



A unit of American Electric Power

850 Tech Center Drive  
Gahanna, Ohio 43230  
614-883-6600

SELWYN J. DIAS  
Vice President Regulatory & Finance

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Mr. Daniel R. Johnson  
Chief, Planning and Market Analysis  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, Ohio 43215-3793

RE: *In the Matter of Ohio Power Company's 2012 Long-Term Forecast Report to the Public Utilities Commission of Ohio, Special Topics Letter dated April 5, 2012, Case No. 12-0501-EL-FOR.*

Dear Mr. Johnson:

This letter is in response to Staff's April 5, 2012 letter regarding the "Special Topic: Utility Decisions and Actions Responsive to U.S. Environmental Protection Agency Rules; MACT, CSAPR, the Ash Rule, and the Cooling Tower Intake Rule." The letter requests that the Company "identify not just efforts that you may be considering, but rather all measures that can be taken within the distribution system, which could contribute to alleviating or partially alleviating the constraints identified in the attached documents."

All of the potential distribution-related investments discussed below are not only contingent on timely and adequate recovery of costs associated with those investments but are also dependent upon the continued financial health of AEP Ohio, a matter that is being debated in cases currently pending before the Commission (Case Nos. 10-2929-EL-UNC and 11-346-EL-SSO et al.). Investments in other areas such as transmission improvements could also be directly and indirectly affected by AEP Ohio's financial health. For example, the Ohio economy has benefited for decades from AEP's robust and reliable transmission system within the AEP Zone of PJM, which has historically helped maintain low energy and capacity prices. AEP would like to make continued investments in its transmission system through its transmission-owning subsidiaries, such as AEP Ohio and AEP Ohio Transmission Company. If the general financial health and stability of AEP Ohio is not maintained, this could indirectly impact the parent company's ability to continue making such investments (e.g., downgraded credit ratings and/or the lack of dividends from a financially healthy AEP Ohio could impact AEP's ability to raise capital to make such investments). This potential adverse impact could not only undermine investments within the AEP Zone, but also in other areas that could otherwise benefit from a strengthened transmission system, such as the ATSI Zone of PJM. In this regard, I recently testified in AEP Ohio's pending Electric Security Plan (ESP) cases that, based on the continued

financial health of AEP Ohio, "I believe American Electric Power will want to help fix [the ATSI constrained zone] problem by relieving congestion and by doing so making investments in the transmission system in that zone similar to what we have done in [the AEP] zone." (Tr. VII at 2130-31.) In sum, all AEP future investments, including but not limited to each of the potential solutions discussed below, must be considered in the context of a financially healthy AEP Ohio.

AEP Ohio's April 13, 2012 response to Staff's first special topics letter contains extensive discussion of the Company's ongoing system mitigation plans and practices. In addition to the information provided in the first response, the Company offers the following descriptions of potential distribution system measures.

### **Collaborative Transmission and Distribution Planning**

System planning for Transmission and Distribution (T&D) is a coordinated effort with joint planning meetings, interaction of T&D planning engineers, and presentation of coordinated plans to the AEP Ohio Leadership Team. Plans are coordinated to consider cost effective solutions for the overall need to provide reliable and cost effective service to AEP Ohio customers and maintain the integrity of the Transmission System. Traditional solutions like sourcing a new substation from a higher voltage transmission line to avoid improvements on a lower voltage line, adding distribution capacitors to reduce reactive power needs and provide voltage support, and adjusting the timing of projects are considered. Some newer types of Distribution solutions now available with newer technologies are listed below. While these newer solutions can be very cost effective in reducing Distribution load, contributing to energy efficiency, and mitigating reliability risk on the distribution system, they have a limited ability to mitigate the larger transmission reliability and congestion risks associated with plant closures. Distribution improvements affect a localized area while Transmission risks generally affect a much broader area.

### **Volt Var Optimization (VVO)**

VVO has the potential to reduce demand and energy consumption on distribution circuits on which it is installed. On those circuits deemed optimal for VVO, demand and energy requirements can be reduced 2% to 3%. Heavily loaded distribution circuits are the best candidates for VVO, and as a result, the technology cannot be assumed to cost-effectively achieve these types of results on all circuits. Based on current estimates, AEP Ohio believes that the potential exists to achieve approximately 160 MW of demand reduction across its Ohio service territory. These preliminary estimates indicate that VVO can be a valuable addition to an energy efficiency (EE) and peak demand reduction (PDR) portfolio, but it is insufficient as a stand-alone option to mitigate reliability concerns created by potential generating unit closures. Additional study is needed to analyze the operational and maintenance needs to support VVO from a long-term capacity resource view. Further, the measurement and verification protocols need to be determined and approved by the PUCO, as well as ensuring it meets PJM evaluation protocols as a resource capable of bidding into future capacity auctions. Attribution of value and cost recovery will also need to be established to include assignment of value acquired from resource bidding to AEP Ohio, a higher ROE for VVO to support and encourage the capital investment as well as certainty of recovery of the long-term operations and maintenance expense. A mechanism to recover distribution lost revenue is also needed. AEP Ohio is willing to work

with the Commission and the AEP Ohio Collaborative to address these issues and consider VVO in a future EE/PDR portfolio, base rate case or ESP, as long as this technology can deliver cost-effective savings as compared to other customer programs in its portfolio.

### **Supervisory Control and Data Acquisition (SCADA) / Capacitor Additions**

Installation of a Distribution SCADA System and monitoring that will indicate deficiencies in power factor correction has the potential to alert operations personnel to repair out of service capacitors and assist engineers in determining where additional capacitors are needed to improve power factor.

### **Targeted Energy Efficiency / Localized Demand Response**

For discussion of EE/PDR efforts, please see AEP Ohio's April 13, 2012 response to Staff's first special topics letter.

### **Distributed Generation (DG)**

AEP Ohio has always supported customer DG opportunities and worked well with customers and developers to ensure DG systems are interconnected in a safe manner and that they have full advantage of our Schedules NEMS and COGEN/SPP or PJM's Wholesale Market Purchase Agreement. Mutual benefits outside of the physical interconnection and revenue stream are regularly explored.

Distributed generating sources, both renewable and traditional, have the potential to help relieve the loading on distribution substations and circuits, if cost effective compared to alternative methods. These sources can also improve reliability of the circuits if the sources can provide power to sections of line islanded from faulted sections during full or partial circuit outages. The sources can also reduce circuit line losses if they are placed in the right locations. For example, AEP Ohio has utilized company-owned DG to defer a substation project in a rural slow growing area. AEP Ohio has also considered utilizing customer-owned emergency generators as DG in the past for such conditions and will continue to do so going forward. DG continues to be considered as a part of the planning process. Applying amounts of DG on the Distribution System significant enough to mitigate risks associated with large generating plant closures will provide challenges. The Distribution system has been built to provide "one way" power flow from a substation to a customer's load. Small amounts of DG can be accommodated without significant changes to the system. Larger amounts (typically more than 15% of the circuit capacity) are likely to require upgrades and monitoring of the system. Also, non-variable fuel sources like diesel and natural gas are subject to EPA regulations that are likely to place severe limits on the number of hours that the DG can be available.

With the passage of Senate Bill 315, Combined Heat and Power (CHP) and Waste Energy Recovery (WER) could provide additional capacity resources. Additional study is needed to determine the scope and capability of those resources in AEP Ohio's service territory, as well as each project's cost effectiveness compared to other customer programs in the Company's portfolio. Participation in PUCO and DOE - CHP Workshops, in addition to discussions with several interested parties, have identified areas to be addressed that may better position CHP/WER as a reliable and cost effective capacity resource.

Some of those areas to be addressed are:

- DG ownership (host customer, utility, 3rd party);
- investment risk (possibly less for institutional, but greater for industrial);
- DG sized to customer electric load or steam load (are you a customer or a generator, then what is the proper purchase price);
- minimizing impact to all rate payers;
- cost competitiveness with other EE/PDR's and renewable energy alternatives;
- means to implement suggested by AEP Ohio (Reasonable Arrangement, EE Auctions, other).

Clearly, the final rule making will greatly affect the opportunities for CHP/WER.

### **Evaluation of the Potential Measures**

VVO is being considered as a potential part of the EE/PDR portfolio. The measurement and verification protocols need to be determined and approved by the PUCO, as well as ensuring they meet PJM evaluation protocols as a resource capable of bidding into future capacity auctions. Use of VVO for energy efficiency will require the Company and the PUCO to agree on appropriate recovery of costs, lost revenue and a return on investment, with inclusion of the energy and demand savings toward the Company's EE/PDR targets. Deployment of VVO is screened based on costs and benefits. This solution is projected to have long-term benefits.

Distribution SCADA is being installed in the Distribution Dispatch Center and will be utilized on circuits that are part of Phase 1 of gridSMART<sup>®</sup>. Additional utilization of SCADA and additional capacitor banks will be based on costs and benefits.

Distributed Generation has been applied in very limited amounts and mostly by customers rather than by the Company. The Company would consider cost and benefits of DG in decisions to add these sources to distribution circuits. High penetrations of DG would require distribution SCADA so that system operators could have visibility and near real time information to reliably operate the system.

### **Suggestions for an Effective Evaluation Framework**

Some of these issues have already been addressed above. AEP Ohio recommends a mechanism to recover lost revenues, program expenses and a bonus on the standard capital return for capital investment as well as a shared savings approach or other suitable return to encourage cost-effective programs.

AEP Ohio recommends reliance on PJM Evaluation guidelines to ensure capacity can be approved and bid into capacity auctions.

The Commission has mandated the Total Resource Cost (TRC) test as the cost effectiveness hurdle for EE/PDR programs and the portfolio as a whole. The Company believes that the Utility Cost Test (UCT) is more effective to measure the Company's performance in providing the lowest cost programs with the maximum benefits in demand and energy savings.

Some of the technologies addressed will require a long-term operation and maintenance commitment. While opportunities like VVO are within AEP Ohio's management control, other

customer-side opportunities such as CHP and WER are not and long-term operational performance and degradation are significant issues to be resolved.

**Current Registered DR Resources within PJM**

PJM updates the list of Demand Side Response (DSR) resources on a monthly basis. The report is available on PJM's website at the following link:

<http://www.pjm.com/markets-and-operations/demand-response/dr-reference-materials.aspx>

The report, named "2012 DSR Activity Report," provides the number of individual sites and their total capability (in MW), in each EDC, for a given state.

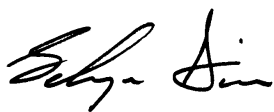
Additionally, FERC recently approved revisions to the current DSR programs (ER12-1372) that will improve PJM's ability to call on DSR on a sub transmission zone basis. Specifically, these changes will allow PJM to dispatch DSR based on the resource's zip code, which will provide more precise control.

PJM's filing on sub-zonal dispatch will provide them with improved control of the transmission system, which will be far and above the control available to AEP, as a single CSP within the AEP Zone. PJM will have full knowledge of the DSR available within the AEP Zone, which will place them in the best position to manage all of the DSR available, as AEP does not represent, nor manage, a significant portion of the DSR within the AEP Zone. The response to sub-zonal dispatch will be mandatory, and subject to non-performance penalties starting with the 2014/15 Planning Year (PY). Prior to the 2014/15 PY, PJM will utilize sub-zonal dispatch; however, performance will be voluntary, and not subject to penalties.

In closing, AEP Ohio is aware that more analyses will be forthcoming from PJM as other generation owners notify PJM of intended closures. The Company has been, and will remain, fully engaged in the identification, analysis and remediation of the potential impacts of the various EPA regulations. AEP actively participates in multiple stakeholder groups within PJM, and the other RTO's in which AEP conducts business, including: MISO, SPP, and ERCOT. This participation includes stakeholder groups that review system planning and operations, and these groups have been vigorously studying the potential impacts of the various EPA regulations.

AEP Ohio understands that as updates occur, and more closures are integrated into PJM's analyses, Staff expects the Company to keep abreast of those developments and provide timely updates to this request on an ongoing basis by filing material supplemental information.

Respectfully Submitted,



**This foregoing document was electronically filed with the Public Utilities**

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Summary: Correspondence electronically filed by Mr. Yazen Alami on behalf of Ohio Power Company