

# ICAP Manual/Tariff Updates

for

## ICAP-DMNC-GADS-UCAP

and

## Intermittents

**ICAP Working Group**

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# **General Strategy**

- **Tariff Changes**
- **ICAP Manual Changes**
- **Attachment D – DMNC Reporting Rules/Forms**
- **Attachment K - GADS Data Reporting**
- **Attachment J – UCAP Calculations**
- **Intermittents - Wind**

# Tariff Changes

- **Article 5.12.1 (ii) - add “for every Capability Period in which it has supplied Unforced Capacity**
- **Article 5.12.6 (a) – change “Capacity factor” to “performance factor” in reference to Intermittents (last sentence in second paragraph)**
- **Article 5.12.6 (a) – change “annually and update monthly using a 12-month rolling average of Operating Data ...” to “periodically in accordance formulae provided in the ISO Procedures.”**
- **Fix formatting inconsistency**

# Tariff Changes (continued)

- **Article 5.12.8 - Clarify that “DMNC Test Period results will be valid for no longer than the next like Capability Period.”**
  - *DMNC Test Period results can be tests or equivalent production data*
- **Clarify that higher of two successive like DMNC Test Period tests will apply**
- **Article 5.12.8 – combine 3<sup>rd</sup> and 4<sup>th</sup> paragraph to clarify that Energy Limited Resources, Generators, System Resources, and Control Area System Resources may perform a DMNC test at any time subject to verification during the applicable DMNC Test Period. Out of period tests must be verified in the subsequent DMNC Test Period.**

# Tariff Changes

## (continued)

- **Article 5.12.8 – last paragraph – delete phrase “rounded down to the nearest whole MW”**
- **Conforming changes consistent with above, as necessary.**

# ICAP Manual Changes

- **All DMNC tests will subject to verification by MMP**
- **Need rules for CLRs in ICAP Manual – define UOLn and UOLe for ELRs and CLRs**
- **ELR and CLR status must be approved by MMP**
- **NYISO must be notified in advance of planned or maintenance outages or else they must be reported as forced outages**
- **Need to define retired units and when they are no longer part of the ICAP market**
  - *Out-of-service unit in market with no return date or a unit that never returns will be subject to deficiency penalties*

# ICAP Manual Changes (continued)

- **Ownership changes – new owners should have the right to use/rely on prior owner’s future commitments, sales, and certifications. Notwithstanding confidentiality, new owner should be entitled to 2 previous capability periods of data; DMNC test, GADS data and/or production data.**
- **Lead time needed to qualify for auctions and certification needs to be increased from 2 calendar days to a minimum of at least 3 business days.**
  - *Also may need an acceptable understanding of business days...i.e. NYISO vs NERC holidays*

# ICAP Manual Changes (continued)

- **Energy Limited Resources, Capacity Limited Resources, Generators, Municipally-Owned Generation (MOG), System Resources, and Control Area System Resources must perform a DMNC test or provide appropriate production data within the DMNC Test Period for each Capability Period in which they supply ICAP.**
- **DMNC tests are valid for no more than subsequent like Capability Period. New in-period test required for subsequent year. Make sure existing, improved, and new resources are treated consistently with respect to capacity and deficiencies**
- **Clean language in Manual on how deficiency charges will be applied..if only a direct cross reference to the Tariff**
- **Procedure need to call on Municipally-Owned Generation (MOG)**



# ICAP Manual Changes

## (continued)

- **Miscellaneous conforming changes – change “Effective Forced Outage Rate on Demand (EFORd)” to conform with the Tariff – “Equivalent Demand Forced Outage Rate” or, better yet, “Demand Equivalent Forced Outage Rate” to conform with IEEE, NERC and PJM (Manual and Tariff).**
- **Change references to Resource Reliability to Auxiliary Market Operations**
- **Note that issued EFORd values are to be verified by submitters or they will be considered agreed to. If no agreement received within 30 days, they will still be subject to future adjustments due audits or discovered errors.**
- **Certification, registration, verification terminology needs consistency**
- **References to forms not in the Manual need to be better defined...i.e. bid forms, workbooks, etc. - found on NYISO website, not in Manual.**

# Attachment D – DMNC Reporting Rules/Forms

- **All DMNC tests will be considered as provisional until verified by MMP. Appropriate production data will be acceptable in lieu of DMNC test proper.**
- **Past and existing practices will be continued where reasonable and practical but will be made more specific to better document those practices and to avoid confusion and/or ambiguity.**
- **Test in normal operating configuration – a configuration that can be called upon and scheduled day ahead or within reasonable time constraints consistent with NYISO market rules.**
- **Temperature curves required for all units**
  - *Barometric and humidity characteristics may also be desirable*
- **Station Power treatment needs to be better delineated**

# Attachment D – (continued)

- **Differentiate Hydro Capacity ???**
  - *Conventional (schedulable/dispatchable)*
  - *Run-of-river hydro...*
  - *Pumped Storage (and Energy Limited Resources)*
  - *Pondage Hydro*
- **Use of nameplate as DMNC/ICAP value for Intermittents, other?**
- **ELR/CLR unit test requirements**
  - *Environmentally restricted units?*

# Attachment K - GADS Data Reporting

- **All planned and maintenance outages must be approved in advance by the NYISO – otherwise outage will be considered a Forced Outage.**
- **Remove SCR references from Attachment K and refer to the workbook posted on the ICAPO market page.**
- **Make Event Types and Cause Codes clear**
- **All Reserve Shutdown events must be reported as per NERC**
- **2005 Operating Data to be consistent with new rules i.e treatment of Reserve Shutdowns and GSU Transmission outages...i.e retroactivity.**
- **Outside Management Control position**
- **Remove SCR references here but refer to registration materials posted on website from within the SCR section of the manual.**

## Attachment J UCAP Calculations

- **Incorporate rules for averaging the 6 most recent “Effective Forced Outage Rate on Demands”**

# Intermittents

- **Manual Changes (Long Term-2006)**
  - *Revise Sections of manual to conform to new construct.*
- **Construct - General procedures for determining capacity values for Intermittent Resources**
  - *UCAP value based on average production over 2-6 PM time slot in summer DMNC Test Period, 4-8 PM time slot in winter DMNC test Period*
  - *The Installed Capacity value of an Intermittent Resource will be its nameplate value, net of any station power required for operation, rounded down the nearest tenth of a MW (“Net Maximum Capacity”).*
  - *The Unforced Capacity value of an Intermittent Resource will be that amount of generating capacity, expressed to the nearest tenth of a MW, that it can reliably contribute during summer peak hours and which can be supplied as Unforced Capacity in the NYISO Installed Capacity markets.*

# Intermittents (continued)

- *“Performance Factor” for an Intermittent Resource is a factor based on historical operating data, and/or a Class Average Factor, used to calculate that Intermittent Resource’s Unforced Capacity value.*
- *Station power refers to the amount of power that is required to operate all auxiliary equipment and control systems.*
- *Class Average Factor is a factor that may be used in calculating Unforced Capacity value for an immature Intermittent Resource, i.e. one with less than a full year of Operating Data.*

# Intermittents (continued)

- *“Hourly output” is the average of the metered outputs, in MW, integrated over a one-hour period.*
- *“Summer Day” is defined as any day from June 1 through August 31, inclusive.*
- *“Summer Test Period” is the period from June 1 through August 31, inclusive.*
- *“Summer Peak Hours” are those beginning 2, 3, 4, and 5 PM on a Summer Day and means all “Peak Hours” for all of the “Summer Test Period”*
- *“Winter Test Period” is the period from December 1 through the last day in the immediately following February, inclusive.*
- *“Winter Peak Hours” are those beginning 4, 5, 6, and 7 PM.*
- *“Winter Peak Hours” means all “Winter Peak Hours” for all of the “Winter Test Period”*



# Intermittents (continued)

- *CALCULATION PROCEDURE - General Approach - The calculation of a Unforced Capacity value for a particular Intermittent Resource for a particular Capability Period is performed by first computing its unique performance factors. The performance factors are based upon operating data for each Summer Test Period and each Winter Test Period, or in the case of an immature intermittent capacity resource, the performance factor is assigned the class average factor for each Capability Period. That Performance Factor, when multiplied by the current Net Maximum Capacity yields the Unforced Capacity value for that intermittent capacity resource. This two step process accommodates any changes in the Net Maximum Capacity that may have occurred during Capability Year.*

# Intermittents (continued)

- *Details:*
  - ▶ Sum all of the “hourly outputs” for each of the summer peak hours in the year
  - ▶ Then, for each of those same summer peak hours, sum the Net Maximum Capacity values.
  - ▶ The quotient of the summed summer peak hour outputs (a) divided by the summed summer peak hour Net Maximum Capacities (b) will yield a single Performance Factor for that Summer.
  - ▶ Repeat for Winter.
  - ▶ If there is no, or incomplete operating data, for one or more of the periods (immature Intermittent capacity resource) then the Performance Factor for each of those periods is assigned the value of the Class Average Factor.
  - ▶ The current Unforced Capacity value is then calculated by multiplying this Capacity Factor from above by the current Net Maximum Capacity of the intermittent capacity resource.

# Intermittents (continued)

- *Simplified Method (Constant Net Maximum Capacity) - The calculation for a single period capacity factor is simplified significantly if the Net Maximum Capacity is constant during the Summer or Winter Test Period for which it is being calculated. In this case the process is merely to average the Hourly Outputs for the Summer (or Winter) Peak Hours and divide that by the Net Maximum Capacity for that summer. The result will be the single Performance Factor for that period. Again, the capacity factor for each year in which there is no or incomplete Summer Period operating data is the current Class Average Factor.*

# Intermittents (continued)

- *How to collect operational data and use it to calculate the Capacity Values specifically for wind generators. Having a valid capacity value is one of a number of requirements for participation in the NYISO Installed Capacity market.*
- *A “Wind Farm” or “Wind Generating Station” is a collection of wind turbines at a single site electrically connected together and injecting energy into the grid at one point.*
- *“Wind Class Average Performance Factor” is a factor that is used only in the calculations for the Unforced Capacity value of an immature wind farm. This factor will be initially set at xx% but is subject to change upon the emergence of operating data from additional wind farms upon which to base the analysis*