new • york • independent • system • operator

nyiso Installed Capacity Manual

<u>4.08.03</u> Blacklined Version 4.0

new • york • independent • system • operator

This document was prepared by:

New York Independent System Operator 3890 Carman Rd Schenectady, NY 12303 (518) 356 6060 www.nyiso.com

Disclaimer

The information contained within this Manual, along with the other NYISO Manuals, is intended to be used for informational purposes and is subject to change. The NYISO is not responsible for the user's reliance on these publications, or for any erroneous or misleading material.

© Copyright 2003 New York Independent System Operator

Version History

<u>Version 1:</u> <u>Installed Capacity manual</u>

Version 2 - Stage 1

Version 3 - Stage 1A

Version 4

More detail and history to be added

Attachment <u>JJ</u>:

Unforced Capacity for Installed Capacity Suppliers

1.0 Fundamental Formulae

(1-1) UCAP = $(1 - EFOR_D) \times DMNC$

(1-2)
$$EFOR_D = \frac{f_f \times FOH + f_p \times (EFOH - FOH)}{SH + f_f \times FOH}$$

(1-3)
$$f_f = \frac{\frac{1}{r} + \frac{1}{T}}{\frac{1}{r} + \frac{1}{T} + \frac{1}{D}}$$

(1-3a) $r = average forced outage duration = \frac{FOH}{number of forced outages}$

(1-3b) T = average time between calls for a unit to run = $\frac{\text{RSH}}{\text{number of attempted starts}}$

(1-3c) D = average run time = $\frac{SH}{number of successful starts}$

$$(1-4) \quad f_p = \frac{SH}{AH}$$

Note: UCAP values will be calculated monthly for each Resource based on a rolling 12-month calculation. The detailed formulae, including treatment where new units are being phased in, are shown in Section 3.

2.0 Definitions

UCAP	.Unforced Capacity
EFOR _D	.Equivalent Demand Forced Outage Rate
DMNC	.per Tariff definition
ICE	Installed Capacity Equivalent as defined in the Services. Tariff and in Section 3 of this Attachment J.
Net Dependable Capacity	The gross power level that a unit can sustain during any period of time when there are no equipment, operating or regulatory restrictions and after adjusting for station service and auxiliary loads and ambient conditions. Average ambient temperature should reflect the average of the daily high temperatures for the month at the plant location. Only one Net Dependable Capacity for each Resource shall be reported for each month. That value may be either the Resource's DMNC for the Capability Period containing that month or that Resource's average Net Dependable Capacity for that month, at the discretion of the owner of the Resource.
f _f	.full f-factor (see formula in Section 1.0)
f _p	.partial f-factor (see formula in Section 1.0)
FOH	.Full Forced Outage Hours
Forced Outage	An unplanned failure that requires a unit to be removed from service, or the Load on the unit to be reduced before the end of the nearest following Weekend.
EFOH	Equivalent Full Forced Outage Hours: Sum of all hours a unit was involved in an outage expressed as equivalent hours of full forced outage at its maximum net dependable capability.
SH	.Service Hours: The time a unit is electrically connected to the system - Sum of all Unit Service Hours.
АН	Available Hours: The time a unit is capable of producing energy, regardless of its capacity level Sum of all Service Hours + Reserve Shutdown Hours + Pumping Hours + Synchronous Condensing Hours.

RSH.....Reserve Shutdown Hours: The time a unit is available for service but not dispatched due to economic or other reasons.

PHPeriod hours equals 24 times the number of days in the reporting period.

Note: For in-depth GADS Data concepts, refer to the NERC Fast Link for GADS Services at www.nerc.com.

3.0 Calculations

In general, all generating Resources with nameplate capacities greater than 10 MWs or plants with aggregated capacities greater than 25 MW are expected to provide the full GADS Data set defined in Attachment K. Units for which the full GADS Data set is provided will have their UCAP based on EFOR_D according to Section 3.1 below. All other generating units will be rated based on equivalent GADS Data as described in Section 3.2. Energy Limited Resources that do not want to have their UCAP based on production levels using equivalent GADS Data will have to submit GADS Data to document their available capacity for the minimum 4-hour daily requirement period. Special Case Resources will have their UCAP based on Load reduction determined in Section 3.3.

3.1 UCAP based on EFOR_D

(a) Determining the Amount of UCAP a Supplier Qualifies to Supply

 $UCAP^{Q}_{gm} = (1 - EFOR_{Dgm}) DMNC_{gm};$

where:

 $UCAP_{gm}^{Q}$ is the amount of Unforced Capacity that supplier g is qualified to provide in month m;

 $UCAP_{gmp}$ is the Unforced Capacity that supplier *g* provides in month *m*;

 $EFOR_{Dgm}$ is the Equivalent Demand Forced Outage Rate calculated for supplier *g* that will be used to determine the amount of Unforced Capacity that the Resource will be permitted to provide in month *m*, as defined further below; and

 $DMNC_{gm}$ is the DMNC rating for supplier g which is applicable for month m, which shall be the most recent Summer DMNC rating for that supplier calculated in accordance with ISO procedures if month m is part of a Summer Capability Period, or the most recent Winter DMNC rating for the supplier calculated in accordance with ISO procedures if month m is part of a Winter Capability Period, as of the close of business on the last business day preceding the Monthly Installed Capacity Auction that is conducted during the month preceding month m.

A rolling, cumulative, 12-month $EFOR_D$ will be calculated for each Resource that submits GADS Data using the GADS reporting format in Attachment K. The $EFOR_D$ for month (m) will be based on GADS Date for months, m-14, through and including month, m-3. (For example, $EFOR_D$ for August will be based on data submitted for June of the prior year through May of the current year).

where f_{fgbe} and f_{pgbe} are further defined below and:

 $EFOR_{Dgm}$ as above, is the Equivalent Demand Forced Outage Rate calculated for Resource *g* that will be used to determine the amount of Unforced Capacity that Resource will be permitted to provide in month *m*;

 IST_{ge} is the number of months that Resource g had been in service as of time e (0 if generator g was not in service as of time e; 12 if Resource g was in service from months m-14 through month m-3);

 FOH_{gbe} is the sum of all Full Forced Outage Hours reported for Resource g for the period beginning at time b and ending at time e. The data is the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 40-43 and Event Record 01, NERC Event Types U1, U2, U3, and SF;

 $EFOH_{gbe}$ is the sum of all Equivalent Full Forced Outage Hours reported for Resource g for the period beginning at time b and ending at time e. The data is the GADS Data submitted in accordance with Attachment K for NERC Event Types U1, U2, U3, D1, D2, D3 and SF, such that:

where:

 OUT_{gbe} is the set of outages for Resource g during the period beginning at time b and ending at time e:

 NDC_{gi} is the Net Dependable Capacity for Resource g applicable for outage *i*, submitted in accordance with Attachment F, Performance Record 01, columns 35-38;

 NAC_{gi} is the Net Available Capacity for Resource g, applicable for outage i, submitted in accordance with Attachment K, Event Record 01, columns 60-63;

and

 H_{gi} is the time accumulated for Resource g applicable for outage *i* submitted in accordance with Attachment K, columns 20-27 and columns 48-55, (*i.e.*, the positive difference between the start and end of the event).

 SH_{gbe} is the sum of all Service Hours reported for Resource g for the period beginning at time b and ending at time e in accordance with the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 16-19;

e is the end of the month occurring three months before month m, (e.g., if month m is September 2001, then e is the end of June 2001);

b is the beginning of the month occurring 14 months before month m, unless the supplier had not gone into service at that time, in which case b is the time at which that supplier went into service; and

 $CEFOR_{Dg}$ is the class-equivalent EFOR_D calculated by the ISO for suppliers of the same class as supplier *g* based on NERC class averages for similar Resources. Where no similar Resource exists, the NYISO will estimate a value based on its best judgment, if a mutually acceptable value cannot be agreed on.

Then:

where:

r is FOH_{gbe} divided by the total number of GADS Data Forced Outages reported for the period beginning at time b and ending at time e in accordance with Attachment K;

T is the number of Reserve Shutdown Hours (RSH_{gbe}) divided by the number of attempted starts reported for the period beginning at time *b* and ending at time *e* for Resource *g*. RSH_{gbe} is the sum of all Reserve Shutdown Hours reported for Resource *g* for the period beginning at time *b* and ending at time *e* in accordance with the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 20-23; and

D is the number of Service Hours (SH_{gbe}) divided by the number of successful starts reported for the period beginning at time b and ending at time e for Resource g; and

where:

 AH_{gbe} is the sum of all Available Hours reported for Resource g for the period beginning at time b and ending at time e in accordance with GADS Data submitted under Attachment K, Performance Record 02, Columns 32-35.

These equations shall be modified when necessary as follows in order to avoid dividing by zero:

If RSH = 0 (<1), set $f_f=1$; If SH = 0, set $f_f = 1$; If FOH = 0, set 1/r = 0 and calculate f_f per its equation; and If AH = 0, set $f_p = 1$.

(b) Determining the ICE of the Amount of UCAP Supplied

where:

 ICE_{gm} is the Installed Capacity Equivalent of the amount of Unforced Capacity that supplier g supplies in month m;

 $UCAP_{gm}^{p}$ is the amount of Unforced Capacity that supplier g supplies in month m; and

 $EFOR_{Dgm}$ as above, is the Equivalent Demand Forced Outage Rate calculated for Resource *g* that will be used to determine the amount of Unforced Capacity that resource will be permitted to provide in month *m*.

3.2 UCAP based on equivalent GADS Data (capacity factor method)

(a) Determining the Amount of UCAP a Supplier Qualifies to Supply

;

where:

 $UCAP_{gm}^{Q}$ is the Unforced Capacity that supplier g is qualified to provide in month m;

 OF_{gm} is the Outage Factor calculated for supplier *g*, as further defined below, that will be used to determine the amount of Unforced Capacity that Resource will be permitted to provide in month *m*; and

 $DMNC_{gm}$ is the DMNC rating for supplier g which is applicable for month m, which shall be the most recent Summer DMNC rating for that supplier calculated in accordance with ISO procedures if month m is part of a Summer Capability Period, or the most recent Winter DMNC rating for the supplier calculated in accordance with ISO procedures if month m is part of a Winter Capability Period, as of the close of business on the last business day preceding the Monthly Installed Capacity Auction that is conducted during the month preceding month m.

A rolling, cumulative 12-month, outage factor (OF) will be calculated for each Resource that submits the basic data (equivalent GADS Data) using the GADS Data form in Attachment K. The OF for month (m) will be based on GADS Data for months, m-14 through month m-3. (For example, $EFOR_D$ for August will be based on data submitted for June of the prior year through May of the current year).

where:

 OF_{gm} is the Outage Factor for Resource g that will be used to determine the amount of Unforced Capacity that Resource will be permitted to provide in month m;

 IST_{ge} is the number of months that Resource g had been in service as of time e (0 if generator g was not in service as of time e; 12 if Resource g was in service from months m-14 through month m-3); and

;

where:

 CF_{gbe} is the Capacity Factor for Resource g for the period beginning at time b and ending at time e;

 NAG_{gbe} is the Net Actual Generation for Resource g for the period beginning at time b and ending at time e. The data is the GADS Data submitted in accordance with Attachment K, Performance Record 01, columns 39-45;

 NDC_{gm} is the Net Dependable Capacity for Resource *g* for month *m*. The data is the GADS Data submitted in accordance with Attachment K, Performance Record 01, columns 35-38;

 PH_{gm} is the Period Hours reported for Resource g for month m. The data is the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 56-59;

 POH_{gm} is the Planned Outage Hours reported for Resource g for month m. The data is from the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 36-39;

 MOH_{gm} is the Maintenance Outage Hours reported for Resource g for month m. The data is from the GADS Data submitted in accordance with Attachment K, Performance Record 02, columns 44-47;

 CCF_g is the class-equivalent Capacity Factor for suppliers of the same class as supplier g based on NERC class averages for similar Resources. Where no

similar Resource exists, the NYISO will estimate a value based on its best judgment if a mutually acceptable value cannot be agreed on;

b is the beginning of the month occurring 14 months before month m, unless the supplier had not gone into service at that time, in which case b is the time at which that supplier went into service;

e is the end of the month occurring three months before month m, (e.g., if month m is September 2001, then e is the end of June 2001);

B is the month containing time *b*; and

E is the month containing time *e*.

(b) Determining the ICE of the Amount of UCAP Supplied

where:

 ICE_{gm} is the Installed Capacity Equivalent of the amount of Unforced Capacity that supplier g supplies in month m;

 $UCAP_{gm}^{P}$ is the amount of Unforced Capacity that supplier g supplies in month m; and

 OF_{gm} , as above, is the Outage Factor for Resource g that will be used to determine the amount of Unforced Capacity that Resource will be permitted to provide in month m.

3.3 UCAP based on Load/Demand Reduction applicable to Special Case Resources

The amount of UCAP that can be provided by a Special Case Resource that provides capacity wholly or partially by means of non-generator based load reduction shall be calculated using the equations specified in subsection (a). The amount of UCAP that can be provided by a Special Case Resource that provides capacity solely by means of load reductions achieved through operation of one or more generators may be calculated using the equations specified in either subsection (a) or subsection (b). The Installed Capacity Equivalent of Special Case Resources shall be as specified in subsection (c).

(a) Determining the Amount of UCAP for a Non-Generator Based Special Case Resource

 $UCAP^{Q}_{gm} = (APMD_{gm} - CMD_{gm}) X X$

where:

 $UCAP_{gm}^{Q}$ is the Unforced Capacity that Resource g is qualified to provide in month m;

 $APMD_{gm}$ is the Average of Peak Monthly Demands for Resource *g* applicable to month *m*, using data submitted in accordance with Attachment K, Special Case Resource Certification; if month *m* is in the Summer Capability Period, the Average of Peak Monthly Demands is calculated using the peak monthly demands for that supplier for the most recent consecutive months of June, July, August and September that had occurred as of the beginning of month *m* (e.g., if month *m* is August 2001, then the peak monthly demands to be counted would be for the months of June, July, August and September of 2000); and if month *m* is in the Winter Capability Period, the Average of Peak Monthly Demands is calculated using the peak monthly demands for that supplier for the most recent consecutive months of June, July, August and September of 2000); and if month *m* is in the Winter Capability Period, the Average of Peak Monthly Demands is calculated using the peak monthly demands for that supplier for the most recent consecutive months of December, January, February and March that had occurred as of the beginning of month *m*;

 CMD_{gm} is the Contract Minimum Demand for Resource g applicable to month m, using data submitted in accordance with Attachment K, Special Case Resource Certification;

 LRH_{gbe} is the set of hours (each an hour h) in the period beginning at time b and ending at time e in which Resource g was requested to reduce load;

 $APMD_{gh}$ is the applicable Average of Peak Monthly Demands for Resource g applicable to hour h, using data submitted in accordance with Attachment K, Special Case Resource Certification; if hour h is in the Summer Capability Period, the Average of Peak Monthly Demands is calculated using the peak monthly demands for that supplier for the most recent consecutive months of June, July, August and September that had occurred as of time e; and if hour h is in the Winter Capability Period, the Average of Peak Monthly Demands is calculated using the peak monthly demands for that supplier for the most recent consecutive months is calculated using the peak monthly demands for that supplier for the most recent consecutive months of December, January, February and March that had occurred as of time e;

 AMD_{gh} is the Average Minimum Demand for Resource g for hour h, using data submitted in accordance with Attachment K, Figure 2, Special Case Resource Minimum Load Demonstration;

 CMD_{gh} is the Contract Minimum Demand for Resource g applicable to hour h, using data submitted in accordance with Attachment K, Special Case Resource Certification;

 $NLRH_{gbe}$ is the number of hours during the period beginning at time *b* and ending at time *e* in which Resource *g* was requested to reduce load (including any hour in which Resource *g* was requested to reduce load by the ISO as part of a test);

b is the beginning of the month occurring 14 months before month m, unless Resource g had not begun at that time to serve as a Special Case Resource available to reduce load, in which case b is the earlier of time e or the time at which Resource g began to serve as a Special Case Resource available to reduce load;

e is the end of the month occurring three months before month m (e.g., if month m is September 2001, then e is the end of June 2001); and

 TLF_g is the applicable transmission loss factor for Resource *g*, expressed in decimal form (i.e. a loss factor of 8% is equal to .08). The applicable transmission loss factor shall be the loss factor for deliveries of Energy by the relevant TO to the retail customer where the Resource *g* is located as reflected in the TO's most recent rate case.

If $NLRH_{gbe} = 0$, then the calculation of $UCAP^{Q}_{gm}$ shall be performed as though the value of in the equation above were 1; provided, however, that if Resource g had not begun to serve as a Special Case Resource at time e, then the value of in the equation above shall be set equal to an average historical performance factor calculated by the ISO for all Special Case Resources. Until such a calculation is performed and posted by the ISO, this factor shall equal 1.

(b) Determining the Amount of UCAP for a Generator-Based Special Case Resource

 $UCAP_{gm}^{Q} = DMNC_{gm} X X$

where:

 $UCAP_{gm}^{Q}$ is the Unforced Capacity that Resource g is qualified to provide in month m;

 $DMNC_{gm}$ is the total of DMNC ratings for all generators used to reduce load at Resource g which are applicable for month m, which shall be the most recent Summer DMNC ratings for the generators calculated in accordance with ISO procedures if month m is part of a Summer Capability Period, or the most recent Winter DMNC ratings for the generators calculated in accordance with ISO procedures if month m is part of a Winter Capability Period, as of the close of business on the last business day preceding the Monthly Installed Capacity Auction that is conducted during the month preceding month m.

 LRH_{gbe} is the set of hours (each an hour *h*) in the period beginning at time *b* and ending at time *e* in which Resource *g* was requested to reduce load;

 $NLRH_{gbe}$ is the number of hours during the period beginning at time *b* and ending at time

e in which Resource *g* was requested to operate in order to offset system load (including any hour in which Resource *g* was requested to operate by the ISO as part of a test);

 AGO_{gh} is the average output of the generator(s) located at Resource g during an hour h using data submitted in accordance with Attachment K, Figure 2, Special Case Resource Generator Output Performance;

 CGO_{gh} is the Contracted Generator Output for the generator(s) located at Resource g applicable to an hour h, using data submitted in accordance with Attachment K, Special Case Resource Certification;

b is the beginning of the month occurring 14 months before month m, unless Resource g had not begun at that time to serve as a Special Case Resource available to reduce load, in which case b is the earlier of time e or the time at which Resource g began to serve as a Special Case Resource available to reduce load;

e is the end of the month occurring three months before month m (e.g., if month m is September 2001, then e is the end of June 2001; and

 TLF_g is the applicable transmission loss factor for Resource *g*, expressed in decimal form (i.e. a loss factor of 8% is equal to .08). The applicable transmission loss factor shall be the loss factor for deliveries of Energy by the relevant TO to the retail customer where the Resource *g* is located as reflected in the TO's most recent rate case.

If $NLRH_{gbe} = 0$, then the calculation of $UCAP^{Q}_{gm}$ shall be performed as though the value of in the equation above were 1; provided, however, that if Resource g had not begin to serve as a Special Case Resource at time *e*, then the value of in the equation above shall be set equal to an average historical performance factor calculated by the ISO for all Special Case Resources. Until such a calculation is performed and posted by the ISO, this factor shall equal 1.

(c) Determining the ICE of the Amount of UCAP Supplied

(1) ICE for a Non-Generator Based Special Case Resource

The ICE of a Special Case Resource g that provides capacity wholly or partially by means of non-generator based load reduction shall be calculated as follows:

$$ICE_{gm} = APMD_{gm} - CMD_{gm}$$

where:

 ICE_{gm} is the Installed Capacity Equivalent of the amount of Unforced Capacity that Resource g supplies in month m;

 $APMD_{gm}$ is the Average of Peak Monthly Demands for Resource g applicable to monthm, using data submitted in accordance with Attachment K, Special Case Resource Certification, as calculated in subsection (a) above; and

 CMD_{gm} is the Contract Minimum Demand for Resource g applicable to month m, using data submitted in accordance with Attachment K, Special Case Resource Certification.

(2) ICE for a Generator Based Special Case Resource

The ICE of a Special Case Resource that provides capacity solely by means of load reductions achieved through operation of one or more generators shall be as follows:

 $ICE_{gm} = CGO_{gm}$

where:

 ICE_{gm} is the Installed Capacity Equivalent of the amount of Unforced Capacity that Resource g supplies in month m; and

 CGO_{gm} is the Contracted Generator Output for the generator(s) located at Resource g applicable for month m, using data submitted in accordance with Attachment K, Special Case Resource Certification.

3.4 Calculation of UCAP for Control Area System Resources

(a) Determining the Amount of UCAP a Supplier Qualifies to Supply

 $UCAP^{Q}_{cm} = NPC_{cm} X (1 - CAF_{cm})$

where:

 $UCAP^{Q}_{cm}$ is the Unforced Capacity that the Control Area System Resource located in the Control Area *c* is qualified to supply in the NYCA during month *m*;

 NPC_{cm} is the Net Projected Capacity calculated pursuant to the formula set forth in Section 4.10.3 of this Manual, repeated below for clarity:

 $NPC_{cm} = CAP_{cm} + EP_{cm} + LM_{cm} - PL_{cm} - ES_{cm} - LS_{cm} - PM_{cm} - PR_{cm};$

and

 CAF_{cm} is the derating factor applicable to the Control Area System Resource providing Installed Capacity from Control Area *c* for month *m*, representing the average proportion of its Installed Capacity Equivalent that that Control Area System Resource was able to provide during months *m*-14 through and including *m*-3, calculated as follows:

where:

i is an hour in which the Control Area System Resource provided Installed Capacity to the NYCA;

b is the beginning of the month 14 months before month m, or the time at which Capacity began to be provided from Control Area c under the terms of this section, if later;

e is the end of the month 3 months before month *m*;

 ICE_{ci} is the Installed Capacity equivalent of the amount of Unforced Capacity supplied from a Control Area System Resource providing Installed Capacity from Control Area *c* during the month containing hour *i*;

 CAP_{ci} is the actual maximum total generating Capacity in hour *i* in Control Area *c*;

 EP_{ci} is the actual External firm Capacity purchases in hour *i* by Control Area *c*, other than purchases from Resources in the NYCA;

 LM_{ci} is the actual amount of load management (*i.e.*, interruptible load) in hour *i* in Control Area *c*;

L_{ci} is the Load in hour *i* for Control Area *c*, including system losses;

 ES_{ci} is the actual External firm Capacity sales in hour *i* by Control Area *c*, other than firm capacity sales to NYCA;

 LS_{ci} is the actual losses, up to the border of the NYCA, that would have been incurred in hour *i* on transactions corresponding to sales of Unforced Capacity by that Control Area System Resource outside the Control Area;

 PM_{ci} is the amount of generating Capacity in Control Area c that was actually unavailable in hour i due to planned maintenance;

 FO_{ci} is the amount of generating Capacity in Control Area c that was actually unavailable in hour i due to forced outages;

 OR_{ci} is the amount of operating reserve that was actually available for Control Area *c* in hour *i*;

E is the month containing e;

B is the month containing *b*;

 ICE_{cm} is the Installed Capacity Equivalent of the amount of Unforced Capacity provided from a Control Area Resource associated with Control Area *c* during month *m*, and

 TH_m is the total number of hours in month *m* in which the Control Area System Resource provided Installed Capacity to the NYCA.

(b) Determining the ICE of the Amount of UCAP Supplied

 $ICE_{cm} = UCAP_{cm}^{P} / (1 - CAF_{cm}),$

where:

 ICE_{cm} is the Installed Capacity equivalent of the amount of Unforced Capacity supplied from Control Area *c* in month *m*;

 $UCAP_{cm}^{P}$ is the amount of Unforced Capacity supplied from Control Area c in month m; and

 CAF_{cm} is the Capacity Adjustment Factor for Control Area c for month m, as calculated above.

Attachment <u>KK</u>:

Reportable Operating Data

NERC-GADS Data Reporting Requirements

Forced Outage

An unplanned failure that requires a unit to be removed from service, or the Load on the unit to be reduced before the end of the nearest following Weekend.

Maintenance Outage

A scheduled outage or derating that can be deferred beyond the end of the nearest following Weekend but that requires the unit to be removed from service or the Load reduced before the next Planned Outage.

<u>Note</u>: Any Resource that notifies the ISO that it can defer its outage beyond the end of the next following Weekend, but requests a maintenance outage before the end of the next following Weekend, will have its maintenance outage request granted by the ISO unless the ISO has specific reliability concerns that require the ISO to deny such a request.

Weekend

The period of time that begins every Friday at 10:01:00 PM and ends the following Monday at 8:00:59 AM.

NERC-GADS data or data equivalent to GADS Data for each Generator is to be provided to the ISO by the 20th of the month following the month for which the data applies.

See Section 4.4 of this Manual for the general Operating Data reporting requirements and the following pages for detailed Operating Data Reporting Requirements.

The input formats for NERC-GADS data can also be found on the NERC web-site at:

www.nerc.com

Find **GADS** Services in the **GO** link. The reporting manuals are also located there. The NERC-GADS data follows an 82 character fixed format as defined in the NERC GADS manuals.

The form on the following page delineates the Performance File and Event File data layouts. The data must be submitted electronically to the ISO (gads<u>data@nyiso.com</u>) in standard ASCII Text File format.

The pages following the Performance File and Event File data layouts further define GADS Data or data equivalent to GADS Data. All data will be used for internal ISO reliability studies and for calculating Unforced Capacity ("UCAP") values.

In general, generating Resources with nameplate capacities greater than 10 MW or plants whose total capacity exceeds 25 MW are expected to submit the full GADS dataset. Those Resources will have a UCAP value based on EFOR_D. Resources submitting equivalent GADS Data will have a UCAP value based on actual production (or Capacity factor). All UCAP calculations are defined and described in Attachment J.

[insert GADS graphics here]

ISO NERC-GADS Reporting Requirements

Data marked with an * is the minimum dataset for data equivalent to GADS Data and will result in UCAP based on actual production, with allowance for scheduled outages. The full dataset will result in UCAP based on EFOR_D. See Attachment J for the actual calculation methodology.

Performance Data

<u>Card 01</u>	
*Card Code *Utility Code TBD	Required Required if known,
*Unit Code TBD	Required if known,
*Year *Report Period (<u>Month</u>) * Report<u>Record</u> Revision Gross Maximum Capacit Gross Dependable Capac Gross (MWhr) Actual Ge *Net Maximum Capacity *Net Dependable Capaci *Net (MWhr) Actual Gen Typical Unit Loading Ch Attempted Unit Starts <u>Verbal Description</u> <u>Actual Unit Starts</u> *Card<u>Record</u> Number	Required Required Required y - ity - ity - eneration - r ty Required ty Required aracteristics Required Required Required Required
<u>Card 02</u>	
*Card Code *Utility Code TBD	Required Required if known,
Unit Code TBD	Required if known,
*Year *Report Period <u>(Month)</u> * Report<u>Record</u> Revision *Unit Service Hours (SH *Reserve Shutdown Hou	Required RequiredCodeRequired)Requiredrs (RH)Required

*Pumping Hours <u>(if applicable)</u> *Synchronous Condensing Hours <u>(if applicable)</u> *Available Hours (AH) *Planned Outage Hours (POH) Forced Outage Hours & Startup Failure Hours *Maintenance Outage Hours (MOH) *Extension of Scheduled Outage Hours (SEH) Unavailable Hours (UH) *Period Hours * <u>Card<u>Record</u> Number</u>	Required Required Required Required Required Required Required Required Required Required
<u>Card 03</u>	Not Required
<u>Card 04</u>	Not Required
Event Report Data	
<u>Card 01</u>	
Card Code Utility Code TBD	Required Required if known,
Unit Code TBD	Required if known,
Year Report Period <u>Event Number</u> Report <u>Record</u> Revision Code Event Type Start of Event End of Event Gross Available Capacity as Result of Event Net Available Capacity as Result of Event Card <u>Record</u> Number	Required Required Required Required Required - Required Required
Cards 02 –99 Provide data on system component events	Not Required

Special Case Resource (SCR))
Commitment/Verification	

SCR End-Use Customer:						_
Address:						-
LBMP Zone:						-
Check one: NYC		LI		ROS		-
Transmission Owner		Service Voltag	ge			
Meter Number/Account:						
Permanent Recording Meter	on Genera	tor/Curtailable Load:	: YES / NO	ID#		-
Method of Load Curtailment	(check wh	ere appropriate):				
On-Site Generator:		_ Curtailable Load:_		Combination:		-
Parallel Operation Agreemen	t:	Non Parallel	l:			
Generator Type: Diesel		_ Gas	Oil	Other		-
If other, describe:						-
Generator Nameplate Rating	:					-
The Special Case Resource Environmental Conservation	e Customore	er is in compliance s that are applicable	e with any to it.: YES /	New York State De NO	epartment of	f
Disclaimer: It is the response regulations. Questions concerning	ibility of the rning com	ne Customer to comp pliance should be fo	oly with all lo rwarded to th	ocal, state and federal ne respective regulating	air emissions g authority.	3
Method of Calculating Load	Curtailmer	<u>nt (</u> check one)				
Customer Load Reduction un	der Sectio	n 3.3(a) of Attachme	ent J:			
Generator Output under Sect	ion 3.3(b)	of Attachment J:				
R	esponsibl	e Interface Party In	<u>iformation</u>			
Type of RIP (circle one):	ТО	LSE		Aggregator		Direct Customer
Name of RIP:						
Contact:						
Address:						_

Phone (1 hour e-mail response required):	
Fax:	

E-mail (1-hour e-mail response required):

Steps:

- 1. SCRs calculating load reduction based on generator output under Section 3.3.(b) of Attachment J shall submit the appropriate DMNC test form with this commitment and skip to Step 7. All others shall continue with the steps below.
- 2. Record the SCR End-use Customer maximum monthly one hour integrated demand for the two most recent Capability Periods (Figure 1).

Figure 1 Actual Maximum Monthly One-Hour Integrated Demand

Year	June	July	August	September	Summer
					Average
Date/Time					N/A
Demand (MW)					

Years	December	January	February	March	Winter
					Average
Date/Time					N/A
Demand (MW)					

3. Capability Period for which commitment is requested (circle one):

	Summer Winter
4.	Determine the average peak monthly demand (APMD _{gm}) for the last like Capability Period selected in step 3:
5.	Level of demand to which customer commits during SCR implementation (Customer Minimum Demand (CMD _{gm})):
6.	Determine the amount of Load customer is willing to reduce its demand by during SCR implementation $(APMD_{gm} - CMD_{gm} = Installed Capacity Equivalent (ICE_{gm}))$:
7.	For SCRs using Section 3.3(b) of Attachment J only , generator output to which SCR commits during SCR implementation (Contracted Generator Output $(CGO_{gm}) = ICE_{gm})$ and Capability Period for which commitment is requested (circle one):
	Summer Winter
8.	Transmission Loss Adjustment: kW
9.	Sum of ICE _{gm} and Transmission Loss Adjustment amount:kW*
10.	Dates SCR may be called upon to curtail Load: Starting: Ending (if applicable):
11.	Report actual Load/generator output from meter readings covering the time period of the SCR implementation request (Figure 2) by the 20^{th} of the month following the month in which the request occurs.

^{*} The entry on this line will be adjusted by the ISO in accordance with a historic performance factor as specified in Section 3.3 of Attachment J to determine the UCAP for the Resource in question (<u>i.e.</u>, to determine the amount that can be claimed by an LSE towards its Unforced Capacity Requirement or that can be sold in an ISO administered auction).

IN WITNESS WHEREOF. this Unforced Capacity commitment has been submitted on this, the ______ day of ______, 20_____.

Name of Certifying Entity:

By: _____

Title:

> Figure 2 Minimum Load/Generator Output Verification Demonstrated Load Reduction During Special Case Resource Implementation (Operating Data as required by Section 4.4 of the Installed Capacity Manual) One completed form required for each event

	Event #	
Requested Start Date/Time		
Requested End Date/Time		
Date/Time*	Meter Reading	Cumulative Energy

IN WITNESS WHEREOF. this Unforced Capacity Verification has been submitted on this, the _____ day of _______, 20_____.

Name of Certifying Entity:

By: _____

Title:

^{*} Entries shall be made according to the increments measured by the interval meter in question (e.g., In the case of an interval meter that measures on a 15 minute basis, four entries shall be made for each hour of SCR implementation).

Attachment L

Revisions in Transmission Owner Installed Capacity Data Submittals

This Attachment establishes the process and procedures associated with the reporting of LSE Load data to the ISO by the Transmission Owners. It discusses how this data is used to calculate LSE's Unforced Capacity requirements each month and the financial reconciliation associated with customer switching among LSEs.

Details:

Transmission Owners are required to provide two data submittals each month documenting LSE customer switching and Load obligations. The first submittal is used for an initial financial reconciliation of customer-switching in the current month and for establishing an LSE's Installed Capacity obligation as of the first of the following month. The second data submittal will be used for a final financial reconciliation of Load-shifts in a designated previous month. Additional customer switching adjustments requiring a financial reconciliation will be handled on a case by case basis.

Data Submittal One

In the first data submittal, Transmission Owners will provide (1) the daily shifts in Load obligations for each Load-serving entity (LSE) occurring in the current month and (2) the Load obligation of LSEs for the first day of the following month. This submittal should contain the best available information at the time of the data submittal. For example, Transmission Owner A would submit customer switching data for August in early August as well as the final Load obligation for September 1. See Attachment A for the data submittal schedule.

The ISO will use this data for two purposes:

- (1) To set each LSE's Unforced Capacity requirement and Locational Unforced Capacity Requirement for the following month (and any remaining months in the Capability Period).
- (2) To perform an initial financial reconciliation of Load-shifts occurring in the course of the current month. That is, an initial reconciliation would be conducted for August customer-switching based on data received in the month of August.

This reconciliation would credit customer-losing and bill Load-gaining LSEs based on the clearing price for the current month's Unforced Capacity in the prior month's Installed Capacity auction.

Example A: 10 MW of Load shifts from LSE A to LSE B on June 5th. First, this 10 MW of Load is equivalent to 11 MW of Unforced Capacity shifting based on a reserve requirement of 10%. LSE A then is credited for 9.166 (11 MW * 25 days / 30) MWs (weighted average) of Unforced Capacity; LSE B is billed for 9.166 MWs of Unforced Capacity. A market clearing price for June Unforced Capacity in the May auction of \$3.00 per kW month translates into \$3,000.00 per MW-month (\$3.00/kW-month * 1,000). Therefore, LSE A is credited \$27,500 (\$3.00/kW-month * 1000 kW * 9.166 MWs); LSE B is billed \$27,500 (\$3.00/kW-month * 1000 kW * 9.166 MWs).

This initial financial reconciliation can also be used by the ISO to address those cases in which an LSE's Load obligation for the current month was set too high or too low causing the LSE to have purchased too much or too little Unforced Capacity for the entire month. In these cases, an LSE would be billed or credited for an entire month of Unforced Capacity.

Example B: Based on the best available data at the time, Transmission Owner A submits a report in early May indicating that LSE A will be serving 110 MW of Load on June 1; and that LSE B will be serving 90 MW of Load on June 1. However, due to the uncertainties of Retail Access, Data Submittal One for June indicates that LSE A actually served 100 MW on June 1, or 10 MW less than projected. Similarly, Data Submittal One for June indicated that LSE B actually served 100 MW on June 1, or 10 MW more than projected. Recall that this 10 MW of Load is equivalent to 11 MW in Unforced Capacity. Using the market clearing price in the above example (\$3.00/kW-month), LSE A would be credited \$33,000 \$3.00/kW-month * 1000 kW * 11 MW * 30 days); LSE B would be billed the same \$33,000.

Data Submittal Two

In the second data submittal, Transmission Owners will provide for a designated prior month (1) the actual Load obligation of each LSE for the first day of the designated month and (2) the daily shifts in Load obligations for each LSE documented to have actually occurred. For example, Transmission Owner A would submit in late August actual customer-switching data for May and the actual Load obligation for May 1. These "true-up" transactions would then be included in the September Unforced Capacity billing. See Attachment A for data submittal dates.

This data will be used to true-up the customer-switching adjustments that were made based on the initial customer-switching provided in Data Submittal One. Any credits or bills would then be net of the prior bills and credits calculated based on the customerswitching reported in Data Submittal One.

Example C: In Example A, it is reported in Data Submittal One for the month of June (based on the best available data at the time) that on June 5th a 10 MW Load (equivalent to 11 MW of Unforced Capacity) is scheduled to shift from LSE A to

LSE B. This shift results in LSE A being credited \$27,500 and LSE B being billed \$27,500.

However, in Data Submittal Two, the Transmission Owner reports that this 10 MW Load (11 MW of Unforced Capacity) actually shifted from LSE A to LSE C - not LSE B. In this case, LSE A would not be affected (since it had already been credited for the \$27,500 it was due); LSE B would now be credited \$27,500 since it had been initially billed this amount for a Load-shift which did not occur; LSE C would now be billed the \$27,500 since in retrospect it had actually assumed the 10 MW Load (11 MW of Unforced Capacity) obligation.

Standardization of Customer Switching Documentation

Transmission Owners will be required to provide electronic data submittals in the format below that will also be available on the ISO Web Site. A PDF version of the required format can be found below. The data submittal will consist of an Excel workbook containing a separate worksheet for each LSE's data. Transmission Owners should complete the worksheets for each Load-serving entity, adding sheets as necessary. Transmission Owners will be required to provide each LSE a copy of the pertinent Excel worksheet.

Schedule

See Attachment A.

ISO Customer Switching Reporting Format Data Submittal One

LSE: Month: Transmission Owner: Vintage: <u>XYZ Electric</u> <u>Jun-00</u> <u>Acme Transmission Owner</u> <u>7-Jun-00</u>

	Total		In-City		On-Island	
Date	Load	Load Shift	Load	Load Shift	Load	Load Shift
01-Jun-00	101.2	<u>1.2</u>	50.6	0.6	25.2	0.2
02-Jun-00	102.2	1.0	51.1	0.5	25.4	0.2
03-Jun-00	100.9	-1.3	50.5	-0.7	25.2	-0.3
04-Jun-00	120.0	19.1	60.0	9.6	29.0	3.8
05-Jun-00	125.0	5.0	62.5	2.5	30.0	1.0
06-Jun-00	117.0	-8.0	58.5	-4.0	28.4	-1.6
07-Jun-00	113.0	-4.0	56.5	-2.0	27.6	-0.8
08-Jun-00	112.5	-0.5	56.3	-0.3	27.5	-0.1
09-Jun-00	117.8	5.3	58.9	2.7	28.6	1.1
10-Jun-00	<u>114.5</u>	-3.3	57.3	-1.7	27.9	-0.7
11-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
12-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
13-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
14-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
15-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
16-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
17-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
18-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
19-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
20-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
21-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
22-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
23-Jun-00	115.0	0.5	57.5	0.3	28.0	0.1
24-Jun-00	116.0	1.0	58.0	0.5	28.2	0.2
25-Jun-00	112.0	-4.0	56.0	-2.0	27.4	-0.8
26-Jun-00	113.0	1.0	56.5	0.5	27.6	0.2
27-Jun-00	112.7	-0.3	56.4	-0.2	27.5	-0.1
28-Jun-00	119.9	7.2	60.0	3.6	29.0	1.4
29-Jun-00	121.9	2.0	61.0	1.0	29.4	0.4
30-Jun-00	120.9	-1.0	60.5	-0.5	<u>29.2</u>	-0.2
01-Jul-00	121.0		61.0		29.5	

ISO Customer Switching Reporting Format Data Submittal One

LSE: Month: Transmission Owner: Vintage: <u>XYZ Electric</u> <u>Jun-00</u> <u>Acme Transmission Owner</u> <u>7-Jun-00</u>

	Total		In-City		On-Island	
Date	Load	Load Shift	Load	Load Shift	Load	Load Shift
01-Jun-00	101.2	<u>1.2</u>	50.6	0.6	25.2	0.2
02-Jun-00	102.2	1.0	51.1	0.5	25.4	0.2
03-Jun-00	100.9	-1.3	50.5	-0.7	25.2	-0.3
04-Jun-00	120.0	19.1	60.0	9.6	29.0	3.8
05-Jun-00	125.0	5.0	62.5	2.5	30.0	1.0
06-Jun-00	117.0	-8.0	58.5	-4.0	28.4	-1.6
07-Jun-00	113.0	-4.0	56.5	-2.0	27.6	-0.8
08-Jun-00	112.5	-0.5	56.3	-0.3	27.5	-0.1
09-Jun-00	117.8	5.3	58.9	2.7	28.6	1.1
10-Jun-00	<u>114.5</u>	-3.3	57.3	-1.7	27.9	-0.7
11-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
12-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
13-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
14-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
15-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
16-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
17-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
18-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
19-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
20-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
21-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
22-Jun-00	114.5	0.0	57.3	0.0	27.9	0.0
23-Jun-00	115.0	0.5	57.5	0.3	28.0	0.1
24-Jun-00	116.0	1.0	58.0	0.5	28.2	0.2
25-Jun-00	112.0	-4.0	56.0	-2.0	27.4	-0.8
26-Jun-00	113.0	1.0	56.5	0.5	27.6	0.2
27-Jun-00	112.7	-0.3	56.4	-0.2	27.5	-0.1
28-Jun-00	119.9	7.2	60.0	3.6	29.0	1.4
29-Jun-00	121.9	2.0	61.0	1.0	29.4	0.4
30-Jun-00	120.9	-1.0	60.5	-0.5	<u>29.2</u>	-0.2
01-Jul-00	121.0		61.0		29.5	

Document comparison done by DeltaView on Tuesday, April 08, 2003 18:04:52

Document 1	pcdocs://new_york/159324/1
Document 2	pcdocs://new_york/159324/2
Rendering set	H&W

Legend:

Insertion		
Deletion		
Moved from		
Moved to		
Format change		
Moved deletion		
Inserted cell		
Deleted cell		
Moved cell		
Split/Merged cell		
Padding cell		

Statistics:			
	Count		
Insertions	581		
Deletions	973		
Moved from	0		
Moved to	0		
Format changed	0		
Total changes	1554		