JA Comments on the NYISO white paper entitled:

"MODELING OF EMERGENCY ASSISTANCE FOR THE NEW YORK CONTROL AREA IN NYSRC IRM STUDIES"

I have reviewed the NYIO's white paper regarding emergency assistance (EA) and offer the following comments for considerations. First let me say that I see this EA paper as first step in a long overdue review of EA and how it should be accounted for in NYSRC IRM studies. NYISO staff has done a good job in starting the review of this difficult and complex issue. My comments address the following areas that I have concerns with:

1. Inconsistencies between the level of emergency assistance (EA) for the 2620 limit case and the difference between the isolated case minus the IRM.
2. The level of EA and indirect EA (IEA) and whether or not it is reflected in the limit calculation.
3. A max limit placed on EA will result in an expected value that is less that that limit.
4. Statement on page 12 regarding LCRs.

Inconsistencies:

In the EA paper executive summary on page 2 the paper states:" In limited testing during this study, applying a limit of 2,620 MW of EA increased the IRM from 17.4% to 18.2% (an increase of 0.8%)". Assuming an isolated case of 25.9%, this suggest a difference of 7.7% or expected EA of 2,570.1[1] MW. On page 12 under the section entitled:" Examination of Assistance Import Flows when the 2,620 MW Limit is Applied" a full tan 45 analysis is presented where the IRM increases to 18.8% or a difference of 7.1% or implied EA of 2,369.8[1] MW. Then on page 13 in the section entitled:" Examination of Both Types of Emergency Assistance in the MARS Model" they show for the 18.8% IRM EA of 7.6% (sum of IEA and EA from Figure 8 page 14) or expected EA 2,536.7[1] MW slightly less than the 2620 limit.

[1] The analysis in this paper uses the base case forecast of 33,378 MW not the 33,500 used in the EA white paper.

This result seems to be inconsistent with the difference between the IRM and isolated case which is 7.1%. The numbers seem to be more in line with the executive summary number of 18.2%. This needs to be clarified or why the EA is at a level of 7.6% VS the 7.1% difference between the IRM of 18.8% and the isolated case. Concerns me whether things are working properly.

Level of EA and IEA:

On page 13 of the EA paper when discussing the components of EA states:" This rise in IEA, or use of another CA's transmission system to wheel EA in order to by-pass NYCA constrained interfaces, is concerning." I certainly agree with that statement and have other concerns. Clearly, if NY cannot utilize that capacity in meeting its own load why would EA looping through a neighboring control area in the EA pass be feasible especially when applying the 10-minute limitation to EA. Another concern with the IEA is how is it counted in calculating the import limit. In the base case which had no limits placed on EA imports a maximum value for EA imports of 4,900 MW[2] was observed and the resulting expected value of the EA was 2837.1[1,2] MW with a small amount attributed to the IEA. With a limit of 2,620 MW applied the expected value is 2,536.7[1] MW with a much higher level of IEA. This is a drop from the base case of 300.4 MW or 10.5% reduction. This for a case were the limit for EA has been cut significantly. Based on the difference between 18.8% and the isolated case the expected value would have been 2,369.8[1] or a difference of 467.3 MW. This is one reason why I have a concern as to how IEA gets included in calculating the EA import limit for any given simulation.

My final comment for IEA concerns the methodology for measuring it whereby the export limits from NY are set to zero – i.e., cutting the ties leaving NY to neighboring CAs. This will result in those areas being less reliable. This potentially could adversely affect the ability of these areas to provide assistance to NY. This could result in higher apparent levels of IEA than actually occurs. I would like the NYISO thoughts on this issue.

[2] An interesting exercise would be to set the EA import limit at 4,900 MW to see if the IRM and expected EA stay the same.

EA Expected Value:

The MARS simulations result in an overall expected value for EA. The isolated case minus the expected EA is the resulting IRM after accounting for the EA. Establishing a limit for the max level of EA imports will result in an expected value less than the limit. This raises a question in my mind as to whether in selecting this EA import limit whether some attention needs to be given to what is an appropriate level of expected EA as well.

On page 1 of the EA white paper it states:" The study found that the levels of EA within the GE MARS model were excessive. These levels were unrealistic from an operation's perspective". Is the expected value of 2837.1[1] excessive when the analysis presented in the paper showed on average there has been 2,970 MW of 10 minute reserves available in the neighboring control areas on the five highest peak days over the last 3 years. Although I agree that the majority of the events will happen with very short lead times (the 10-minute criterion), scenarios with much longer lead times will be possible as well. I believe having an EA import limit offers many benefits such as providing more stability from year-to-year in the IRM study EA and provides some insulation from the residual uncertainties[3] that can exist in neighboring control areas. Whatever EA limit is chosen must result in a reasonable expected value as well. Also, I like to see a stronger basis or support for the statement that the EA levels within the MARS model were excessive. Maybe GE should be asked to comment on the levels of emergency assistance in the NY MARS simulations?

LCR Discussion:

On page 12 of the white paper states:" While the increase in IRM was expected, the drop in LCRs was not." I found this statement somewhat surprising. Isn't LCR-IRM curve dynamics such that as the statewide IRM increases the LCRs decrease exactly for the reasons stated. So by definition the LCRs should decrease. The unexpected result would have been If the LCRs hadn't changed or increased unless I am missing something.

This concludes my comments.

[3] See a Review of PJM Modeled LOLE AI-181-1.2 as presented at ICS Meeting 183 on May 4, 2016 for a definition of and discussion of residual uncertainties.