Demand Side Ancillary Services Program (DSASP)

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Demand Response In-Depth Course

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Rensselaer, NY 12144

Session Objectives

- Define the purpose of Demand Side Ancillary Services Program (DSASP)
- Identify the fundamentals of Regulation and Operating Reserves
- Identify program eligibility and general requirements for participation
- Describe the DSASP Provider responsibilities
- Identify the basic communications and metering requirements
- Identify the specific testing requirements associated with each ancillary service product
- Explain the process for enrollment

Session Objectives

- Outline the process for bidding and scheduling in the Demand Side Ancillary Service Program
- Explain how the real-time baseline and MW response is determined for DSASP resources providing regulation or reserve
- Describe method for measuring and reporting performance
- Identify the various settlements associated with the Demand Side Ancillary Service Program
- Describe the reporting process for additional data

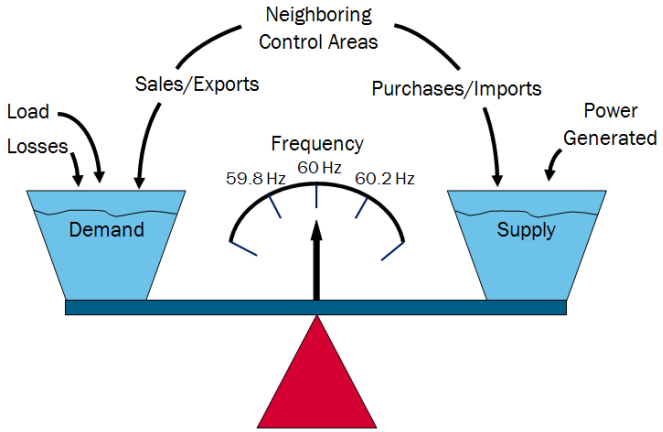
Purpose of DSASP

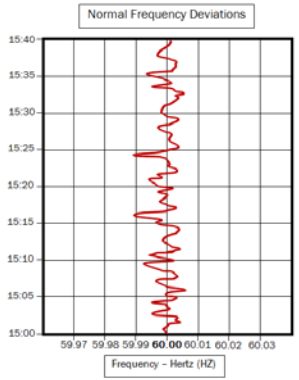
- Allow Demand Side Resources to participate in Ancillary Services markets as a DSASP Resource
  - Regulation and Frequency Response Service
    - DSASP Resources will be committed to raise or lower demand using Automatic Generation Control (AGC)
  - Operating Reserve Services
    - DSASP Resources will provide demand response when economics of the energy bid indicate willingness to curtail load
      - Likelihood is higher when there is a system contingency/reserve pickup

Fundamentals of Regulation and Operating Reserves

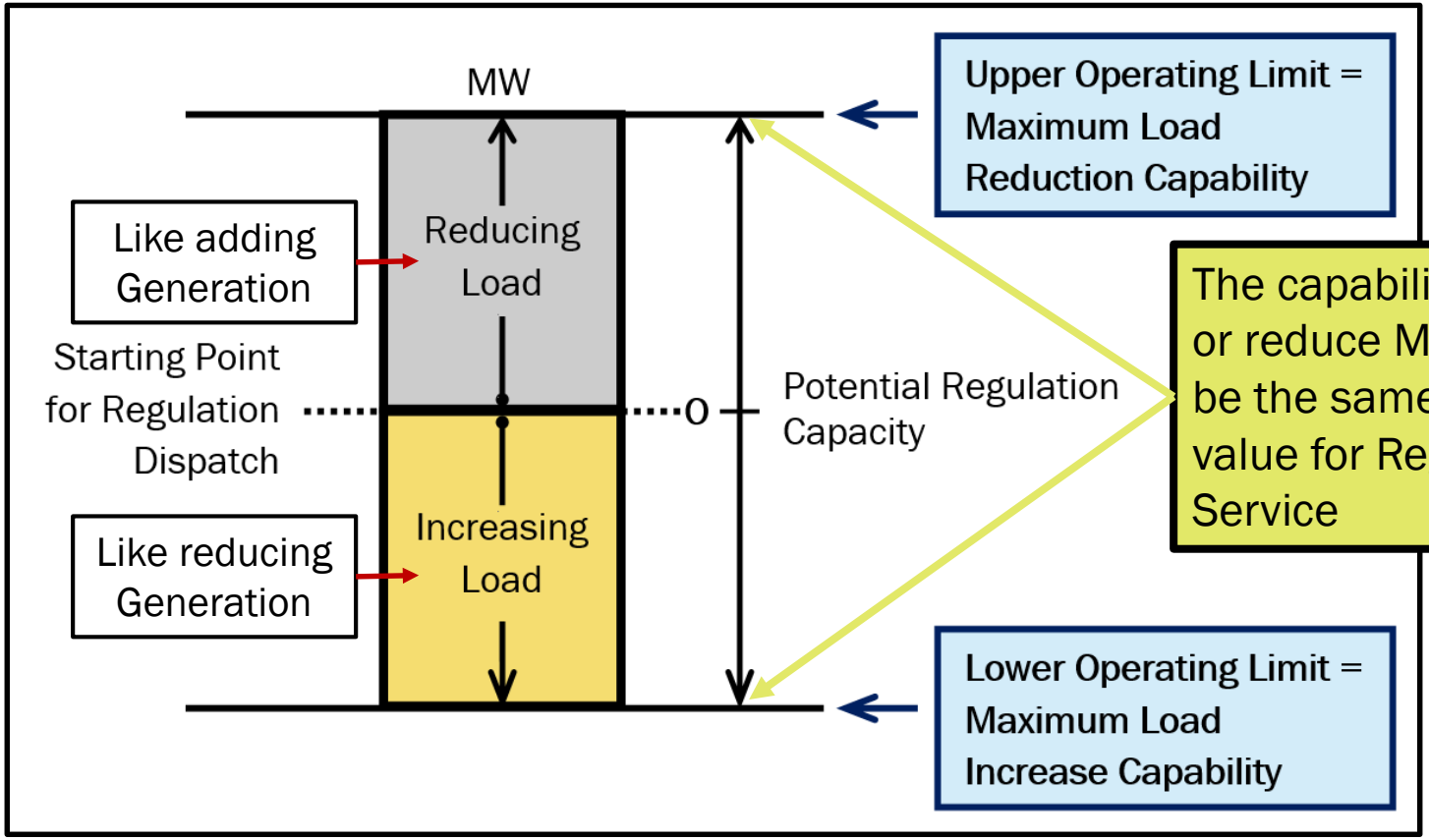
Regulation & Frequency Response Service

- Balancing of resources with load - supply and demand balance
- Assists in maintaining frequency at 60 Hz
- Can be supported by dispatching demand side Resources
    - A qualified DSASP Resource can increase or decrease load to follow system need



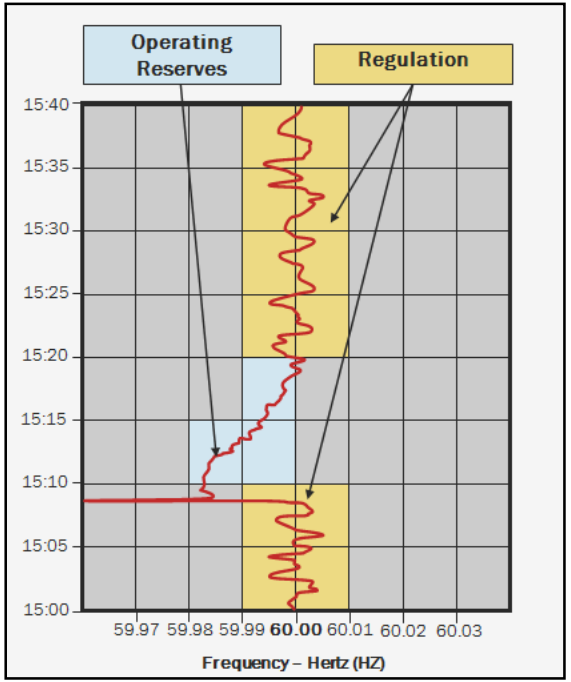


Demand Side – Regulation Service



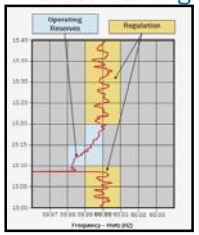
Demand Side – Reserve Service

- **Operating Reserve Service**
  - Purpose:
    - Provide for additional Generation and/or Demand Response that is available to serve load in the event of a Real Time Power System Contingency
    - In order for the New York Control Area (NYCA) to respond in a timely fashion, the reserves must be available from Generators or Demand Side Resources located within the NYCA and within specific regions



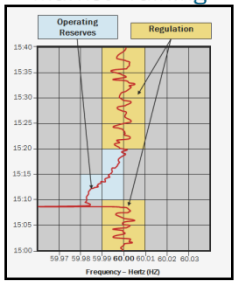
Demand Side – Reserve Service

Market Training



- **Operating Reserve Products**
  - Spinning Reserve – 10 Minute or 30 Minute
    - Qualified DSASP Resources connected to NYS power system may participate
    - Can change output level within 10 or 30 minutes
    - DSASP Resources using a Local Generator for their demand reduction may not participate

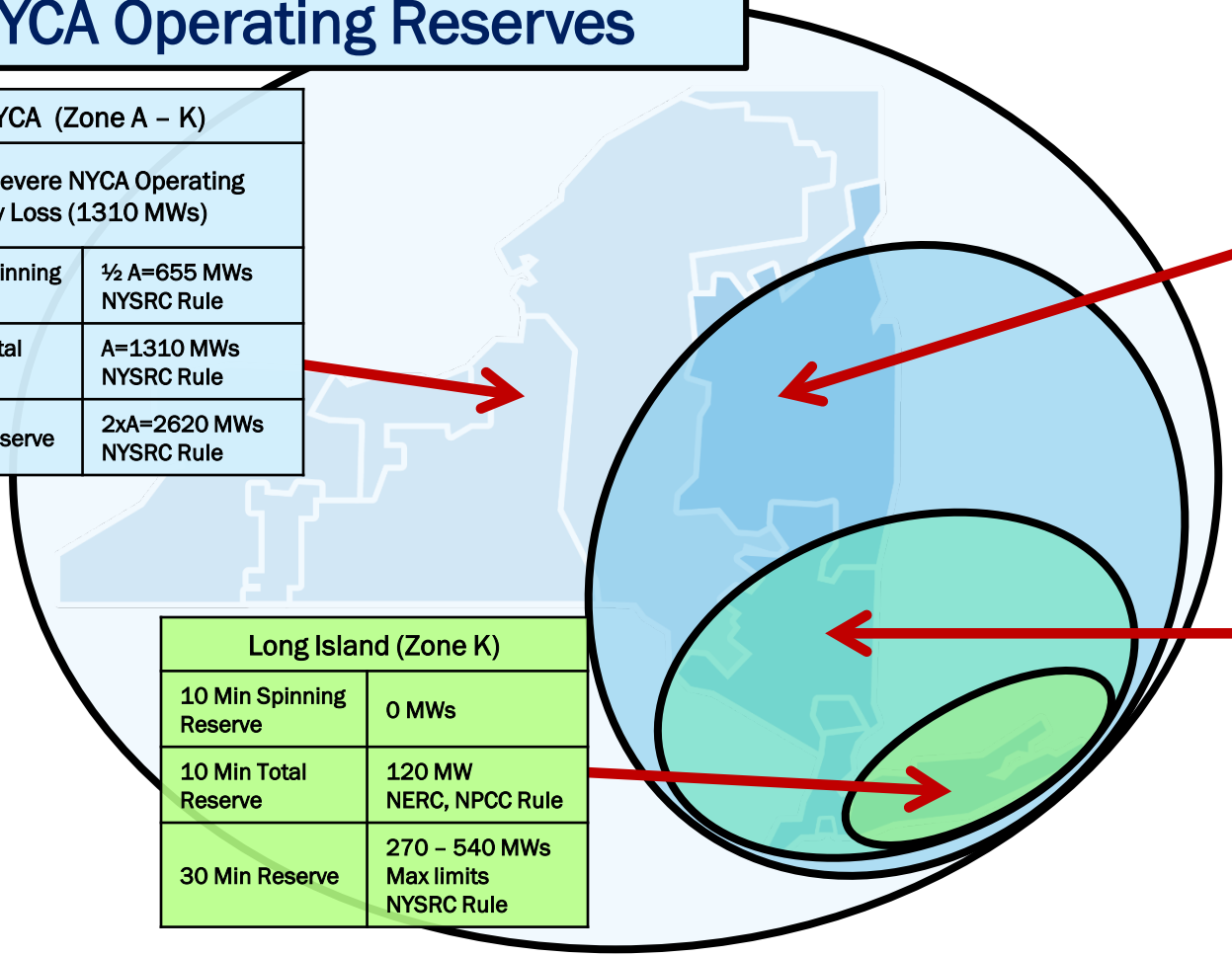
Demand Side – Reserve Service



- **Operating Reserve Products**
  - Non-Synchronized Reserve – 10 Minute or 30 Minute
    - DSASP Resources where response is provided by a Local Generator(s) that can be started and loaded within 10 or 30 minutes

NYCA Operating Reserves

NYCA (Zone A – K)	
A=most severe NYCA Operating Capability Loss (1310 MWs)	
10 Min Spinning Reserve	½ A=655 MWs NYSRC Rule
10 Min Total Reserve	A=1310 MWs NYSRC Rule
30 Min Reserve	2xA=2620 MWs NYSRC Rule



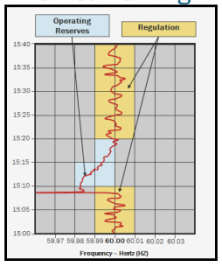
East (Zone F – K)	
A=most severe NYCA Operating Capability Loss (1310 MWs)	
10 Min Spinning Reserve	¼ A=330 MWs NERC, NPCC Rule
10 Min Total Reserve	1200 MWs NYSRC Rule
30 Min Reserve	1200 MWs NERC, NPCC Rule

SENY (Zone G – K)	
10 Min Spinning Reserve	0 MWs
10 Min Total Reserve	0 MWs
30 Min Reserve	1300 MWs NYSRC Rule

Long Island (Zone K)	
10 Min Spinning Reserve	0 MWs
10 Min Total Reserve	120 MW NERC, NPCC Rule
30 Min Reserve	270 – 540 MWs Max limits NYSRC Rule

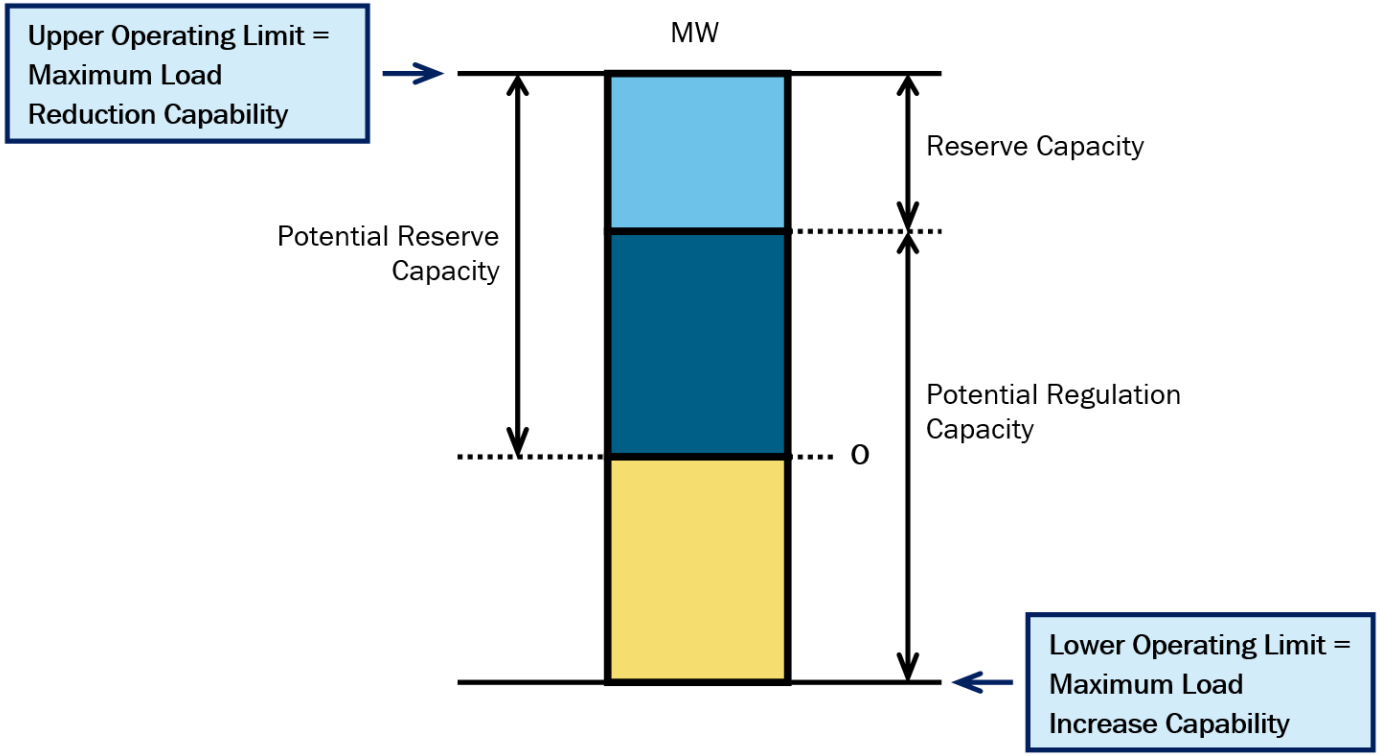
Demand Side – Reserve Service

Market Training



- **Reserve Service Implementation**
  - Reserve Pickup
    - Large Event RPU - Initiated if load exceeds current energy dispatch opportunities (ACE high)
    - Dispatch-able resources receive new base points w/ 10 min. ramp time
    - Small Event RPU – used to reduce transmission line loading
    - Regulation suspended during RPU

Demand Side – Regulation & Reserve Service



Let's Review

Regulation

- Which of the following statements are true for Regulation service?

A. Regulation service is locational based
B. Increasing load is equivalent to increasing generation
C. The Upper Operating Limit for Regulation is based on the maximum load reduction capability
D. A supplier of Regulation could have a different capability for regulating up and down

Let's Review

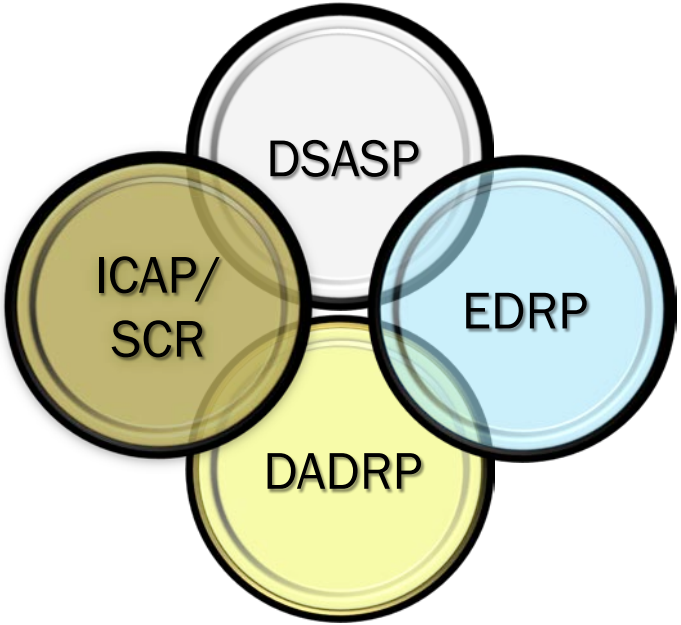
Operating Reserve

- Which of the following statements are true for Operating Reserve service?
  - A. Demand Side resources using a Local Generator for their demand reduction may not participate in non-Synchronized Reserve
  - B. Demand Side resources can only qualify for non-Synchronized Reserve
  - C. The majority of the 10 Minute Reserve is required to be in the SENY area (Zones G-K)
  - D. The total NYCA MW requirement for 10 Minute Reserve is based on the capability loss of the largest contingency

DSASP Eligibility And General Requirements

Review – DSASP Coordination with Other Programs

- DSASP & DADRP programs are mutually exclusive
- DSASP Resources may also participate in the ICAP/SCR or EDRP programs

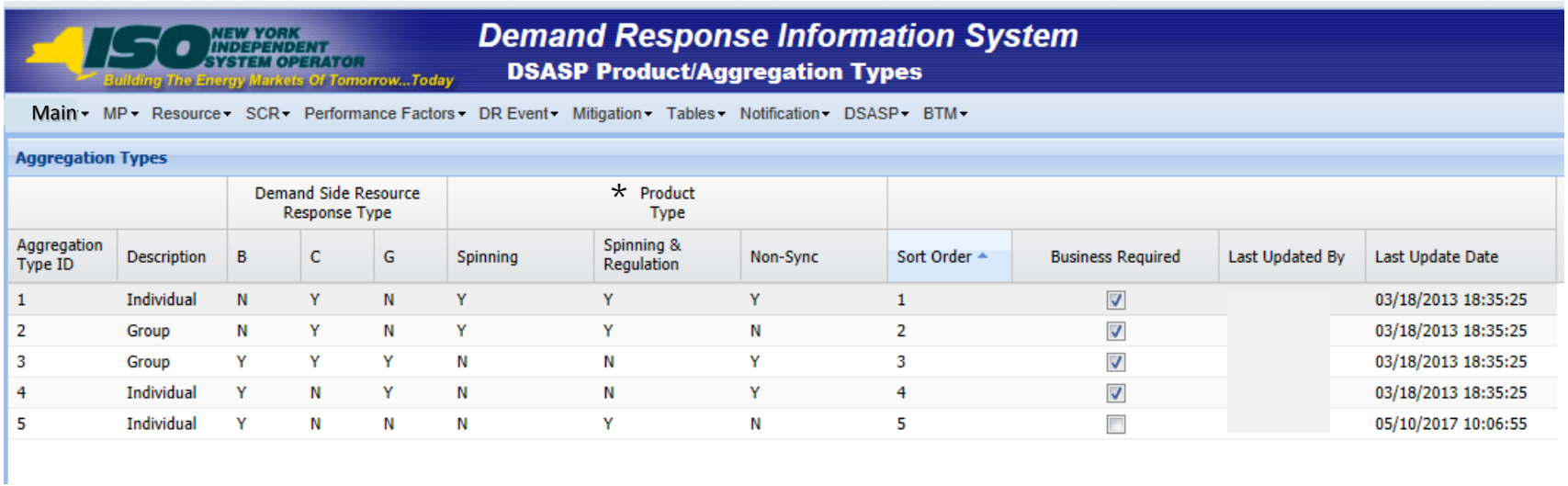


DSASP General Requirements

- Participation is mandatory when scheduled
- Minimum 1 MW of load reduction capability for both the Summer and Winter Capability Periods
  - Demand Side Resources in the same Load Zone can be aggregated into a DSASP Resource
- Minimum Energy Offer: $75/MWh (why required covered later)
- DSASP Resources enrolled with the NYISO by DSASP Provider

DSASP – Product/Aggregation Types

- Only Interruptible loads for Spinning Reserves or Regulation



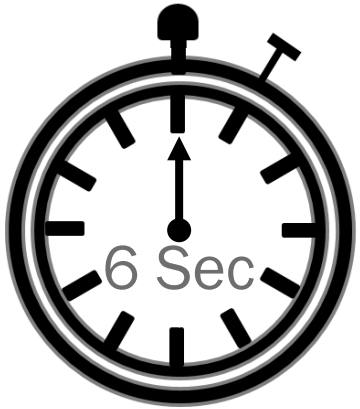
		Demand Side Resource Response Type			* Product Type						
Aggregation Type ID	Description	B	C	G	Spinning	Spinning & Regulation	Non-Sync	Sort Order	Business Required	Last Updated By	Last Update Date
1	Individual	N	Y	N	Y	Y	Y	1	☑		03/18/2013 18:35:25
2	Group	N	Y	N	Y	Y	N	2	☑		03/18/2013 18:35:25
3	Group	Y	Y	Y	N	N	Y	3	☑		03/18/2013 18:35:25
4	Individual	Y	N	Y	N	N	Y	4	☑		03/18/2013 18:35:25
5	Individual	Y	N	N	N	Y	N	5	☐		05/10/2017 10:06:55

B – Both
C - Curtailment
G - Generation

*Demand Side Resources can be qualified to bid synchronous (spinning) or non-synchronous reserves, but not both.

DSASP General Requirements

- **Resource Requirements**
  - Appropriate control and metering equipment installed (more later)
  - Be capable of receiving and responding to automatic control signals
    - 5 minute periodicity for Reserve Service
    - 6 second periodicity for Regulation Service
  - Provide telemetered output data that can be scanned every 6 seconds
  - Must offer as ISO Committed Flex



DSASP General Requirements

- **Resource Requirements, continued**
  - The Demand Side Resource must take service from a qualified Load Serving Entity which is subject to the energy settlements of the NYISO Services Tariff and NYISO OATT
  - Complete a pre-qualification test (more later)
  - The DSASP Provider enrolls and registers the DSASP Resource
    - DSASP provider must meet all credit and collateral requirements

Let's Review

DSASP General Requirements

- The DSASP and the EDRP are mutually exclusive

  True False

- The DSASP requires a minimum of 100 kW for participation

  True False

- The DSASP Resources must provide telemetered data every 5 minutes

  True False

DSASP Provider Responsibilities

DSASP Provider Responsibilities

- Is the DSASP Resource's point of contact with the NYISO
- Is responsible for DSASP Resource performance and all market obligations related to that performance
- Must obtain authorization from each Demand Side Resource to allow the DSASP Provider to act on their behalf

DSASP Provider – *Communication Pathways

- **The DSASP Provider may enroll resources to receive dispatch signals through one of two ways:**
  - Transmission Owner (TO)
    - TO's requirements shall apply for equipment needed
  - Direct Communications with NYISO
    - NYISO requirements of Direct Communications Manual apply

* Examples to be covered later

DSASP Provider Responsibilities

- **When DSASP Provider communicates directly with the NYISO, the DSASP Provider is responsible for:**
  - Communications infrastructure between itself and the NYISO
  - Communications infrastructure to send dispatch signals to DSASP Resources under its control and obtain telemetry from DSASP Resources under its control
  - Scheduling communications, computer control system, and DSASP Resource outages

DSASP Provider Responsibilities

- **When DSASP Provider communicates directly with the NYISO, the DSASP Provider is responsible for:**
  - Voice communications with NYISO to address communication outages or issues with operational performance of DSASP Resources
  - The immediate repair of its circuits and/or communication system
  - Design and operation of the metering infrastructure between itself and the Demand Side Resources

DSASP Provider Responsibilities

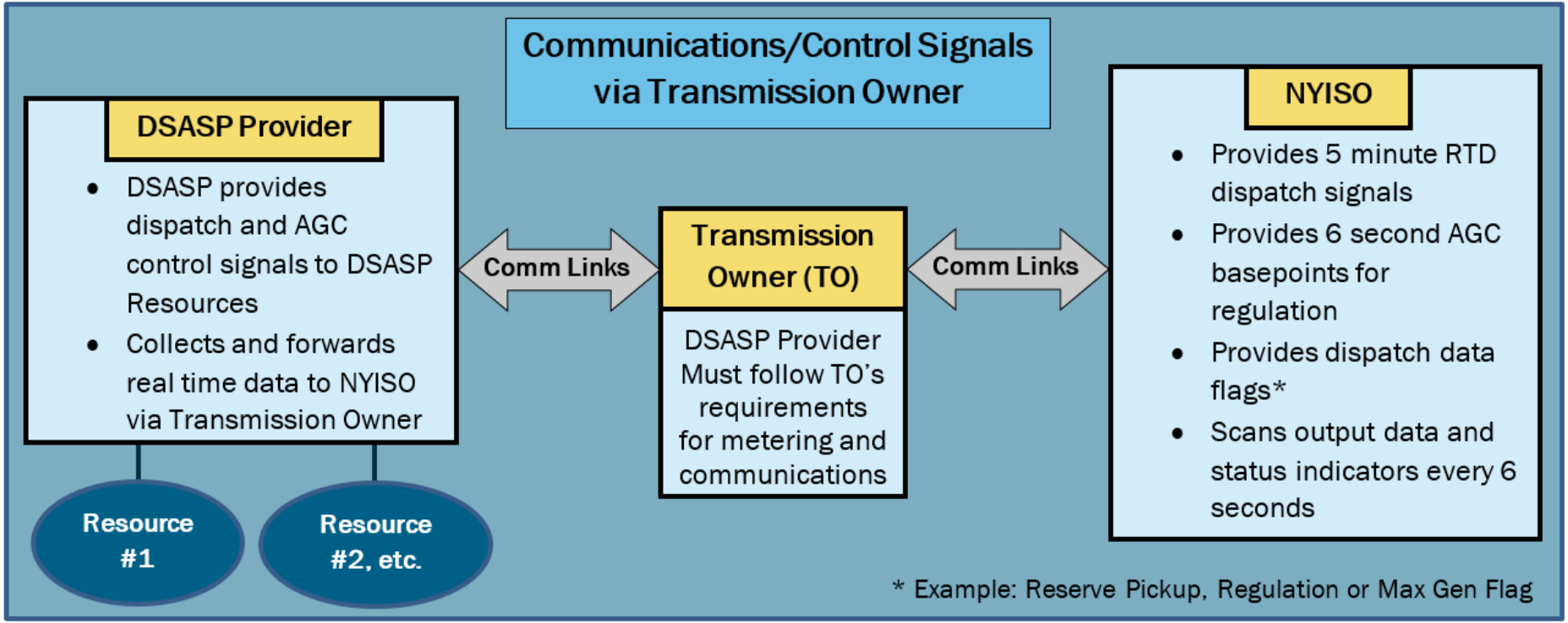
- **When DSASP Provider communicates directly with the NYISO, the DSASP Provider is responsible for:**
  - Communicating to the DSASP Resource how to perform to follow the NYISO dispatch
  - Providing telemetry back to the NYISO that indicates how its DSASP Resource has responded to the dispatch signal

DSASP Communications and Metering

DSASP Metering Requirements

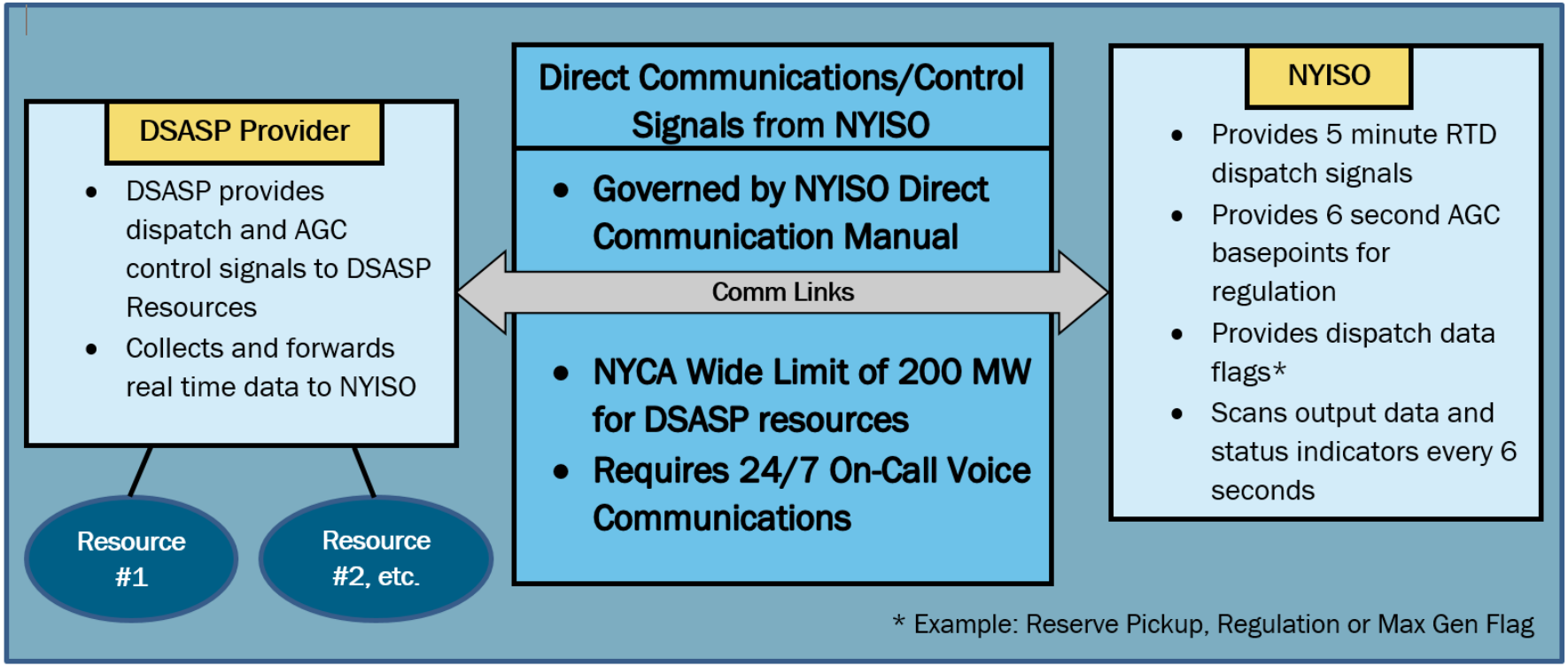
- Requires 6-second metering and two-way communication (telemetry)
- Requires a revenue grade interval billing meter
- Instantaneous total load meter
- DSASP supplier will
  - Receive RTD (5 minute), AGC (6 second) MW schedules (reserve and regulation)
  - Transmit response MW and total actual load consumption
- Meter Authority qualified as MDSP to submit total load MWh data
  - Validate instantaneous data

DSASP Communications – Through TO



Control and Communications – Option 1

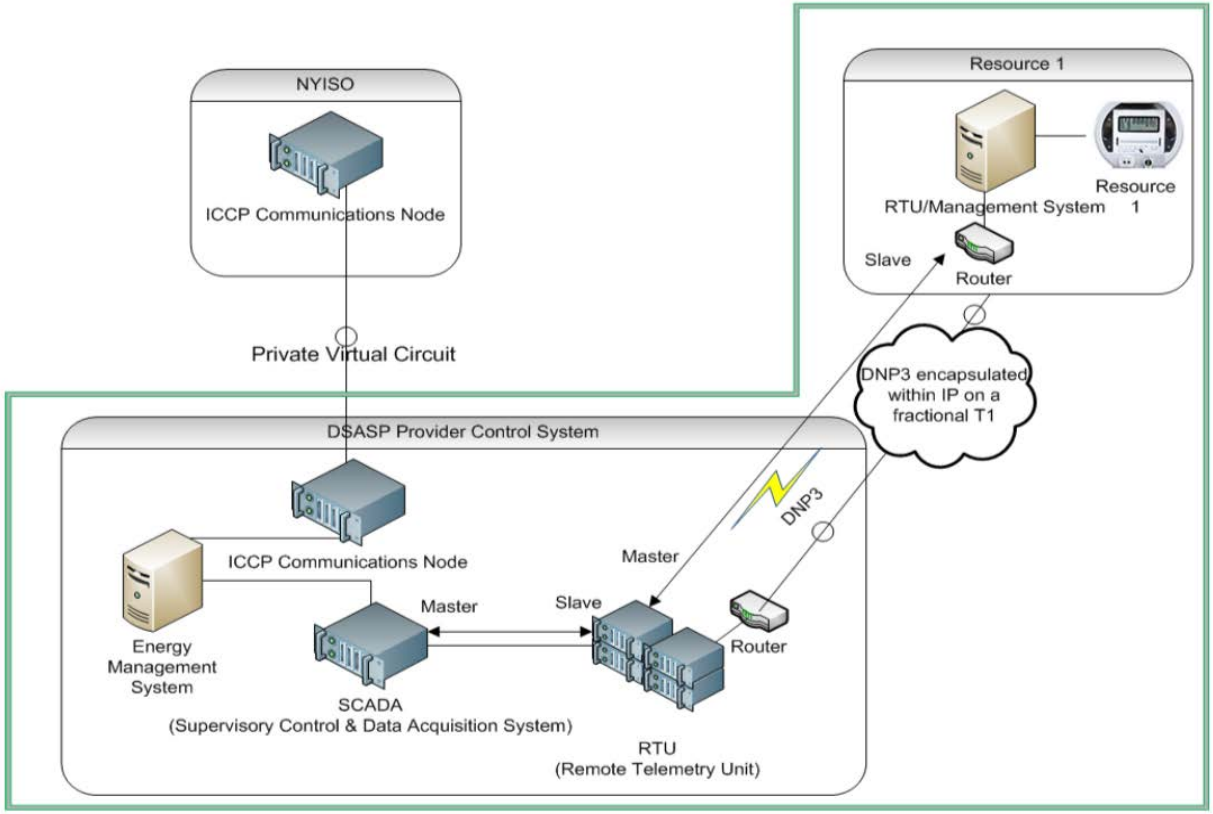
DSASP Communications – NYISO Direct



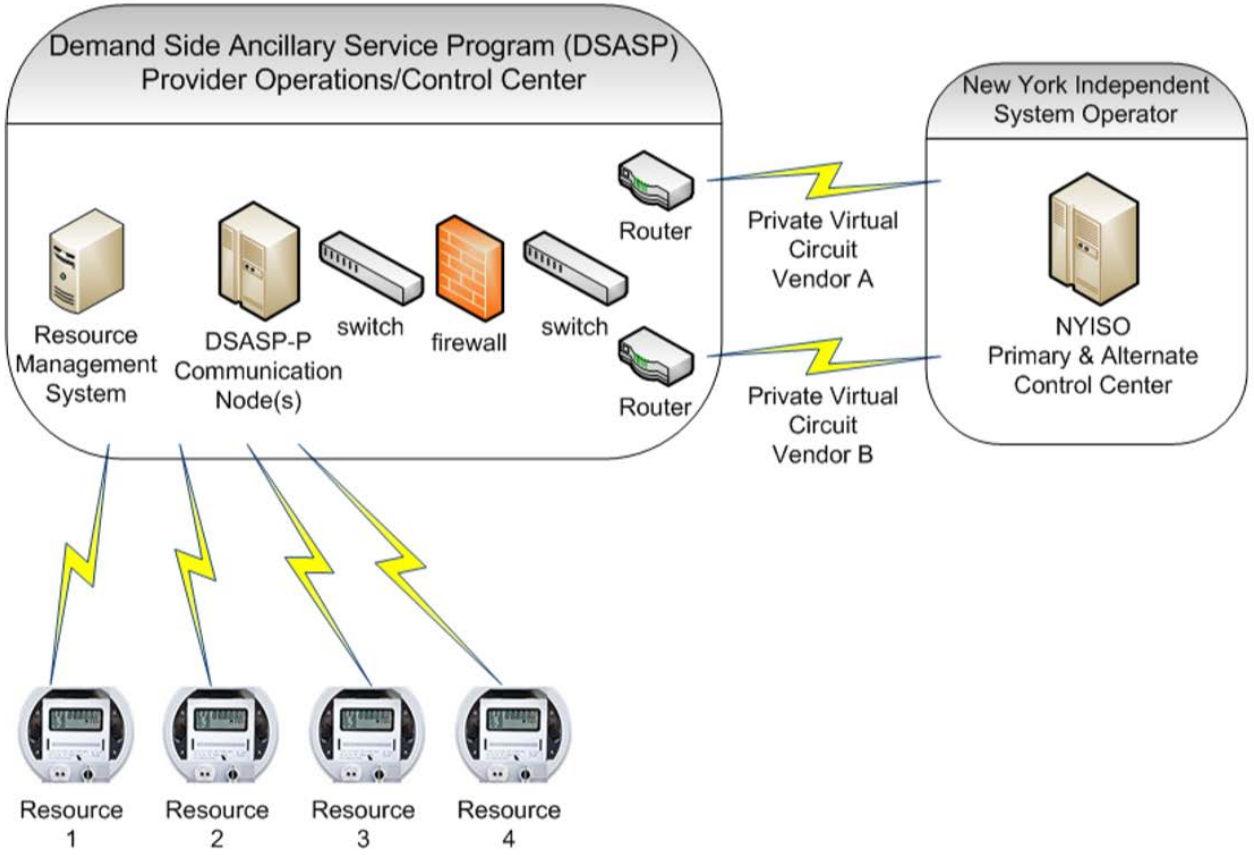
Control and Communications – Option 2

Example DSASP – One Resource

- ICCP - Inter-Control Center Communications Protocol
- DNP3 – Distributed Network Protocol Version 3
- T1 – a high capacity, high speed telephone line, copper or fiber optic
- IP – Internet Protocol Address
- Router – networking device that forwards data between computer networks (directs traffic)
- Private Virtual Circuit- private point-to-point connection between the two nodes



Example Direct Communications with NYISO



Multiple Resources

DSASP Direct Communications Requirements

- **Requirement if total enrollment by DSASP Provider is < 25 MW:**
  - A single-loop communication configuration is required, consisting of:
    - 1 communications vendor
    - 1 set of network components
    - 1 ICCP node

DSASP Direct Communications Requirements

- **Requirement if total enrollment by DSASP Provider is >25 MWs.**
  - A completely redundant communication configuration is required (recommended for all DSASP Providers, regardless of size), consisting of:
    - 2 different communication vendors
    - 2 sets of network components
    - Minimum of 2 ICCP nodes

Let's Review

Metering and Communications

- Redundant communications equipment is required when the total MW enrolled by the provider is greater than _____ MW?

  a. 1

  b. 10

  c. 25

  d. 200

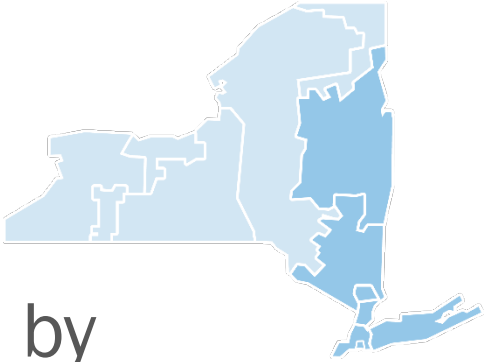
Let's Review

Metering and Communications

- DSASP metering requirements include?
  a. Revenue Grade Interval meter
  b. Instantaneous total load meter
  c. Remote telemetry capability
  d. All the above

Specific Requirements for Reserves

Reserve Qualification Criteria



- **Reserve suppliers must**
  - Must be located in NYCA
  - Reduce demand when called upon by the NYISO
  - Specify a Day-Ahead availability bid for each category of reserve

Reserve Qualification Criteria

- Eligibility Criteria
  - Spinning Reserve (10-minute synchronous)
    - Demand Side Resources that are not supporting their Demand Reduction through the use of a Local Generator
  - 10-Minute Non-Synchronized Reserve
    - Demand Side Resources that are supporting their demand reduction through the use of Local Generators

Reserve Qualification Criteria

- Eligibility Criteria
  - 30-Minute Reserve (spinning and non-synchronized)
    - Demand Side Resources that are not supporting their Demand Reduction through the use of a Local Generator
    - Demand Side Resources that are supporting their demand reduction through the use of Local Generators that are capable of starting, synchronizing, and increasing their output level within thirty minutes

Reserves Pre-Qualification Performance Test

- Stakeholder Services will coordinate with Grid Operations to schedule the test
- Market Participant notified by NYISO Stakeholder Services
  - Minimum of two days prior to the test period
- Test participants will be instructed to submit reserve and energy bids
  - For specified dates and for all hours that the Resource is capable of changing energy schedules or modifying demand in real time

Reserves Pre-Qualification Performance Test

- *Operations will conduct random performance audit

- Operations will randomly schedule the resource within the first 14 days after notifying Stakeholder Services that they would like to perform a test

* See Technical Bulletin TB-142 Generator Performance Audit for details.

Reserves Pre-Qualification Performance Test

- **10 Minute Reserve Acceptance Criteria**
  - For individual unit demonstration of 10 Minute Reserve, a variation of 2% of required pickup or 1 MW (whichever is greater) of required pickup may be used
  - A one-minute tolerance is allowed
  - Example: A 15 MW pickup is required in 10 minutes. Minimum acceptable performance would be 14 MW in 11 minutes
  - Test is performed using the emergency response rate

Reserves Pre-Qualification Performance Test

- **30 Minute Reserve Acceptance Criteria**
  - For individual unit demonstration of 30 Minute Reserve, a variation of 2% of required pickup or 2 MW (whichever is greater) of required pickup may be used
  - A three-minute tolerance is allowed
  - Example: A 30 MW pickup is required in 30 minutes. Minimum acceptable performance would be 28 MW in 33 minutes
  - Test is performed using the emergency response rate

Specific Requirements for Regulation

DSASP Regulation Requirements

- **Minimum 1 MW reduction**
- **Capable of Regulation response**
  - Capable of supplying Regulation Service continuously in both the up and down directions for intervals in the scheduled hour and for all hours with accepted bids
  - Capable of responding to Automatic Generator Control (AGC) signals on a 6-second basis

Regulation Pre-Qualification Performance Test

- Stakeholder Services will coordinate with Grid Operations to schedule the test
- Market Participant notified by NYISO Stakeholder Services a minimum of two days prior to the test period
- Supplier should begin bidding to provide Regulation Service for all hours that the Resource is capable of providing the service
- Testing window will be open for a calendar week

Regulation Pre-Qualification Performance Test

- Qualification requires that the unit bid Regulation Service such that it gets scheduled within a calendar week, for 24 hours
- At least two four-hour periods
  - One that spans the morning pick up from hour beginning 5:00 through hour beginning 8:00
  - One that spans the evening load drop off from hour beginning 19:00 through hour beginning 22:00

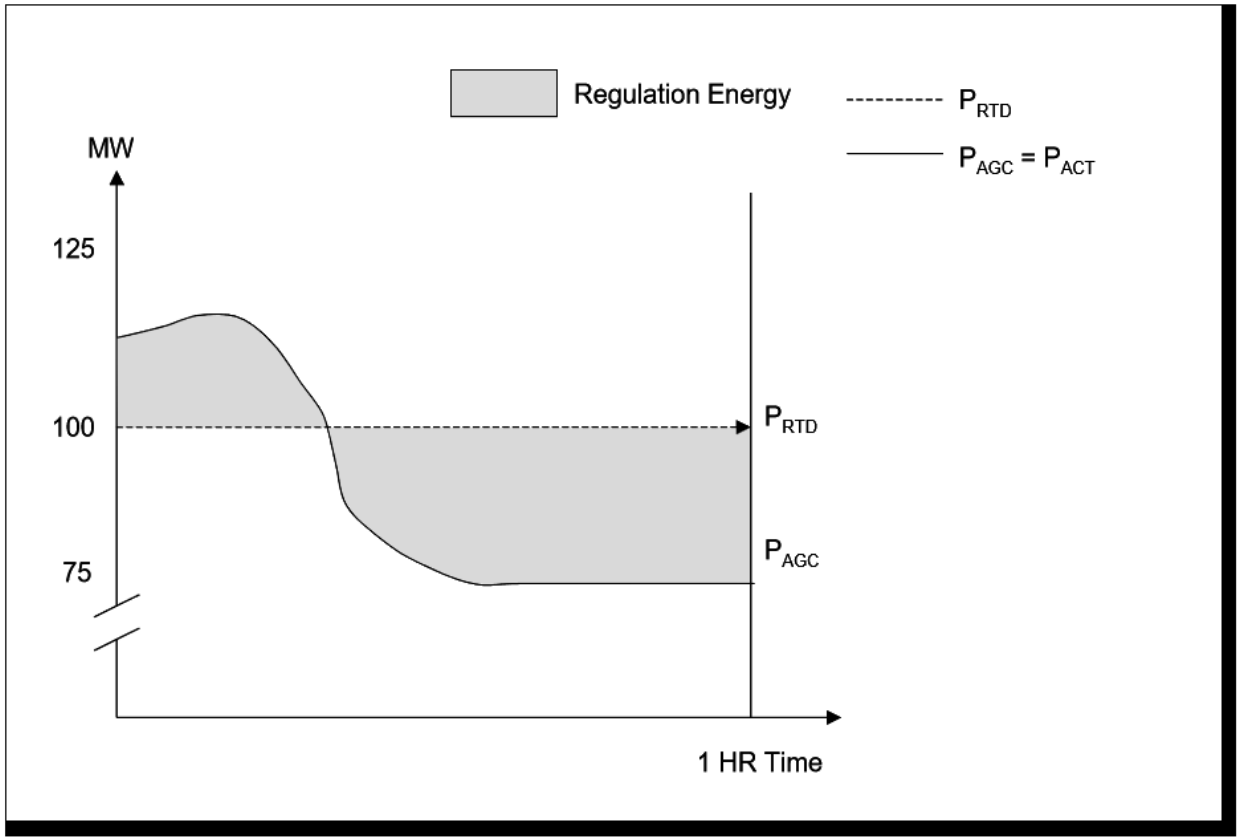
Regulation Pre-Qualification Performance Test

- Must bid into the Day-Ahead and/or Real-Time Market the maximum Regulation Service capability that wish to qualify
- This value must be the lesser of the Regulation Capacity response rate x 5 minutes or the Operating Capacity of the unit

Regulation Pre-Qualification Performance Test

- **Regulation Acceptance Criteria**
  - A time weighted Performance Index greater than or equal to 0.85 must be demonstrated over the calendar week period in order to pass the prequalification test
  - Tracked by NYISO's Performance Tracking System (PTS)
    - Tracks how well a regulation supplier responds to the control signals that are issued every six seconds
  - A regulation performance index is calculated for every RTD interval

Performance Index = 1

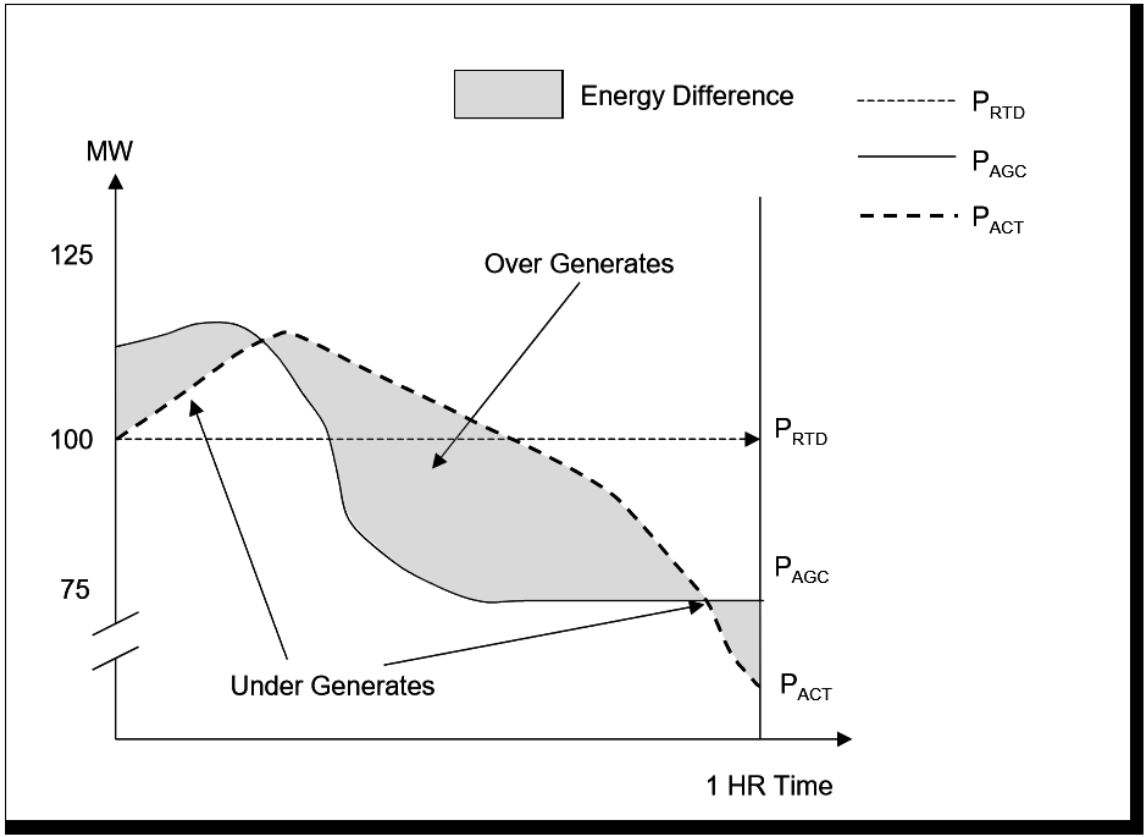


P_{RTD} – Real Time Dispatch basepoint (MW)

P_{AGC} – Automatic Generation Control signal for Regulation Movement (MW)

P_{ACT} – Actual Performance (MW)

Performance Index <1



P_{RTD} – Real Time Dispatch basepoint (MW)

P_{AGC} – Automatic Generation Control signal for Regulation Movement (MW)

P_{ACT} – Actual Performance (MW)

Let's Review

- Demand Side Resources that are not supporting their Demand Reduction through the use of Local Generation are eligible to participate in:

a. 10 Minute Non-Spinning Reserve

b. 10 Minute Spinning Reserve

c. 30 Minute Spinning or Non-Spinning Reserve

d. All the above

Let's Review

- For individual unit demonstration of 10 Minute Reserve, a variation of _____ % of required pickup or _____ MW (whichever is greater) of required pickup may be used

a. 1%, 1 MW

b. 2%, 2 MW

c. 5%, 1 MW

d. 2%, 1 MW

Let's Review

- A time weighted Performance Index greater than or equal to _____ must be demonstrated over the calendar week period in order to pass the prequalification test for Regulation

  a. 0.5

  b. 0.75

  c. 0.85

  d. 1

Process for Enrollment

- DSASP Provider

Enrollment for DSASP Provider

- DSASP Provider Resources

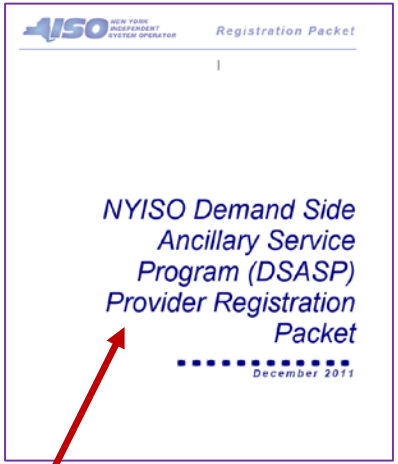
DER Documents & Resources

DER

- DER Roadmap
- Demand Response
  - General Information
  - Reports to FERC
  - Day-Ahead Demand Response Program
  - Emergency Demand Response Program
  - Special Case Resource ICAP Program
  - Demand-Side Ancillary Service Program
  - Demand Response Activations
  - Archives
  - DRIS Training Materials
  - Monthly Net Benefit Offer Floor
- Behind-the-Meter Net Generation

Filter: View Details

Type	Document Name	Modified
Demand-Side Ancillary_Service_Program		
	Demand-Side Ancillary Services Program Resource Registration Packet • Demand-Side Ancillary Services Program Resource Registration Packet - Optional Registration Spreadsheet	04/11/2016
	DRIS - DSASP Import Template - csv format	03/19/2013
	DRIS - DSASP Import Template - xls format	03/19/2013
	Demand Side Ancillary Service Provider Registration Packet	12/16/2011



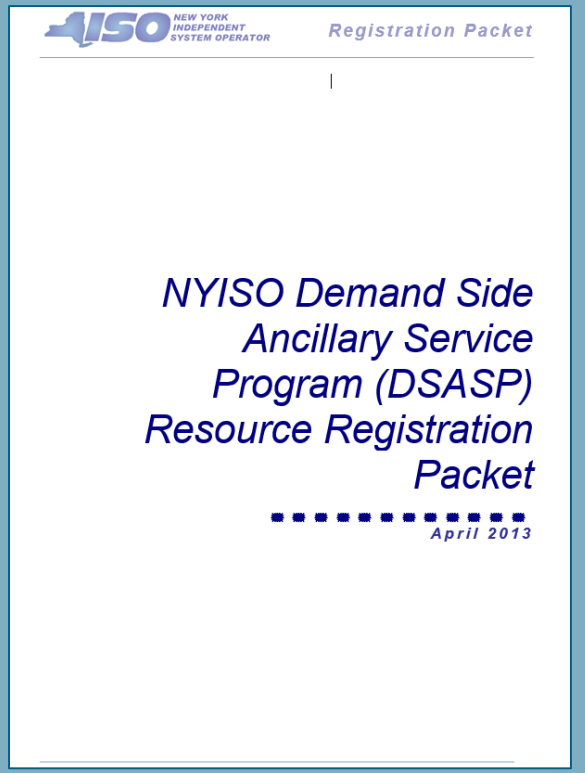
DSASP Provider Registration

- **A current NYISO Market Participant must perform the following to register as a DSASP Provider**
  - A DSASP Provider must register, via the DSASP Provider Registration Packet, prior to registering any DSASP Resources
  - The DSASP Provider Registration Packet requires:
    - A complete list of DSASP Provider Contacts for the DSASP Program, Operations, and Communications
    - A complete Infrastructure and Technology Plan
    - Identification of any third party providers and their contact information

Infrastructure and Technology Plan

- **Required for all DSASP Providers seeking to directly communicate with the NYISO**
  - Description of the DSASP Provider Operations/Control Center configuration
  - Overall System Architecture of Energy Management System
  - Description of the Communications Architecture
  - Description of the Data Management Practices

Process for Enrollment DSASP Resource

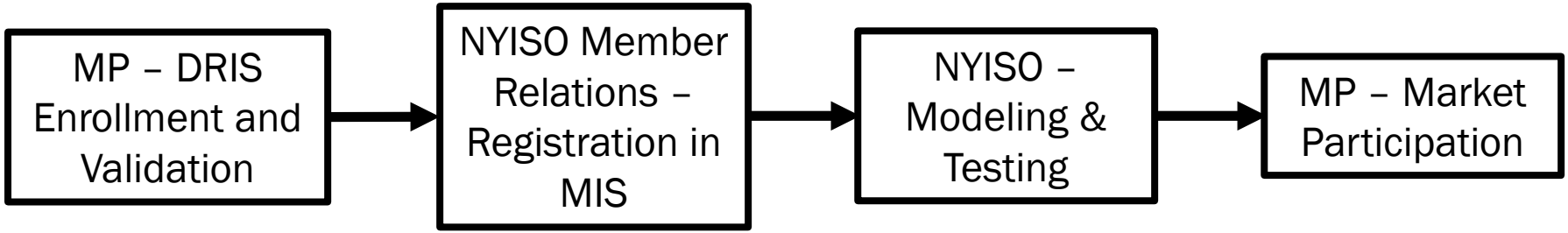


Prerequisites to DSASP Resource Enrollment

- Prior to importing/enrolling DSASP Resources into DRIS, Market Participants must have completed the following:
  - Contact Member Relations
    - Register as a NYISO Customer
    - Register as a DSASP Provider
  - MIS
    - Have DRIS user privileges assigned by the MP organization MIS Administrator
  - DRIS
    - Assign a contact type of “Admin” for DSASP in DRIS

DSASP Resource Registration Process

- Enrollment of Demand Side Resources into DRIS
- Registration of DSASP Resource in MIS
- Modeling
- Testing
- Market Participation

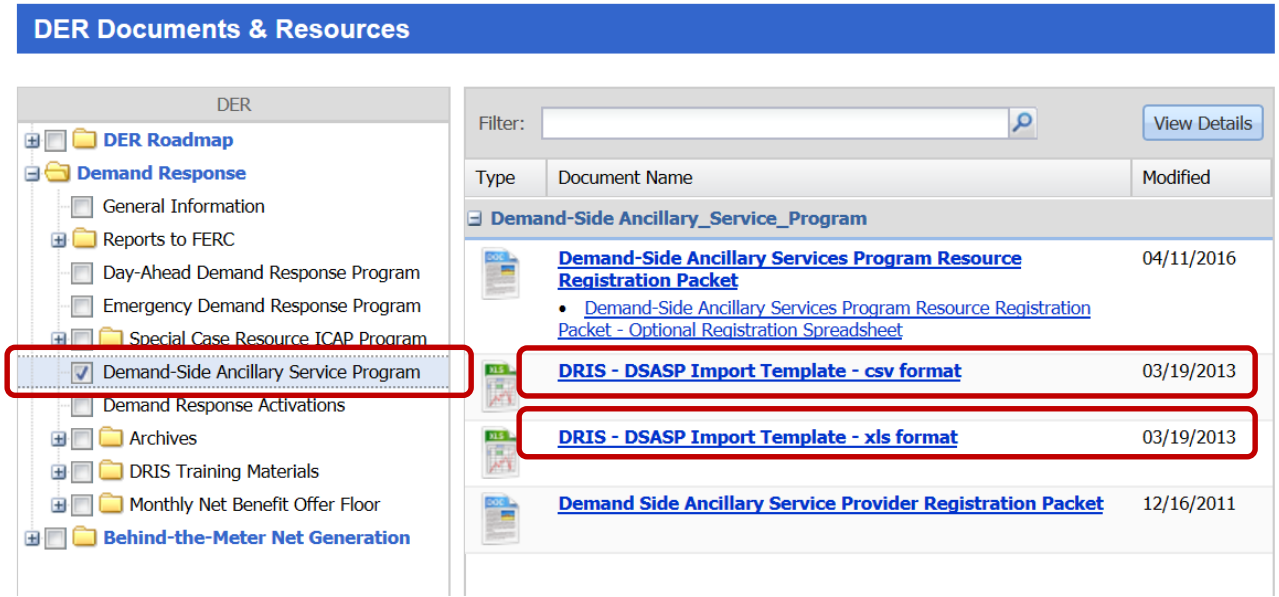


Enrolling Resources in DSASP

- **Two step process**
  - Enrollment in DRIS which verifies eligibility and produces the DSASP Resource Report (Needed for Registration packet)
  - Submittal of DSASP Resource Registration Packet
    - Provides information needed to establish Resource as a Supplier in MIS
    - Provides information to network model the resource

Enrollment via DRIS

- DSASP Provider uses DSASP import file to registrar Resource as Individual or part of Group



Information Needed for Import File

Effective Date=04/01/2013&

PROGRAM=DSASP&

Resource ID	Resource Name	TO Account Num	Zone	Transmission Owner Abbreviation	Street	Street 2	City
	Name 1	R564867431	C	RGE	123 Pine Mill Rd		Rochester
22222222	Name 2	963498552	F	NMP	564 4th Ave Extension		Albany
	Name 3	111963459	J	CED	1064 19th St.		Brooklyn
44444444	Name 4	R357814337	C	RGE	54 Allen St.		Rochester
55555555	Name 5	468473589	F	NMP	63-584 North Main		Albany
66666666	Name 6	111934863	J	CED	1574 4th St.		Manhattan
77777777	Name 7	93728569723	E	NYP	2 Hills Ct		Elmira

State	Zip Code	Generator Type ID	Generator Name Plate Rating	DSASP Authorization	Aggregation ID	Aggregation Type	Response Type
NY	14626		700	Y	101	2	C
NY	12210		500	Y	102	2	C
NY	11230	4	600	Y	103	3	B
NY	14626		300	Y	101	2	C
NY	12210		400	Y	102	2	C
NY	11230	4	800	Y	103	3	B
NY	14903			Y	104	1	C

Spinning	Spinning & Regulation	Non - Syn	Summer Subscribed Load kW	Summer Subscribed Gen kW	Winter Subscribed Load kW	Winter Subscribed Gen kW	Direct Communication
Y	N	N	800	0	800	0	Y
N	Y	N	800	0	800	0	Y
N	N	Y	500	500	500	500	Y
Y	N	N	600	0	600	0	Y
N	Y	N	700	0	700	0	Y
N	N	Y	900	700	900	700	Y
N	Y	N	2300	0	2300	0	Y

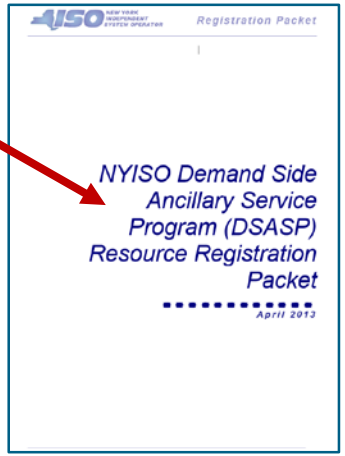
See Table 7-6 in the DRIS User's Guide for explanation of columns and the 'Description and Rule(s)' for data entry

All DSASP Resources required to provide limits for Summer and Winter Capability Periods

DSASP Resource Registration Package

Market Training

Sections of the Registration Package



1. Applicant Contact Information (DSASP Provider)
2. DSASP Resource Requirement
   - Market Status - Products to be Offered
   - DSASP Resource Contact Information
   - MIS Modeling Form (New DSASP Resources only)
   - Metering Installation Information
   - Meter Information – Instantaneous Meter and Revenue Meter
   - Meter Authority Information
3. Attachment A – Meter Authority/MDSP Signed Authorization Form
4. Attachment B – Demand Side Resource Acknowledgement of Participation
5. Attachment C – DRIS Report

DSASP Resource Enrollment: DRIS

- Demand Side Resources will be validated and be aggregated through DRIS as a DSASP Resource
  - *MPs will import individual Demand Side Resources, to form a DSASP Resource (Aggregation)*
  - *MPs will manage resources to create aggregations*
  - *DRIS is used to validate individual and aggregate level information in order to prepare for registration submittal*
  - *DRIS is used to perform validation, enrollment and record keeping functionality*

DRIS is used to manage and track individual Demand Side Resources which make up the DSASP Resource (Aggregation/Gen PTID)

DSASP Resource Registration: Gen PTID

- MP will send DSASP Resource Registration Packet with DSASP Resource Report to NYISO Member Relations (MR)
- Operations will model Aggregation (Multiple Demand Side Resources) as a single Unit (DSASP Resource)
- Member Relations enter DSASP Resource into MIS, with a single Gen PTID
- DSASP Resource Provider contacts Stakeholder Services to schedule:
  - Communications Test (IT Grid Ops)
  - Pre-Qualification Test (Operations)

Let's Review

- For a new Demand Side Resource to participate in DSASP, which of the following must be completed?

a. NYISO Customer Registration

b. DSASP Provider Registration

c. DRIS Registration

d. All the above

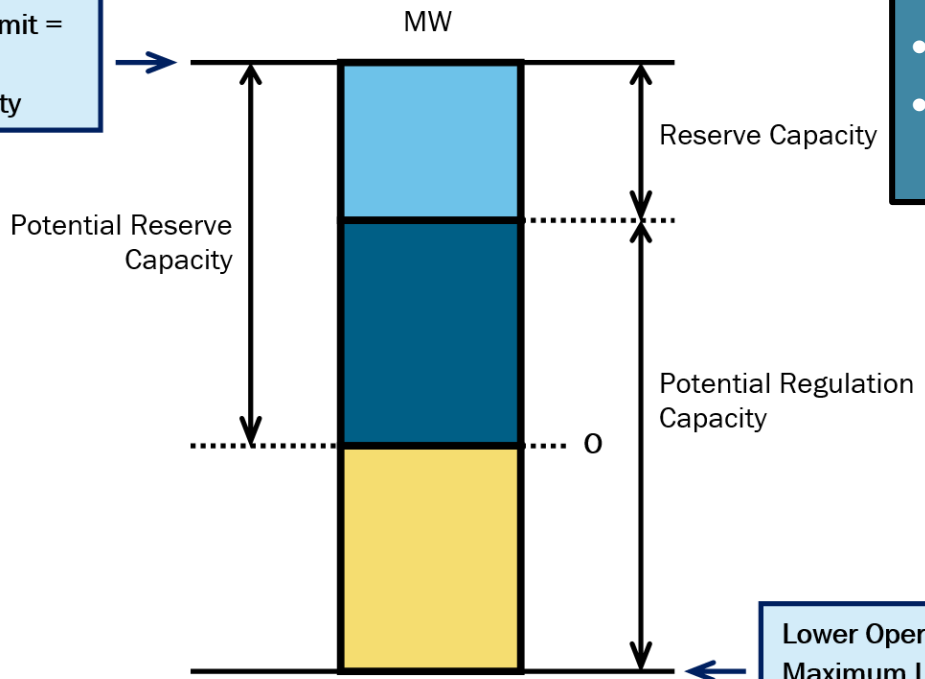
Let's Review

- The DSASP Resource Report is completed by the Market Participant after the DSASP Resource Registration Packet is completed and accepted by NYISO Member Services
  - True
  - False

Bidding Regulation and Reserves

Demand Side – Regulation & Reserve Service

Upper Operating Limit = Maximum Load Reduction Capability



Lower Operating Limit = Maximum Load Increase Capability

May Bid:

- Reserve Only
- Reserve and Regulation
- Any hour or all hours of the day

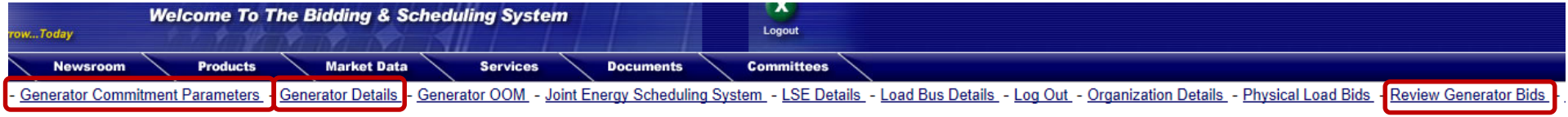
Availability Bids for DSASP Resources

- **Only as ISO-Committed Flexible**
- **May provide Synchronous or Non-Synchronous Reserves, but not both**
  - Non-Synchronous resources may not provide Regulation Service
  - Qualified Local Generator only permitted as Non-Synchronous supplier in DSASP
- **Must bid Energy**
  - Minimum Energy Bid of $75/MWh
  - DSASP Resources are not paid for energy if/when scheduled

Purpose of Energy Bids for DSASP Resources

- **Day Ahead**
  - In order to be a Reserves provider, the resource must have an energy bid
  - DSASP Resources will not be evaluated as an energy resource in the DAM
- **Real Time**
  - Used as an economic indicator of the price at which the resource can be scheduled

BTM:NG Resource Bidding in MIS



- **Generator Details Screen**
  - Includes attributes such as Generator Limits, Authorization Flags, and Response Rates
  - Data submitted by MP is validated and entered by NYISO
- **Generator Bid [Offer] Screen**
  - Data entered by the MP as part of their ancillary services offer
- **Generator Commitment Parameter Screen**
  - Start, Stop, and Run Time information

DSASP Generator Details - MIS

Generator Details

Generator PTID: | Gen ID: | EDC Area: | Generator Name: Gen_DSASP | Search

Generator Name	Gen ID	Gen PTID	Generator Type	Active Flag
Gen_DSASP	XXXXXXX	XXXXXXX	DSASP	Y

Contact Information

Primary Contact:
Primary Contact Phone:
Fax:
Email:
Pager:
Outage Scheduling Email:

{ Filled in }

Secondary Contact:
Secondary Contact Phone:
Address:

Generator Limits

Summer Operating Capacity	Winter Operating Capacity	Summer Contract Capacity	Winter Contract Capacity	Bid Floor Price	Start Date	End Date
5.0	5.0	0.0	0.0	75.0	XX/XX/XXXX 00:00:00	

Authorization Flags

DAM Flag
- [x] Fixed Energy
- [x] Dispatch Energy
- [x] Regulation Control
- [x] 10 Minute Spinning
- [ ] 30 Minute Spinning
- [ ] 10 Minute Non-Synch
- [ ] 30 Minute Non-Synch

HAM Flag
- [x] Fixed Energy
- [x] Dispatch Energy
- [x] Regulation Control
- [ ] 10 Minute Spinning
- [ ] 30 Minute Spinning
- [ ] 10 Minute Non-Synch
- [ ] 30 Minute Non-Synch

Other Flag
- [ ] Bid ICAP

DSASP Generator Details - MIS

Generator Physical Attributes			
Physical Min Generation MW:	**0.00** [1]	Normal Response Rate 1 MW/Min:	**1.0**
Emergency Response Rate:	**1.0** [2]	Normal Response Rate 2 MW/Min:	
Regulation Capacity Response Rate MW/Min:	**1.0** [3]	Normal Response Rate 3 MW/Min:	
6-Second Regulation Response Rate MW/6Sec:	**0.10** [4]		

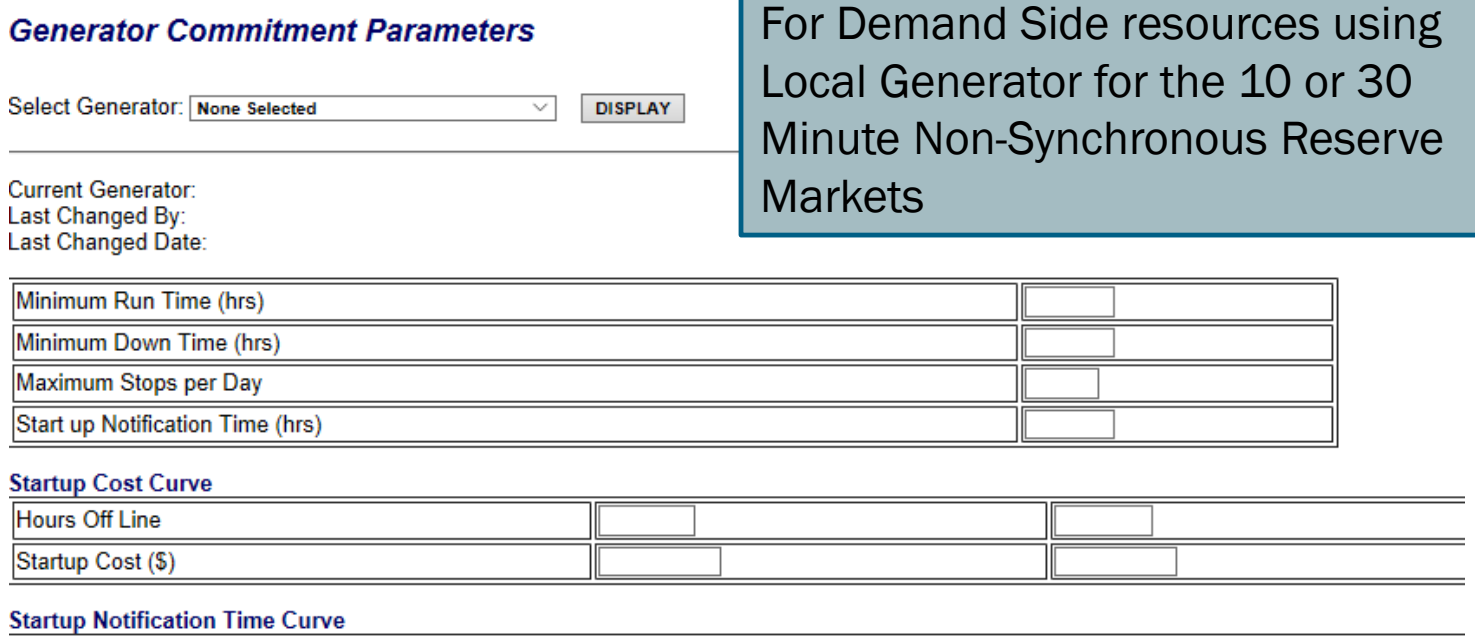
[1] May be negative for resource qualified for Regulation

[2] Used to determine response capability for Reserves

[3] Used to determine response capability for Regulation

[4] Regulation Capacity rate divided by 10

Generator Commitment Parameters - MIS



For Demand Side resources using Local Generator for the 10 or 30 Minute Non-Synchronous Reserve Markets

Must be set up before a resource can bid

Reference: Market Participant User's Guide, Section 7.3.1

Generator Bid

Required field for all DSASP Bids

Required for Regulation | Required for Reserves

Ref: MUPG, Section 7.4.1

Generator Name:

Fuel Type: None Selected

Burdened Fuel Price ($/mmbtu)

Bid Date (mm/dd/yyyy hh:mi)

Num of Hours

Market

Expiration (DAM Only) (mm/dd/yyyy hh:mi)

Energy Bid

Upper Operating Limit (MW)	Emergency Upper Operating Limit (MW)	Minimum Generation (MW)	Minimum Generation Cost ($)

Self Scheduled MW

00 Minute MW	15 Minute MW	30 Minute MW	45 Minute MW

Unit Operations

- ISO Committed Flex
- Self Committed Flex
- Self Committed Fixed
- ISO Committed Fixed

Host Load (MW)

Start-Up Cost ($)

Bid Curve (Block Format)

MW (Basepoint)												
$/MW												

Ancillary Services

Item	MWs	$/MW
10 Minute Spinning Reserves		
10 Minute Non-Synchronized Reserve		
30 Minute Spinning Reserve		
30 Minute Non-Synchronized Reserve		
Regulation Capacity		
Regulation Movement		

Generator Bid Fields - 1

- **Upper Operating Limit (MW) – indicates the maximum net schedule**
  - DSASP Resource bidding Regulation requires UOL greater than or equal to 1
  - DSASP Resources are not required to bid to UOL
- **Emergency Upper Operating Limit (MW) – indicates the UOL under emergency conditions**
- **Minimum Generation (MW) – indicates the minimum amount of generation that must be run should the bid be accepted**
  - Regulation bids include a negative Minimum Generation value
  - Must be zero for a DSASP Spinning Reserve only bid
  - DSASP Resource qualified to bid Non-Synchronous reserves must have a Physical Min Gen value greater than or equal to 1 and the Min Gen MW value must be greater than or equal to Physical Min Gen value

Generator Bid Fields - 2

- **Minimum Generation Cost ($) – the cost for the minimum generation segment**
  - DSASP Resources bidding Regulation or Spinning Reserves must have a Minimum Generation Cost of $0
  - DSASP Resources bidding Non-Synch must have a Minimum Generation Cost greater than or equal to Bid Floor Price
- **Unit Operations**
  - DSASP Resources must indicate **ISO Committed Flex**

Generator Bid Fields - 3

- **Start Up Cost ($)**
  - DSASP units bidding Synchronous (Spinning) Reserves and/or Regulation must bid a Start Up Cost = $0
  - Bid startup cost takes priority over Unit Commitment Parameters
- **Bid Curve (Block Format) – up to 11 blocks in ascending order**
  - **MW (Base point):** Base point for each block
  - **$/MW:** Bid cost for the Base point (up to 2 decimal digits)

New Generator Bid Fields - 4

- **Bid Curve (MW) and ($)**
  - DSASP Bid Floor Price is currently $75/MW
  - For DSASP bids, MW bid curve points less than or equal to zero must have price less than or equal to the Bid Floor Price times minus one.
  - For DSASP bids, MW bid curve points greater than zero to must have price greater than or equal to the Bid Floor Price
  - DSASP Bid curve must include zero transition point with $/MW below Bid Floor Price times minus one
  - For DSASP units bidding Non-Synchronous reserves, bid curve MW value cannot be less than 0

New Generator Bid Fields - 5

- **Bid Specifics - Regulation**
  - Regulation Capacity MW
    - Required for Regulation only
    - Must be bid qualified to provide Regulation
    - The value indicates the ability to move both up and down by the total MWs bid
    - This is 5 minutes times the unit's Regulation Response Rate
  - Regulation Capacity $/MW
    - Value must be in dollars and cents with up to two decimal digits
  - Regulation Movement $/MW

Generator Bid

Example: DAM Bid – Regulation Only

Generator Name: Gen_DSASP

Fuel Type: None Selected

Burdened Fuel Price ($/mmbtu):

Bid Date: 02/14/2018 08:00

Num of Hours: 6

Market: DAM

Expiration (DAM Only): (mm/dd/yyyy hh:mi)

Energy Bid

Upper Operating Limit (MW)	Emergency Upper Operating Limit (MW)	Minimum Generation (MW)	Minimum Generation Cost ($)
5	5	-5	0

Self Scheduled MW				Unit Operations		Host Load (MW)	Start-Up Cost ($)
00 Minute MW	15 Minute MW	30 Minute MW	45 Minute MW	ISO Committed Flex	Self Committed Flex		0
				Self Committed Fixed	ISO Committed Fixed		

Bid Curve (Block Format)

MW (Basepoint)	0	5										
$/MW	-75	100										

Ancillary Services

Item	MWs	$/MW
10 Minute Spinning Reserves		
10 Minute Non-Synchronized Reserve		
30 Minute Spinning Reserve		
30 Minute Non-Synchronized Reserve		
Regulation Capacity	5	2
Regulation Movement		1

New Generator Bid Fields - 5

- **Bid Specifics - Reserves**
  - $/MW
    - Units bidding Flexible must enter an Availability bid for appropriate Reserve categories
      - Value must be in dollars and cents with up to two decimal digits
      - Failure to enter and Availability bid in the DAM will result in failed validation

Bidding Reserve Characteristics

- **Follow same rules as generators for submittal of reserve bids:**
  - MW values determined by ramp rates
  - Availability bids allowed in Day-Ahead.
  - Must bid reserves at $0 in RT.
- **A flexible energy bid in real time requires the resource to bid into the Real Time Reserves market**

Operating Reserve – Availability Bids

- **All dispatchable capacity is available for scheduling reserve – applies to Generators and DSASP Resources**
  - Available 10 & 30 minute Spinning (Synchronous)
  - Available 10 & 30 minute Non-Synch
- **Reserve is limited by a DSASP Resource's:**
  - Emergency Response Rate (ERR)
    - Response Rate is expressed in MW per min.
    - 10-Min. Spinning Reserve MW = 10 * ERR
  - Applicable Upper Operating Limit (UOL)
    - Seasonal

Generator Bid

Example: Reserve Bid 10 Min Spinning

Generator Name: Gen_DSASP

Fuel Type: None Selected

Burdened Fuel Price ($/mmbtu):

Bid Date: 02/14/2018 08:00

Num of Hours: 1

Market: DAM

Expiration (DAM Only): (mm/dd/yyyy hh:mi)

Energy Bid

Upper Operating Limit (MW)	Emergency Upper Operating Limit (MW)	Minimum Generation (MW)	Minimum Generation Cost ($)
25	25	0.0	0.00

Self Scheduled MW				Unit Operations		Host Load (MW)	Start-Up Cost ($)
00 Minute MW	15 Minute MW	30 Minute MW	45 Minute MW	ISO Committed Flex	Self Committed Flex		0.00
				Self Committed Fixed	ISO Committed Fixed		

Bid Curve (Block Format)

MW (Basepoint)	0	25										
$/MW	-75	1000										

Ancillary Services

Item	MWs	$/MW
10 Minute Spinning Reserves		0.00
10 Minute Non-Synchronized Reserve		
30 Minute Spinning Reserve		
30 Minute Non-Synchronized Reserve		
Regulation Capacity		
Regulation Movement		

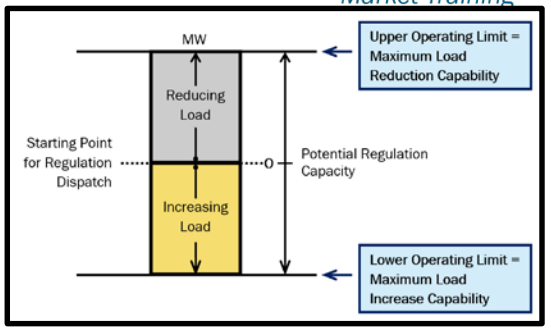
Scheduling of Regulation

Regulation Service Capacity Scheduling

- **In the Day-Ahead and Real-Time Markets**
  - NYISO submits to its scheduling and pricing software the Regulation Service Bids provided by each Supplier
  - Solved to meet the NYISO's Regulation Capacity requirement
- **Regulation Service Bid inputs include Supplier's:**
  - Regulation Capacity Bid price
  - Regulation Movement Bid price
    - Adjusted for the number of anticipated movements per hour

Awarding of Regulation Capacity

- **The Regulation Capacity awarded to each Regulation Service resource is based on;**
  - The economics of the bid and the NYISO Regulation Service requirement
  - Not to exceed the lesser of the regulation response rate (RRR) times 5 minutes or the regulation availability MW's bid



Validations and Bid View - MIS

Clicking on date/time takes you to the Bid Details

Results

Bid Identification			
Date	**Market**	**Generator**	**Status**
02/12/2018 00:00 EST	DAM	GEN_DSASP	VALIDATION PASSED
02/12/2018 00:00 EST	DAM	GEN_DSASP	BID ACCEPTED

Schedules (MW)							
Time	Energy	10 Min Spin	10 Min Non-Synch	30 Min Spin	30 Min Non-Synch	Regulation Capacity	Op Cap Reserve

Validations and Bid View - MIS

Generator Bid Results

Bid Identification			
Date	**Market**	**Generator**	**Status**
02/12/2018 00:00 EST	DAM	GEN_DSASP	VALIDATION PASSED
02/12/2018 00:00 EST	DAM	GEN_DSASP	BID ACCEPTED
02/12/2018 00:00 EST	HAM	GEN_DSASP	BID ACCEPTED

Schedules (MW)							
Time	Energy	10 Min Spin	10 Min Non-Synch	30 Min Spin	30 Min Non-Synch	Regulation Capacity	Op Cap Reserve
00:00	0.0					5.0	
00:15	0.0					5.0	
00:30	0.0					5.0	
00:45	0.0					0.0	

Scheduling of Reserves

Scheduling - Reserves

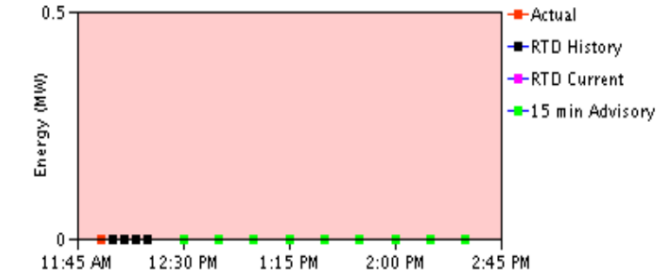
- Resources are evaluated every five minutes
- One of three outcomes for next 5-min period:
  - Not scheduled for reserves
  - Scheduled for reserves
  - Converted to energy
    - DSASP Resource is not paid for energy, but still gets the reserve margin for the amount of its reduction
- Selection and scheduling of reserves <u>are not</u> tied to a reserve ("pickup") event, though likelihood of being scheduled is higher during a reserve "pickup" event

- Review Generator Bids | Review Generator Forecasted Schedules -

Generator Forecast Schedules

This page will automatically refresh itself with the most recent data every 30 seconds.

Generator	Source Type	Date	Schedules (MW)						Energy Chart
			Energy	10 Min Spin	10 Min Non-Synch	30 Min Spin	30 Min Non-Synch	Regulation	
	RTD Hist	02/12/2018 12:00 EST	0.0	10.0		0.0		0.0	
	RTD Hist	02/12/2018 12:05 EST	0.0	10.0		0.0		0.0	
	RTD Hist	02/12/2018 12:10 EST	0.0	10.0		0.0		0.0	
	RTD Hist	02/12/2018 12:15 EST	0.0	10.0		0.0		0.0	
	RTD	02/12/2018 12:30 EST	0.0	10.0		0.0		0.0	
	RTD	02/12/2018 12:45 EST	0.0	0.0		0.0		0.0	
	RTD	02/12/2018 13:00 EST	0.0	0.0		0.0		0.0	
	RTD	02/12/2018 13:15 EST	0.0	0.0		0.0		0.0	
	RTC	02/12/2018 13:30 EST	0.0					0.0	
	RTC	02/12/2018 13:45 EST	0.0					0.0	
	RTC	02/12/2018 14:00 EST	0.0	10.0					
	RTC	02/12/2018 14:15 EST	0.0	10.0					
	RTC	02/12/2018 14:30 EST	0.0					0.0	



KavaChart images from VE.com

Let's Review

- When would a DSASP Resource have a negative Minimum Generation MW number?

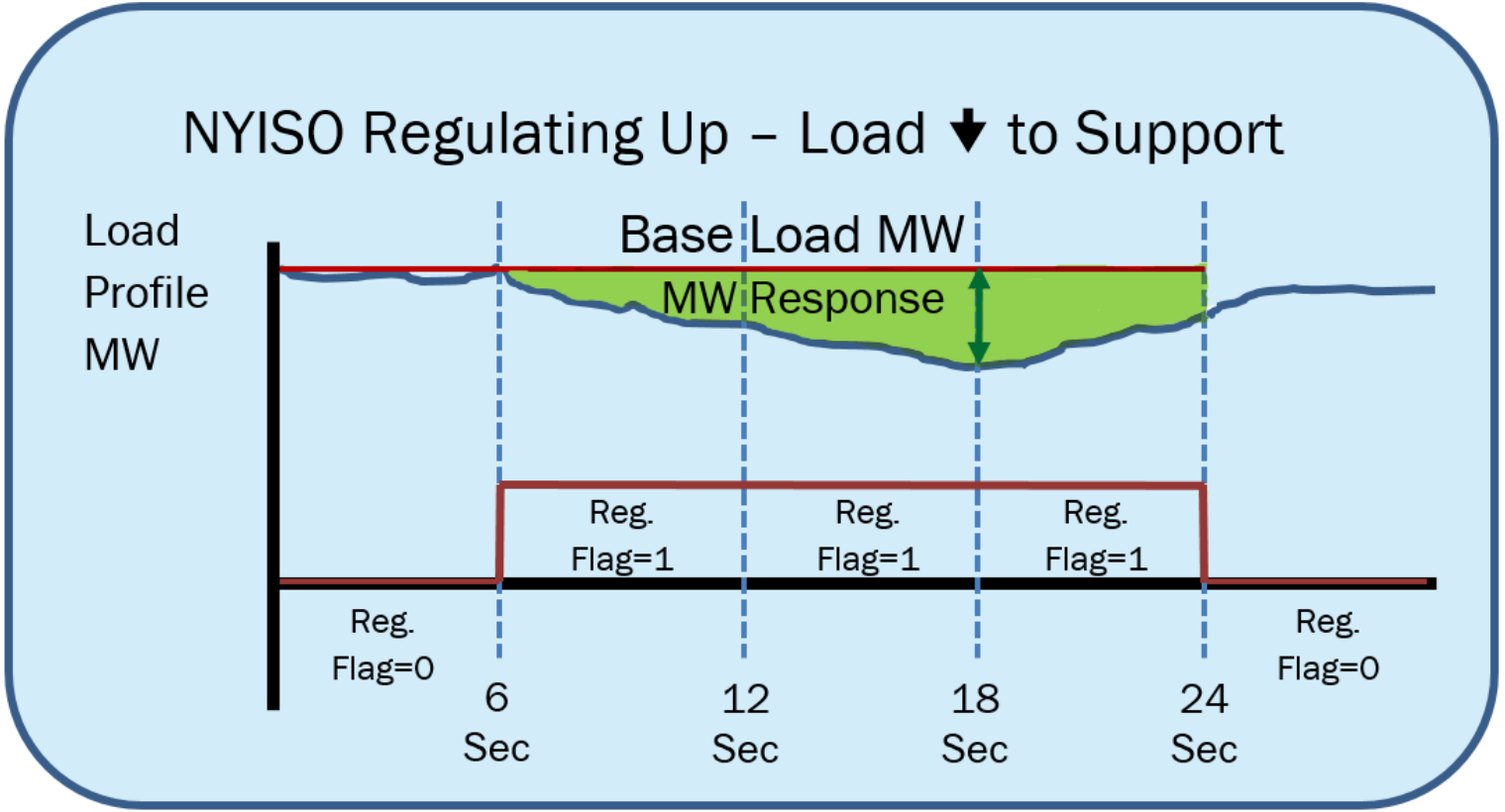
- A DSASP Provider bidding Regulation or Spinning Reserves must bid a Minimum Gen Cost of $____ ?

Determining Real Time Baseline and MW Response

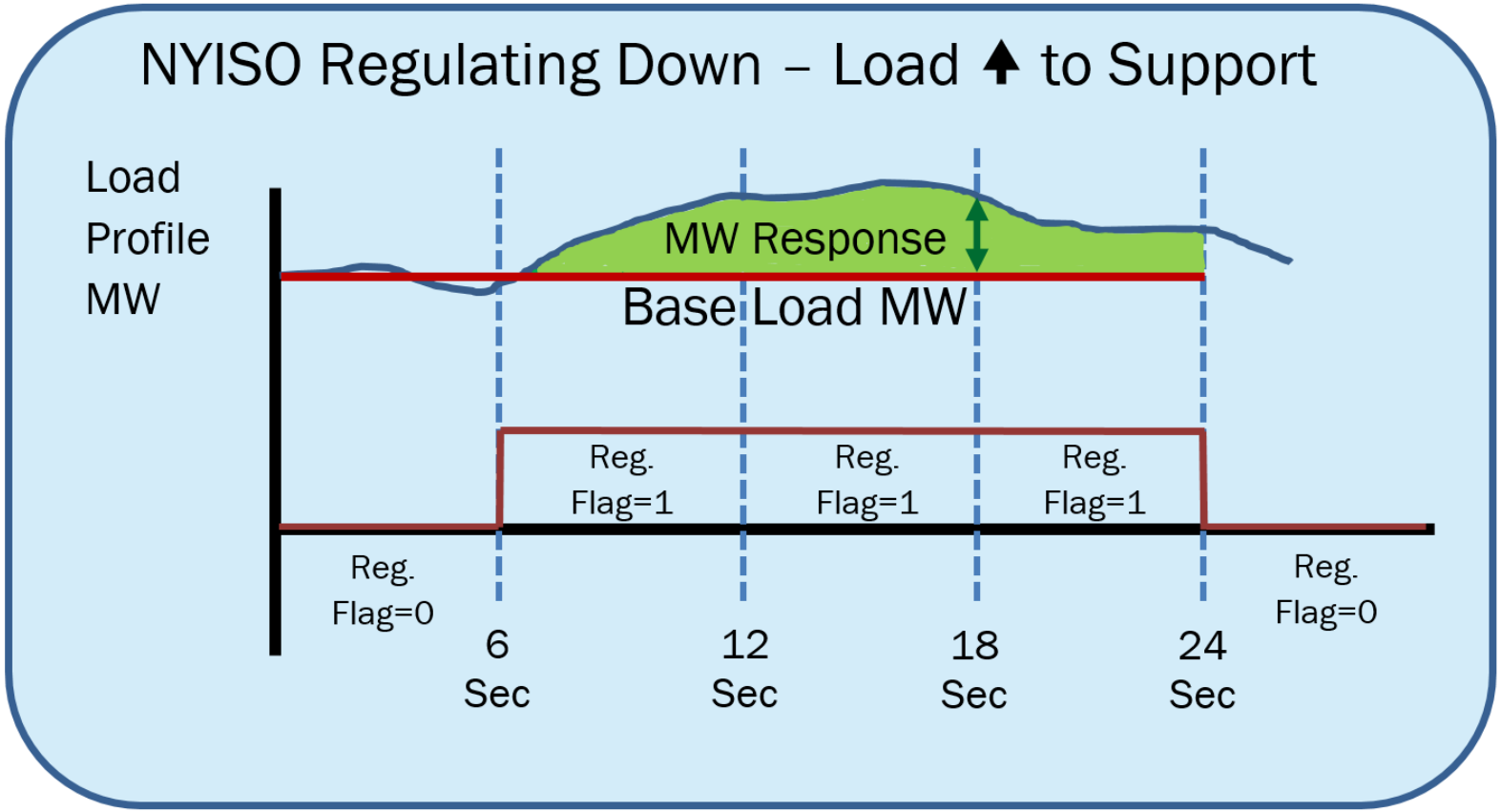
NYISO DSASP MW Response

- Real-Time Baseline
  - Base Load MW:
    - Actual load at interval just prior to real-time dispatch schedule
      - For Regulation just prior to Regulation Flag set to 1
      - For Reserves just prior to non-zero RTD basepont
    - Resets when the dispatch schedule is over
- MW Response
  - Difference between Base Load MW and actual load during a reserve or regulation schedule

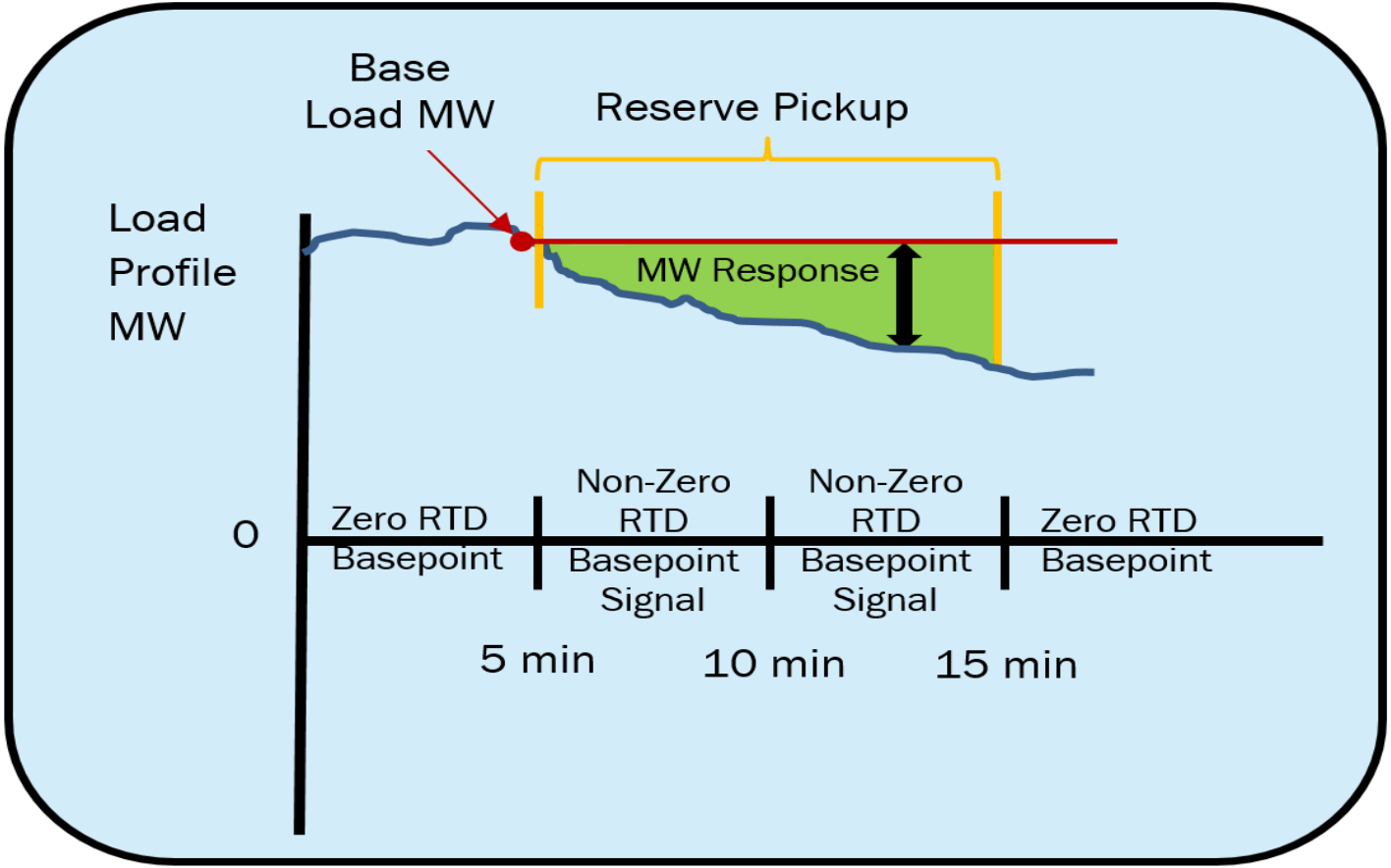
DSASP MW Response for Regulation



DSASP MW Response for Regulation



DSASP MW Response for Reserve

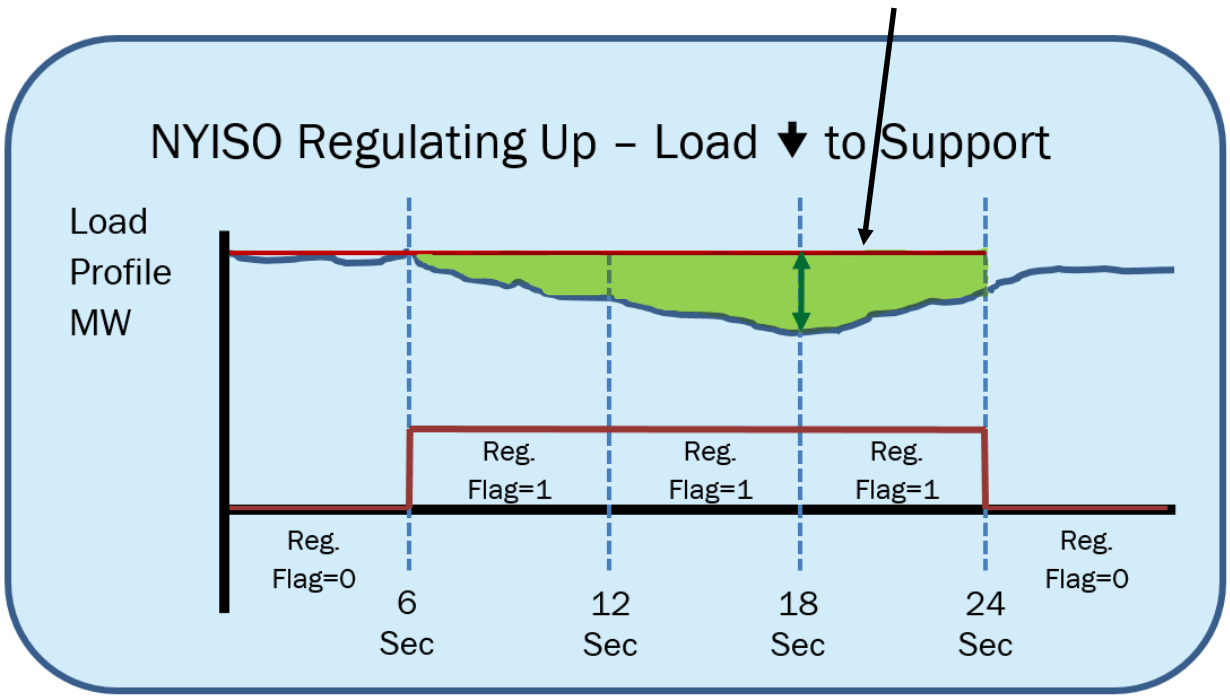


DSASP Data Submission for Verifying Load Reduction

- Real-Time Baseline
  - Meter data is transmitted every 6-seconds via continuous two-way metering and incorporated into system operations
  - Real-time meter data compared to revenue-grade meter after the fact for verification

Let's Review

- In the figure below the top red line represents:



a. Load MW

b. RTD Base Point

c. Response MW

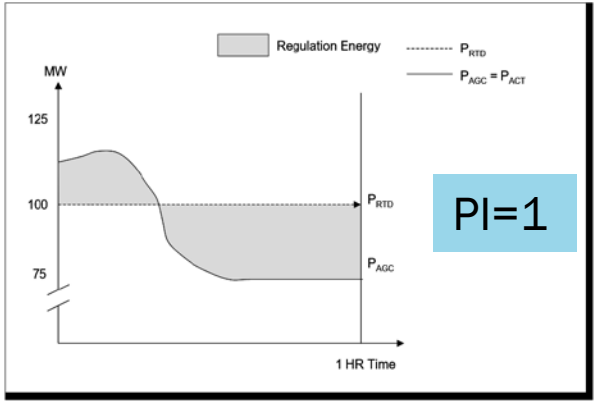
d. Base Load MW

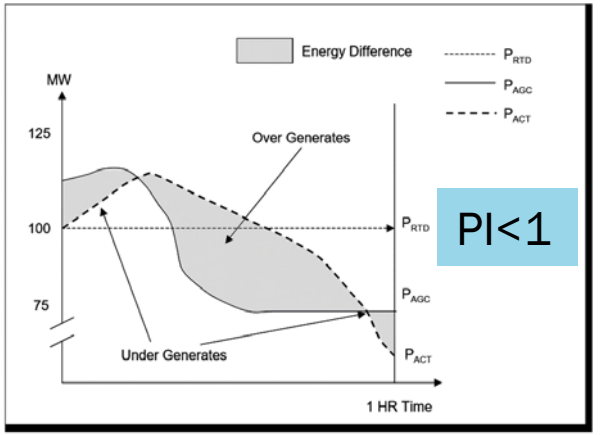
e. AGC Base Point

Measuring and Reporting Performance

Performance Tracking for Regulation

- **Performance Tracking System (PTS)**
  - Monitors performance of Resources providing Regulation Service
  - Produces a Regulation Performance Index (PI) between 0 and 1
    - The Regulation Performance Index is used for financial settlements (covered later)





Regulation Performance Index

- Tracks how well a regulation supplier responds to the control signals that are issued every six seconds
- Is calculated for every RTD interval
  - Applied to Movement Payments

Regulation Performance Index - Inputs

- Amount of MWs the Generator or DSASP Resource could change during the regulation interval
  - Based on ramp rate and the regulation interval time
- The amount of over and under-generation/demand response is accumulated for each 30-second period in the RTD interval based on:
  - Measuring provider's over-generation (MW Response exceeds six-second AGC Basepoint)
    - Each 30 seconds, the measured MW output is compared to the largest of the six-second Basepoints of the past 30 seconds
  - Measuring provider's under-generation (MW Response is less than six-second AGC Basepoint)
    - Each 30 seconds, the measured MW output is compared to the smallest of the six-second Basepoints of the past 30 seconds

Reserve Performance

- NYISO may disqualify Suppliers that consistently fail to provide Energy when scheduled from providing Operating Reserves in the future
- A DSASP Resource will have a reserve performance index calculated for each interval of its real-time demand reduction schedule
  - The Reserve Performance Index is used in the Day-Ahead Margin Assurance Payment ("DAMAP") calculation which may reduce the DAMAP payments to DSASP Resources

Performance Tracking for Reserves

- **Reserve Performance Index**
  - Ratio of Average Actual Demand Reduction to the Average Scheduled Demand Reduction + 0.10
    - Example:
      - Average Actual Demand Reduction 4.1 MW
      - Average Scheduled Demand Reduction 5.0 MW

Reserve PI = (4.1/5) + 0.1 = 0.92

Let's Review

- The Reserve Performance Index is applied to the Day Ahead and Real Time Reserve Availability payments. True or False

Settlement Types

- DAM Payment for Regulation Capacity
- Real-Time Regulation Capacity Balancing Charge/Payment
- Regulation Movement Payment
- Regulation Performance Charge
- Bid Production Costs
- Day Ahead Market Assurance Payment
- DAM Payment for Reserve Availability
- Real-Time Reserve Availability Balancing Charge/Payment

Regulation Settlements

DAM Payment for Regulation Capacity

- Each Supplier that is scheduled Day-Ahead to provide Regulation Service shall be paid a DAM Regulation Capacity payment

DAM Scheduled Regulation Capacity X DAM Regulation Capacity Market Price

Date Hour	DAM Scheduled Regulation Capacity (MWh)	DAM Regulation Capacity Market Price ($/MWh)	DAM Regulation Capacity Settlement ($)
7/14/2017 08	5.00	5.00	25.00

Real-Time Regulation Capacity - Balancing Charge

- If Real-Time Scheduled Regulating Capacity < DAM Scheduled Regulating Capacity then a Balancing Charge occurs:

$$\text{Real-Time Reg Capacity Price (\$)} \times \left[\text{Real Time Sched Reg Capacity (MWh)} - \text{DAM Sched Reg Capacity (MWh)}\right] \times 300/3600$$

Real-Time Reg Capacity Price ($)	Real-Time Sched Reg Capacity (MWh)	DAM Sched Reg Capacity (MWh)	Balancing Charge ($)
4.00	1.00	5.00	-1.33

Balancing Charge = 4.00 x (1.00 - 5.00) x 300/3600 =

Real-Time Regulation Capacity - Balancing Payment

- If Real-Time Scheduled Regulating Capacity > DAM Scheduled Regulating Capacity then a Balancing Payment occurs:

$$\text{Real-Time Reg Capacity Price (\$)} \times \left[\text{Real Time Sched Reg Capacity (MWh)} - \text{DAM Sched Reg Capacity (MWh)}\right] \times 300/3600$$

Real-Time Reg Capacity Price ($)	Real-Time Sched Reg Capacity (MWh)	DAM Sched Reg Capacity (MWh)	Balancing Payment ($)
4.00	8.00	5.00	1.00

Charge = 4.00 x (8.00 - 5.00) x 300/3600 =

Regulation Capacity Settlement for 1 Hour

Real-Time Interval	Balancing Reg Capacity Settlement ($)
1	-1.00
2	2.00
3	0.75
4	0.50
5	-1.25
6	-0.50
7	-2.00
8	-1.00
9	-1.25
10	1.75
11	-1.00
12	1.00
Total	-2.00

Date Hour	DAM Regulation Capacity Settlement ($)
7/14/2017 08	25.00

DAM Payment	$25.00
Real Time Payment	-$2.00
Total for Hour	$23.00

Regulation Movement Payment

- Additionally, the NYISO will pay Suppliers with real-time Regulation Capacity schedules a real-time payment for Regulation Movement provided in each interval
- The payment amount shall equal the product of:

Real-Time Reg Movement Market Price ($)	x	Real-Time Reg Movement (MW)	x	Real-Time Performance Index

Regulation Movement Payment

Real-Time Reg Movement Market Price ($)	x	Real-Time Reg Movement (MW)	x	Real-Time Performance Index

Real-Time Reg Movement Market Price ($/MW)	Real-Time Reg Movement (MW)	Real-Time Perf Index:	Real-Time Reg Movement Settlement ($)
0.20	20.0	1.0000	= 4.00
0.20	20.0	0.500	= 2.00

Regulation Performance Charge

- **Applies to Suppliers with a Real-Time Regulation Schedule and a Real-Time Performance Index < 1**
- **Factors included in calculation***
  - DAM Regulation Capacity Market Price
  - Real Time Regulation Capacity Market Price
  - Scheduled Real Time Regulation Capacity
  - Incremental increase in Real-Time over DAM Capacity Scheduled
- **10% add-on included in performance charge**

* Note: Refer to MST Section 15.3.5.4.2 for details on calculation

DSASP Regulation – Other Payments

- **ISO-Committed Flexible Generators that provide Regulation Service may be eligible to receive:**
  - Day-Ahead Bid Production Cost Guarantee payment
    - Refer to Section 18.10 of the MST for calculation
  - Real-Time Bid Production Cost Guarantee payment
    - Refer to Section 18.11 of the MST for calculation
  - Day Ahead Market Assurance payment (DAMAP)
    - Refer to App H of Accounting and Billing Manual

Reserve Settlements

DSASP Reserve Settlements

- Suppliers selection based on:
  - Response Rates
  - Upper Operating Limit
  - Bid
- Separate DAM and RT prices for three Operating Reserve products for each of three locations

DSASP Reserve Settlements

- **The price of higher quality Operating Reserves will not be set at a price below the price of lower quality Operating Reserves in the same location.**
  - The price of Spinning Reserves will not be below 10-Minute Total Reserves or 30-Minute Reserves
  - The price for 10-Minute Non-Synchronized Reserves will not be below 30-Minute Reserves
- **Balancing (DAM/RT) Payments**
  - RT Schedule < DAM schedule → supplier charged
  - RT Schedule > DAM Schedule → supplier paid

DAM Payment for Reserve Availability

- Each Supplier scheduled Day-Ahead to provide Reserve Service shall be paid a Day-Ahead Reserve Availability payment

DAM Scheduled Reserve Availability X DAM Reserve Market Price

Date Hour	DAM Scheduled Reserve Avail (MWh)	DAM Reserve Market Price ($/MWh)	DAM Reserve Avail Settlement ($)
7/14/2017 08	20.00	5.00	100.00

Real-Time Reserve Availability - Balancing Charge

- If Real-Time Scheduled Reserve Availability (MW) < DAM Scheduled Reserve Availability (MW) then a charge occurs:

$$\text{Real-Time Reserve Avail Price (\$)} \times \left[\text{Real-Time Sched Res Avail (MWH)} - \text{DAM Sched Res Avail (MWh)}\right] \times 300/3600$$

Real-Time Res Avail Price ($)	Real-Time Sched Res Avail (MWH)	DAM Sched Res Avail (MWh)	Balancing Charge ($)
3.00	0.00	20.00	-5.00

Balancing Charge = 3.00 x (0.00 - 20.00) x 300/3600 =

Real-Time Reserve Availability - Balancing Payment

- If RTD RT Scheduled Reserve Availability (MW) > Hr DAM Scheduled Reserve Availability (MW) then a payment occurs:

$$\text{Real-Time Reserve Avail Price (\$)} \times \left[\text{Real-Time Sched Res Avail (MWH)} - \text{DAM Sched Res Avail (MWh)}\right] \times 300/3600$$

Real-Time Res Avail Price ($)	Real-Time Sched Res Avail (MWH)	DAM Sched Res Avail (MWh)	Balancing Payment ($)
3.00	30.00	20.00	2.50

Balancing Charge = 3.00 x (30.00 - 20.00) x 300/3600 =

Reserve Availability Settlement for 1 Hour

Real-Time Interval	Balancing Market Res Avail Stlmnt ($)
1	-1.00
2	3.00
3	0.75
4	2.50
5	-1.25
6	-0.50
7	-4.00
8	-5.00
9	-3.25
10	4.75
11	-3.00
12	1.00
Total	-6.00

Date Hour	DAM Reserve Avail Settlement ($)
7/14/2017 08	100.00

DAM Payment	$100.00
Real Time Payment	-$6.00
Total	$94.00

Operating Reserve – Other Payments

- ISO-Committed DSASP Resources providing Operating Reserves may be eligible for a:
  - DAM Bid Production Cost Guarantee payment
  - Real-Time Bid Production Cost Guarantee payment
- ISO-Committed DSASP Resources providing Operating Reserves may be eligible for a DAM assurance payment (DAMAP)
  - The NYISO produces a Performance Index for purposes of calculating a Day Ahead Margin Assurance payment for a DSASP Resource providing Operating Reserves

Let's Review

- The RTD Performance Index for Regulation is used in calculating:

  a. DAM Payment for Regulation Capacity

  b. Real-time Regulation Balancing Payment for Capacity

  c. Regulation Movement Payment

  d. RTD Regulation Performance Charge

Let's Review

- DSASP Resources scheduled for Operating Reserve availability are eligible for:
  a. Bid Production Cost Guarantee
  b. Payment for energy delivered during reserve pickup
  c. Day Ahead Market Assurance Payment (DAMAP)
  d. All the above

Reporting Additional Data

Meter Data Submission

- Instantaneous metered data collected via ICCP and used for settlement
- Hourly integrated data from revenue-grade meter
  - Collected by MDSP
    - No calculations required
  - Required within 55 days of initial invoice
  - Bus Load MW data
  - Via file upload to MIS
  - Used for reasonableness test of metering devices

Meter Data Retention

- **The DSASP Provider must retain all real-time interval meter data from each DSASP Resource that receive direct communications from the NYISO for six years**
  - Members of a grouped DSASP Resource or
  - Individually registered DSASP
- **At any time, the NYISO may request instantaneous interval meter data for Demand Side Resources that are;**
  - part of a grouped DSASP Resource
  - individually registered DSASP Resources that receives dispatch instructions via direct communication with the NYISO

Summary - Review of Objectives

- Define the purpose of Demand Side Ancillary Services Program (DSASP)
- Identify the fundamentals of Regulation and Operating Reserves
- Identify program eligibility and general requirements for participation
- Describe the DSASP Provider responsibilities
- Identify the basic communications and metering requirements
- Identify the specific testing requirements associated with each ancillary service product
- Explain the process for enrollment

Summary – Review of Objectives

- Outline the process for bidding and scheduling in the Demand Side Ancillary Service Program
- Explain how the real-time baseline and MW response is determined for DSASP resources providing regulation or reserve
- Describe method for measuring and reporting performance
- Identify the various settlements associated with the Demand Side Ancillary Service Program
- Describe the reporting process for additional data

References

- NYISO Ancillary Services Manual
- MST 15.3 Rate Schedule 3 – Payments for Regulation Service
- MST 15.4 Rate Schedule 4 – Payments for Supplying Operating Reserve
- NYISO Accounting and Billing Manual
- NYISO Direct Communications Manual
- NYISO Revenue Metering Requirements Manual