

Cumulative Persisting Annual Savings (MWh) from Section 8-103B (b-20) of FEJA	0	47,532	47,532	92,268	139,800	187,332	232,068	279,600
% Cumulative Persisting Annual Savings from Section 8-103B (b-20) of FEJA	0.00%	0.17%	0.17%	0.33%	0.50%	0.67%	0.83%	1.00%
Difference between VO Plan and Section 8-103B (b-20) of FEJA (MWh)	0	-39,882	12,462	36,165	61,925	87,674	116,219	141,968
Difference between VO Plan and Section 8-103B (b-20) of FEJA (%)	0.00%	-0.14%	0.04%	0.13%	0.22%	0.31%	0.42%	0.50%

AIC witness Andrew Cottrell presented testimony describing the Total Resource Cost (“TRC”) test that was applied to individual circuits, as well as to the VO Plan, to determine cost effectiveness of VO. Mr. Cottrell explains that the TRC test was first applied to individual circuits, and then, all cost-effective circuits were packaged together and the TRC test was applied at the Plan level. Mr. Cottrell explains that a total of 2,474 circuits were analyzed for cost-effectiveness, with 1,047 circuits found to be cost-effective with a TRC ratio greater than or equal to 1.0. Mr. Cottrell further explains that applying the TRC test to the VO Plan consisting of those 1,047 circuits resulted in a finding that the VO Plan was cost-effective with a TRC ratio of 1.36.

B. AG's Position

AG witness Maximilian Chang presented testimony which included certain recommendations regarding the VO Plan. Mr. Chang proposes that the Commission require the Company to prioritize the installation of voltage optimization in Tier One communities and to investigate voltage optimization opportunities for low-income customers outside of its definition of Tier One communities so that the Company's low-income customers will benefit from the energy savings provided by the VO plan as quickly as possible. While the Company concludes that its overall program is cost-effective, Mr. Chang found that the TRC benefit-cost ratio of the 621 circuits in the Company's 20 top Tier One (low income) communities to be 1.85, as compared with Ameren Illinois' computed overall average of the circuit-specific ratio for the 1,047 circuits of 1.88. The comparability of the Tier One community and VO plan ratios makes clear that investment in low income communities will deliver significant benefits to communities with primarily economically challenged customers.

Mr. Chang also proposes that the Commission order the Company to provide the Commission with updated CVR factors based on installed circuits for purposes of any future modifications or adjustments to ensure overall cost-effectiveness of the VO plan and an accurate assessment of energy savings achieved annually. Mr. Chang recommends that the analysis and updating should begin within 90 days of the date of the Commission's order. Mr. Chang further asks the Commission to direct the Company to apply the results of those evaluations to the deemed CVR factor value and to use the deemed 0.8 CVR factor for planning purposes, but utilize actual CVR factors verified through evaluation for purposes of computing annual energy savings performance.

C. Staff's Position

Staff witness Jennifer Morris presented testimony which included certain recommendations regarding the VO Plan. Ms. Morris proposes that the Commission direct that any peak demand savings achieved by the VO investments be evaluated and included as a benefit in future TRC test calculations done for the purposes of future implementation decisions. Ms. Morris also takes issue in her direct testimony with AIC's proposed EM&V plan, stating it does not lead to accurate evaluation of savings and may allow AIC to earn bonus returns even if VO performs poorly. Further, Ms. Morris claims AIC's proposed EM&V plan for VO measures is not consistent with existing Commission-approved energy efficiency policies. Ms. Morris recommends the Commission require the VO Plan to undergo a retrospective evaluation of savings using rigorous on/off testing methodology starting the first year of operation. Ms. Morris further proposes that the VO evaluation results be submitted to the IL-TRM Update Process for possible inclusion in future versions of the IL-TRM.

D. NRDC/CUB/EDF's Position

NRDC/CUB/EDF witness Christopher Neme presented testimony which included certain recommendations regarding the VO Plan. Mr. Neme proposes that if deployment on circuits serving lower income communities first can be accomplished without significant adverse effects on cost of deployment and/or the ability of the Company to meet its savings goals, the Company should do so and that guidance should be memorialized in any Commission ruling on the plan. Mr. Neme further proposes that the

Commission direct that any peak demand savings achieved by the VO investments be evaluated and included as a benefit in future TRC test calculations done for the purposes of future implementation decisions. Mr. Neme acknowledges that the deeming of the CVR factor of 0.8 is reasonable as consistent with both the Company's past pilot program results and results from a variety of utility VO projects across the country, but recommends that the evaluation results of the VO investments from 2018 and 2019 be used to update the CVR factor that would be used to evaluate either the 2020 savings (evaluated in 2021) or the 2021 savings (evaluated in 2022).

E. Settlement Stipulation

Following the submission of direct testimony, the Company, AG, Staff, NRDC, CUB, and EDF (the "Stipulating Parties") entered into discussions in an attempt to find a collaborative solution to the contested issues in this docket. As a result of these negotiations, the Stipulating Parties entered into a Settlement Stipulation ("Stipulation") addressing agreed-to modifications to AIC's VO Plan. AIC witness Michael Abba presented a copy of the Settlement Stipulation, executed on March 22, 2018, as Ameren Exhibit 3.2. As reflected in the Stipulation, and notwithstanding the positions previously stated in the Stipulating Parties' direct or rebuttal testimony, the Stipulating Parties agree that the agreement reflected in the Stipulation should be adopted and that the VO Plan, as modified by the Stipulation, should be approved. The Stipulation thus resolves all outstanding issues among the Stipulating Parties.

The Stipulation reflects the full agreement of the parties, but highlights include: (1) modifications to the proposed EM&V plan (Ameren Ex. 3.2, ¶ 1(a)-(g)); (2) agreement regarding the evaluation of peak demand savings (*id.* at ¶ 2); and (3) modification to the proposed prioritization of implementation of the planned VO investments to circuits serving low-income customers (*id.* at ¶ 3). As noted above, the Stipulation was agreed to by the parties to this docket, and it was entered into the record without objection.

IV. COMMISSION ANALYSIS AND CONCLUSION

In light of the Stipulation, the Commission notes that it is uncontested that Ameren Illinois' VO Plan, as modified by the Stipulation, satisfies the requirements of Section 8-103B of the Act. The Commission acknowledges and appreciates the collective efforts of the parties that resulted in the Stipulation.

Under Section 8-103B of the Act, the Commission can approve or approve with modification the VO Plan submitted by Ameren Illinois. 220 ILCS 5/8-103B(b-20). The Commission has reviewed the evidence in this proceeding, including the testimony, exhibits, and particularly the Stipulation, and finds that Ameren Illinois' VO Plan, as modified by the Stipulation, meets the requirements of the Act and should be approved. The VO Plan, as modified by the Stipulation, identifies the cost-effective voltage optimization measures the Company plans to undertake through December 31, 2024, sets forth a prudent plan to design, deploy, and operate those cost-effective voltage optimization measures on the Ameren Illinois primary distribution system, identifies a reasonable EM&V plan to evaluate the VO investments, and identifies the adjustments to the unmodified and modified goals set by the Commission pursuant to Section 8-103B in Docket No. 17-0311. The Commission further applauds the VO Plan's commitment to

low- and moderate-income utility customers, and, in particular, the commitment to prioritize implementation of VO on circuits serving low-income utility customers.

In light of the above, the Commission finds that the provisions of the VO Plan and Stipulation are reasonable, consistent with Section 8-103B of the Act, and supported by substantial evidence in the record. Accordingly, the Commission approves all aspects of Ameren Illinois' VO Plan, as modified by the Stipulation, including the proposed adjustments to the unmodified and modified goals set by the Commission pursuant to Section 8-103B in Docket No. 17-0311. The Company is directed to make a compliance filing in Docket No. 17-0311 identifying the revised unmodified and modified savings goals in Docket No. 17-0311, as required by Section 8-103B(b-20) of the Act.

V. FINDINGS AND ORDERING PARAGRAPHS

The Commission, having given due consideration to the entire record and being fully advised in the premises, is of the opinion and finds that:

- (1) Ameren Illinois Company d/b/a Ameren Illinois is an Illinois corporation that is engaged in the transmission, distribution, and sale of electricity and the distribution and sale of natural gas to the public in Illinois and is a public utility within the meaning of Section 3-105 of the Act;
- (2) the Commission has jurisdiction over Ameren Illinois Company d/b/a Ameren Illinois and the subject matter of the proceeding;
- (3) the findings of fact and conclusions of law set forth in the Commission Analysis and Conclusion portions of this Order are supported by the evidence in the record and are hereby adopted as findings of fact and conclusions of law;
- (4) the testimony and exhibits admitted into the record provide substantial evidence that Ameren Illinois Company d/b/a Ameren Illinois' Voltage Optimization Plan, as modified by the terms of the Stipulation, meets the requirements of Section 8-103B(b-20) of the Act;
- (5) the VO Plan, as modified by the Stipulation filed as Ameren Exhibit 3.2 shall be approved and adopted;
- (6) the proposed adjustments set forth in the Table 1 of this Final Order to the unmodified and modified goals set by the Commission pursuant to Section 8-103B in Docket No. 17-0311 shall be approved; and
- (7) within 60 days of the date of this Final Order, the Company is directed to make a compliance filing in Docket No. 17-0311 identifying the revised unmodified and modified savings goals in Docket No. 17-0311, as required by Section 8-103B(b-20) of the Act.

IT IS THEREFORE ORDERED that the verified Petition filed by Ameren Illinois Company d/b/a Ameren Illinois requesting approval of its Voltage Optimization Plan, as modified by the terms of the Stipulation, is hereby approved.

IT IS FURTHER ORDERED that the VO Plan, as modified by the terms of the Stipulation filed as Ameren Exhibit 3.2, is hereby approved.

IT IS FURTHER ORDERED that Ameren Illinois Company d/b/a Ameren Illinois is authorized to and directed to file a compliance filing in Docket No. 17-0311 setting forth the savings adjustments to the unmodified savings goals and modified savings goals approved in that docket as required by Section 8-103B(b-20) of the Act.

IT IS FURTHER ORDERED that any objections, motions, or petitions filed in this proceeding that remain unresolved should be disposed of in a manner consistent with the ultimate conclusions contained in this Order.

IT IS FURTHER ORDERED that pursuant to Section 10-113(a) of the Public Utilities Act and 83 Ill. Adm. Code 200.880, any application for rehearing shall be filed within 30 days after service of the Order on the party.

IT IS FURTHER ORDERED that, subject to the provisions of Section 10-113 of the Act and 83 Ill. Adm. Code 200.880, this Order is final; it is not subject to the Administrative Review Law.

By Order of the Commission this 7th day of May, 2018.

(SIGNED) BRIEN SHEAHAN

Chairman