

DRAFT - FOR DISCUSSION PURPOSES ONLY

RESPONSE TO THE PAPER TITLED: “MODELING OF EMERGENCY ASSISTANCE FOR THE NEW YORK CONTROL AREA IN NYSRC IRM STUDIES”

Introduction

The *Modeling of Emergency Assistance for the New York Control Area in NYSRC IRM Studies*¹ Paper (hereinafter the “Paper”) received four sets of comments from ICS members and New York State Reliability Council (“NYSRC”) consultants. Some of these comments were discussed at subsequent ICS meetings along with suggested future directions. This response is intended to address the common or major comments received, and proposes a future direction for the initiative.

Common Comments

MARS flow distributions – The comments suggest using distribution factors associated with incoming Emergency Assistance (“EA”) from neighboring control areas into the NYCA based on load flow analysis.

Average EA versus maximum EA – The comments note that the Paper did not clearly define the relationship between the average EA versus maximum EA, and suggest that it may be more appropriate to target an expected value over a maximum value of EA because the use of a maximum EA will result in a lower expected EA.

Indirect Emergency Assistance (IEA) – The Paper highlighted that the model may be overly reliant on neighboring transmission systems’ capability in establishing the NYCA’s IRM. This concern raised questions on acceptability of the NYCA’s IRM results, which needs further studying to understand the model’s reliance on IEA and how it changes as the model is updated. It also raises questions on the methodology used to calculate the values expressed in the Paper.

Available external assistance – The available external assistance for the NYCA EA limit was based on a single set of data examining 15 points over three years (2013–2015). These 15 points provide a limited historical basis for statistical analysis, and more data is necessary to provide better statistical support for the availability of external assistance.

¹ The Paper, dated July 26, 2016, is the original version presented to the ICS with corrections based upon comments received from the ICS meeting on June 29, 2016. The paper was subsequently distributed to ICS members.

Response and Future Actions

MARS flow distributions – As a transportation model, MARS does not have the capability to directly structure flows on its external interfaces based on distribution factors. The NYISO confirmed this understanding with GE.

Average EA versus maximum EA – Figure 6 in the Paper shows the IRM for various levels of EA import limits. These EA values are hard import limits on the imports, meaning that they limit the EA for every single hour of every iteration. The NYISO is unaware of any methodology or MARS capability that could target an expected average value.

Indirect Emergency Assistance – This is more commonly known as “loop flow,” where capacity leaves one Control Area and then returns to the same Control Area on the other side of a constraint. About six or seven years ago, the ICS discussed this issue, and a white paper was written. The conclusion of the white paper was that the mechanism to allow loop flow should not be used in early passes of MARS. The premise was that if the program allowed it in earlier passes, the NYCA could end up using the transmission capability on its neighbors’ transmission systems before they had a chance to fully utilize their capability. The result was to set the model to only allow this possibility on the very last pass, after the neighboring transmission systems had a chance to fully use the capacity on their systems to address their shortages. This logic also works for our neighbors looping through NYCA. Loop flows through a neighboring system are a natural event in an AC transmission system, and there is no MARS capability that can completely curtail indirect emergency assistance.

That being said, it is an interesting observation from the EA study that when EA became more limited, the amount of indirect emergency assistance increased. As suggested by the comments, the NYISO recommends continuing to study this phenomenon.

Available external assistance – The ICS has coalesced around pursuing an import limit that is based on the amount of excess 10-minute resources that the NYCA’s neighboring systems carry as an appropriate level of EA. Upon request, the NYISO provided additional data on the available help from neighboring control areas when the NYCA experiences peak load conditions. Figure 1 below shows the relationship over the period 2013 through 2015 between the top 100 NYCA peak hours and the surplus MWs reported by neighboring control areas. The trend line of this data starts at 2,405 MW of help when the NYCA is at 102% of expected peak and goes all the way up to 3,480 MW at 86% of the NYCA’s expected peak.

Figure-1 External Control Area potential help during NYCA peak load hours

