BEFORE THE

LOUISIANA PUBLIC SERVICE COMMISSION

IN RE: APPLICATION OF SOUTHWESTERN ELECTRIC POWER COMPANY FOR THE CERTIFICATION AND APPROVAL TO CONSTRUCT THE HALLSVILLE NATURAL GAS PLANT AND TO CONVERT WELSH UNITS 1 AND 3 TO NATURAL GAS, IN ACCORDANCE WITH THE MBM ORDER AND THE COMMISSION'S 1983 ORDER	DOCKET NO. U-_____

DIRECT TESTIMONY OF

HASSAN HAYAT

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

DECEMBER 2024

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I. INTRODUCTION

Q. WOULD YOU PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS?

A. My name is Hassan Hayat and I am currently Director of Regional Transmission Planning for American Electric Power Service Corporation (AEPSC). AEPSC is a wholly owned subsidiary of American Electric Power Company, Inc. (AEP). AEP is the parent company of Southwestern Electric Power Company (SWEPCO or the Company). My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

Q. WOULD YOU PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND?

A. I have a bachelor's and a master's degree in electrical and computer engineering from The Ohio State University in Columbus, Ohio, and Kansas State University in Manhattan, Kansas, respectively. I am a registered professional engineer in the state of Ohio.

Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND?

A. I have over thirteen years of industry experience. In April of 2011, I began my career in the electrical utility industry working as a contract engineer for AEPSC through Aerotek. I joined AEPSC as a full-time employee in February 2012. At AEPSC, I have worked as a transmission planning engineer in the Indiana and Michigan region for about six years, as a supervisor in the AEP PJM region model development team for two and a half years, as Manager of Regional Transmission Planning for about four years, and I began my current role as Director of Regional Transmission Planning in 2024.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. My responsibilities as Director of Regional Transmission Planning include managing activities related to assessing the adequacy of AEP's operating companies' transmission network within the Southwest Power Pool (SPP) Regional Transmission Organization (RTO) region, in a reliable, cost-effective, and environmentally compatible manner.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY COMMISSIONS?

A. Yes. I have submitted testimony before the Oklahoma Corporation Commission.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide an overview of the SPP generator interconnection process impacts on the planned fuel conversion of the Welsh Plant Units 1 & 3 (Welsh Conversion) from coal to natural gas, as well as the new construction of the Hallsville Natural Gas Plant (Hallsville Plant) (collectively, the Projects). I will also discuss the benefits of reutilizing interconnection facilities on existing Company property and highlight the favorable location of the Projects in terms of transmission congestion. My testimony also addresses the congestion analysis for the (RFP) bid evaluation.

III. SPP GENERATOR INTERCONNECTION PROCESS FOR THE PROJECTS

Q. WHICH RTO WILL THESE PROJECTS BE CONNECTED TO?

A. The Projects will be connected to SPP.

Q. ARE THE PROJECTS SUBJECT TO THE SPP GENERATOR INTERCONNECTION APPROVAL PROCESS?

A. For the Welsh Conversion, there is no need to obtain a new Generator Interconnection Approval (GIA) through SPP's GIA process, due to the existing GIA in place. This Project is simply a fuel conversion where the change in heat source for the boiler will have no downstream impacts on the generator's electrical connection or characteristics.

For the Hallsville Plant, the Company is simply modifying the existing GIA. SPP conducted a study to confirm that the modifications do not constitute a Material Modification. This study, which was issued on October 18, 2024,[1] found that this project does not constitute a Material Modification and will not require a new generation interconnection (GI) request, but will require a modification of the existing GIA.

Q WHAT IS A MATERIAL MODIFICATION STUDY?

A. A Material Modification Study[2] is part of the process involved in the GI requests, particularly when a customer wishes to make changes to an already submitted GI project. These studies assess whether a proposed modification will have significant impact on the reliability of the transmission system. If the changes are not deemed to be material, they are allowed to proceed without restarting the interconnection process. An example of a material modification would be increasing the size (MWs) of a plant or changing the point of interconnection. A Material Modification Study was required

[1] https://opsportal.spp.org/documents/studies/files/2022_Generation_Studies/FINAL_SPP_Report_Modification_GEN-2022-GR1_10-16-2024.pdf.

[2] SPP Tariff Attachment V Generator Interconnection Procedures.pdf.

because the Hallsville Plant is switching fuel from a planned solar[3] facility to an updated gas design. As noted above, SPP has concluded that based on the study results this Project is not a Material Modification as it does not have an adverse impact on the SPP Transmission System.

Q. ARE THERE OTHER BENEFITS FROM REUSING EXISTING INTERCONNECTION FACILITIES?

A. Yes. Reusing existing facilities saves costs and time. Although it is not always possible, in this situation the Company will be able to utilize existing interconnection facilities for both proposed Projects. This reduces the costs and avoids the redundancy of building a new interconnection facility. Additionally, it avoids delays associated with obtaining new GIAs by using and modifying existing agreements already in place.

Q. ARE THERE ANY ANTICIPATED ASSOCIATED INTERCONNECTION OR TRANSMISSION NETWORK UPGRADE COSTS ASSOCIATED WITH THESE TWO PROJECTS?

A. Yes, for the Hallsville Plant, there will be approximately $1.4 million dollars in interconnection costs, but no network upgrade costs. The Welsh Conversion is not expected to incur any interconnection costs or network upgrade costs.

Q. CAN YOU EXPLAIN THE APPROXIMATELY $1.4 MILLION IN INTERCONNECTION COSTS REQUIRED FOR THE HALLSVILLE PLANT?

A. The scope of work includes Supervisory Control and Data Acquisition enhancements, metering and protection, and control upgrades. A new dead-end structure and a new

[3] The original Pirkey facility at this site was a coal fuel facility that was planned to be converted to solar. The Company has now applied to update that design to be a natural gas fuel facility.

transmission line span will also be needed. The Company estimates these costs at $1.4 million and does not anticipate other costs related to upgrades or interconnection costs for the Hallsville plant. All upgrades will be done on SWEPCO property.

IV. TRANSMISSION CONGESTION

Q. WHAT IS TRANSMISSION CONGESTION?

A. Transmission congestion occurs when there is high demand in one area, but the transmission infrastructure is inadequate to transfer the most economical generation to that area. This results in increased costs for customers as the grid operators now need to dispatch more costly generators. As a result, Locational Marginal Pricing (LMP) at the load center will be higher as electricity must traverse through a congested transmission grid to reach the load center, and LMPs at the generator will be lower.

Q. WHAT IS LMP?

A. LMP is a method used in electricity markets to determine the price of electricity at different locations (nodes) within the grid. LMP has three main components:

- The energy component reflects the cost of producing the next unit of electricity.
- The congestion component accounts for the cost associated with transmission grid constraints.
- The loss component reflects the cost of electrical losses as electricity traverses through the transmission grid.

There are many factors that have an impact on the LMPs. Those factors include, but are not limited to, supply and demand, transmission constraints, generation costs, and market operations.

Q. PLEASE PROVIDE AN OVERVIEW OF THE MARKET SIMULATIONS PERFORMED BY THE COMPANY TO ANALYZE CONGESTION AND LOSS COSTS ASSOCIATED WITH THE RFP BIDS.

A. The Company performed a Transmission Screening Analysis to evaluate the cost of congestion and losses associated with delivery of power from the SWEPCO 2024 RFP facilities to the AEP West Zone. The Company used PROMOD, an integrated electric generation and transmission market simulation software tool primarily employed for forward-looking locational market price simulations. PROMOD is also used by SPP to perform an hourly chronological security constrained unit commitment and economic dispatch of the entire SPP footprint and neighboring regional markets subject to transmission constraints for the assumed market conditions. PROMOD market simulations produce the LMP at various pricing nodes on the SPP system. PROMOD also reports the hourly marginal congestion cost and marginal loss charge components of the LMP for each pricing node. This analysis enabled the Company to evaluate congestion and loss costs associated with delivery of power from the 2024 RFP bid locations to the AEP West Zone

Q. IS THE LOCATION OF THE PLANTS FAVORABLE FROM A CONGESTION STANDPOINT?

A. Yes, the location of Hallsville and Welsh power plants (generators) is favorable from a congestion standpoint. The generators are situated close to SWEPCO's major load centers such as Shreveport-Bossier City (Louisiana), Longview (Texas), and Texarkana (Texas & Arkansas). If a generator is located closer to where the electricity is needed, it can help reduce congestion by providing power locally, reducing the need

for electricity to be transmitted over long distances and via congested transmission lines. The Projects are part of a highly interconnected transmission network, with each plant linked to the system through several transmission facilities. In addition, the congestion and loss cost differential between the AEP West load hub and the Hallsville/Welsh plant nodes is a relatively small value when compared with generation resources which are farther away from the load centers.

V. CONCLUSION

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.