New York ISO
Independent System Operator

ICAP Manual Appendix Revisions

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Background: CARCs and CAFs

- The Capacity Accreditation Factors (CAFs) are calculated using the Marginal Reliability Improvement (MRI) technique, by comparing the Loss of Load Expectation (LOLE) improvement of the Locational Minimum Installed Capacity Requirement study model ("LCR model") with the addition of a 100 MW representative unit and the addition of 100 MWs of perfect capacity to the modeling zone that corresponds to capacity zone for the resource.
- The representative unit for Capacity Accreditation Resource Classes (CARCs) that are comprised of Intermittent Power Resources or Limited Control Run-of-River Hydro will be modeled using weighted-average historic hourly production profiles of the existing Installed Capacity Suppliers of the CARC in the capacity zone.

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Representative Unit: IPRs and LCRoR

- **The weighted-average production profiles will be produced from the same years of historic production as the years used to model the existing Intermittent Power Resources (IPRs) and Limited Control Run-of-River (LCRoR) Hydro Resources in the LCR model.**
  - If there are no existing Installed Capacity Suppliers in the capacity zone of a Capacity Accreditation Resource Class comprised of Intermittent Power Resources or Limited Control Run-of-River Hydro, the NYISO will use a representative hourly production profile based on the production of existing units in other capacity zones or simulated units.

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UCAP for IPRs and LCRoR Hydro

- Unforced Capacity for an Intermittent Power Resource or Limited Control Run of River Hydro Resource is calculated as
  - UCAP = MIN(Namplate Capcity,CRIS) × (1 – RSDF) × CAF
- The Resource Specific Derating Factors (RSDF) for IPRs and LCRoR Hydro Resources will be based on a comparison of the Resource's applicable average capacity factor for the Capability Period to the applicable Average Capacity Factor (ACF) for the same Capability Period of the representative unit, used to calculate the Resource's Capacity Accreditation Factor.

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Representative Average Capacity Factor

- The Average Capacity Factor is the average capacity factor for resources within the same Capacity Accreditation Resource Class and capacity zone.
- Therefore, revisions to the ICAP Manual Attachment were made to clarify when there are less than three (3) resources within a capacity zone that comprise a single CARC to be used for an ACF calculation, NYISO would use existing units in other capacity zone(s) within the same Capacity Accreditation Resource Class.
  - Components of equations that were further clarified were the amount of energy delivered and nameplate capacity.

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Resource Specific Derating Factor

- **Revisions were made to clarify that Resources will only be compared to the representative ACF if the representative ACF is calculated using data from at least three (3) Resources that met the criteria.**
  - Representative ACF will not be calculated until there are at least three (3) Resources within NYCA that comprise a single CARC with at least sixty (60) days of historic operating data in the Prior Equivalent Capability Period Peak Load Window.
    - Resources in a CARC with less than three Resources within NYCA will have an Unforced Capacity value based on the applicable CAF for the Resource's CARC and a derating factor of zero.

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Corrected ACF Equations

- **Additional revisions were made to the Average Capacity Factor Equations, adding the division by the total number of hours in the sample of all Peak Hours during the appliable months.**
  - Average Capacity Factor$_{gm} = \frac{1}{H} \sum_{h \in CPPH_{gm}} \frac{E_{gh}}{NC_{gh}}$
  - Average Capacity Factor$_{rm} = \frac{1}{H} \sum_{h \in CPPH_{m}} \frac{E_{rh}}{NC_{rh}}$
  - Average Capacity Factor$_{gm} = \frac{1}{H} \sum_{h \in CPPH_{gm}} Capacity\ Factor_{gh} \frac{\cancel{1}}{\cancel{CPPH_m}}$

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Next Steps

- NYISO will incorporate these revisions for clarification and corrections related to the Average Capacity Factor and Resource Specific Derating Factor.
- This will first apply for the Capability Period that begins May 1, 2024.
- Summer 2024 Capability Period Updates, including derating factors, will be available after 5pm on March 6, 2024.

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Questions?

Email: accreditation@nyiso.com

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation