

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Managing Transmission Line Ratings)
Technical Conference)

Docket No. AD19-15-000

**PREPARED STATEMENT OF CARLOS CASABLANCA, DIRECTOR OF ADVANCED
TRANSMISSION STUDIES AND TECHNOLOGY, AMERICAN ELECTRIC POWER**

Chairman Chatterjee, Commissioners, staff, and colleagues, thank you for the opportunity to participate in this important dialogue. My name is Carlos Casablanca, and I am the Director of Advanced Transmission Studies and Technology at American Electric Power (AEP) Transmission.

I. DESCRIPTION OF AEP

American Electric Power (AEP) is one of the largest electric utilities in the United States, delivering electricity to more than 5.3 million customers in 11 states. AEP also owns the nation’s largest electricity transmission system, a more than 40,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP’s transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, and approximately 11 percent of the electricity demand in ERCOT.

II. COMMENTS

AEP’s experiences with real-time facility ratings adjustment techniques, including Ambient Adjust Ratings (AAR) and Dynamic Line Rating (DLR) technologies, have given

us a good perspective on the benefits and challenges of these methods and the value that they can bring to Transmission Owners and Operators.

It is our belief that Ambient Adjusted Ratings that leverage real-time and next-day forecasted regional temperature differences can increase the value of a robust Transmission system to the benefit of our customers and bring flexibility to the Transmission operations environment. A requirement for Transmission Owners and Operators in all regions to implement Ambient Adjusted Ratings on most, if not all, of their Transmission lines, should be encouraged.

The application of Ambient Adjusted Ratings in real-time operational environments is something that AEP has been doing for over ten years. We monitor various temperature zones in each of our regions and real time temperature data is retrieved with every state estimation process run to adjust facility ratings. The facility ratings are adjusted by interpolating between the respective seasonal summer and winter ratings, following AEP's established facility rating methodology. In addition, temperature zone values can be manually adjusted when performing studies in our State Estimator; a feature that allows our operational planners to better analyze the system impact of anticipated near-term temperature changes.

In the PJM Interconnection (PJM), Transmission Owners are required to provide temperature adjusted values for normal, emergency, and load dump ratings associated with the limiting equipment for each particular Transmission facility. Eight different ambient

temperatures are used, with a set for the night period and a set for the day period; thus, 16 sets of three facility ratings are provided for each monitored facility and used for operational purposes.

In the Electric Reliability Council of Texas (ERCOT), Transmission Owners are required to provide temperature adjusted facility ratings from 20 to 115 degrees Fahrenheit in 5 degree increments for requested facilities. It should be noted that not all facilities in the AEP ERCOT footprint have seasonal differences in operating limits: only circuits that were built after 1977 have temperature-adjusted ratings.

In the Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO), AEP calculates temperature adjusted ratings within the AEP state estimator and uses those ratings operationally. Seasonal ratings are submitted in both regions and, although not required, both regions have mechanisms in place to allow members to supply Ambient Adjusted Ratings via Inter-Control Center Protocol (ICCP). Whenever there is a difference in the derived operating ratings, AEP and the respective regional operator will operate to the most limiting ratings unless the respective regional operator elects to defer to AEP's temperature adjusted ratings.

Although AEP has leveraged Ambient Adjusted Ratings for a long time, it should be understood that not all transmission lines may benefit from Ambient Adjusted Ratings. Still, as several Regional Operators and we have demonstrated, the principle and methodology around Ambient Adjusted Ratings should be feasible to scale to all

Transmission facilities. Entities that have not applied Ambient Adjusted Ratings before will likely incur some start-up costs associated with internal process development and documentation, weather data subscriptions, software changes, and training. However, given our experience and practice in the four regions that we operate in, and across two different EMS platforms over the last decade, these should be manageable.

AEP also recommends that the application of these Ambient Adjusted Ratings be limited to real-time and day-ahead operational planning and studies. We believe that neither Ambient Adjusted Ratings nor Dynamic Line Rating technology should be considered as permanent solutions to address any thermal constraints identified in long-term Transmission Planning reliability assessments, as these long-term Transmission Planning assessments are meant to be deterministic and conservative, and assume system peak load conditions that coincide with higher ambient temperatures.

After the conclusion of this technical conference, we would recommend that the FERC issue an order with an appropriate timetable, requiring Transmission Owners and Operators in all regions to implement Ambient Adjusted Ratings on most, if not all, of their Transmission facilities and that the application of these Ambient Adjust Ratings be limited to real-time and day-ahead applications.

I would like to thank again the FERC Commissioners and staff for your time, for organizing this technical conference, and for allowing us to participate. I welcome your questions and look forward to the coming dialogue.

