

Managing Transmission Line Ratings

Technical Rating Communication working group



Various



Agenda

3:00-3:05 p.m.

Welcome and Introductions

3:05-3:15 p.m.

Overview of FERC 881

Joshua Bauer

3:15 p.m.-3:25 p.m.

High Level Project milestones

Magaly Barajas-Roman

3:25-3:45 p.m.

Overview of Limit Exchange Portal (LEP)

Mark Phelps

3:45-3:55 p.m.

Overview of NX changes

Joshua Bauer

Questions



OVERVIEW OF FERC 881 REQUIREMENTS



Seasonal ratings

- Must have at least 4 seasons
 - ISO-NE area will use 12 seasonal ratings that represent each month
 - This is applicable to all equipment that submits ratings to ISO-NE
 - PP7 is being updated



Ambient Adjusted Ratings (AAR)

- Must use ratings that are based on ambient air temp for equipment that is applicable and those ambient ratings must be used in Real Time and markets
 - Equipment Owner is responsible to calculate and provide AARs in real time and for future based on forecast
 - Forecasted up to 10 days out (Order requirement)
 - ISO-NE will use 72 hours out due to the wording in our Tariff
 - Reflects an up-to-date forecast of ambient air temperature for the time period the rating applies
 - AAR is updated every 5 degrees F
 - Applies to time period not greater than 1 hour
 - Daytime and Night time ratings

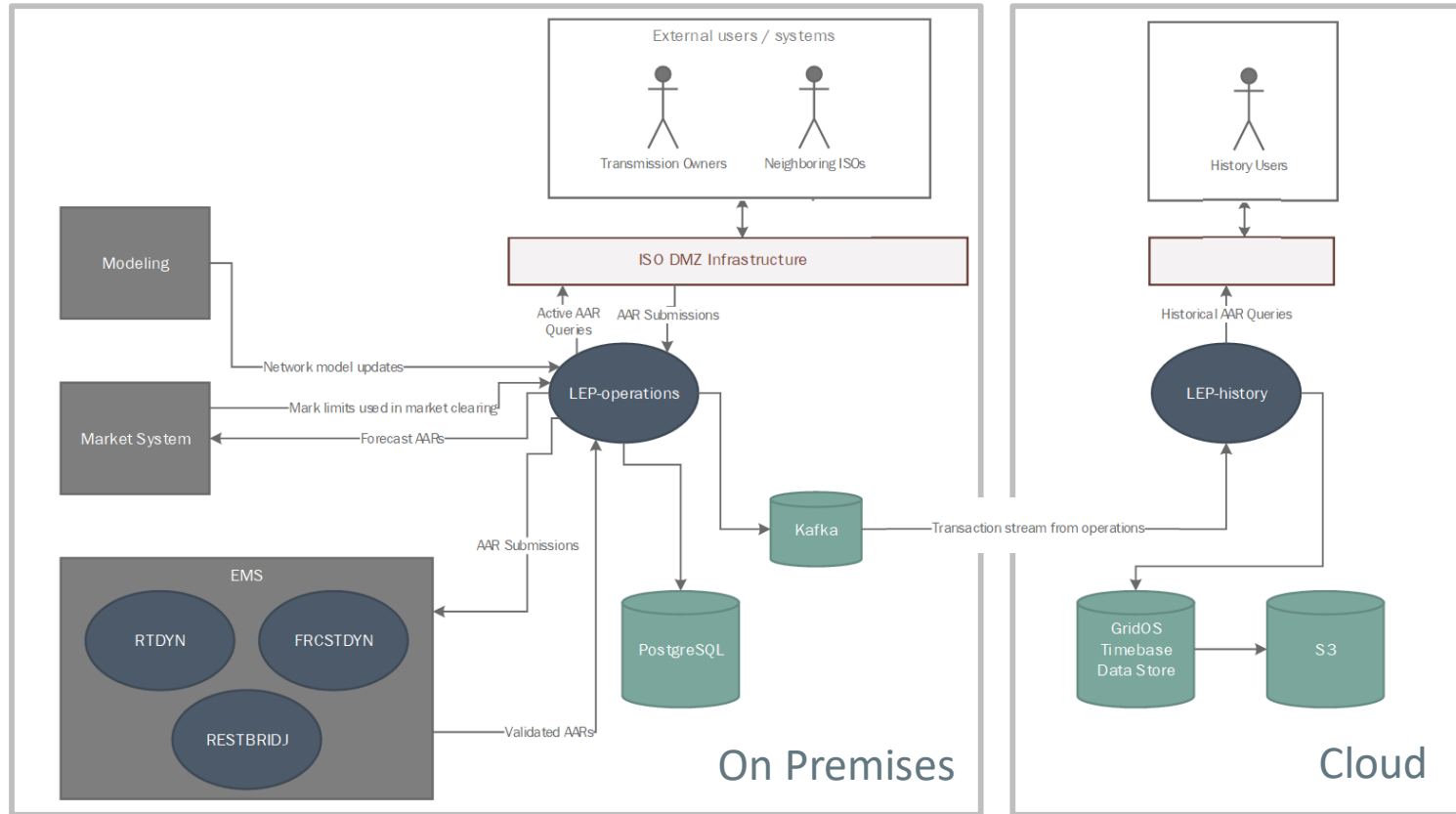


Ratings retention

- FERC Order 881 requirement: Postings to OASIS or another password-protected website: The Transmission Provider must maintain on the password-protected section of its OASIS page or on another password-protected website a database of Transmission Line Ratings and Transmission Line Rating methodologies. The database must include a full record of all Transmission Line Ratings, both as used in real-time operations, and as used for all future periods for which Transmission Service is offered.
 - Limit Exchange Portal will be used for this aspect of the order



Overall 881 architecture



HIGH LEVEL PROJECT MILESTONES



MTLR Limit Exchange Portal(LEP) External Milestones

	Key Dates	Functionality
LEP Operation(UI/API)	Oct. 2, 2024	Sandbox available with APIs, AARs, Seasonal Ratings, Temporary Ratings exceptions <u>Note: Security Administrator need to identify roles in CAMS for LEP</u>
LEP Operation	Dec. 4, 2024	Sandbox update to include Local Transmission feature and bug fixes, if needed
NX	March 19, 2025	Sandbox available
LEP Historical(Cloud)	March 31, 2025	Sandbox available
FERC 881 deadline	July 12, 2025	

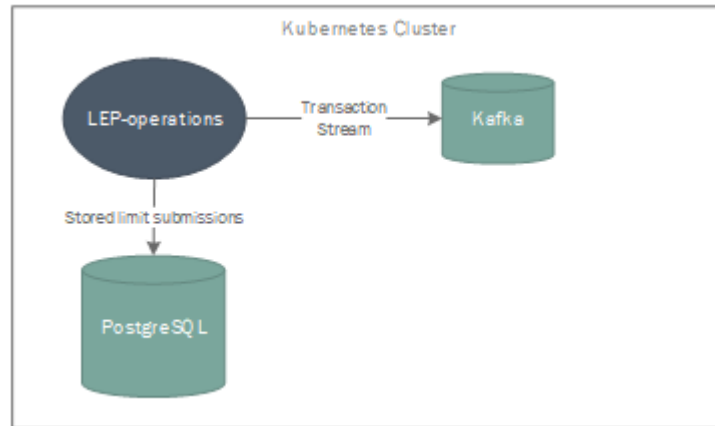


LIMIT EXCHANGE PORTAL (LEP) OVERVIEW



LEP Operations

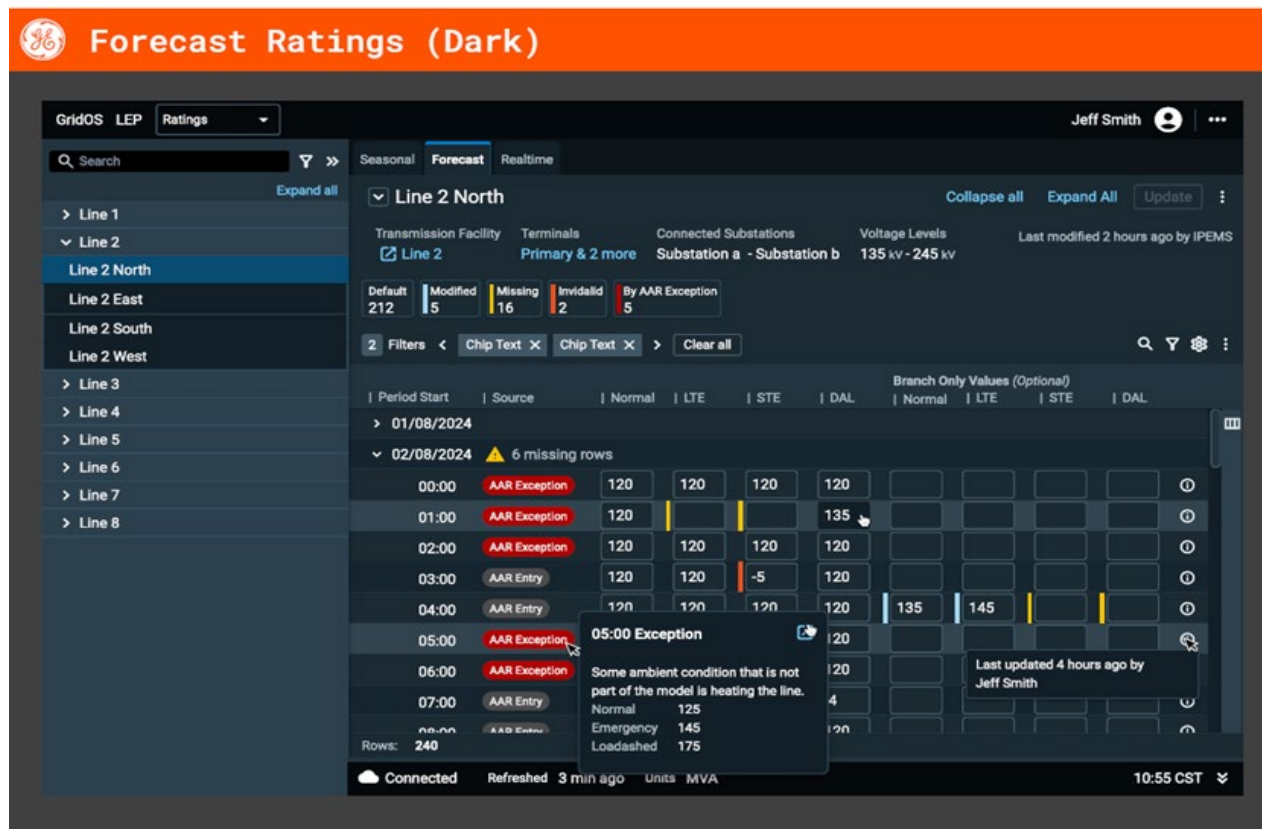
- **LEP-Operations** is the primary hub for real-time and forecasted ambient-adjusted ratings (AARs) in the system. It accepts submittals and queries, exposing APIs* and user interface for managing them. It is its own system component, keeping a rolling window of active limits stored in a PostgreSQL database. Both the Market System and the EMS have integrations with LEP-operations, and the RTDYN and FRCSTDYN (also known as the Forecast Dynamic Ratings application) have a symbiotic role with LEP-operations in validating or “clearing” limit submissions.
- For details on the API specifications:
<https://trolie.energy>



*Assumed to be primary communication pathway



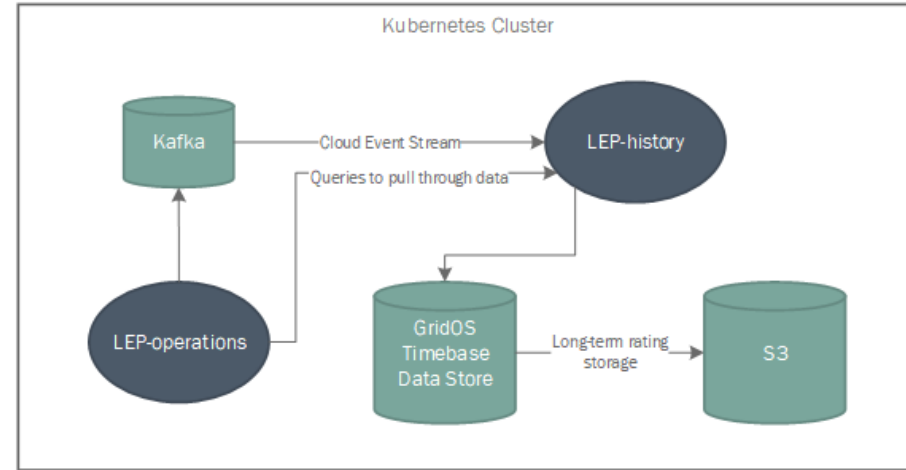
LEP Mockup



Not final
product

LEP Historical

- **LEP-History** is the hub for historical rating data.
- LEP-History will also have a query API, although it will differ from LEP-Operations and be geared towards bulk download.



Questions



NX OVERVIEW



NX Overview

- NX9 Forms will continue to capture all of the data needed for network modeling except the actual equipment ratings.
- Ratings will be provided by the Participant in the Limit Exchange Portal (LEP).
- ISO-NE will continue to represent equipment with multiple NX9 forms as a single piece of equipment in our network model.



NX-Changes (UI)

- NX9 Form Header Add External Equip Flag
- NX9 Ratings Tab Removal
- NX9 Ratings Tab New Field
 - LEP Only Check Box
 - LEP Implementation Date
 - Ratings Provided via Telemetry
 - Nominal Ratings (MVA)
 - Conditional Ratings Data
 - Conditional Ratings Set
- NX9 Add Equipment Reference Number
- NX9 Equipment Search update
- NX- Add Set LEP Implementation Date Display
- NX Comparison Display

The screenshot displays the NX9 form interface with the following sections and highlighted changes:

- Form Header:** Includes fields for Reference Number, Participant, ISO Equip ID, Related To, Form State, Participant Equip ID, ISO EMS ID, EMS ID, and ISO Line Name. A red box highlights the **Equip Reference #** field.
- Equipment Section:** Includes fields for Circuit, Nominal System Voltage (KV), Series Device, Cable Type, Conductor Length (mi.), Terminal A, Terminal B, Bus #, and Station. A red box highlights the **External Equip** checkbox.
- Ratings Tab:** Contains sub-tabs for Equipment Data, ISO-NE Data, and Conditional Rating Data.
 - Equipment Data:** Includes a red box around the **Ratings provided via telemetry** checkbox.
 - ISO-NE Data:** Includes a red box around the **LEP Only Equipment** checkbox and the **LEP Implementation Date** field.
 - Conditional Rating Data:** Includes a red box around the **Conditional Rating Set** checkbox.
- Initial Nominal Ratings for New Equipment (MVA):** A red box highlights this section, which includes a table for Normal, LTE, STE, and DAL ratings, and a text area for Rating Comments.

NX-Changes (Form Reports)

- Remove all existing rating data from reports

**ISO New England Equipment Rating, Characteristic,
and Operational Data Implementation Form
Transmission Line (NX-9A)**

Reference	2406050010	Participant	144
Participant	NSTAR Electric Company	ISO ID	144
Form State	Preliminary	Check Effective Dates	Ckt 1
Equipment Ref	2310170001		
Conductor Type	2-1590 ACSS (54/19)	ISO EMS ID	144
Terminal A	Bourne 1 115kV	Bus #	111217 EMS BOURNE
Terminal B	West Barnstable 115kV	Bus #	111135 EMS W_BARNST
Cable Type	Overhead	Nominal System Voltage	115
		Conductor Length	12.4
Impedance Data (%) (100 MVA Base)			
R	0.294	X	5.308
		B	1.237
Ratings Provided via telemetry	False	Conditional Rating Sets	
LEP Only Equipment	True	- breaker open	
LEP Implementation Date			
Bi-Directional Ratings	True		
Conditional Ratings	True		
Initial Nominal Ratings (MVA)	Normal: 30	LTE: 30	STE: 30 DAL: 50
Rating Comments	LEP ratings		

Questions

