

## TO Responses to Customer Questions/Comments re: the Revised NITS Capacity Proposal posted to LG&E/KU OASIS on February 17, 2017.

| Question | Customer Question / Comment                                                                                                                                                                                                                                                                                                                                                                                                              | TO Response                                                                                                                                                                                                                                      |
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| 1        | "Will TO will post redline to BP?"                                                                                                                                                                                                                                                                                                                                                                                                       | As described in the NITS Capacity presentation posted on OASIS, the TO will post a redline of the LG&E/KU Business Practices.                                                                                                                    |
| 2        | "According to the definitions in the BP, two different items with two different definitions." [Referring to DNR and NITS Capacity]                                                                                                                                                                                                                                                                                                       | Understood. The TO was providing background on the topic and wanted to make it clear that neither DNR nor NITS Capacity were used prior to 2012.                                                                                                 |
| 3        | "DNR and NITS Capacity (NC) can be different values – DNR is the unit capacity available to serve NL without any associated transmission service. NC is a DNR that has been allocated NITS. Both the DNR and NC values are determined by the TC."                                                                                                                                                                                        | Agreed that DNR and NITS Capacity can be different values; this is described in the NITS Capacity presentation posted on OASIS. However, the DNR and NITS Capacity values are determined per process outlined in the LG&E/KU Business Practices. |
| 4        | "Is this the same as the "respective models" mentioned below?" [Referring to "power flow studies"]                                                                                                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                              |
| 5        | "Is the definition of "summer" April through September? It is possible for a CT to generate the same peak power during certain summer conditions as in winter peak, that is, cool mornings during the summer season."                                                                                                                                                                                                                    | No. Summer model refers to the single hour "summer peak" model used in transmission planning studies. It is not realistic to build a transmission model that covers 6 months                                                                     |
| 6        | "However, a customer should be able to use their entire amount of NITS Capacity during any point in time of the entire year."                                                                                                                                                                                                                                                                                                            | Yes. This is described in the NITS Capacity presentation posted on OASIS.                                                                                                                                                                        |
| 7        | "Is this an accurate statement? This seems to indicate a model would use load and generator capacities provided by MOD-032 GO data at zero degrees and use transmission line and equipment ratings at a different temperature (say 20 degrees)." [Referring to "winter-peak model may use colder ambient temperature assumptions for loads and generator capacities than the ambient temperature assumption used for equipment ratings"] | Yes. The higher temperature assumption results in lower equipment ratings, and thereby is a more conservative assumption. See further explanation in response below.                                                                             |

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| 8  | <p>“Would a reasonable worst case model use consistent data – not extreme values (90/10) for some inputs and expected values (50/50) for others?”</p>                                                                              | <p>There is no reason that all inputs have to be based on the same ambient temperature assumption; in fact that could produce undesirable results. For example, in the winter peak models, if we assumed zero degrees for equipment ratings, but equipment ratings happen to have higher rate of change per degree than generators, then what looks okay at zero degree, may result in overloads at 23 degrees.</p>                                                                                                                                                                                                                                                                                         |
| 9  | <p>“Again, are these the respective models?”</p>                                                                                                                                                                                   | <p>Yes. See response to Question 4.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10 | <p>“Why? And, why not the NITS Capacity owned by the Transmission Customer?” [Referring to “The LG&amp;E/KU Transmission Planner uses the generation capacities as supplied by the GOs for the summer and winter peak models”]</p> | <p>MOD-032 requires the Transmission Planner to use data as supplied by the submitting GO entities in the building of models. The TO is unsure of the concept of “NITS Capacity <u>owned</u> by the transmission customer”. This may be true of PTP, but not for NITS. The TO plans for and builds for network resources based on projected output capability of the units, and not any historical TSR that may have been submitted. It is very similar to how loads are modeled. A TSR can be submitted, studied, and granted for a load increase, but if the next year’s MOD-032 load data is lower than the TSR, the transmission system is no longer planned and built for the higher TSR capacity.</p> |

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| 11 | <p>“Are these values Gross or Net? [Referring to Question 10]</p> <p>How does the TSP determine the value to be used from the data provided by the GO?</p> <p>Is the Aux value a MAX aux load?</p> <p>Is “Balance of Plant Load” considered?</p> <p>What if there is a change in the auxiliary amount resulting in a different NET value?</p> <p>What if the auxiliary is removable by the GOP?”</p> | <p>The NITS Capacity is based on the net injection at the POI and hence does not include any unit aux loads that are served “behind” the POI. This is described in the NITS Capacity presentation posted on OASIS.</p> <p>Transmission Planning models both the gross and the aux loads as submitted by the MOD-032 generation data submitter. This includes both aux loads served behind the POI and any aux loads that are served via a separate transmission interconnection point.</p> <p>Balance of plant aux loads can be served from behind the POI or via separate transmission interconnection point, but are not included in the net unit capability.</p> <p>Increased net unit capability due to reduced aux loads is permissible under emergency conditions.</p> |
| 12 | <p>“Are these the “0 degree” and “104 degree” capacities?” [Referring to “summer and winter peak models”]</p>                                                                                                                                                                                                                                                                                        | <p>Yes. However, based on customer feedback, this may be revised in future MOD-032 data request to allow more flexibility for the submitter to provide data at their expected output capability for summer peak, winter peak, and off peak.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 13 | <p>“The GO data also does not represent the NITS Capacities.”</p>                                                                                                                                                                                                                                                                                                                                    | <p>MOD-032 requires the Transmission Planner to use data as supplied by the submitting GO entities in the building of models. There is nothing to prevent the GO and Network customer from collaborating on the MOD-032 data.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| 14 | <p>“The ITO/TO may use “off peak” to name their models but “Off Peak” should not be used to designate a load or generation forecast as the term is used for other purposes and in other contexts throughout the industry. For generation use something like “Maximum Net Output” with a qualifier that it is the maximum output that a unit can be expected to sustain for a [2?] hour period under optimum operating conditions. For load, use “Shoulder Season Hourly Peak” with a qualifier that it is the hourly peak load expected during mild (60-70) weather.”</p> | <p>It would not be appropriate to use “Maximum Net Output” to describe the generation capacity in the off-peak model as not all units will be capable of producing their maximum output in the more moderate ambient conditions associated with the off-peak model.</p>                                                                                                                                                                                                                                                                                                       |
| 15 | <p>“Is it one or several? If several, what changes?” [Referring to “models(s)”]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>There will generally be more than one model, as one off-peak model will be built for each future year in which the full set of study models is being built per the TPL standards.</p>                                                                                                                                                                                                                                                                                                                                                                                      |
| 16 | <p>“Transmission equipment [not generator equipment], correct?” [Referring to “70 degree ambient equipment ratings”]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Yes</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 17 | <p>“The TSP will allow TCs to work with GOs to ensure that the max expected capability is reflected in the “off-peak” or “max net out” data set, correct? What if the unit can produce more at say 50 degrees versus 0, 60, 90, or 104?”</p>                                                                                                                                                                                                                                                                                                                              | <p>The maximum capability of each unit should be reflected in one of the three ambient temperatures. It is not the intent for the “off peak” to always reflect the maximum for all units, but only for units that are not at their maximum at either summer-peak or winter-peak conditions. This is described in the NITS Capacity presentation posted on OASIS.</p> <p>The written description of the “off-peak” model will be clarified to not be specific to 60 degree ambient. Nothing to prevent the GO and Network customer from collaborating on the Mod-032 data.</p> |
| 18 | <p>“Will this be grandfathered and NO additional NITS requests will be required?”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>No. TSRs will be required for new maximum capacity that exceed the currently approved levels if desired by the network customer. This is described in the NITS Capacity presentation posted on OASIS.</p>                                                                                                                                                                                                                                                                                                                                                                  |
| 19 | <p>“What if the GO is not the Network Customer?”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>See response to Question 13.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 20 | <p>“But what is described above uses various values, NOT “this single value”...???” [Referring to “This single-value unit capacity will not be used in any specific sensitivity study, but rather will be studied as described above in the appropriate year/model as submitted by the GOs in their annual MOD-032 data submittal”]</p>                                                                                                                                                                                                                                   | <p>The sentence clarifies that the single-value NITS Capacity will NOT be used in a sensitivity study as is the current process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| 21 | <p>“The “customer” is the TC, not the GO. The GO should not be determining the NC.”</p>                                                                                                                                                                                                                                                                                                                                  | See response to Question 13.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 22 | <p>“Specifying load or gen forecasts at a specific ambient temp is not a good idea – some extrapolation, assumptions and estimations will be required. Values under “expected” seasonal conditions would be more appropriate and should be consistent with the approach used for other resource and load planning purposes.”</p>                                                                                         | Language may be revised to allow some latitude in future MOD-032 data request.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 23 | <p>“The GO provides MOD-32 data but the GO is not necessarily the TC. The TC designates a unit’s DNR capacity and arranges NITS which are the factors that determine the NITS Capacity.”</p>                                                                                                                                                                                                                             | See response to Question 13.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 24 | <p>“We agree with GIC as a limit but a small incremental change in NITS Capacity should not mandate a study. The ITO/TO has granted the 5/10MW “deadband” for changes in DP load – it seems logical that a similar “deadband” should be permissible for NITS Capacity values (up to a unit’s GIC cap).</p> <p>If a GO submits MOD-32 data that has an increase in NITS Capacity, is some type of process triggered?”</p> | The customer must submit a new request for any incremental change in NITS Capacity on OASIS to treat NITS capacity increases on a comparable basis to a similar request for point to point service increase.                                                                                                                                                                                                                                                                                      |
| 25 | <p>“Doesn’t NITSOO eliminate TSRs for NITS? What is the process for changing NITS Cap?” [Referring to recent industry implementation of NITS on OASIS]</p>                                                                                                                                                                                                                                                               | The customer still submits requests to change resource capacities on OASIS and submits NITS application spreadsheet showing the desired changes. Request will continue to be studied in similar fashion as before NITS on OASIS. The redlined Business Practices will reflect the revised terminology.                                                                                                                                                                                            |
| 26 | <p>“Not if the unit has a capacity higher during ambient conditions other than 0, 60, 90, 104, correct?” [Referring to “...it is reasonable to limit the NITS Capacity of a unit to the maximum forecasted capacity over the next 10 years as submitted via the MOD-032 data request”]</p>                                                                                                                               | <p>No. The maximum capacity for each unit should be reflected in one of the three generation capacity data submittals. This is described in the NITS Capacity presentation posted on OASIS.</p> <p>The language will be clarified that the “off-peak” submittal does not have to be precisely at 60 degrees, but rather should reflect the maximum for units that are not at their maximum in the summer-peak or winter-peak data submitted. (i.e., wind resources, run of river hydro, etc.)</p> |

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| 27 | <p>“What is the “maximum forecasted capacity”? Similar to earlier question, if a unit has a MOD-032 value of 200 MW in year 1 and 210 in year 10, is the “maximum forecasted capacity” 210?”</p>                                                                                                                                                                                            | Yes                                                                                                                                                                                                                                                                                                                               |
| 28 | <p>“See earlier question regarded processes. The GO does not determine DNR or NITS Capacity values – the TC does. Changes in MOD-32 values by the GO should not automatically require the TC to increase DNR or NITS Capacity values – will the option to increase/decrease NITS Capacity be up to the TC?”</p> <p>If not, could NITS Capacity values be submitted directly by the TC?”</p> | <p>The capacities submitted by the GO in the MOD-032 submittal will be capped by the transmission planners during the initial model building, the network customer will have the option to submit NITS request to increase the NITS capacity if desired. This is described in the NITS Capacity presentation posted on OASIS.</p> |