NITS Capacity Revisions

February 28, 2017
March 2, 2017

Important Terms

- **Generation Interconnection Capacity (GIC):** Represents the generating resource's interconnection capacity as established in either:
  — A generator interconnection agreement or;
  — For resources without such generator interconnection agreement, based on historical modeling in NERC MMWG models, prior to the establishment of the generator interconnection process in FERC Order No. 2003
    - Posted on OASIS in July of 2015
  — GIC is net output on the grid, or gross output less aux loads connected at the POI or Gen bus

Important Terms

- **Designated Network Resource (DNR) Capacity:** Represents the capacity of a resource that has been designated to serve the Network Load of a specific Network Customer. As defined by FERC, the capacity of the resource should be based on the "maximum generator nameplate", contracted output amounts, or output identified in generator interconnection agreements

- A single value for a resource

- Posted on OASIS

Important Terms

- **NITS Capacity:** Defined as the maximum net-capacity for each resource over the 10 year horizon as submitted by the Network Customer in their annual 10 year forecast submitted in compliance with MOD-032.
  — The Network Customer submits maximum capacities for each resource based on three (0, 60, 104 degrees F) ambient temperatures as requested in the annual MOD-032 data request.
  — The NITS Capacity will be set as the highest of the three submitted net resource capacities over the 10 year period.
    - Capped at DNR Capacity (firm network DNR)
    - DNR Capacity capped at GIC
  — NITS capacity is net output on the grid (gross less aux loads connected at the POI or Gen bus)

History of NITS Capacity Process

- ITO recommendations on NITS capacity after reviewing TEPs and Planning Guidelines prior to 2012 are as follows:
  - NITS capacity represents the Firm Transmission rights and therefore local maximization of generation NITS capacity plus Firm point to point transaction from generation must be considered in the TEP and TSR studies to ensure sufficient outlet capability
  - Subsequently, TO updated the BP and established NITS capacity
  - Furthermore, TEP and TSR study process required further review and modification due to following limitations:
    - Single posted NITS capacity values
    - Discrepancy between NITS capacity values and resource forecast.
    - No availability of seasonal generation capability data or no BP to use these seasonal generation capability for TEP process.

Current NITS Capacity Process

- The NITS Capacity for each resource is currently modeled in a summer-peak, winter-peak, and off-peak load sensitivity study and evaluated at N-0 only.

- This can result in identification of transmission network upgrades that may not be needed due to resources being modeled at a capacity that is not achievable in the respective peak model.
  - I.E. Winter capacities for Combustion Turbines used in the Summer Peak sensitivity model

Proposed NITS Capacity Process

- Based on Network Customer's MOD-032 Data
  - 104 Degree capacity used in summer peak model
  - 0 Degree capacity used in winter peak model
  - 60 Degree capacity used in off-peak model

- The assumption is that a resource's maximum capacity will be reflected in one of the three ambient temperatures

- Network customers will be able to operate Designated Resources at the NITS Capacity level on any day of the year.

Things to Keep in Mind

- Real-time net output cannot exceed either the current NITS Capacity + firm point to point commitment or GIC

- Transmission Planner will reduce MOD-032 capacities that exceed current NITS Capacity + firm point to point commitment or GIC
  - (PC/TP will contact GO when actual studied values are reduced or capped at the NITS and/or GICs)

- Network Customer must submit a TSR to obtain NITS Capacity in excess of current Posted NITS Capacity

Things to Keep in Mind

- Network Customer must submit GI request to obtain NITS Capacity in excess of current Posted GIC

- Generation can operate to the NITS Capacity on any day of the year.

- The GIC Stability Study (one model with all generation on at maximum GIC levels) will not change.

NITS Capacity Example #1

MOD-032 Data Submitted – Unit XYZ									
	2017	2018	2019	2020	2021	2022	2023	2024	2025
104 Deg	100	100	100	99	98	99	100	100	100
60 Deg	110	110	110	109	109	109	111	111	111
0 Deg	105	105	105	105	105	105	105	105	105

Assume:
Current Posted DNR Capacity / NITS Capacity = 105
Current GIC = 110

Unit XYZ studied at the above capacities – capped at 105

Requires TSR to increase NITS Capacity to 110 (GIC Cap)
Requires GI Study and TSR to increase NITS Capacity to 111
Requires execution of updated NITSA

NITS Capacity Example #2

MOD-032 Data Submitted – Unit ABC									
	2017	2018	2019	2020	2021	2022	2023	2024	2025
104 Deg	100	100	100	99	98	99	100	100	100
60 Deg	110	110	110	109	109	109	111	111	111
0 Deg	105	105	105	105	105	105	105	105	105

Assume:
Current Posted DNR Capacity / NITS Capacity = 120
Current GIC = 120

Unit ABC studied at the above capacities
New NITS Capacity = 111

TSR required if customer desires to operate the unit above
111 and if future MOD-032 data submittal exceeds 111
Requires execution of updated NITSA

Next Steps

- Evaluate stakeholder feedback regarding this new process

- Revise documents to incorporate revised NITS Capacity Process
  — OATT Business Practices Document
  — Planning Guidelines
  — TSR Study Criteria Document
  — GI Study Criteria Document

- Request Network Customers to revise MOD-032 generation unit data as needed to ensure one of the three ambient temperature capacities reflects the maximum net capacity of the resource

Questions?