# UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

Implementation of Dynamic Line Ratings ) Docket No. AD22-5-000	COMMENTS OF POTOMAC ECONOMICS, LTD.				
	Implementation of Dynamic Line Ratings	)	Docket No. AD22-5-000		

Pursuant to the above-captioned Notice of Inquiry (NOI), initiated by the Federal Energy Regulatory Commission (the "Commission"), Potomac Economics hereby submits these responses. The Commission is seeking comment on whether and how the required use of dynamic line ratings ("DLRs") is needed to ensure just and reasonable wholesale rates. The Commission further seeks comment on: whether the lack of DLRs requirements renders current wholesale rates unjust and unreasonable; potential criteria for DLRs requirements; the benefits, costs, and challenges of implementing DLRs; the nature of potential DLRs requirements; and potential timeframes for implementing DLRs requirements.

Potomac Economics is the Independent Market Monitor ("IMM") for the Midcontinent ISO ("MISO") and the external Market Monitoring Unit ("MMU") for the New York ISO ("NYISO") and ISO New England. In these roles, we are responsible for monitoring and evaluating the performance of each RTO's energy and operating reserve markets. We also

recommend market design changes to improve the performance of the markets and evaluate design changes proposed by the RTOs or market participants. Our role includes monitoring and evaluating the operation of the transmission system and we have been active in preceding dockets related to DLRs and AARs and Order 881.

#### NOTICE AND COMMUNICATIONS

All communications, correspondence, and documents related to this proceeding should be directed to the following persons and such persons should be placed on the official service list maintained by the Commission's Secretary for this proceeding:

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#### I. COMMENTS

The Commission asks a wide array of questions in the NOI regarding potential requirements for DLRs. While we support increasing the utilization of the transmission system by implementing DLRs, we comment on the timing of a potential Rule on DLRs and encourage the Commission to focus on market incentives rather than directives for inducing new investments.

# 1. Requiring DLRs now would be premature and should be motivated by incentives rather than mandates

The Ambient Adjusted Ratings ("AAR") and Emergency Ratings, which FERC has required in Order 881, involve more accurate ratings on existing facilities to account for the effects of temperature on facility ratings and the availability of post-contingent actions. FERC established a three-year deadline for transmission owners to implement AARs and emergency

ratings. Implementation costs for AARs and emergency ratings are relatively low compared to their benefits for constraints that have been the source of significant congestion. This order also requires enhanced transparency and validation. We believe that entities should focus on implementing the requirements of Order 881 as rapidly as possible before being required to evaluate and implement DLRs so we find such a requirement to be premature.

Importantly, DLRs will likely require new technologies and significant investment. We recommend the Commission rely on the development of market-based incentives to motivate cost-effective investment in DLRs rather than issuing a mandate for DLRs. We discuss this recommendation in further detail below in response to the Commission's question in the NOI.

#### 2. Response to Specific Questions

Question 1. As a threshold matter, even for transmission lines that incorporate AARs, is there a need to further increase the accuracy of transmission lines ratings through the implementation of DLRs to ensure just and reasonable wholesale rates? Why or why not? If yes, please explain whether a requirement by the Commission to adopt DLRs is needed.

We believe there is a fundamental difference between AARs and DLRs. Providing AARs and Emergency Ratings enables more accurate ratings for the existing facilities, and implementation does not require any investment in the facilities. Arguably, any costs related to implementing AARs and Emergency Ratings would result in increased transparency and accuracy of ratings, leading to increased utilization and reliability of the system. Hence, we believe that Order 881 requires actions that should be considered standard, good utility practice.

In contrast, DLR involves prospective capital investments that are likely significant and should only be expected to the extent that they are clearly economic. Therefore, one can only argue DLRs are required to ensure just and reasonable prices to the extent that they are clearly

economic for mitigating congestion in an area. Because of this, a requirement to adopt DLRs would be misplaced, while a requirement to evaluate the cost-effectiveness of DLRs in the planning process may be reasonable. However, we recommend such a requirement be sequenced after compliance with Order 881.

**Question 2.** What, if any, barriers to DLR implementation exist today? Are potential requirements to implement DLRs necessary to address these existing barriers? Why or why not?

The principal barrier to DLRs implementation is the lack of efficient incentives for most TOs to invest in them. Hence, the most appropriate and efficient means to address this barrier is to introduce market-based incentives that will facilitate efficient investment in DLRs. One way to do this is to implement a financial incentive to ensure that the Transmission Owner will benefit from providing the DLRs. We proposed such an incentive in Docket No. PL19-3-000. Under this approach, the transmission owner could receive a portion of the surplus congestion revenues or FTRs associated with the additional capability made available above the AAR level attributable to the DLR investment. Although relying on rate of return regulation is much less effective, the Commission could alternatively encourage the use of incentive rates for DLR investments to address this barrier.

### Questions 3-8.

In the NOI questions 3-8, the Commission asks how DLRs should be evaluated, whether DLRs should be required on some or all lines, and what criteria should be used if the requirement is only on some lines. The Commission asks if congestion is used, how should criteria account for expected changes in congestion magnitudes and patterns, what other criteria should be considered and how often should the criteria be revisited.

We believe the primary metric would be the value of the transmission congestion associated with the DLR capability increase. This metric would equal the shadow price of the affected constraints times the incremental flow over the constraints facilitated by the DLR. This metric would tend to indicate substantial benefits on a relatively small number of constraints that have been frequently or severely binding. These constraints are the most profitable targets for investing in DLR equipment to increase transfer capability. This primary metric of potential congestion benefits should not be limited to actual historic congestion. It should include known or expected system changes (e.g. generator retirements and additions, and other expected topology changes) that would inform forecasted DLR benefits. However, given the greater uncertainty in longer-term analyses, near-term benefits should be weighted more heavily than long-term benefits in DLR evaluations.

The Commission should apply comparable provisions in non-RTO/ISO areas, which may necessitate the use of a different metrics to identify the most profitable opportunities for investing in DLR technologies. Such metrics could include the frequency of TLRs, the rejection of transmission service requests, or other indicators that limited transmission capability is limiting the full utilization of the network. Market data from RTO/ISO areas impacted by TLRs should also be considered, which shows the costs incurred by the RTO to provide relief in response to the TLR. Hence, this data can indicate a portion of the economic benefits of DLRs that would accrue outside of the non-RTO/ISO area.

As indicated above, the metrics for non-RTO/ISO areas should not be limited to actual historic congestion. It should include known or expected system changes (e.g. generator retirements and additions, and other expected topology changes) that would inform forecasted DLR benefits.

#### **Questions 9-11.**

In questions 9-11 the Commission asks what criteria should be considered for DLR requirements on new transmission lines, how DLRs should be considered in regional transmission planning and interconnection processes and what reporting and posting requirements should be considered.

Although we do not believe the Commission should require DLRs, it would be reasonable for the planning and interconnection processes to evaluate DLRs as an alternative option to investing in new transmission facilities. The evaluation, criteria, assumptions, and results should be as transparent as possible subject to CEII limitations. As we commented in Docket RM21-17, we believe enhanced transparency in the planning processes will help ensure that the most economic investments are identified because it will allow customers and others affected by the transmission planning assumptions and results to scrutinize them.

In addition, a consistent and effective monitoring process would also mitigate any biases in the process and help ensure that DLRs, other ratings improvements, transmission optimization, and other options are considered and optimized in the transmission planning process. The economic utilization of all these options to complement transmission investment where it is economic will maximize the congestion reduction benefits of the planning processes. However, some of these options have not typically been evaluated in the transmission planning process so improvements to the planning models and processes may be needed.

# II. CONCLUSION

We appreciate the Commissions goals in this proceeding, as well as the Commission's focus on improving the accuracy and efficiency of the transmission system. Rather than a requirement, however, we believe increased prudent investment in and use of DLR can be achieved with a combination of incentives and transparency and flexibility needed in the planning and other transmission processes.

This concludes our comments.

Respectfully submitted,

/s/ David B. Patton

David Patton President Potomac Economics, Ltd.

# **CERTIFICATE OF SERVICE**

I hereby certify that I have this day e-served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 25th day of April 2022 in Fairfax, VA.

/s/ David B. Patton		