

Managing Transmission Line Ratings FERC Order 881– Final Rule

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Agenda

- **Background**
- **FERC Order 881 and Timeline**
- **Next Steps**

Background

Background

■ What are Ambient Adjusted ratings?

- The transfer capability of transmission lines can change with ambient weather conditions
 - Increase in ambient air temperatures tend to a lower a transmission line's rating, while a lower ambient air temperature can increase the transmission line's rating
- Ambient adjusted rating determination calls for taking into consideration the ambient weather conditions to determine the maximum amount that can flow over a transmission line

Background

■ Why are Ambient Adjusted ratings needed?

- Adjustment to transmission line ratings based on ambient weather conditions may lead to accurate reflection of near-term transfer capability of the transmission system
- Use of seasonal or static temperature assumptions for line rating may result in inaccurate assessment of transmission system capability
 - This may lead to unnecessary restriction to flows and increased congestion cost when static temperature assumptions exceed actual ambient air temperatures.
 - This may lead to potential reliability problems if static temperature assumptions are lower than actual air temperatures.

FERC Order 881

FERC Order 881 - Summary

- FERC is revising both the pro forma OATT and the Commission's regulations to improve the accuracy and transparency of electric transmission line ratings.
- FERC order 881 specifically requires ISOs/RTOs and TOs to implement ambient-adjusted ratings on the transmission lines over which they provide transmission service

FERC Order 881 – Summary (cont'd)

- **An ambient-adjusted rating (AAR) is defined as a transmission line rating that:**
 - applies to a time period of not greater than one hour
 - reflects an up-to-date forecast of ambient air temperature across the time period to which the rating applies
 - incorporates an adjustment for daytime/nighttime solar heating, where the local sunrise/sunset times used to determine daytime and nighttime periods are updated at least monthly
 - is calculated at least each hour

Ambient - adjusted ratings

- **Transmission owners (TOs) are responsible for**
 - Calculating transmission line ratings in accordance with a written transmission line rating methodology and consistent with good utility practice
 - Sharing the transmission line ratings and transmission line rating methodologies with their RTOs/ISOs and the market monitor(s)
- **AARs must be calculated using the temperature at which there is sufficient confidence that the actual temperature will not be greater than that temperature (*i.e.*, expected temperature plus an appropriate forecast margin)**

Ambient - adjusted ratings (cont'd)

- **ISOs/RTOs are responsible for:**

- Implementing systems and procedures necessary to allow transmission owners to electronically update transmission line ratings at least hourly
- Sharing the transmission line ratings and methodologies with any transmission provider(s) upon request
- Maintaining a database of their TOs' transmission line ratings and methodologies on their OASIS site or another password-protected website
- Implementing AARs within their security constrained economic dispatch (SCED) and security constrained unit commitment (SCUC) models in both the day-ahead and real-time markets and reliability unit commitment (RUC) processes, and any other intra-day RUC processes.

Ambient - adjusted ratings (cont'd)

- **ISOs/RTOs must use AARs as the relevant transmission line ratings when:**
 - evaluating requests for near-term transmission service
 - A near-term transmission service is defined as a transmission service ending within 10 days of the date of the request
 - responding to requests for information on the availability of potential near-term transmission service (including requests for ATC or other information related to potential service); and
 - posting ATC or other information related to near-term transmission service to their OASIS site.
 - determining whether to curtail or interrupt near-term transmission service

Seasonal Ratings

- **Seasonal line ratings are an important input to longer-term sales of a transmission service**
- **ISOs/RTOs must use seasonal line ratings as the appropriate transmission line ratings when:**
 - evaluating requests for transmission service ending more than 10 days from the date of the request;
 - responding to requests for information on the availability of such transmission service (e.g., ATC); and
 - posting transmission availability (including ATC) to their OASIS site.
 - determining whether to curtail or interrupt non-firm point-to-point transmission service because of issues anticipated to occur more than 10 days ahead

Seasonal ratings (cont'd)

- **ISOs/RTOs must utilize not fewer than four seasons per year.**
 - Seasons should reasonably reflect portions of the year where expected high temperatures are relatively consistent
- **Seasonal line ratings should be calculated/updated annually, if not more frequently.**
 - Seasonal line ratings should, however, be reviewed when there is a change in equipment, climate or weather data, or when otherwise prudent
- **Seasonal ratings may be derived from historical temperatures.**

Exceptions to AARs and Seasonal rating requirements

- An ISO/RTO may use a rating for a transmission line that is not AAR or Seasonal rating, if it determines that the rating of this transmission line is not affected by ambient air temperatures.
- Example of such a transmission line may include (but are not limited to):
 - (1) a transmission line for which the technical transfer capability of the limiting conductors and/or limiting transmission equipment is not dependent on ambient air temperatures; or
 - (2) a transmission line whose transfer capability is limited by a transmission system limit (such as a system voltage or stability limit)

Exceptions to AARs and Seasonal rating requirements (cont'd)

- **ISOs/RTOs may temporarily use transmission line rating that is not AAR or Seasonal rating, if needed to ensure the safety and reliability of the transmission system**
- **ISOs/RTOs should post the use of exemptions or temporary alternate ratings to OASIS or another password-protected website**

Dynamic Line Ratings (DLR)

- **FERC declined to mandate DLR implementation in this final rule.**
- **FERC issued a Notice of Inquiry (NOI) on February 17, 2022, to examine the use of DLRs**
 - Docket No. AD22-5-000
- **Order 881 requires RTOs/ISOs to establish and maintain systems and procedures to facilitate the voluntary implementation of DLRs by TOs**
 - Allow transmission owners to electronically update transmission line ratings at least hourly, with such data submitted by TOs directly into RTOs'/ISOs' EMS through SCADA or related systems

Emergency Ratings

- **FERC requires that transmission providers use uniquely determined emergency ratings.**
 - Under this requirement, transmission providers must use emergency ratings that transmission owners determine uniquely from their determination of normal ratings.
- **Transmission owners, not transmission providers, are responsible for calculating emergency ratings**
- **FERC requires that emergency ratings also incorporate an adjustment for ambient air temperature and for daytime/nighttime solar heating, consistent with the AAR requirements for normal ratings.**
 - TOs have the discretion to determine exceptions to AAR requirements for emergency ratings, on similar lines as exceptions to AAR requirements for normal ratings

Timeline

- **NYISO must submit a compliance filing by July 12, 2022.**
- **All requirements of the Final Rule must be implemented by July 12, 2025.**

Next Steps

Next Steps

- **May/June**
 - Discuss draft tariff revisions with Stakeholders
- **Submit compliance filing by July 12, 2022**

Questions?

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation