

## **SCOPE**

### **LFU Modeling: NY Temperature Distribution Analysis**

#### **Study Purpose and Summary**

NYISO will conduct a study in order to compile updated information on the statistical variation in peak weather conditions. This study will focus mainly on long-term temperature and humidity distributions across multiple regions of the New York Control Area (NYCA). NYISO will analyze and compare the historical distributions between multiple temperature-humidity variables currently used in the LFU modeling. Finally, this study will augment existing work performed to date on the CTHI<sup>1</sup> variable including extreme value analysis, regional versus local temperature distributions, and regional correlation of extreme weather (coincident / non-coincident variability).

#### **Study Scope**

The following topic areas will be examined under the auspices of this study:

- Comparison of currently used temperature-humidity indices for Zones H/I, J, and K (CTHI vs. TV and CTHI vs. THI4)
- Analysis of long term (1950-present) historical CTHI temperature distributions
  - Coincident versus Non-Coincident extreme weather between regions/zones
  - Local (e.g. station) extreme values versus zonal aggregations
- Compare the distributions of the seasonal summer maximums versus the peak producing values (both by individual zone and reliability region)
- Perform an analysis of the long-term inter-annual variability of load-weather sensitivity for the NYCA and associated load zones and reliability regions.

#### **Study Schedule**

This study will be conducted during the September 2020 - January 2021 period. With stakeholder feedback, NYISO would determine the significant items of interest from the first phase of this study and determine the scope for follow-on studies in LFU modeling.

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<sup>1</sup> CTHI is an acronym that stands for Cumulative Temperature-Humidity Index. This is a three-day weighted sum of a heat index used for evaluating the relationship between load and weather. TV and THI4 are similar heat indexes used by some of the Transmission Owners in their evaluations.