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December 10, 2019  
PJM Interconnection, L.L.C.  
955 Jefferson Avenue  
Valley Forge Corporate Center  
Norristown, PA 19403-2497

Attention: Suzanne Glatz, Chair of the Transmission Expansion Advisory Committee

RE: 2018/19 RTEP Long-Term Proposal Window - Hunterstown - Lincoln Project Selection

Dear Sue:

Ameren Transmission Company of Illinois (ATXI) respectfully submits the following comments for your consideration. These comments regard the above referenced proposal window and the decision by Transmission Expansion Advisory Committee to recommend the HL-622 proposal to the board of Directors.

PJM has endorsed the HL-622 project which consists of rebuilding the Hunterstown-Lincoln 115 kV line at a proposed cost of \$7.21 million (PJM independent Cost was \$6.20 million) over the HL-469 which had a proposed cost of \$4.65 million (PJM independent Cost was \$7.15 million). The recommended solution solves the congestion issue but ATXI does not believe it to be the most cost effective solution. ATXI believes that, in the constructability review, PJM Staff incorrectly modified the proposed application of the SmartValve™ technology by adding circuit breakers and relay panels to the HL-469 proposal. The HL-469 proposal consisted of SmartValve technology which does not need breakers for system protection needs. The addition of breakers and relay panels at the new Smart sub just serves to make the project more expensive and less competitive but provides no additional reliability benefits.

Smart Wires, the vendor of the SmartValve technology, notes *"The SmartValve is a self-protecting device. Each device contains fully redundant bypass functionality capable of bypassing up to 63 kA rms of fault current for up to 1 second. The bypass functionality detects a fault and bypasses the power flow control device in 1 millisecond or less. For this reason, none of the existing Smart Wires installations or the extensive list of planned Smart Wires installations require breakers installed in series. A confidential list of Smart Wire installations was provided to PJM staff during the review process. SmartValve installations rely on the existing line breakers to clear faults and do not require*

*additional breakers to isolate the SmartValve deployment for protection. Some SmartValve installations use bypass switches in parallel with the deployment to facilitate maintenance, but note these are not required for protection. Though the engineering designs for existing deployments are not in the public domain, should a party request additional information, Smart Wires will work with its customers to accommodate the request as fully as possible.*

*In order to ensure the bypass capabilities of the SmartValve provide sufficient protection, power system consultant DNV-GL completed an extensive study of the SmartValve devices impact on existing protection systems. The study was conducted using a Real Time Digital Simulator (RTDS) on an actual 345 kV system with typical relay types using a wide variety of protection schemes including step distance. Thousands of different fault cases were run in batch mode to determine if there would be any relay mis-operation with the addition of the SmartValve devices. The study showed that due to the rapid bypass capabilities of 1 millisecond or less, there was no impact on protection in the inductive mode and impact in only a few cases in capacitive mode that could be compensated for by relay setting adjustment. In addition to the DNV-GL protection study, Smart Wires has engaged in several project-specific protection studies which have also shown no impact on existing protection systems"*

If the two extra breakers, relay panels, and the control house expansion that were added by PJM Staff to the project scope proposed by ATXI are removed from the HL-469 project, the estimated project cost would be reduced to \$5.85 million which is \$1.36 million (19%) lower than the proposed cost of \$7.21 million for the HL-622 project. As a result of the reduced cost, the B/C ratio for the HL-469 project would increase to 88.72, which is roughly 116% of the recommended HL-622 project that has been recommended to the PJM Board. This would make the HL-469 project the most competitive solution proposed. ATXI believes the TEAC should reconsider their recommendation since the cost estimate of HL-469 was inflated by adding equipment that is not recommended nor required for the safe and reliable operation of the SmartValve device.

Regards,

Ameren Transmission Company of Illinois (ATXI)



Shawn E. Schukar  
President and Chairman