NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Large Loads Task Force (LLTF)

Scope Document
August 2024

Purpose

The purpose of the Large Loads Task Force (LLTF) is to better understand the reliability impact(s) of emerging large loads such as Data Centers (including crypto and AI), Hydrogen Fuel Plants, etc. [1] and their impact on the bulk power system (BPS). The LLTF will first focus on identifying the unique characteristics and risks associated with emerging large loads, and then validate and prioritize these risks. Following this, the LLTF will identify gaps and mitigation of potential risks to support BPS reliability including enhancements to existing planning and operations processes to help transmission planners and operators mitigate these risks.

Activities

The LLTF will be conducted in two phases as outlined below:

Phase 1 – Identify unique characteristics and risks of large loads

1. Provide a common understanding and definition for large loads.
2. Coordinate and conduct an industry data survey to gather information on types of emerging large loads, projected growth, etc.
3. Document the different types of large loads and identify unique characteristics and risks associated with their performance on the BPS.
4. Provide technical basis demonstrating the potential impacts of these new types of large loads and the associated reliability problems they pose.
5. Validate and prioritize risks based on the potential impacts of large loads.
6. Identify areas where potential security risks associated with large loads require further assessment by related RSTC groups.
7. Conduct an industry technical workshop to gather feedback on concerns, challenges, and understandings.
8. Perform other activities as directed by the NERC Reliability and Security Technical Committee (RSTC).

Phase 2 – Identify gaps and potential risk mitigation

1. Assess whether existing engineering practices, requirements, and Reliability Standards can adequately capture and mitigate reliability risks identified in Phase 1.

[1] *2023 Grid Strategies National Load Growth Report*

   a. Share relevant findings with NERC Load Modeling Working Group (LMWG) to support ongoing enhancement and accurate representation of load models.
2. Identify potential risk mitigations including improvements to existing planning, and operation processes and interconnection requirements for large loads.
3. Develop industry guidance on recommended practices, for real time monitoring, event analysis, coordination efforts, data collection, analyses, and modeling related to large load performance
4. in both Planning and Operations time horizon.
5. Conduct an industry technical workshop to prioritize and enhance clarity on possible mitigations.
6. Coordinate with other applicable on-going large load industry efforts such as WECC and ERCOT[2].
7. Conduct an informational webinar to share lessons learned and best practices with the industry.
8. Perform other activities as directed by the NERC Reliability and Security Technical Committee (RSTC).

Deliverables

The LLTF will develop the following deliverables within its anticipated one to two year period:

Phase 1

1. Develop a white paper on the unique characteristics and risks associated with emerging large loads. This paper will use the NERC Framework to Address Known and Emerging Reliability and Security Risks[3] to identify, validate, and prioritize potential reliability risks related to the integration of emerging large loads. The LLTF will highlight areas where potential security risks require further assessment by security professionals and identify RSTC groups for follow-up work.

Phase 2

1. Develop a white paper assessing whether existing engineering practices, requirements, and Reliability Standards can adequately capture and mitigate reliability impact(s) of large loads interconnected to the BPS. The paper will also highlight gaps in load modeling practices that LMWG can leverage to take further action to improve load modeling.
2. Develop a reliability guideline identifying potential risk mitigations including improvements to existing planning, and operation processes and interconnection requirements for large loads. Guidance may include recommended improvements to modeling practices, analyses, coordination and data collection efforts, real time monitoring and event analysis.

Membership

The LLTF will include members and observers with technical expertise in the following areas:

[2] *ERCOT Large Flexible Load Task Force*
[3] *Framework to Address Known and Emerging Reliability and Security Risks.*

1. Assessing the reliability impacts of emerging large loads on the BPS.
2. Implementing emerging large loads in BPS planning studies and real time operations.
3. Forecasting and modeling of emerging large loads.
4. Design and operation of large loads.

It is anticipated that these members will likely include Transmission Planners, Planning Coordinators, Reliability Coordinators, Balancing Authorities, Distribution Providers, Generation Owners[4] and Developers/Owners of large loads, as well as consulting or engineering services staff to meet the necessary technical expertise requirements.

The LLTF will have open meetings. Observers may actively participate in discussions and the development of deliverables.

The LLTF will consist of a chair and vice chair appointed by the RSTC Chair. Officers shall be selected from individuals employed at entities within NERC membership sectors 1 through 12 to support sufficient expertise and diversity in execution of the subordinate group's responsibilities. The task force will also be assigned an RSTC Sponsor to support its activities. NERC staff will be assigned as coordinator(s). Decisions will be consensus-based, led by the Chair and Vice Chair and staff coordinator(s). Any minority views will be included in an addendum.

The LLTF chair, vice chair, and the assigned NERC staff coordinator can develop groupings of membership to facilitate the development of various deliverables identified in the work plan.

Reporting and Duration

The LLTF will report to the NERC RSTC. The NERC RSTC will approve LLTF work products. The group will develop the deliverables in its work plan on a timeline approved by the RSTC and will continue completion of the LLTF work plan.

Meetings

The LLTF is expected to have hybrid or virtual monthly meetings, supplemented with conference calls, to facilitate the completion of work products.

[4] *Generation Owners are considered impacted entities due to co-location of generation and large loads at some generation facilities.*