UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Managing Transmission Line Ratings	Docket No. RM20-16-000

COMMENTS OF
TRANSMISSION ACCESS POLICY STUDY GROUP

The Transmission Access Policy Study Group ("TAPS") appreciates the opportunity to comment on the Commission's November 19, 2020 Notice of Proposed Rulemaking.[1] TAPS supports the implementation of cost-effective technologies to improve the use of existing transmission facilities and reduce the delivered cost of energy. With the additional clarifications, corrections, and enhancements discussed below, the Commission's proposed directives to expand the use of Ambient-Adjusted Ratings ("AARs") will meet that bill by increasing the capacity, efficiency, and reliability of existing transmission facilities. Specifically,

- *Subject to adoption of our requested clarifications and enhancements, TAPS supports the NOPR's proposal to require all Transmission Providers ("TPs") to implement AARs and seasonal line ratings on all transmission lines over which they provide transmission service, and to use AARs for purposes of near-term transactions in both Regional Transmission Organization ("RTO") and non-RTO regions, with phased implementation prioritizing lines where AARs are likely to provide the most benefits*. However, TAPS' support is subject to the Commission taking clarifying steps to ensure the efficient, consistent, and non-discriminatory AAR implementation required for just and reasonable rates:
    - *Implementation in RTO regions should be accomplished using the "look-up table" approach applied in PJM*. Specifically, transmission owners ("TOs") would be required to supply the RTO with a table

[1] Notice of Proposed Rulemaking, *Managing Transmission Line Ratings*, 173 FERC ¶ 61,165 (2020) ("NOPR").

showing the temperature-adjusted ratings for a pre-established set of ambient temperatures; the RTO would use those look-up tables, in conjunction with temperature data it receives from local weather stations, to set transmission line ratings throughout its footprint. At minimum, RTOs should be required to offer TOs the option of implementing AARs using the "look-up table" approach. *See* Part II.A.1 below.

- *Implementation should be accompanied by monitoring to ensure non-discriminatory implementation, reinforced by enhanced transparency*. Because of the potential for discriminatory application, AAR implementation should be subject to Commission tariff compliance audits and enhanced transparency requirements. In addition, within RTOs, independent market monitors ("IMMs") should be directed to monitor implementation to ensure consistency and reasonableness of AAR ratings and methodologies. *See* Part II.A.2 below.

- *Any final rule should make clear that TOs within RTOs are directly or indirectly subject to the proposed AAR mandate.* The NOPR's AAR directive is aimed at transmission *providers*. In RTO areas, the transmission *provider* and transmission *owner* are two different entities. Any final rule should ensure that the AAR directive does not fall in a gap between the RTO as TP, and TOs within that RTO. *See* Part II.B below.

- *TAPS supports the NOPR's proposal not to require Dynamic Line Ratings ("DLRs"), but to require that RTOs develop the systems necessary to accommodate DLRs from member TOs that elect to implement them, provided that: (1) in RTO regions, TO DLR implementation is subject to monitoring by RTO IMMs; and (2) in both RTO and non-RTO areas, TO/TP DLR implementation is subject to monitoring by the Commission in tariff compliance audits, as wells as enhanced transparency requirements*. These safeguards are essential to ensure that TOs in RTOs, and TPs outside RTOs, do not use or selectively implement DLRs to advantage their own generation while disadvantaging generation owned by others. *See* Part II.C below.

- *Emergency ratings warrant further examination in RTO regions.* The Commission should take steps to better understand the reasons why TOs submit to their RTOs emergency ratings that are identical to the normal ratings. TOs that do so should be required to explain those ratings to the RTO and the IMM. *See* Part II.D below.

- *Any final rule should cure the NOPR's proposed preferential treatment of point-to-point service requests, as compared with near-term secondary network service and near-term network resource designations.* To treat them comparably, AAR-adjusted ratings should be used to evaluate the availability of, and requests for, near-term secondary network service, as well as near-term network resource designations, to the same extent they are used for point-to-point service. *See* Part II.E below.

- *While AARs should not be used for reliability planning, the Commission should not rule out potential future use of AARs for economic planning.* While a final rule should not require the use of AARs for planning purposes, it would be premature to include broad language that could be read to permanently foreclose RTOs from submitting future Section 205 filings to propose consideration of AARs in planning economic projects. *See* Part II.F below.

- *Any final rule should require greater transparency regarding transmission line ratings and rating methodologies (including the calculations used to develop AARs) to interested persons through password-protected interfaces, subject to non-disclosure agreements, as appropriate.* Doing so would enable transmission customers to better understand what is driving the prices they are required to pay, and better inform power supply decisions. Transparency is an essential tool to unearth and address discriminatory application of AARs and to provide additional accountability, as the Commission has previously recognized. It is especially crucial as to TPs in non-RTO regions where there is no RTO or IMM oversight. *See* Part II.G below.

I. INTEREST OF TAPS

TAPS is an association of transmission-dependent utilities ("TDUs") in 35 states promoting open and non-discriminatory transmission access.[2] It has participated actively in numerous Commission proceedings concerning transmission access, planning, pricing, incentives policies, and the formation and operation of RTOs. Representing entities entirely or predominantly dependent on transmission facilities owned and controlled by others, TAPS has long recognized the need for a robust and efficiently utilized transmission infrastructure to provide non-discriminatory transmission access and foster competition.

We therefore appreciate the Commission's efforts to closely examine the potential for transmission line rating technologies to increase the capacity, efficiency, and

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[2] David Geschwind, Southern Minnesota Municipal Power Agency, chairs the TAPS Board. Jane Cirrincione, Northern California Power Agency, is TAPS Vice Chair. Terry Huval is TAPS Executive Director.

reliability of transmission facilities. If cost-effective, such technologies may enhance TAPS members' ability to meet their load-serving obligations reliably and affordably. For that reason, TAPS has actively engaged on issues pertaining to the use of technology to enhance transfer capability. TAPS filed follow-up comments to the Technical Conference on *Managing Transmission Line Ratings*,[3] sponsored a panelist at the *Grid Enhancing Technologies* Workshop,[4] and filed follow-up comments to that Workshop.[5]

Communications regarding these proceedings should be directed to:

Terry J. Huval
Executive Director
TRANSMISSION ACCESS POLICY STUDY GROUP
P.O. Box 60551
Lafayette, LA 70596
(337) 278-0306
Email: thuval@tapsgroup.org

Cynthia S. Bogorad
William S. Huang
Amanda C. Drennen
SPIEGEL & MCDIARMID LLP
1875 Eye Street, NW, Suite 700
Washington, DC 20006
(202) 879-4000
Email: cynthia.bogorad@spiegelmcd.com
william.huang@spiegelmcd.com
amanda.drennen@spiegelmcd.com

II. COMMENTS

A. The Commission should adopt the NOPR's AAR mandate as amended to ensure efficient, consistent, and non-discriminatory implementation

The NOPR preliminarily concluded that reform of transmission line ratings was required.[6] It pointed out that the static and seasonal ratings generally in use today often

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[3] Post-Technical Conference Comments of the Transmission Access Policy Study Group, Docket No. AD19-15-000 (Nov. 1, 2019), eLibrary No. 20191101-5189 ("TAPS MTLR Post-Technical Conference Comments").

[4] *See* October 31, 2019 Prepared Statement of Steven Leovy on Behalf of WPPI Energy and the Transmission Access Policy Study Group for the November 5-6 Workshop, Docket No. AD19-19-000 (Nov. 12, 2019), eLibrary No. 20191112-4023 ("Statement of Steven Leovy").

[5] Post-Workshop Comments of Transmission Access Policy Study Group, Docket No. AD19-19-000 (Feb. 14, 2020), eLibrary No. 20200214-5154 ("TAPS GETs Post-Workshop Comments").

[6] *See* NOPR PP 33-42.

do not reflect the true near-term transfer capability of transmission facilities. The NOPR stated that incorporating AARs would more accurately reflect the cost of delivering electricity, generally increasing system transfer capability (while decreasing it where static ratings overstate it). Because current ratings practices may produce unjust and unreasonable rates, the NOPR proposes to require all transmission providers to implement AARs and seasonal line ratings on all transmission lines over which they provide transmission service, and to use AARs for purposes of near-term transactions in both RTO and non-RTO regions. In doing so, the NOPR would prioritize lines where AAR implementation is likely to provide the most benefits: proposing implementation within a year of the TP's compliance filing for lines historically subject to congestion, with implementation one year later for all remaining lines.[7]

Subject to the additional clarifications sought below, TAPS generally supports the NOPR's AAR proposal. Requiring application of AARs is consistent with the Commission's long-standing recognition that non-discriminatory open access transmission service is necessary for just and reasonable rates. As recounted in the NOPR and the record of the MTLR Technical Conference,[8] reliance on static and seasonal ratings inflicts unnecessary costs on consumers. Testimony at the MTLR Technical Conference made clear that deployment of AAR technology that relies on commercial temperature forecasts can provide a low-cost means of producing significant benefits to

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[7] NOPR PP 92-94, 131.

[8] Notice of Technical Conference, *Managing Transmission Line Ratings*, Docket No. AD19-15-000, eLibrary No. 20190628-3060 (June 28, 2019) (proceedings in this docket are referred to as "MTLR Technical Conference").

consumers.[9] MTLR Technical Conference testimony, as well as testimony at the Grid-Enhancing Technologies Workshop,[10] confirmed that AARs have been widely deployed in the PJM Interconnection ("PJM")[11] and the Electric Reliability Council of Texas ("ERCOT")[12] and have a track record of success elsewhere.[13] American Electric Power ("AEP"), which has used AARs for many years, supported a mandate.[14] And an AAR mandate was endorsed by the Independent Market Monitors participating in the MTLR Technical Conference and GETs Workshop.[15]

However, TAPS' support of the NOPR is subject to the Commission taking clarifying steps to ensure that the AAR mandate achieves the efficient, consistent, and non-discriminatory implementation required for just and reasonable rates. Specifically, the AAR mandate will serve its purposes only if coupled with two important additions: (a) implementation in RTO regions should be accomplished using the "look-up table"

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[9] Transcript of Day 2, at 292:20-23 (Bourg, Entergy), *Managing Transmission Line Ratings*, Docket No. AD19-15-000 (Oct. 8, 2019), eLibrary No. 20191008-4002 ("MTLR Tr. Day 2"); MTLR Tr. Day 2, at 286:14-18 (Hartman, ELCON) (the IMM for MISO "found AARs would have reduced congestion costs by over 100 million annually in recent years").

[10] Notice of Workshop, *Grid-Enhancing Technologies,* Docket No. AD19-19-000, eLibrary No. 20190909-3021 (Sept. 9, 2019) (proceedings in this docket are referred to as "GETs Workshop").

[11] Transcript of Day 1, at 97:9-17 (Murphy, PJM), *Managing Transmission Line Ratings*, Docket No. AD19-15-000 (Oct. 8, 2019), eLibrary No. 20191008-4001 ("MTLR Tr. Day 1").

[12] MTLR Tr. Day 1, at 79:6-10, 81:16-20 (Thompson, ERCOT).

[13] *See* MTLR Tr. Day 2, at 293:5-15 (Bourg, Entergy).

[14] AEP's Robert Bradish noting AEP's use of AARs for many years. Transcript of Day 1, at 76:17-24 (Bradish, AEP), *Grid-Enhancing Technologies,* Docket No. AD19-19-000 (Jan. 6, 2020), eLibrary No. 20200106-4004 ("GETs Tr. Day 1") ("[O]ur operators do use something called ambient adjusted ratings . . . . We've been using them for many years . . . we can apply them though to 40,000 miles of lines at fairly relative low cost, and so they do add additional capacity.").

[15] MTLR Tr. Day 1, at 170:20-171:1, 172:10-11 (Wander, Potomac Economics, IMM for MISO); MTLR Tr. Day 2, at 308:19-21 (Chaisson, Potomac Economics, IMM for MISO); MTLR Tr. Day 2, at 308:2-8 (Bowring, Monitoring Analytics, IMM for PJM); Transcript of Day 2, at 305:15-16 (Bowring, Monitoring Analytics), *Grid-Enhancing Technologies,* Docket No. AD19-19-000 (Jan. 6, 2020), eLibrary No. 20200106-4005 ("GETs Tr. Day 2").

approach that PJM currently uses to adjust ratings based on weather forecasts PJM receives from local weather stations (or, at the very least, by offering TOs the option to use the "look-up table" approach); and (b) implementation in both RTO and non-RTO areas must be accompanied by monitoring to ensure non-discriminatory implementation, reinforced by the enhanced transparency discussed in Part II.G below. Otherwise, AAR implementation could become unduly burdensome and a tool for undue discrimination.

1. The Commission should require use of a "look-up table" approach to AAR implementation in RTO regions, or at least require that approach be an option available to TOs

While TAPS recognizes that application of AARs to certain lines may yield greater consumer savings than application to other lines, TAPS supports the NOPR's proposal to require AARs on all transmission lines, if it is implemented in an efficient and consistent manner. Broad application reduces the opportunity that TPs/TOs would otherwise have for implementing AARs in a discriminatory manner. The opportunity for TPs to selectively implement AARs in a manner that favors their own generation and load is of particular concern in non-RTO regions where there is no independent monitoring. Across-the-board AAR application also avoids the need to periodically reassess which transmission lines warrant AARs. Further, broad application of AARs is important to ensure consistent available transmission capacity ("ATC") across interfaces, a factor the Commission has long recognized as important to open access transmission service.[16]

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[16] *See*, *e.g.*, *Preventing Undue Discrimination & Preference in Transmission Serv.*, Order No. 890-A, 121 FERC ¶ 61,297, P 52 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g and clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009) ("we clarify that adjacent transmission providers must coordinate and exchange data and assumptions to achieve consistent ATC values on either side of a single interface").

However, to achieve efficient and consistent application of AARs in RTOs, where the TO and TP are not the same entity, the final rule should direct RTOs to implement AARs using the "look-up table" approach applied in PJM. Specifically, for each of their transmission facilities, TOs would be required to supply the RTO with a table showing the temperature-adjusted ratings for a pre-established set of ambient temperatures. (PJM uses eight ambient-adjusted rating sets, in nine-degree increments from 32-95 degrees Fahrenheit.) The RTO would then use the look-up tables provided by the TOs, in conjunction with temperature data received by the RTO from local weather stations, to set transmission line ratings throughout its footprint. Consistent with PJM operating procedures, it should be the RTO's responsibility to divide its footprint into appropriate zones and subzones for purposes of obtaining and applying the temperature values to the look-up table provided by each TO.[17]

The "look-up table" approach will avoid burdening each individual TO in an RTO with the obligation to continuously monitor weather reports to recalculate AARs and communicate those ratings to the RTO on an hourly basis. And the RTO's selection and application of weather forecasts will achieve more consistent ratings across the RTO

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[17] *See* Post-Technical Conference Comments of PJM Interconnection, L.L.C. at 2, Docket No. AD19-15-000 (Nov. 5, 2019), eLibrary No. 20191105-5170. In PJM, AARs are determined by reference to a look-up table where the ratings are predetermined and published by the transmission owner based on a set of forecasted ambient temperatures. AARs utilize the following eight ambient temperatures that are each nine-degree steps apart: 95°, 86°, 77°, 68°, 59°, 50°, 41°, and 32° (in degrees Fahrenheit). In addition, there is a set of ratings for the night period and a set for the day period corresponding to these eight ambient temperatures. PJM's real-time operational procedures specify when PJM is to change a rating based on changing temperature conditions, and PJM may make multiple real-time ratings changes over the course of a day. *See also* the more detailed description available at PJM State & Member Training Dep't, Transmission ITP at 6-11, 14-15, https://www.pjm.com/-/media/training/nerc-certifications/trans-exam-materials-2020/transmission-itp/lesson-5-ops-parameters.ashx (last accessed Mar. 11, 2021).

footprint. It will also reduce the likelihood of errors and vulnerability to communications breakdowns.

At minimum, the Commission should require RTOs to make the "look-up table" approach an option available to any TO that prefers that approach, and to support and accommodate use of that approach by any TO that elects it. Such a requirement is essential to allow for compliance with the proposed AAR directive without unduly burdening individual TOs, especially smaller TOs with limited resources and personnel. We recognize that allowing TOs to elect *not* to use this approach would erode the benefits of TAPS' primary position that RTOs should be directed to implement the AAR directive through the "look-up table" approach (e.g., consistency in selection and application of the weather forecast to be applied to a particular line). Allowing TOs to choose *not* to use the "look-up table" approach therefore heightens the need for enhanced IMM oversight (discussed in subpart (2) below) and transparency (discussed in Part II.G below).

Thus, TAPS strongly urges that any final rule direct RTOs to use the "look-up table" approach to AAR implementation (i.e., where the RTO adjusts line ratings, for purposes of assessing the availability of transmission and dispatch, by applying temperature data the RTO obtains (on a zonal and subzonal basis) to a TO-supplied look-up table for the TO's transmission facilities). At minimum, the Commission should require the "look-up table" approach be an implementation option that RTOs must accommodate and make available to any of its TOs. Failure to adopt these measures would not only impose unnecessary costs (e.g., for new TO communications systems and additional personnel) and result in less consistent ratings, but would entail complexity

requiring a much longer implementation period, beyond the one- and two-year periods proposed by the NOPR.

2. The Commission should take steps to minimize the opportunity for discriminatory application of AARs

As recognized in Order No. 888, transmission providers have both the incentive and opportunity to use their control over transmission to discriminate in their own favor.[18] Order No. 890 emphasized the importance of consistency and transparency of ATC and its components to avoid undue discrimination in transmission service.[19] *See*, *e.g.*, Order No. 890, P 207. The NOPR's AAR proposal should be designed to continue to advance those objectives.

MTLR Technical Conference panelists confirmed that TOs have both the incentive and opportunity to use facility ratings to make capacity available on an unjust, unreasonable, and discriminatory basis.[20] New line rating technologies—while

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[18] *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Servs. by Pub. Utils.; Recovery of Stranded Costs by Pub. Utils. & Transmitting Utils.*, Order No. 888, 75 FERC ¶ 61,080, FERC Stats. & Regs. at 31,682, *clarified*, 76 FERC ¶ 61,009 (1996), *modified,* Order No. 888-A, 78 FERC ¶ 61,220, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in part & remanded in part sub nom. Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002) ("It is in the economic self-interest of transmission monopolists, particularly those with high-cost generation assets, to deny transmission or to offer transmission on a basis that is inferior to that which they provide themselves. The inherent characteristics of monopolists make it inevitable that they will act in their own self-interest to the detriment of others by refusing transmission and/or providing inferior transmission to competitors in the bulk power markets . . . .").

[19] *Preventing Undue Discrimination and Preference in Transmission Serv.*, Order No. 890, 118 FERC ¶ 61,119, *order on reh'g and clarification*, Order No. 890-A, 121 FERC ¶ 61,297 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g and clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

[20] *See*, *e.g.*, MTLR Tr. Day 1, at 67:20–68:16 (Gramlich) (Allowing line rating methodology to be a black box "violates 25 plus years of FERC tradition of trying to determine what the available transmission capacity is and make it available to the market and that was done for . . . just and reasonable rate reasons, but also discrimination reasons"); MTLR Tr. Day 2, at 312:14-20 (Chiasson) (if ratings "are unjustifiably overly conservative that pushes them into the physical withholding question from us is [sic] market monitors"); Prepared Statement of Devin Hartman on Behalf of the Electricity Consumers Resource Council at 5, Docket No. AD19-15-000 (Sept. 17, 2019), eLibrary No. 20190917-4035 ("Statement of Hartman") ("encouraging TOs to actively alter their line ratings without correcting oversight deficiencies

beneficially increasing transmission availability—could expand that opportunity by widening the range of potential ratings for a facility, and by giving TOs/TPs greater control and discretion to competitively advantage their own generation and disadvantage the generation of others. While the NOPR's proposal to require application of AARs on all transmission lines would reduce the ability of TOs/TPs to use that technology to discriminate in their own favor, the NOPR would still allow them significant residual discretion in developing their ratings.[21] Therefore, although affording some flexibility may be consistent with good utility practice, additional safeguards are needed to guard against TOs/TPs exercising this discretion in a discriminatory manner.

Specifically, while TAPS agrees with the NOPR that AAR implementation should be a matter of economic regulation under Section 206 and subject to Commission tariff compliance audits,[22] the final rule should also direct IMMs within RTOs to monitor implementation of AARs to ensure consistency and reasonableness of AAR ratings and

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may incent new forms of market manipulation").

[21] The NOPR emphasized that its AAR mandate still leaves room for TOs/TPs to take appropriate steps to protect their systems. *See* NOPR P 98 ("While we expect the nature of our proposed requirements to provide transmission providers with the latitude (and obligation) to develop accurate, safe, and reliable line ratings in the first instance, we also propose, in an abundance of caution, to make explicit in the tariff language proposed herein that if a transmission provider determines, consistent with good utility practice, that it must temporarily use a rating different than otherwise required by the tariff in order to ensure the safety or reliability of the transmission system, it may do so. While we expect that such alternate line rating authority would be needed infrequently, if ever, we provide the clarification related to such temporary ratings to resolve any instance where a transmission provider reasonably believes that the tariff requirements for transmission line ratings conflict with system safety or reliability") and *id.* P 105 (The NOPR provides that TPs would still have considerable flexibility: "transmission providers that find they need a reliability margin have existing Commission-approved mechanisms, such as the transmission reliability margin (TRM) component of ATC, for establishing such a margin on a consistent and transparent basis," and "under our proposal, transmission owners have latitude, consistent with good utility practice, to develop assumptions about ambient conditions that result in transmission line ratings that reflect what transmission flows the system can safely and reliably accommodate").

[22] *See id.* P 130. *See also id.* P 150 n.232 ("Reliability Standard FAC-008-3 has not been revised in this proceeding however the requirements proposed in this proposed rulemaking under section 206 of the FPA affects the burden for three requirements in Reliability Standard FAC-008-3").

methodology. In this way, Commission tariff compliance audits would be augmented by IMM oversight.

In non-RTO regions, where there are no IMMs, the role of Commission tariff compliance audits is particularly important. In those regions, they are a critical tool to protect customers from the TP's ability to discriminate through the discretion it will continue to exercise in setting AARs.

TAPS also urges the Commission to supplement these tools—IMM oversight (within RTOs) and Commission tariff compliance audits (both within and outside of RTOs)—with enhanced transparency (discussed in Part II.G below) in order to provide an additional avenue to prevent abuse.

3. If the Commission narrows the scope of its AAR mandate, any such limit should be applied only to RTO regions

As noted above, TAPS urges the Commission to adopt a final rule that includes the NOPR's proposal to require AARs on all transmission facilities, as clarified by the additional requirements urged in subparts (1) and (2) above. If, in response to comments of others, the Commission considers narrowing its proposed AAR directive (e.g., to include only lines that have historically experienced congestion), it should confine that narrowed application to RTO regions where the RTO can administer and periodically reassess objective criteria for determining whether additional lines warrant AARs, and IMMs can monitor implementation.

Even if the Commission were to consider more selective AAR application in RTO regions, it should adhere to the NOPR's proposed broad application of AARs to all transmission facilities in non-RTO regions. Given the absence of independent oversight, even seemingly objective criteria for deploying AARs initially, with the need for periodic

review to determine whether application of AARs should be expanded based on those criteria, will leave too much room for non-RTO TPs to apply AARs in a discriminatory manner.

B. The Commission should make clear that TOs within RTOs are directly or indirectly subject to the proposed AAR mandate

The NOPR's AAR directive is aimed at transmission *providers*. *See* proposed *Pro Forma* OATT Attachment M ("The Transmission Provider will implement Ambient-Adjusted Ratings and Seasonal Line Ratings on the transmission lines over which it provides Transmission Service . . . ."). In RTO areas, however, the transmission *provider* and transmission *owner* are two different entities. Therefore, the Commission should shape any final rule to ensure that its AAR directive does not fall in a gap between the RTO as TP, and the TOs within that RTO.

The regulatory text and OATT revisions proposed by the NOPR do not clearly avoid that problem. The only reference to the AAR mandate appears in new Attachment M to the OATT (Transmission Line Ratings), which the RTO—not individual member TOs—would be required to adopt. *See* NOPR, App. B. Proposed 18 C.F.R. § 35.28(b)(10) defines the new term, "Ambient-adjusted line rating," but does not require such ratings. And while proposed 18 C.F.R. § 35.28(c)(5) would establish new line-rating-related obligations for TOs,[23] it simply creates a generic requirement that

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[23] As proposed by NOPR, 18 C.F.R. § 35.28(c)(5) would read:

> (5) Every public utility that owns, controls, or operates facilities must have on file a joint pool-wide or system-wide open access transmission tariff, which provides for the following to be shared with its transmission provider(s) (and its Market Monitoring Unit(s), if applicable):
>
> (i) Transmission line ratings for each period for which transmission line ratings are calculated (with updated ratings shared each time ratings are calculated); and
>
> (ii) Written transmission line rating methodologies used to calculate the transmission line ratings

public utility TOs—both inside and outside of RTOs—provide their line ratings and rating methodologies to any TP from which the TO takes service. It does not mention AARs or specify that the information provided by TOs to their TPs be adequate to support the requisites for AARs—i.e., the one-hour maximum time period for AARs, and that the ratings "reflect[] an up-to-date forecast of ambient air temperature across the time period to which the rating applies."[24]

The implementation of AARs in RTO areas will require coordination among RTOs and their member TOs. In any final rule, the Commission should ensure that RTOs are able to fulfill the NOPR's mandate, either by: (1) clarifying that RTOs have the authority to require their member TOs to provide the information the RTO will need to implement AARs; or (2) by directing TOs within RTOs to provide that information to their RTO. In particular, to enable RTOs to implement AARs using the "look-up table" method discussed above in Part II.A, the Commission should make clear that either: (1) RTOs have the authority to direct their member TOs to supply the RTO with a look-up table showing the temperature-adjusted ratings of the TO's facilities for a pre-established set of ambient temperatures; or (2) TOs have an obligation to provide their RTO with such look-up tables for the transmission facilities they own, so that the RTO can use them to implement AARs.

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provided under subparagraph (i).

[24] Proposed definition of "Ambient-adjusted line rating" in NOPR, 18 C.F.R. 35.28(b)(10).

C. Voluntary implementation of DLRs is appropriate, provided there are adequate safeguards against discrimination and enhanced transparency requirements

TAPS supports the NOPR's proposal not to require DLRs.[25] In addition, provided that (1) TO implementation of DLRs is subject to monitoring by the RTO's IMM and by the Commission in tariff compliance audits, and (2) TOs that choose to implement DLRs are subject to enhanced transparency requirements, TAPS supports the NOPR's proposal to require RTOs to develop the systems necessary to accommodate DLRs from member TOs that have voluntarily chosen to implement them.[26]

DLRs should not be mandated at this time. The NOPR correctly recognizes that implementing DLRs will be more expensive and more complicated than implementing AARs, and will create more exposure to physical- and cyber-security risks.[27] Based on testimony at the MTLR Technical Conference and GETs Workshop, and in light of the limited incremental gains from DLRs versus AARs, DLRs should not be required as a part of good utility practice now.[28]

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[25] NOPR P 100.

[26] *See id.* P 108.

[27] *Id.* P 100.

[28] *See* TAPS MTLR Post-Technical Conference Comments at 5-6, 10-11. *See also* MTLR Tr. Day 1, at 214:15–216:14 (Bourg, Entergy Services, LLC); *id.* at 111:4-18 (Xu, NYPA); *id* at 108:4-25 (Murphy, PJM Interconnection, L.L.C.); *id.* at 109:10–110:2 (Enayati, National Grid USA); *id.* at 163:5-11 (Shah, PacifiCorp); *id.* at 77:12–78:6 (Velez, Dominion Energy.); Statement of Hartman at 2 n.3; Comments of Francisco Velez on behalf of Virginia Electric and Power Company, dba Dominion Energy Virginia at 4, Docket No. AD19-15-000 (Sept. 17, 2019), eLibrary No. 20190917-4011. *See also* TAPS GETs Post-Workshop Comments at 9, 14; GETs Tr. Day 2, at 322:1-5 (Patton, Potomac Economics) ("[I]f I'm a DLR and I'm looking at the WATT proposal, I wouldn't want you to assume AARs, because there goes 90 percent of my benefit . . . . I don't buy the argument that AARs are somehow unreliable, so we should start with . . . the ratings we have today") and GETs Tr. Day 1, at 76:18-24 (Bradish, AEP) ("[O]ur operators do use something called ambient adjusted ratings that I believe Lindsey wasn't pleased with, but we do use them. We've been using them for many years, apparently at our own peril, but we can apply them though to 40,000 miles of lines at fairly relative low cost, and so they do add additional capability"). *See also* Staff Paper, Managing Transmission Line Ratings at 12-14, 17-26, Docket No. AD19-15-000 (Aug. 23, 2019), eLibrary 20190823-4002 ("Staff MTLR Paper") (describing AAR

The NOPR's proposed voluntary implementation approach for DLRs, combined with its requirement that RTOs develop the systems necessary to accept DLRs from TOs that choose to deploy them, strikes the right balance. It will allow TOs that are ready to implement DLRs to begin to do so, while giving TOs and RTOs the opportunity to gain familiarity with DLR systems, identify potential problems, and figure out how to address them. This approach also allows DLRs to be implemented on facilities where the technology may be more beneficial, while using the more economical AAR method, which is likely to capture much of the congestion savings benefits, on other facilities.

Like any approach that would allow TOs to selectively deploy grid-enhancing technology, however, the NOPR's proposal also creates opportunities for discrimination. Thus, safeguards must be developed to ensure that TOs do not use or selectively implement DLRs to advantage their own generation while disadvantaging generation owned by others.[29] In RTO regions, the IMM should be required to monitor DLR

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deployment in PJM and ERCOT and comparing AAR and DLR technologies).

[29] Both the Commission and panelists at the MTLR Technical Conference have expressed concern over using line ratings in a discriminatory manner. *See* citations included in notes 19-20, *supra. See also* Notice of Proposed Rulemaking, Regional Transmission Organizations, 64 Fed. Reg. 31,390, FERC Stats. & Regs at 31,420-21 (1999) ("The Commission believes that RTOs are best situated to establish ratings and operating ranges for two reasons . . . . RTOs will be trusted since they will be independent in two ways: they will not have any economic interests in electricity market outcomes and they will not be owned or controlled by any market participants . . . [S]ince RTOs will be independent of all stakeholders in the electricity market, they will not have an incentive to distort the operation of electricity markets by manipulating equipment ratings . . . ."); Comments of Potomac Economics, Ltd. at 7, *Inquiry Regarding the Commission's Electric Transmission Incentives Policy*, Docket No. PL19-3-000 (June 25, 2019), eLibrary No. 20190625-5179 (stating with respect to emergency and dynamic ratings, "[t]o the extent that the transmission owner owns generation or serves load in a load pocket served by its transmission facilities, the transmission owner may have an incentive to provide *higher* or *lower* ratings depending on how prices in the load pocket affect its net revenues and costs.") (emphasis in original). TAPS has raised this concern as well. *See* Statement of Steven Leovy at 4-6; TAPS MTLR Post-Technical Conference Comments at 6-9; TAPS GETs Post-Workshop Comments at 16-17.

implementation for discriminatory application to facilities that benefit the TO's load and/or generation.

In both RTO and non-RTO areas, TO/TP decisions to selectively deploy DLRs should be subject to monitoring through the Commission's tariff compliance audits, and, as discussed below in Part II.G, to enhanced transparency requirements.

D. Emergency ratings warrant further examination in RTO regions

The NOPR P 32, states (footnotes omitted):

> [W]hile [Midcontinent Independent System Operator, Inc. ("MISO ")] requires transmission owners to submit both normal and emergency ratings, 63% of transmission line ratings provided to MISO reflect emergency ratings that are equal to the normal ratings. Generally, RTOs/ISOs do not require unique emergency ratings. Instead, transmission owners can decide whether to submit unique emergency ratings, or whether to submit emergency ratings that equal their normal ratings.

The 63% MISO statistic cited by the NOPR, and the apparent general lack of accountability to provide RTOs with accurate emergency ratings, are certainly concerning.

To the extent only a small percentage of transmission facilities has unique emergency ratings, that may well be attributable to the fact that in RTOs, the facility-rating function has not migrated from TOs to the RTO as Order No. 2000 contemplated.[30] It seems unlikely that a TO responsible for operating its own system would, in an

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[30] In Order No. 2000, the Commission stated that it expected responsibility for facility rating "to migrate [from TOs] to the RTO, as facility ratings have at least an indirect effect on the ability of the RTO to perform other RTO minimum functions (e.g., planning and expansion, ATC and TTC)." *Regional Transmission Organizations*, Order No. 2000, 89 FERC ¶ 61,285, FERC Stats. & Regs. at 31,105-06 (1999), *order on reh'g*, Order No. 2000-A, 90 FERC ¶ 61,201 (2000), *appeal dismissed for want of standing sub nom*. *Pub. Util. Dist. No. 1 v. FERC*, 272 F.3d 607 (D.C. Cir. 2001). As a general matter, that migration of responsibility has not occurred.

emergency, strictly limit flows over its facilities to only their normal ratings. It is also understandable that, if TOs are primarily responsible for the facility rating function in an RTO, they might be reluctant to provide the RTO—or any third party—with broad authorization to exceed their facilities' normal ratings. The combined result of these individual TO decisions not to provide accurate emergency ratings, however, may needlessly tie the hands of RTOs in emergencies and when dealing with contingences in the course of everyday dispatch.

The Commission should take steps to better understand the scope of this issue and the reasons for individual TO decisions to submit emergency ratings for facilities that are identical to their normal ratings. Specifically, to the extent that responsibility for setting facility ratings has not been migrated to an RTO, TOs that provide the RTO with the same rating for emergency and normal conditions should be required to explain those ratings to the RTO and the IMM.

E. The Commission should treat requests for near-term secondary network service and near-term network resource designations consistently with point-to-point transmission service

Under the NOPR's proposal, AARs must be considered when TPs are: (1) evaluating the availability of, and requests for, "near-term" point-to-point transmission service requests; (2) posting available near-term transmission capacity or other related information to an Open Access Same-Time Information System ("OASIS"); and (3) making curtailment, interruption, or redispatch decisions.[31] The NOPR proposes to define "near-term" as "point-to-point transmission service ending within 10 days of the

[31] NOPR PP 87-89.

date of the request."[32] Seasonal ratings would still be used to evaluate requests for longer-term point-to-point transmission service.

Oddly, the NOPR does *not* apply that same bifurcated framework to network service and secondary network service requests. The NOPR finds that because they are generally long-term requests, use of seasonal ratings (limited to three months) is appropriate to evaluate both requests under *Pro Forma* OATT Section 30 to designate new network resources and requests under *Pro Forma* OATT Section 31 to designate a new network load.[33] The NOPR proposes that AARs would be used when making curtailment and redispatch decisions involving network and secondary network service within the ten-day window; but it would *not* require the use of AARs for evaluating the availability of, and requests for, near-term secondary network service requests.[34] The NOPR offers no explanation whatsoever for failing to comparably require the use of AARs for near-term secondary network service requests on which load-serving entities rely to economically and reliably service their loads.

And the NOPR also omits any reference to near-term network resource designations which could benefit from near-term increases in transfer capability that result from the implementation of AARs.

The discriminatory exclusion of near-term secondary network service and near-term network resource designations from the benefits of AARs should be cured in any final rule. In addition, the Commission may want to more closely consider the

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[32] NOPR P 87.

[33] FERC, *Pro Forma Open Access Transmission Tariff* §§ 30, 31 (July 18, 2013), https://www.ferc.gov/sites/default/files/2020-05/pro-forma-OATT.pdf ("*Pro Forma* OATT").

[34] NOPR P 90.

appropriate "near-term" period for which AARs should be applied comparably to network and point-to-point service.

1. AAR-adjusted ratings should be applied to near-term secondary network service

Secondary network service is provided under *Pro Forma* OATT Section 28.4 to deliver, on an as-available basis, energy to the network customer's network loads from resources that have not been designated as network resources. As the Commission has recognized,[35] such service is provided to enable network customers (and TPs) to serve network (and native) load reliably and economically. It is made available subject to timing restrictions set forth in *Pro Forma* OATT Section 18.3 for reserving non-firm point-to-point service.[36]

It would be blatantly discriminatory to apply AARs to evaluate the availability of, and requests for, near-term point-to-point service, while denying that application for secondary network service that is often used on a short-term basis. Indeed, because network and native load customers are responsible for the residual cost of the grid,[37] secondary network service comes *ahead* of non-firm point-to-point service in curtailment priority under the *Pro Forma* OATT.[38] The NOPR offers no justification for flipping that priority by giving firm and non-firm point-to-point customers preferential and exclusive

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[35] Order No. 890-A, P 956.

[36] "Requests for monthly service shall be submitted no earlier than sixty (60) days before service is to commence; requests for weekly service shall be submitted no earlier than fourteen (14) days before service is to commence, requests for daily service shall be submitted no earlier than two (2) days before service is to commence, and requests for hourly service shall be submitted no earlier than noon the day before service is to commence. Requests for service received later than 2:00 p.m. prior to the day service is scheduled to commence will be accommodated if practicable [or such reasonable times that are generally accepted in the region and are consistently adhered to by the Transmission Provider]." *Pro Forma* OATT § 18.3.

[37] Order No. 888, FERC Stats. & Regs. at 31,750.

[38] *See Pro Forma* OATT §§ 14.2, 28.4.

access to the increased capacity associated with AAR-based evaluations of the availability of, and requests for, near-term service.

2. AAR-adjusted ratings should be applied to near-term network resource designations

While TAPS agrees with the NOPR (P 90) that requests to designate network resources are "generally long-term requests" and that "seasonal line ratings better reflect conditions over a longer-term," those statements do not justify application of seasonal ratings to short-duration network resource designations within the "near-term" window determined to be appropriate for application of AARs to point-to-point service. In fact, Order No. 890 explicitly provided for network resource designations as short as one day, noting the need for comparable treatment with firm point-to-point service:[39]

> We agree . . . that the minimum term should be the same as the minimum time period used for firm point-to-point service (i.e., daily), unless otherwise demonstrated by the transmission provider and approved by the Commission.

By failing to recognize the need to treat network resource designations that fall within the near-term AAR applicability window comparably with point-to-point requests, much less explain its failure to do so, the NOPR violates core comparability principles.[40]

3. The Commission may want to more closely examine the period to be treated as "near-term"

TAPS recognizes that the effectiveness of using AARs to evaluate service requests—both point-to-point and network—a full ten days out will necessarily depend

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[39] Order No. 890, P 1505 (footnote omitted).

[40] The same principle would apply to evaluations of the availability of, and requests for, temporary network resource undesignations/redesignations. However, no modification to the NOPR's proposal is necessary to address such requests because TPs lack the right to deny either undesignations (Order No. 890-A, P 950), or paired temporary redesignations of the same network resource (Order No. 890-A, P 924; *Pro Forma* OATT § 30.3).

on the ability to accurately forecast weather. The Commission may want to refine further, e.g., via technical conference, the appropriate "near-term" period for which AAR-adjusted ratings should be applied.

F. The final rule should not address the potential future use of AARs for economic planning purposes

The NOPR states (P 104), "in response to Exelon's comments that AARs should not be implemented in transmission planning, we agree and reiterate that we are only proposing to require AAR implementation for certain aspects of near-term transmission service." TAPS agrees that any final rule should focus on use of AARs for near-term operational/transmission service purposes, and should *not* require the use of AARs for planning purposes. However, it would be premature to include language in the final rule that could be read to foreclose possible future RTO efforts to use AARs in planning economic projects.

TAPS agrees that AARs should not be used in planning reliability upgrades. We also recognize that there are significant challenges associated with using AARs in economic planning. Even in RTOs that already use adjusted production cost savings metrics to evaluate economic projects, reliably projecting the effects of AARs on congestion over the planning horizon could be difficult. In non-RTO regions—particularly those that do not use adjusted production cost savings to evaluate the benefits of economic projects—attempting to integrate AARs into economic planning clearly would not make sense absent broader reforms to the planning process.

However, if the Commission adopts the NOPR's AAR mandate, the use of AARs will become widespread, and RTOs will gain experience with and better understand the impacts of AAR deployment. RTOs may well develop ways to make effective use of

AARs in planning economic upgrades, in order to identify the best projects and to avoid selecting unnecessary economic projects based on over-stated congestion benefits. Because it is premature to rule out that possibility, any final rule should not include broad language that could be read to permanently foreclose RTOs from submitting future Section 205 filings to propose consideration of AARs in planning economic projects.

G. Any final rule should extend transparency requirements

In its post-technical conference comments, TAPS urged transparency and oversight, but stressed that reliability standards and their enforcement should not be the means to mandate and audit application of new ratings technologies.[41] We appreciate the NOPR's proposal to focus on monitoring and enforcement through tariff compliance audits, consistent with TAPS' request that FERC not use its reliability authority or direct changes to standards.[42] And we support the NOPR's requirement that TOs "share transmission line ratings for each period for which transmission line ratings are calculated (with updated ratings shared each time ratings are calculated) and transmission line rating methodologies with their transmission provider(s) and, in regions served by an RTO/ISO, also with the market monitor(s) of that RTO/ISO."[43]

But we question the NOPR's failure to require the greater transparency TAPS identified as "essential," regarding ratings and line rating methodologies.[44] As described in the NOPR, current ratings and methodologies are generally not available to

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[41] *See* NOPR PP 57, 121.

[42] *See id.* P 130.

[43] *Id.* P 125.

[44] *Id.* P 121.

transmission providers or the public.[45] To address claimed concerns as to confidentiality, as well as litigation risks and compliance burden, the NOPR proposed that such information would not be shared with the broader public,[46] while acknowledging that "sharing such information with other interested parties may yield benefits" and inviting comments on whether to extend transparency to other interested parties.[47]

TAPS urges the Commission to require greater transparency regarding provision of transmission line ratings and rating methodologies to interested persons through password-protected interfaces, such as OASIS pages, subject to non-disclosure agreements as appropriate. Where a transmission customer has concerns about the impact of a constraint, it should be able to obtain, on a protected basis, information on the ratings and methodology used to establish the ratings, including the calculations used to develop the ambient-adjusted ratings. Doing so would enable transmission customers to better understand what is driving the prices they are required to pay. It could better inform power supply decisions, including assessing the risks of reliance on Energy Resource Interconnection Service.

Exposure to customer scrutiny may also prompt TOs/TPs to be more diligent in developing their ratings. Transparency is an essential tool to unearth and address discriminatory application of AARs, especially in non-RTO regions where there is no RTO or IMM oversight. Making such information available to interested persons, including transmission customers, will provide additional accountability. Given their

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[45] *Id.* P 126.

[46] *Id.*

[47] *Id.* P 129.

importance to determining the availability of the open access transmission service that is the underpinning of competitive markets, greater transparency of line ratings is critical to preventing misuse of AARs for competitive purposes.

The requested enhanced transparency builds on Order No. 890's insistence on transparency on ATC and all data used to calculate ATC.[48] In that proceeding, the Commission *rejected* arguments asking to restrict information access based on claimed litigation and compliance concerns—the very concerns the NOPR cites in proposing to restrict the sharing of line ratings and line rating methodologies.[49] Instead, the Commission both required TPs to post load forecast information, and denied a request that it clarify there would be no repercussions for TPs that provide inaccurate forecasts:[50]

> We deny EEI's request for a guarantee that transmission providers will not be held accountable for producing a reasonable load forecast. While we do not intend to penalize transmission providers for failing to account for unforeseen circumstances, we retain our ability to investigate any allegations of manipulation of load forecasts, as this could be used as a means of inappropriately denying requested transmission service.

In this proceeding, FERC should not grant TOs/TPs a license to discriminate by allowing them to withhold basic information on line ratings and rating methodologies.

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[48] *See*, *e.g.*, Order No. 890, P 324 ("More transparent ATC calculations are critical to coordinated regional transmission planning that ultimately will improve transmission access for customers and enhance grid reliability. Transparent ATC calculations facilitate the ability of market participants and regulators to detect discrimination.") *See also id.* P 328 ("ATC calculations have a direct and tangible effect on the granting of open access transmission service. As such, an accurate and detailed statement of the methodology and its components that defines how the transmission provider determines ATC belongs in the transmission provider's OATT as the means of holding the transmission provider accountable for following non-discriminatory procedures for granting service . . . .") (footnote omitted).

[49] NOPR P 126.

[50] Order No. 890, P 416.

Order No. 890 also dismissed confidentiality concerns as a basis for denying access.[51] TAPS recognizes the need to protect Critical Energy/Electric Infrastructure Information ("CEII"), and therefore suggests that disclosure be accomplished through password-protected interfaces, such as OASIS pages, subject to non-disclosure agreements.

Thus, any final rule should expand the NOPR's proposed information sharing requirement (i.e., that TOs share transmission line ratings for each period for which transmission line ratings are calculated (with updated ratings shared each time ratings are calculated) and transmission line rating methodologies) to include interested parties through password-protected interfaces, subject to non-disclosure agreements as appropriate. And this enhanced transparency requirement should expressly encompass TPs, especially those in non-RTO regions.

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[51] Order No. 890, P 348; Order No. 890-A, P 148 (making specified additional data available on request, subject to CEII protections, to ensure transparency to customers); Order No. 890, P 349 ("We note that appropriate procedures to accommodate CEII concerns should be developed to ensure eligible entities with a legitimate interest in transmission study data can receive access to it.") and, *e.g.*, *id.* PP 312, 403-04.

CONCLUSION

For the reasons set forth above, the Commission should take account of TAPS' comments in developing its final rule.

Respectfully submitted,

/s/ Cynthia S. Bogorad

Cynthia S. Bogorad
William S. Huang
Amanda C. Drennen

Attorneys for
Transmission Access Policy Study Group

Law Offices of:
Spiegel & McDiarmid LLP
1875 Eye Street, NW
Suite 700
Washington, DC 20006
(202) 879-4000

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