Special Case Resources (SCR)

Mathangi Srinivasan Kumar
Market Training Program Administrator, NYISO

Alexis Hormovitis
Distributed Resources Operations Engineer, NYISO

Demand Response In-Depth

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SME Bio

Alexis Hormovitis

Distributed Resources Operations Engineer, Distributed Resources Operations

As part of the Distributed Resources Operations team, Alexis is responsible for the day-to-day administration of the NYISO's Demand Response Programs, including Special Case Resources and Demand Side Ancillary Services, and works extensively with Market Participants to ensure accurate market results. Alexis has also been involved in working with Behind the Meter Net Generator resources.

Alexis joined the NYISO and the Distributed Resources Operations team in 2018, and has worked on multiple market initiatives, including Expanding Capacity Eligibility (ECE) and Buyer Side Mitigation (BSM) for SCRs. Alexis has also been a key contributor to the development of the Distributed Energy Resource participation model, specifically focused on the Capacity Market rules.

Alexis holds a B.S. in mathematics and a B.S. in finance from the University of Scranton as well as an M.S. in Engineering and Management Systems from Clarkson University.

SCR Module Objectives

New York ISO

- Define the purpose of the SCR Program
- Identify program eligibility requirements
- Summarize the process for enrollment
- Explain how baseline load values are calculated for capacity
- Identify the performance testing requirements and timeline
- Describe the method for measuring and reporting performance
- Identify the different performance factors and calculation methodology for each
- Explain the event notification process and customer response to an event
- Explain how baseline load values are calculated for energy
- Describe verification process after an event
- Describe how UCAP for SCRs are calculated
- Identify the various settlements associated with a SCR

SCR Overview

SCR Overview – Definition

New York ISO

- SCRs are Demand Side Resources:
  - Whose Load is capable of being interrupted at the direction of the NYISO, and/or
  - That have a Local Generator which is not visible to NYISO's MIS (behind the meter local generator) and is rated 100 kW or higher that can be operated to reduce load from the NYS Transmission System and or the distribution system
- Qualified SCRs are able participate in the Installed Capacity Market as ICAP suppliers that can offer their load reduction as Unforced Capacity or UCAP reductions by the NYISO
  - SCRs are subject to special rules, set forth in the Market Services Tariff and related ISO Procedures, in order to facilitate their participation in the Installed Capacity market as Installed Capacity Suppliers

SCR Overview

- SCRs are part of the Reliability-based Programs where NYISO Operations determines activation
- Purpose: SCRs curtail load when directed to do so for a discrete period of time by NYISO Operations
  - When Operating Reserves are forecast to be short
  - When there is an actual Operating Reserve Deficiency
  - When there is another system emergency requiring resources to maintain balance between load and generation

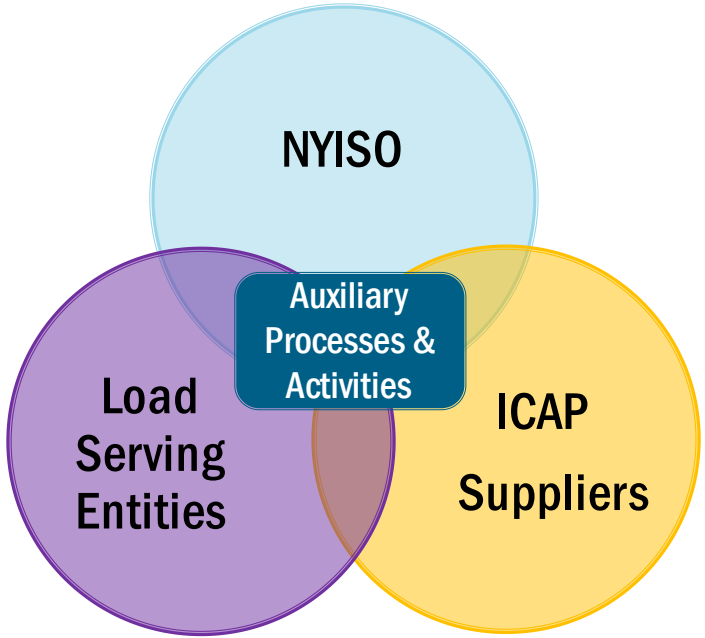
SCR Overview

New York ISO

- Each SCR is enrolled by Responsible Interface Party (RIP)
  - RIP serves as interface between the NYISO and the resource
  - May aggregate multiple SCRs in the same zone
  - An individual SCR may, if it meets the applicable registration requirements, act as its own RIP
- RIPs could be one of the following entities:
  - Transmission Owner
  - Competitive Load serving Entities (LSEs)
  - Aggregators that are not a TO or LSE
- A RIP may participate in the Installed Capacity Market with one or more qualified SCRs
  - Offer capacity into ICAP auctions, or may sell capacity in bilateral contracts
  - Receive capacity payment if awarded capacity in the auctions

Installed Capacity Market Mechanics

- How does it work?
  - Suppliers offer their capacity
    - SCRs participate as ICAP suppliers
  - Loads bid to procure capacity
  - NYISO runs auctions to match bids and offers to determine a clearing price
  - Auxiliary processes and activities



Installed Capacity Market Mechanics

- Auxiliary processes and activities
  - Determining the amount of capacity required
  - Determining the amount of capacity available (Performance tests for SCRs)
  - Determining the amount of capacity suppliers are qualified to offer (UCAP calculation for SCRs)
  - Determining the amount of capacity obligation to be procured

Program Eligibility Requirements

Program Eligibility Requirements

New York ISO

- Minimum of 100 kW reduction, in aggregate by PTID within the same Load Zone
  - Multiple resources - Aggregation
    - Each SCR must be electrically located within the same Load Zone and the total Load reduction of all Loads grouped by PTID greater than or equal to 100 kW
  - The SCR's load reduction capability must be sustainable for a minimum of 4 consecutive hours
- Mandatory Performance
  - 4-hour mandatory Load reduction
  - Load reduction must be achievable during reliability event response to the NYISO directive if the minimum notification criteria has been met
- Individual Demand Side Resources can subscribe to either EDRP or the SCR program, but not both
  - SCRs enrolled with the NYISO, but not sold their installed capacity will be considered as an EDRP resource for that period of time when their capacity is unsold, and will be notified with EDRP resources when an event is deployed

Metering Requirements

New York ISO

- To report event data and measure performance:
  - Revenue-grade interval billing meter
    - A meter that meets regulatory requirements for accuracy and has been certified for billing
    - Meter authorities have access to the data stored in the revenue meter

      OR
  - Shadow meter
    - An additional metering device installed next to the existing revenue meter so that other entities may have access to the meter data
      - May be a revenue-grade meter that is not used for billing
      - May be another type of recording device using pulse outputs from the revenue meter
      - Installed by a meter authority or a Professional Engineer
      - Must meet the ± 2% accuracy threshold
- Meter data may be submitted by the TOs or the MSEs
- Required of all SCRs unless the SCRs are part of a Small Customer Aggregation (SCA)*

* SCA will be covered in the EDRP discussion

Program Eligibility Requirements

New York ISO

- RIP must identify a "Response Type" for each SCR resource it enrolls in DRIS based on both
  - How the SCR resource reduces its load during an event
  - The meter configuration of the SCR's facility
- The identification of "Response Type" dictates how performance is measured and metering requirements
- Enrolling SCRs via a Prescribed Response Type
  - Response Type C: Curtailment
  - Response Type G: Local Generator
    - Must meet Regulation and Environmental Compliance Requirements
  - Response Type B: Both

SCR Enrollment Process

RIP Enrollment

- Step 1: RIP Enrollment with NYISO
  - RIP will be the NYISO customer as an ICAP Supplier
    - Must complete registration requirements, including SCR and ICAP supplier specific documentation, in order to participate in the Demand Response program and the ICAP market
      - Section II: ICAP Purchase/Sell Agreement
      - Section QQ: Special Case Resources
    - Must have a Qualified status in the MIS
    - Must designate Administrator contacts and one (or more) Event Responder Contact(s) in DRIS

SCR Resource Enrollment

New York ISO

- Step 2: SCR Resource Enrollment
  - Submit Resource enrollment file through DRIS prior to each Capability Period
    - Enrollments may change within a Capability Period, but if no changes are made then the submission is applicable to each month within that Capability Period
    - DRIS Event Calendar indicates enrollment time periods for each Capability Period and month for which the MP intends to enroll/sell SCR's capacity or make updates to existing enrollments

SCR Resource Enrollment

New York ISO

- Enrollment file created by RIP per DRIS User Guide shall include

  - *Effective Date*
  - *Program Type*
  - *Multiple Tabs (for each applicable zone)*
  - *Resource ID*
  - *Resource Name*
  - *Transmission Owner District*
  - *TO Account Number*
  - *Load Zone*
  - *Resource Address information*
  - *TO Service Voltage*
  - *Generator Type ID*
  - *Generator Name Plate Rating*
  - *CBL method*
  - *Compliance Question*
  - *Aggregation ID*
  - *Response Type*
  - *Subscribed Load*
  - *Subscribed Generation*
  - *Shutdown kW*
  - *Incremental kW*
  - *Provisional ACL Question*
  - *Request to use existing ACL Data*
  - *Meter Installation Date*
  - *ACL kW for Peak Load Date Hours 1-40*

- Properly formatted file must be uploaded into DRIS by RIP

SCR Resource Enrollment

New York ISO

- Key components of enrollment file
  - RIP must provide the Load (kW) of the SCR for each of the Capability Period SCR Load Zone Peak Hours* from the Prior Equivalent Capability Period
  - Data used to determine the Average Coincident Load (ACL) for the resource
  - RIP can also indicate if the resource intends to enroll with
    - Provisional ACL or
    - Incremental ACL

* Capability Period SCR Load Zone Peak Hours are made viewable to the MP 90 days prior to the start of the Capability Period as specified on the DRIS Event Calendar

SCR Enrollment Status

- Status categories displayed for SCR resources:
  - Enrolled or Approved
    - Resource is enrolled by NYISO
  - Separated
    - When resource is no longer part of the RIP's portfolio
    - Resource can be separated by the RIP or NYISO
    - Once separated, the resource cannot participate unless it is re-enrolled by the same or a different RIP, via an import file
  - Enrollment period deadlines are identified in the DRIS Calendar

SCR Enrollment Status

New York ISO

- Pending/Under Review
  - When resource enrollment is pending validation by NYISO
  - Resources are placed in this status automatically by DRIS if the information in any of the monitored fields has changed from the last enrollment to the current

Fields Monitored for both SCR and EDRP Enrollments
Zone
Transmission Owner
Transmission Owner Account Number
Resource Facility Street
Resource City
Resource Zip Code
Response Type*

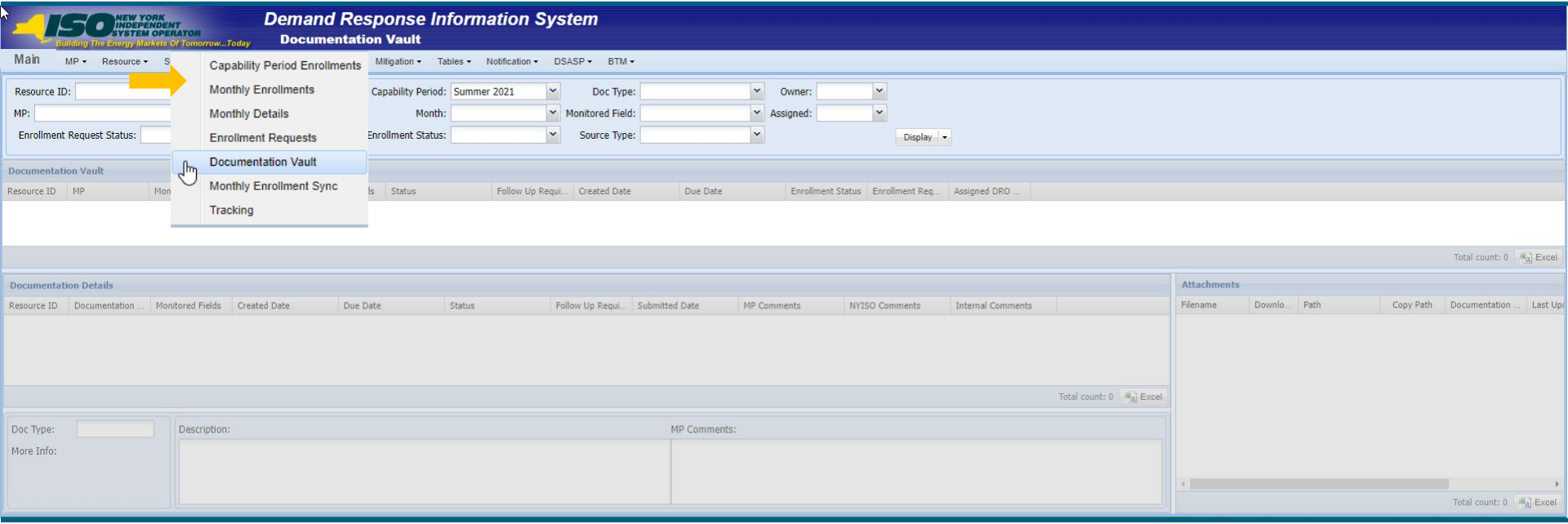
Fields Monitored Only for SCR Enrollments
Generator Type ID
Generator Name Plate Rating
ACL kW for Peak Load Date Hour 1 * through ACL kW for Peak Load Date Hour 40 *
TO Service Voltage ID
Calculated ACL kW (ACL kW value calculated by DRIS from the Top 40 ACL kW Peak Load values imported on enrollment file)

- Approved
  - Once NYISO requested documentation has been received, reviewed and accepted
- Denied
  - RIP can re-enroll the resource in the next open enrollment period

SCR Resource Enrollment

- Documentation Vault feature in DRIS can be used by the RIP to:
  - View additional documentation requests
  - Respond to documentation requests

Note: The "observer" on DRIS menu will be changes to "Main" in all screenshots

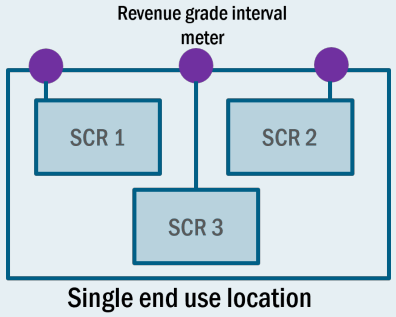


SCR Enrollment

- For more than one Demand Side Resource located at a single end-use location (service address), that has its own Transmission Owner (or electric service provider account) numbers, enrollment depends on:
  - Metering configuration; and
  - Account information of each Demand Side Resource

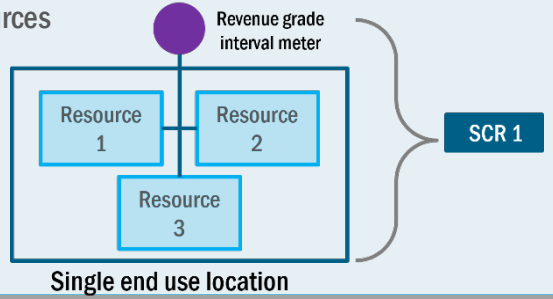
Enroll as separate SCR

Each Demand Side Resource has both
(i) A unique Transmission Owner or electric service provider account number and
(ii) An interval meter



Enroll as single SCR

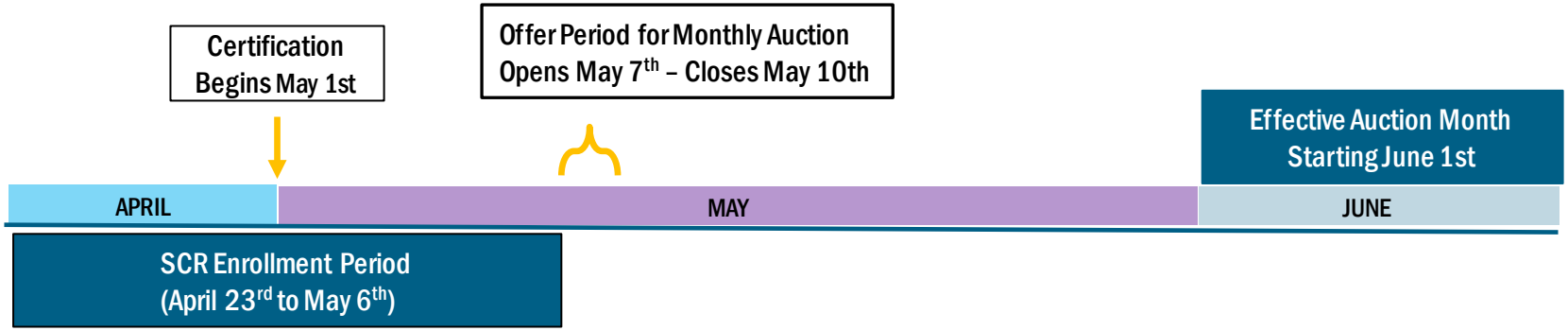
(i) The end-use location is associated with a single legal entity,
(ii) The individual Demand Side Resources do not have individual interval meters, and
(iii) The end-use location has an interval meter that aggregates all the associated individual Demand Side Resources



SCR Enrollment

New York ISO

Timeline for submitting enrollment data example - June 2021

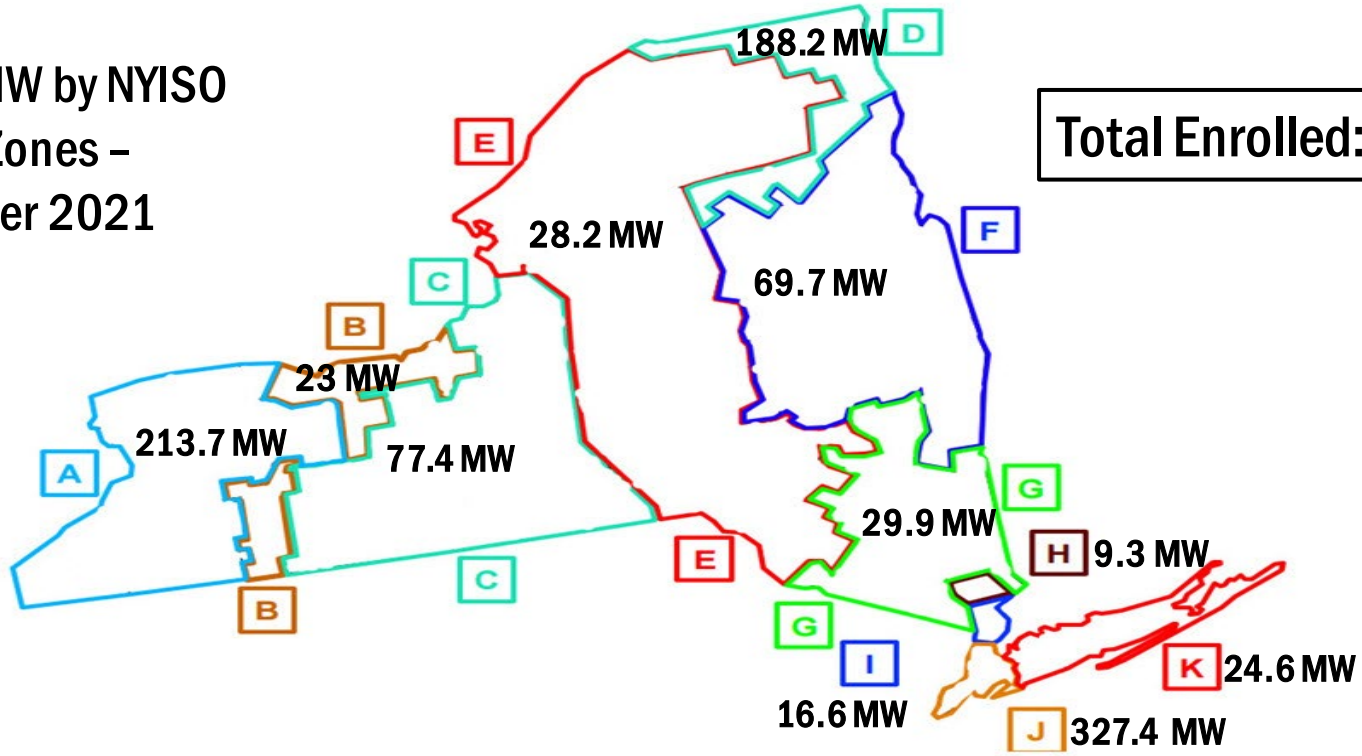


- Resource's enrollment remains in effect until
  - The RIP modifies it
  - A duplicate enrollment condition occurs
  - The NYISO changes the status of the enrolled resource, or
  - The Capability Period ends

Refer to the DRIS and ICAP Event Calendars for specific dates

SCR Enrollment – Summer 2021

SCR MW by NYISO Load Zones – Summer 2021



Total Enrolled: 1007.8 MW

As reported in NYISO 2021 Annual Report on Demand Response Programs

Average Coincident Load (ACL) and Declared Values

Capacity - Baseline Load Values

New York ISO

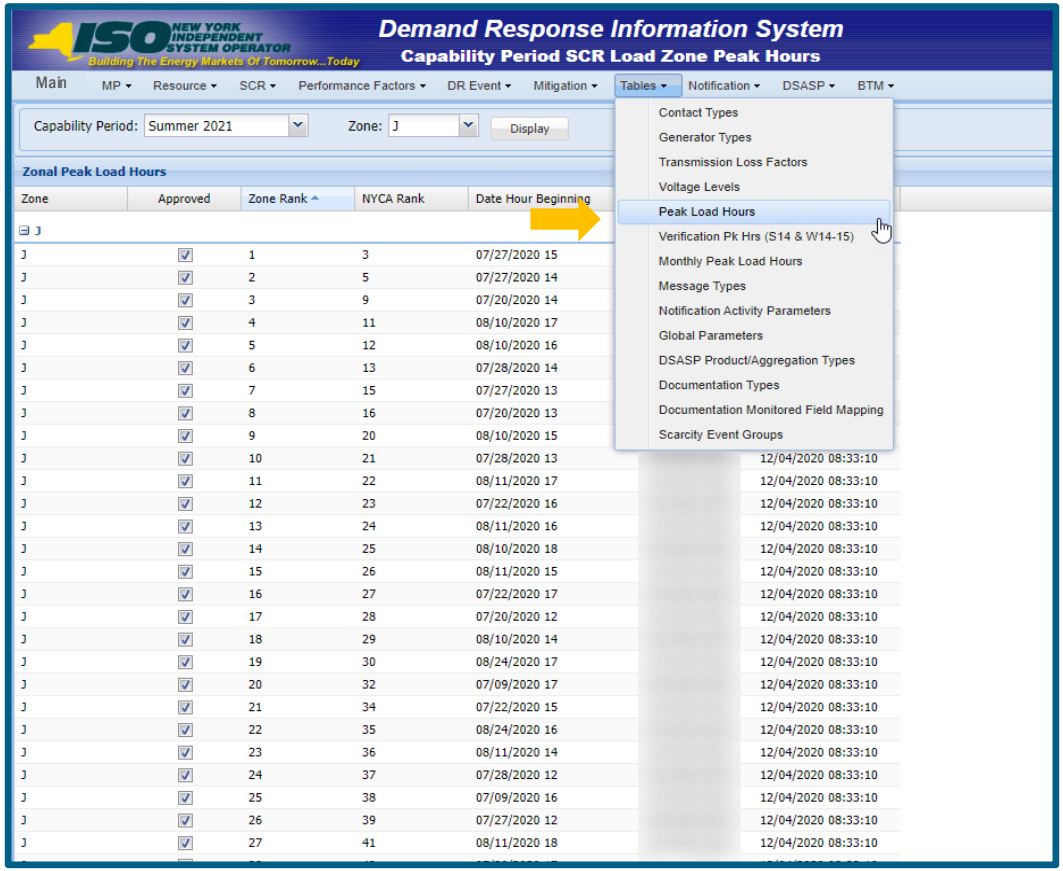
- Values to determine:
  - How much an SCR can offer in the Installed capacity market:
    - Average Coincident Load (ACL)
      - Provisional
      - Changes to ACL – Incremental ACL, Decrease to ACL, Net Average Coincident Load (Net ACL)
      - Declared Value

Average Coincident Load (ACL)

New York ISO

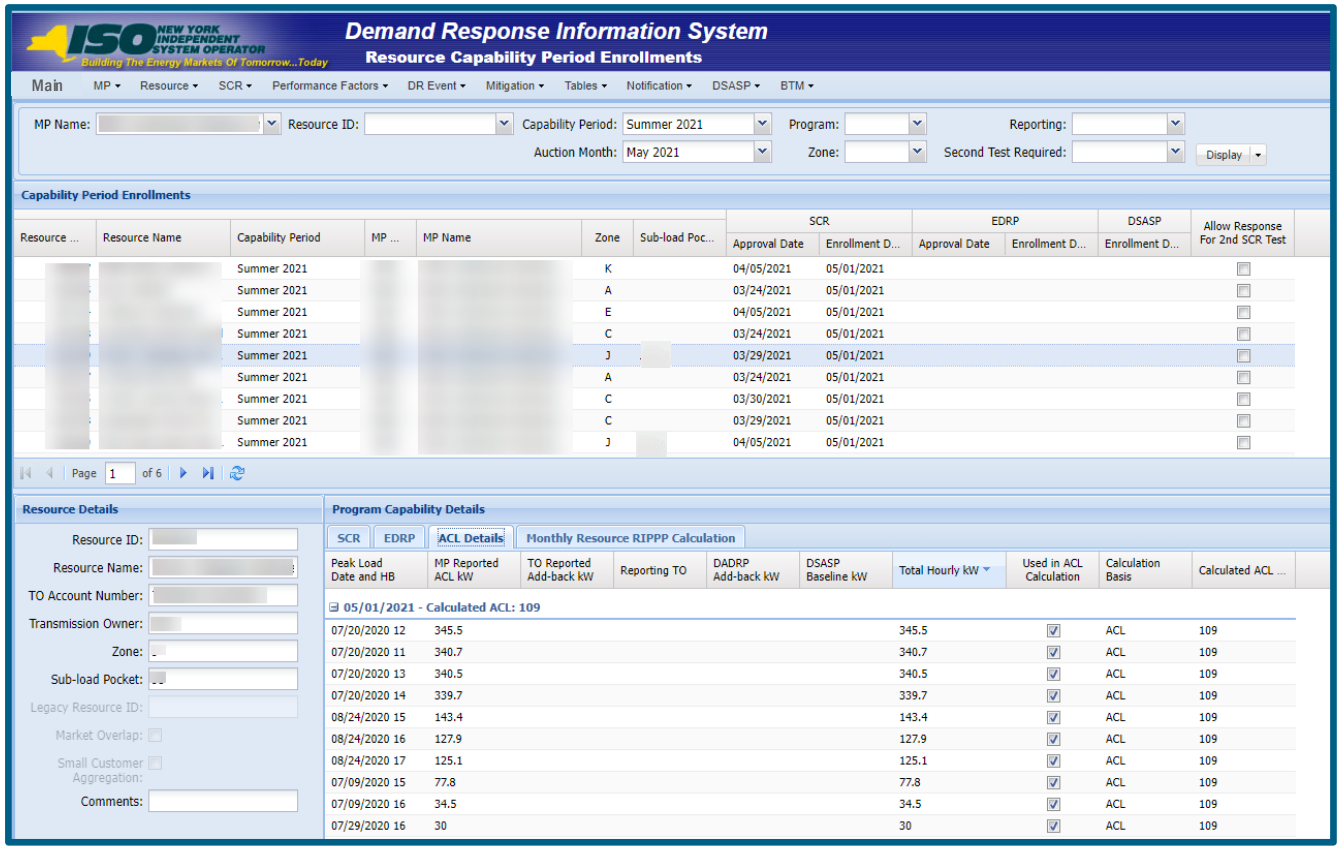
- Baseline Load used by the NYISO to calculate the SCR capacity that can be offered in the Capacity Auctions during a specific Capability Period
  - Calculated as the average of highest 20 resource loads that occurred during the Capability Period's SCR Load Zone Peak Hours of the Prior Equivalent Capability Period
  - Add backs to ACL calculation:
    - TO Add-Backs: Curtailed MWs in TO DR Programs reported by TO, added back to meter data and then included in ACL
    - Add-Backs for NYISO Economic Demand Response Programs
  - Any Load supported by generation produced from a Local Generator should not be included in the SCR's metered Load values reported for the ACL

Average Coincident Load (ACL)



Top 40 Load Zone Peak Hours for Zone J, for prior equivalent Capability Period (Summer 2020) in DRIS used for ACL calculation for Summer 2021 Capability Period

Average Coincident Load



Highest 20 resource loads of Summer 2020 that occurred within top 40 Load Zone Peak Hours for a representative resource

Average Coincident Load – Provisional ACL

- Provisional ACL - Used when the resource
  - Was not previously enrolled in the ICAP-SCR program with the same RIP, and
  - Did not have interval billing meter data from the Prior Equivalent Capability Period
- Provisional ACL is the RIP's forecast of the SCR's ACL
  - Will be the basis for the upper limit of ICAP for which the RIP may enroll the SCR during the Capability Period
  - One value imported on the enrollment file
- The RIP needs to provide verification data to validate the provisional ACL
- Provisional ACL may be applicable to a SCR for a maximum of three consecutive Capability Periods when enrolled with the same RIP
  - Begins with the Capability Period in which the SCR is first enrolled by the RIP

Average Coincident Load

New York ISO

- Net Average Coincident Load (Net ACL)
  - The effective ACL calculated and used by the NYISO for a SCR during a specific month in which an increase or a decrease was reported for the resource
    - Increase – 'Incremental ACL'
    - Decrease – 'Change of Status' or 'Change of Load'

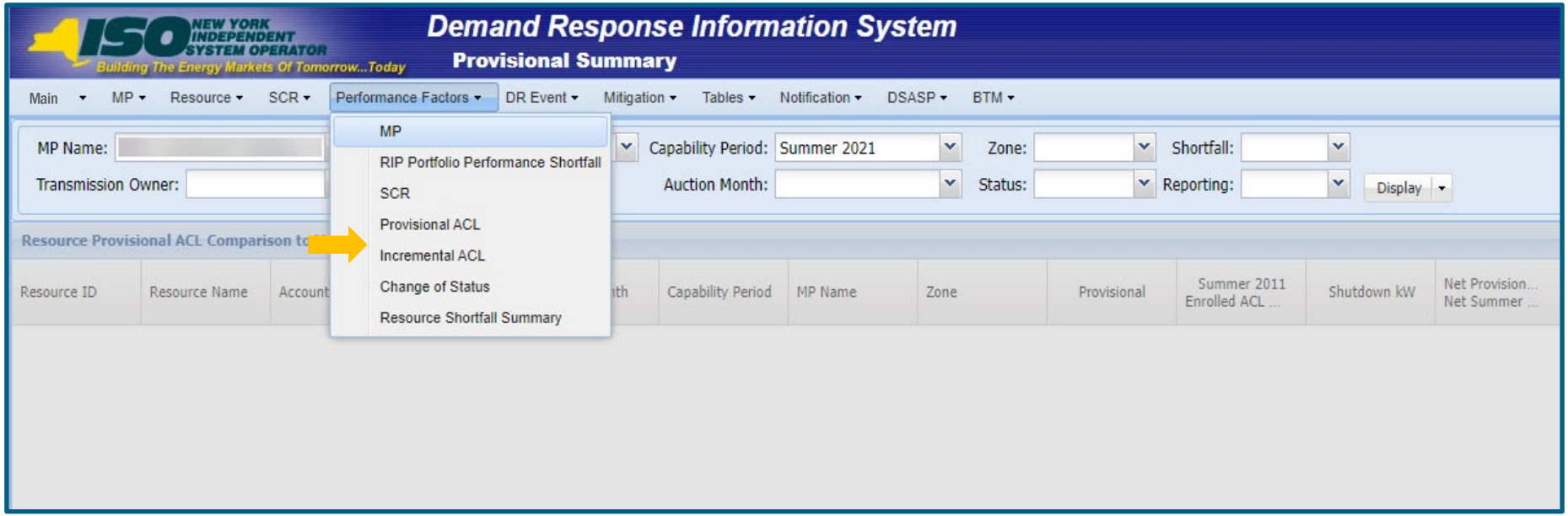
Average Coincident Load

New York ISO

- Incremental ACL
  - SCR resource to increase its ACL above the calculated ACL determined by the Top 40 Hours in the Prior Equivalent Capability Period
  - Conditions
    - ACL must be greater than 500kW
    - For total Load increase between 20% and 30% of the applicable ACL
      - Cannot change Declared Value
    - For total Load increase above 30%
      - Can change Declared Value
    - Increase is capped at 100% of ACL
    - May only be increased once per Capability Period and the amount of the increase enrolled must remain the same for all months for which the Incremental ACL is reported
    - Not eligible if already enrolled in Provisional ACL for the Capability Period
  - Failure by a RIP to report required interval data for the Incremental ACL verification process will result in the Verified ACL being set to zero for all months within the Capability Period in which the resource was enrolled with an Incremental ACL

Average Coincident Load

- Provisional and Incremental ACL in DRIS



Average Coincident Load

New York ISO

- Decrease to ACL
  - Change of Load
  - Change of Status
  - RIP is required to report a decrease to the ACL of a SCR

MST Section 5.12.11.1.3

Average Coincident Load

New York ISO

- Decrease to ACL - Change of Load
  - Applicable when SCR enrolled with an ACL, Provisional ACL, or Net ACL, and:
    - Has experienced an unanticipated reduction,
    - Is currently experiencing a reduction, or
    - Is expected to have a reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that is expected to continue for a total period that is greater than 7 consecutive days
      - Applies to any month in which the SCR sold capacity or adjoining months in which the SCR sold capacity in either month

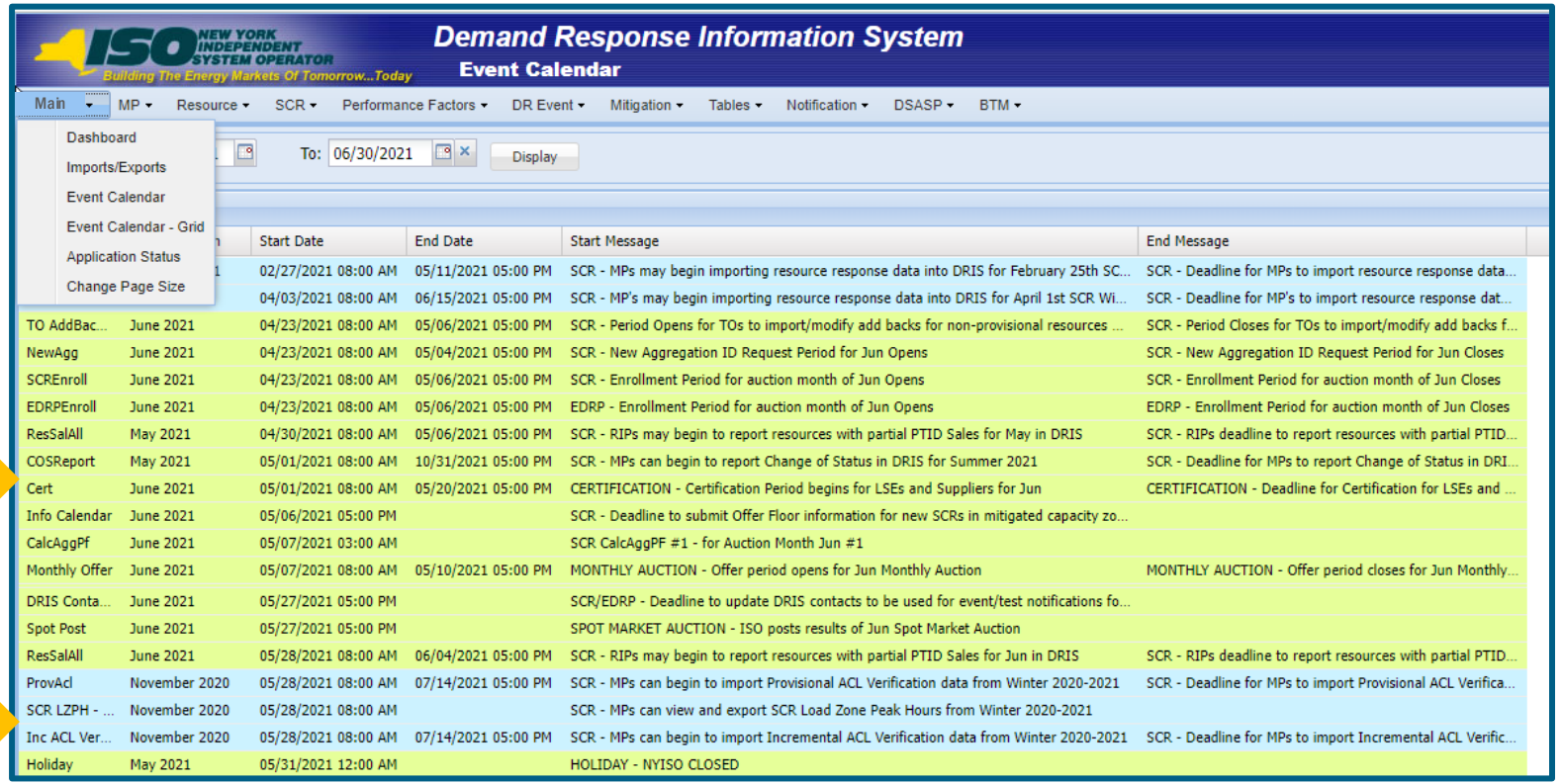
Average Coincident Load

New York ISO

- Decrease to ACL - Change of Status
  - If the SCR
    - has experienced an unanticipated reduction
    - is currently experiencing a reduction, or
    - is expected to have a reduction in total load that meets or exceeds the SCR Load Change Reporting Threshold that will extend for a period of greater than 60 consecutive days
    - Applies to any month in which the SCR sold capacity
  - Net Average Coincident Load ("Net ACL") would be applicable
    - Based on SCR Load Change Reporting Threshold
      - Must be 500kW or greater
      - Change must be equal to or greater than 30% or 5 MW in the NYC Locality or 10 MW if in any other Locality

Average Coincident Load

DRIS Event Calendar

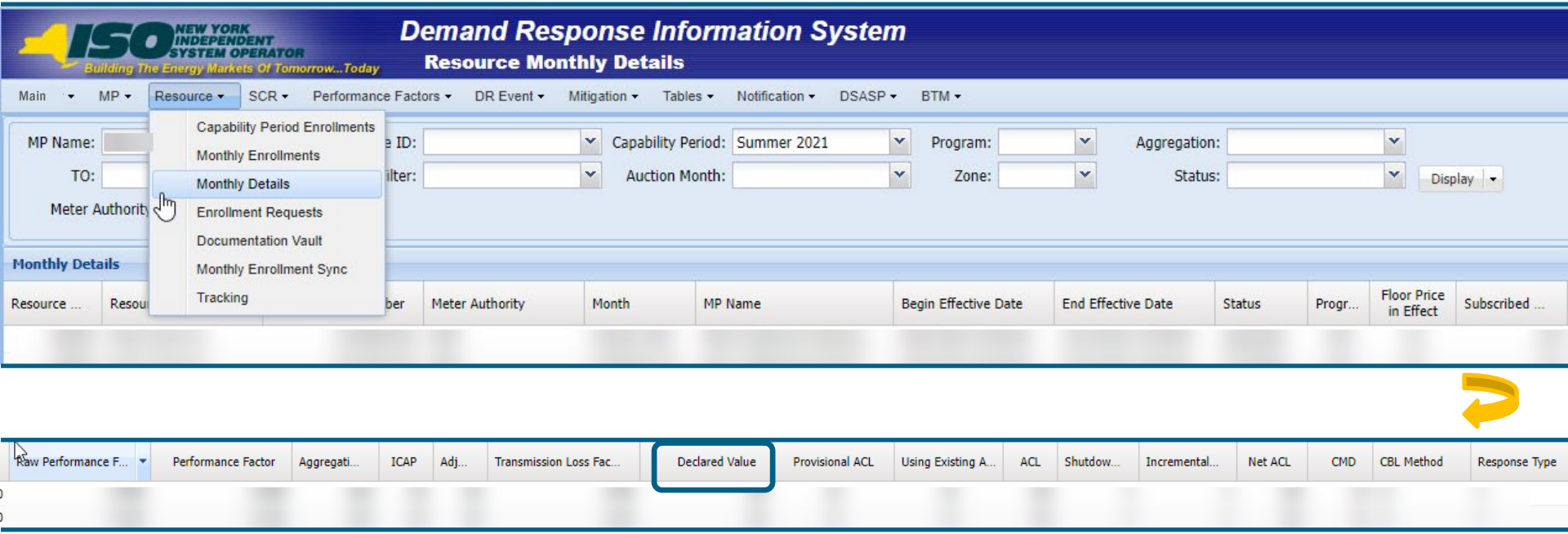


		Start Date	End Date	Start Message	End Message
		02/27/2021 08:00 AM	05/11/2021 05:00 PM	SCR - MPs may begin importing resource response data into DRIS for February 25th SC...	SCR - Deadline for MPs to import resource response data...
		04/03/2021 08:00 AM	06/15/2021 05:00 PM	SCR - MP's may begin importing resource response data into DRIS for April 1st SCR Wi...	SCR - Deadline for MP's to import resource response dat...
TO AddBac...	June 2021	04/23/2021 08:00 AM	05/06/2021 05:00 PM	SCR - Period Opens for TOs to import/modify add backs for non-provisional resources ...	SCR - Period Closes for TOs to import/modify add backs f...
NewAgg	June 2021	04/23/2021 08:00 AM	05/04/2021 05:00 PM	SCR - New Aggregation ID Request Period for Jun Opens	SCR - New Aggregation ID Request Period for Jun Closes
SCREnroll	June 2021	04/23/2021 08:00 AM	05/06/2021 05:00 PM	SCR - Enrollment Period for auction month of Jun Opens	SCR - Enrollment Period for auction month of Jun Closes
EDRPEnroll	June 2021	04/23/2021 08:00 AM	05/06/2021 05:00 PM	EDRP - Enrollment Period for auction month of Jun Opens	EDRP - Enrollment Period for auction month of Jun Closes
ResSalAll	May 2021	04/30/2021 08:00 AM	05/06/2021 05:00 PM	SCR - RIPs may begin to report resources with partial PTID Sales for May in DRIS	SCR - RIPs deadline to report resources with partial PTID...
COSReport	May 2021	05/01/2021 08:00 AM	10/31/2021 05:00 PM	SCR - MPs can begin to report Change of Status in DRIS for Summer 2021	SCR - Deadline for MPs to report Change of Status in DRI...
Cert	June 2021	05/01/2021 08:00 AM	05/20/2021 05:00 PM	CERTIFICATION - Certification Period begins for LSEs and Suppliers for Jun	CERTIFICATION - Deadline for Certification for LSEs and ...
Info Calendar	June 2021	05/06/2021 05:00 PM		SCR - Deadline to submit Offer Floor information for new SCRs in mitigated capacity zo...	
CalcAggPf	June 2021	05/07/2021 03:00 AM		SCR CalcAggPF #1 - for Auction Month Jun #1	
Monthly Offer	June 2021	05/07/2021 08:00 AM	05/10/2021 05:00 PM	MONTHLY AUCTION - Offer period opens for Jun Monthly Auction	MONTHLY AUCTION - Offer period closes for Jun Monthly...
DRIS Conta...	June 2021	05/27/2021 05:00 PM		SCR/EDRP - Deadline to update DRIS contacts to be used for event/test notifications fo...	
Spot Post	June 2021	05/27/2021 05:00 PM		SPOT MARKET AUCTION - ISO posts results of Jun Spot Market Auction	
ResSalAll	June 2021	05/28/2021 08:00 AM	06/04/2021 05:00 PM	SCR - RIPs may begin to report resources with partial PTID Sales for Jun in DRIS	SCR - RIPs deadline to report resources with partial PTID...
ProvAcl	November 2020	05/28/2021 08:00 AM	07/14/2021 05:00 PM	SCR - MPs can begin to import Provisional ACL Verification data from Winter 2020-2021	SCR - Deadline for MPs to import Provisional ACL Verifica...
SCR LZPH - ...	November 2020	05/28/2021 08:00 AM		SCR - MPs can view and export SCR Load Zone Peak Hours from Winter 2020-2021	
Inc ACL Ver...	November 2020	05/28/2021 08:00 AM	07/14/2021 05:00 PM	SCR - MPs can begin to import Incremental ACL Verification data from Winter 2020-2021	SCR - Deadline for MPs to import Incremental ACL Verific...
Holiday	May 2021	05/31/2021 12:00 AM		HOLIDAY - NYISO CLOSED	

Declared Value

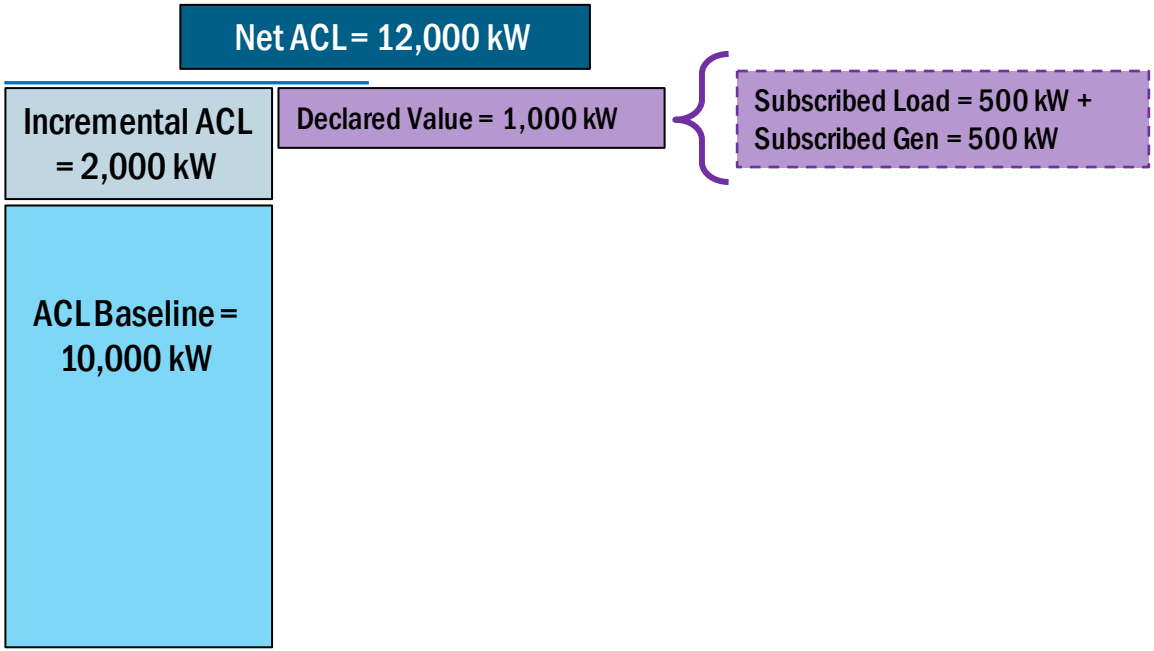
- Identified upon initial enrollment
- Represents the amount of capacity the SCR could make available
- Combination of Subscribed Load and Subscribed Generation
  - Subscribed Load
    - For resources with Response Type C or B, the Curtailment Declared ICAP value in kWh must be greater than or equal to zero
    - For resources with Response Type G, must be either blank or zero
  - Subscribed Generation
    - For resources with Response Type G or B, the Generation Declared ICAP value in kWh must be greater than or equal to zero and cannot be greater than the Generator Name Plate Rating
    - For resources with Response Type C, must be either blank or zero
  - For resources requesting existing ACL Data from the NYISO, must be null
- Declared Value cannot be greater than the resource's Net Average Coincident Load

Declared Value



Average Coincident Load (ACL)

- Example Resource's ACL



Performance Test Requirements

SCR Performance Test Requirements

- Must demonstrate its maximum enrolled Declared Value once in every Capability Period
- NYISO accepts the higher of its greatest load reduction either in a mandatory event hour or in a 1st Performance Test hour
  - Proxy Test Value –value based on mandatory event that may be used in place of value for the 1st Performance Test

	1st Performance Test Test Window	2nd Performance Test Date/Time determined by NYISO:
Summer Capability Period	August 15 – September 7	Late September or October
Winter Capability Period	February 15 – March 7	Late March or April

SCR Performance Test Requirements

- Requirements to perform in 2nd Performance Test
  - Any resource enrolled after 1st Performance Test
  - Any Resources with Incremental ACL after 1st Performance Test
  - Any SCR enrolled with a SCR Change of Status after 1st Performance Test
  - *Exception: Any SCR with a Change of Status reported after the close of enrollment for the last month of the Capability Period will not be required to perform in the 2nd Performance Test

Performance Test/ Event Notification and Event Response

Performance Test/Event Deployment

- A reliability event activation is one of the emergency procedures in response to an Operating Reserve Forecast Shortage
- SCR resources may be deployed in conjunction with EDRP resources, as part of a NYISO activated Reliability Demand Response
- Responsibilities of SCR resources during a Demand Response Event:
  - Receiving Event Notifications
  - Reporting expected curtailment values by zone
  - Performing load reduction during the event
- Performance test notifications will be sent out every Capability Period according to timeline presented earlier

SCR Test/Event Notification

- Notification types may include, but are not limited to:
  - Day-Ahead Advisory*
  - In-day advisory
  - Activation (2-hour Notice)*

    *Both required for mandatory response of SCR for 4 hours
  - Immediate activation (participation becomes voluntary)
  - Extension of Event or
  - Early termination of Event
- Notification from the NYISO will take place via two communications media:
  - Burst e-mail messages to all RIP Event-Responder e-mail contacts specified in DRIS
  - Automated phone call to all RIP Event-Responder phone contacts specified in DRIS
- Only contacts within DRIS with a contact type association of Event-Responder will receive event notifications of Demand Response events, SCR performance tests, and communication tests called by the NYISO

SCR Test/Event Notification

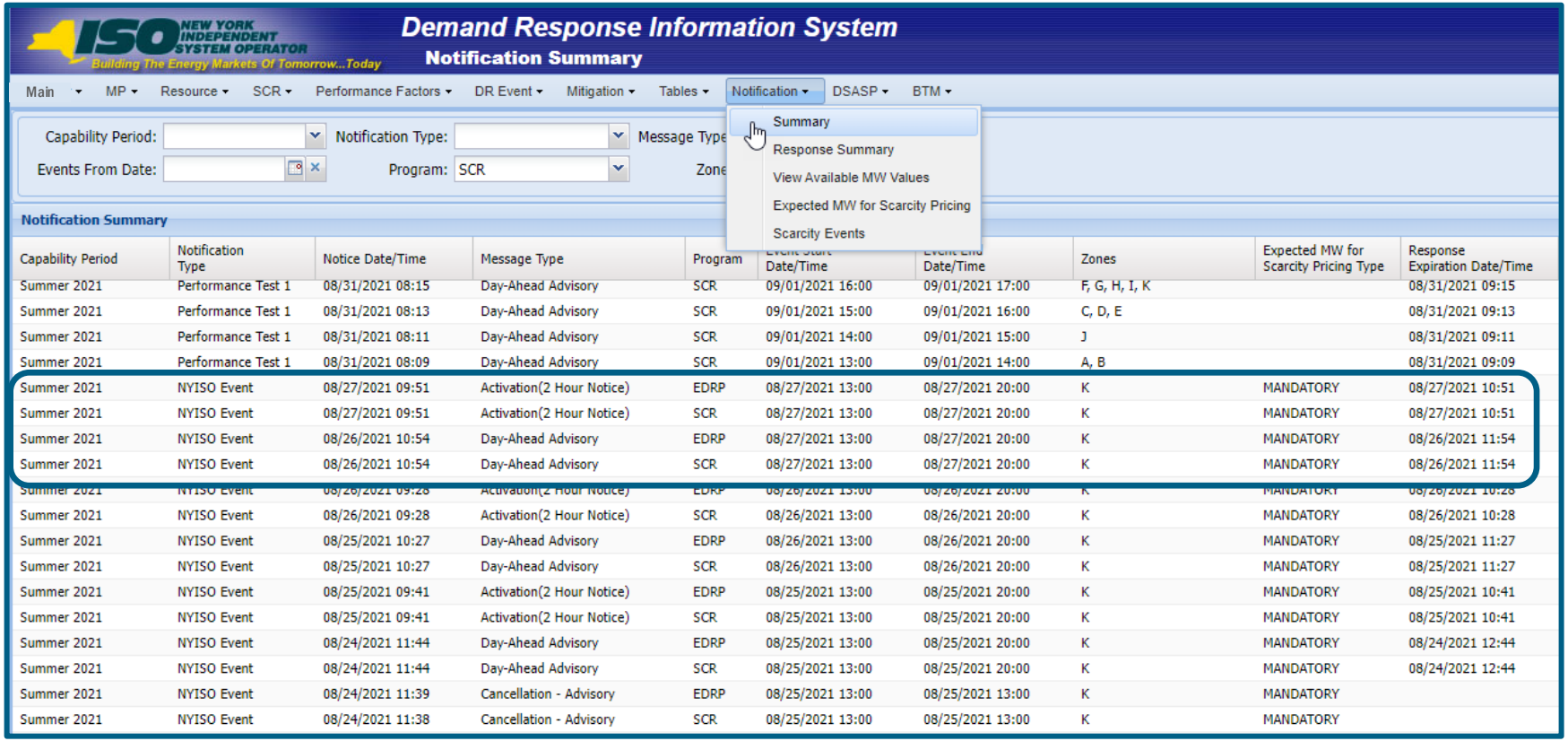
- Both e-mail and automated phone Test/Event Notifications contain the following parameters:
  - Notification Type: NYISO Event, Targeted Demand Response Program Event, Performance Test 1 or 2
  - Program: EDRP or SCR
  - Message type: Notification type as listed in previous slide
  - Zone(s) or Subload Pocket(s)
  - Start Time of Event
  - End Time of Event
  - Date of performance test or event
- E-mail notification will indicate the "From" address as edrp-scr@nyiso.com

SCR Test/Event Notification - RIP Response

New York ISO

- After receiving the SCR Notification, the RIP shall take the following steps:
  - Assess whether the RIP has resources that can respond, and the kW level of the response by zone
  - Provide the expected kW response ('expected curtailment value') for each zone or subload pocket for enrolled resources in accordance with the instructions in the notification
    - Must be entered in DRIS
    - Must respond within 1 Hour
  - If RIP could not enter the expected curtailment value in DRIS, they can provide the information to NYISO's Stakeholder Services
- If the NYISO does not receive the automated response before the Response expiration date/time, it may call upon additional RIP contact numbers to make a connection

Viewing Event Notification Response Deadline in DRIS



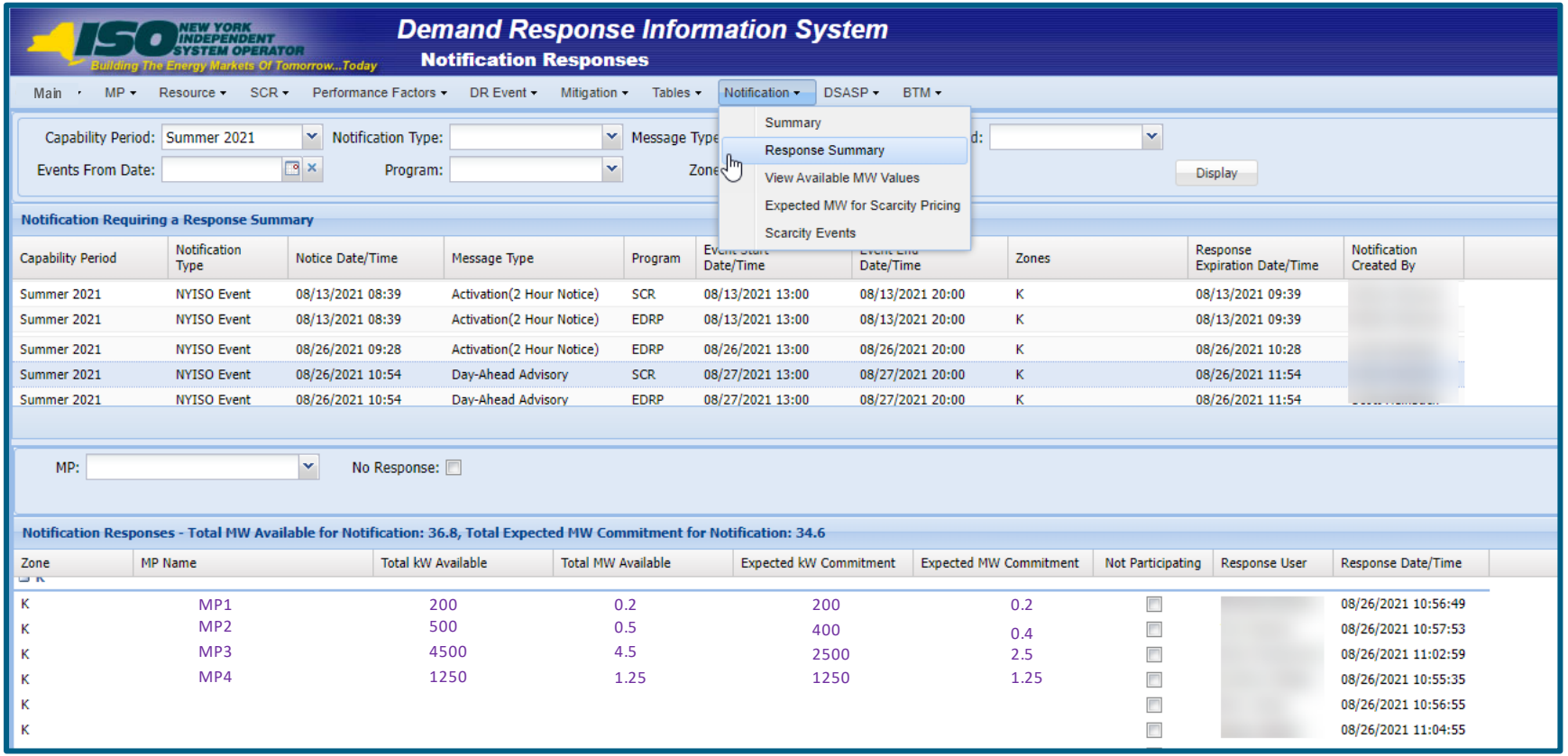
Capability Period	Notification Type	Notice Date/Time	Message Type	Program	Event Start Date/Time	Event End Date/Time	Zones	Expected MW for Scarcity Pricing Type	Response Expiration Date/Time
Summer 2021	Performance Test 1	08/31/2021 08:15	Day-Ahead Advisory	SCR	09/01/2021 16:00	09/01/2021 17:00	F, G, H, I, K		08/31/2021 09:15
Summer 2021	Performance Test 1	08/31/2021 08:13	Day-Ahead Advisory	SCR	09/01/2021 15:00	09/01/2021 16:00	C, D, E		08/31/2021 09:13
Summer 2021	Performance Test 1	08/31/2021 08:11	Day-Ahead Advisory	SCR	09/01/2021 14:00	09/01/2021 15:00	J		08/31/2021 09:11
Summer 2021	Performance Test 1	08/31/2021 08:09	Day-Ahead Advisory	SCR	09/01/2021 13:00	09/01/2021 14:00	A, B		08/31/2021 09:09
Summer 2021	NYISO Event	08/27/2021 09:51	Activation(2 Hour Notice)	EDRP	08/27/2021 13:00	08/27/2021 20:00	K	MANDATORY	08/27/2021 10:51
Summer 2021	NYISO Event	08/27/2021 09:51	Activation(2 Hour Notice)	SCR	08/27/2021 13:00	08/27/2021 20:00	K	MANDATORY	08/27/2021 10:51
Summer 2021	NYISO Event	08/26/2021 10:54	Day-Ahead Advisory	EDRP	08/27/2021 13:00	08/27/2021 20:00	K	MANDATORY	08/26/2021 11:54
Summer 2021	NYISO Event	08/26/2021 10:54	Day-Ahead Advisory	SCR	08/27/2021 13:00	08/27/2021 20:00	K	MANDATORY	08/26/2021 11:54
Summer 2021	NYISO Event	08/26/2021 09:28	Activation(2 Hour Notice)	SCR	08/26/2021 13:00	08/26/2021 20:00	K	MANDATORY	08/26/2021 10:28
Summer 2021	NYISO Event	08/25/2021 10:27	Day-Ahead Advisory	EDRP	08/26/2021 13:00	08/26/2021 20:00	K	MANDATORY	08/25/2021 11:27
Summer 2021	NYISO Event	08/25/2021 10:27	Day-Ahead Advisory	SCR	08/26/2021 13:00	08/26/2021 20:00	K	MANDATORY	08/25/2021 11:27
Summer 2021	NYISO Event	08/25/2021 09:41	Activation(2 Hour Notice)	EDRP	08/25/2021 13:00	08/25/2021 20:00	K	MANDATORY	08/25/2021 10:41
Summer 2021	NYISO Event	08/25/2021 09:41	Activation(2 Hour Notice)	SCR	08/25/2021 13:00	08/25/2021 20:00	K	MANDATORY	08/25/2021 10:41
Summer 2021	NYISO Event	08/24/2021 11:44	Day-Ahead Advisory	EDRP	08/25/2021 13:00	08/25/2021 20:00	K	MANDATORY	08/24/2021 12:44
Summer 2021	NYISO Event	08/24/2021 11:44	Day-Ahead Advisory	SCR	08/25/2021 13:00	08/25/2021 20:00	K	MANDATORY	08/24/2021 12:44
Summer 2021	NYISO Event	08/24/2021 11:39	Cancellation - Advisory	EDRP	08/25/2021 13:00	08/25/2021 13:00	K	MANDATORY	
Summer 2021	NYISO Event	08/24/2021 11:38	Cancellation - Advisory	SCR	08/25/2021 13:00	08/25/2021 13:00	K	MANDATORY	

Event Notification- RIP Response

New York ISO

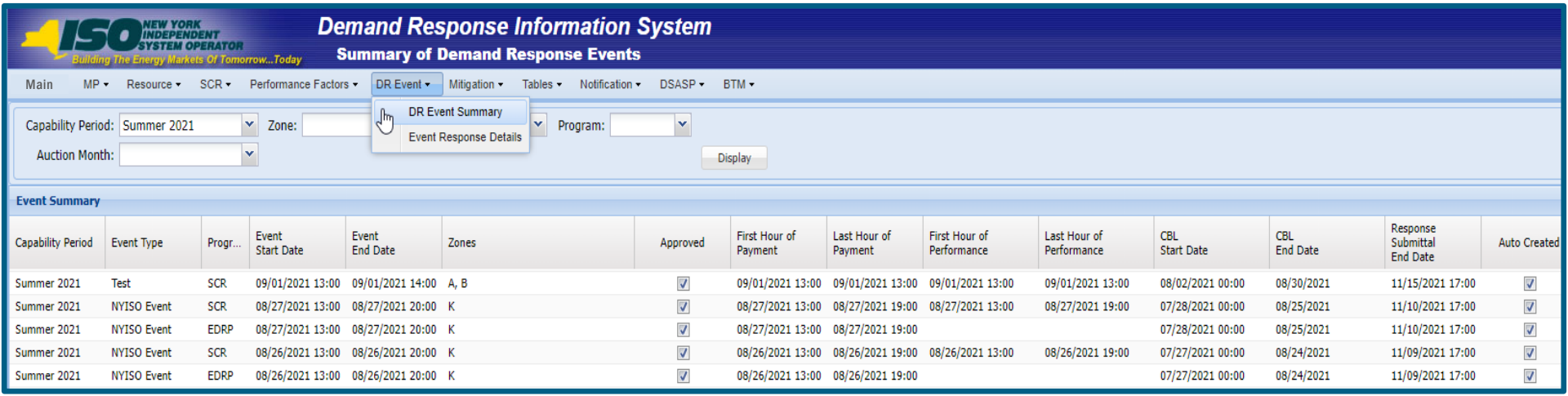
- RIPs should respond with the expected curtailment values for each zone indicated in the Event Notification for which the resources are enrolled in DRIS, according to instructions provided in the DRIS user's Guide (Section 11.3)
- RIPs may provide multiple updates to the expected curtailment value; the value with the most recent submittal time will be saved in DRIS

Event Notification – RIP Response



Representative MP information

Event Summary



Capability Period	Event Type	Progr...	Event Start Date	Event End Date	Zones	Approved	First Hour of Payment	Last Hour of Payment	First Hour of Performance	Last Hour of Performance	CBL Start Date	CBL End Date	Response Submittal End Date	Auto Created
Summer 2021	Test	SCR	09/01/2021 13:00	09/01/2021 14:00	A, B	☑	09/01/2021 13:00	09/01/2021 13:00	09/01/2021 13:00	09/01/2021 13:00	08/02/2021 00:00	08/30/2021	11/15/2021 17:00	☑
Summer 2021	NYISO Event	SCR	08/27/2021 13:00	08/27/2021 20:00	K	☑	08/27/2021 13:00	08/27/2021 19:00	08/27/2021 13:00	08/27/2021 19:00	07/28/2021 00:00	08/25/2021	11/10/2021 17:00	☑
Summer 2021	NYISO Event	EDRP	08/27/2021 13:00	08/27/2021 20:00	K	☑	08/27/2021 13:00	08/27/2021 19:00			07/28/2021 00:00	08/25/2021	11/10/2021 17:00	☑
Summer 2021	NYISO Event	SCR	08/26/2021 13:00	08/26/2021 20:00	K	☑	08/26/2021 13:00	08/26/2021 19:00	08/26/2021 13:00	08/26/2021 19:00	07/27/2021 00:00	08/24/2021	11/09/2021 17:00	☑
Summer 2021	NYISO Event	EDRP	08/26/2021 13:00	08/26/2021 20:00	K	☑	08/26/2021 13:00	08/26/2021 19:00			07/27/2021 00:00	08/24/2021	11/09/2021 17:00	☑

- **Important fields to note:**
  - Event Start and End Date
  - First and last hour of Payment and performance
  - CBL Start and End Date
  - Response submittal End Date

Energy Reduction Baseline- CBL

Customer Baseline Load (CBL)

- Used to calculate energy market settlements for curtailment response during a Demand Response event or test
- Based on highest five consumption days of last 10 “like” days prior to the DR Event - (weekday calculation)
  - Average Day CBL
  - Weather Adjusted CBL
  - CBL for Local Generator
- CBL Calculation and Response Type:
  - Response type C
  - Response type G
  - Response type B

Average Day CBL - Weekday

New York ISO

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9 Day 30	Jun 10 Day 29	Jun 11 Day 28	Jun 12 Day 27	Jun 13 Day 26	Jun 14 Day 25
Jun 15 Day 24	Jun 16 Day 23	Jun 17 Day 22	Jun 18 Day 21	Jun 19 Day 20	Jun 20 Day 19	Jun 21 Day 18
Jun 22 Day 17	Jun 23 Day 16	Jun 24 Day 15	Jun 25 Day 14	Jun 26 Day 13	Jun 27 Day 12	Jun 28 Day 11
Jun 29 Day 10	Jun 30 Day 9	Jul 1 Day 8	Jul 2 Day 7	Jul 3 Day 6	Jul 4 Day 5	Jul 5 Day 4
Jul 6 Day 3	Jul 7 Day 2	Jul 8 Day 1	Jul 9 Event	Jul 10	Jul 11	Jul 12

Average Day CBL – Weekday

New York ISO

1. Establish CBL Window

Select 10 days prior to event from a 30 day period immediately before the event (based on specific exclusions)

2. Establish CBL Basis

Select 5 highest ranked days, based on average daily event period usage, from the 10 day CBL window

3. Calculate CBL

For each hour of the event, calculate CBL as the average hourly usage for the 5 days in the CBL Basis

Average Day CBL - Weekday

New York ISO

1. Establish the CBL Window for weekdays:

Step 1: Determine resource's peak load for the last 30 days that corresponds to the hours that cover the event

Average Day CBL - Weekday

New York ISO

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9 Day 30 9	Jun 10 Day 29 9	Jun 11 Day 28 8	Jun 12 Day 27 8	Jun 13 Day 26 10	Jun 14 Day 25 7
Jun 15 Day 24 5	Jun 16 Day 23 8	Jun 17 Day 22 9	Jun 18 Day 21 10	Jun 19 Day 20 13	Jun 20 Day 19 11	Jun 21 Day 18 6
Jun 22 Day 17 5	Jun 23 Day 16 10	Jun 24 Day 15 7	Jun 25 Day 14 8	Jun 26 Day 13 8	Jun 27 Day 12 12	Jun 28 Day 11 7
Jun 29 Day 10 5	Jun 30 Day 9 11	Jul 1 Day 8 8	Jul 2 Day 7 12	Jul 3 Day 6 9	Jul 4 Day 5 5	Jul 5 Day 4 6
Jul 6 Day 3 5	Jul 7 Day 2 11	Jul 8 Day 1 11	Jul 9 Event	Jul 10	Jul 11	Jul 12

Maximum Load Value during Event hours

Peak Load hour = 13 (Day 20)

Average Day CBL - Weekday

Step 2: Within the chosen 30 days prior to the event for which CBL is being calculated, beginning with the day prior to the event, exclude:

- Any holidays, as specified by the NYISO
- Days and the days prior when NYISO declared as SCR, EDRP or a TDRP event for which the resource was eligible for payment for a curtailment
- Days and the days prior in which the resource's DADRP curtailment bid was accepted in the DAM, whether or not the resource actually curtailed

Average Day CBL - Weekday

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9 Day 30 9	Jun 10 Day 29 9	Jun 11 Day 28 8	Jun 12 Day 27 8	Jun 13 Day 26 10	Jun 14 Day 25 7
Jun 15 Day 24 5	Jun 16 Day 23 8	Jun 17 Day 22 9	Jun 18 Day 21 10	Jun 19 Day 20 13	Jun 20 Day 19 11	Jun 21 Day 18 6
Jun 22 Day 17 5	Jun 23 Day 16 10	Jun 24 Day 15 7	Jun 25 Day 14 8	Jun 26 Day 13 8	Jun 27 Day 12 12	Jun 28 Day 11 7
Jun 29 Day 10 5	Jun 30 Day 9 11	Jul 1 Day 8 8	Jul 2 Day 7 12	Jul 3 Day 6 9	Jul 4 Holiday	Jul 5 Day 4 6
Jul 6 Day 3 5	Jul 7 Day 2 11	Jul 8 Ineligible Day (Day Before)	Jul 9 Event	Jul 10	Jul 11	Jul 12

Maximum Load Value during Event hours

Peak Load hour = 13 (Day 20)

Average Day CBL - Weekday

Step 3: Calculate the initial seed value:

Initial seed value = 25% x Maximum peak load hour value

= 25% x 13

= 3.25

Step 4: For each remaining weekday that is not excluded, within the last 30 days, calculate Average Daily Event Period Usage (simple average of resource's usage over hours defining the event)

If Average Daily Event Period Usage < Initial Seed Value, exclude that day

Average Day CBL - Weekday

Step 5: After all exclusions, establish the CBL window (reverse order selection of the last 10 days prior to the event for which CBL is being calculated)

- After all exclusions, if there are fewer than 10 days, but no less than 5 days, establish those days as part of the CBL window
- If fewer than 5 days remain, contact NYISO Stakeholder Services

Average Day CBL - Weekday

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9	Jun 10	Jun 11	Jun 12	Jun 13	Jun 14
Jun 15	Jun 16	Jun 17	Jun 18	Jun 19	Jun 20	Jun 21
Jun 22	Jun 23 CBL Day 10 For July 9	Jun 24 CBL Day 9 For July 9	Jun 25 CBL Day 8 For July 9	Jun 26 CBL Day 7 For July 9	Jun 27 CBL Day 6 For July 9	Jun 28
Jun 29	Jun 30 CBL Day 5 For July 9	Jul 1 CBL Day 4 For July 9	Jul 2 CBL Day 3 For July 9	Jul 3 CBL Day 2 For July 9	Jul 4 Holiday	Jul 5
Jul 6	Jul 7 CBL Day 1 For July 9	Jul 8 Ineligible Day (Day Before)	Jul 9 Event	Jul 10	Jul 11	Jul 12

Average Day CBL - Weekday

CBL Window Selection- Single Weekday Event Example										
Event date	Day 1	Day 2	Day3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
9-July	7-July	3-July	2-July	1-July	6/30	6/27	6/26	6/25	6/24	6/23

Average Day CBL - Weekday

New York ISO

- Example of CBL Window selection if there are multiple events

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9	Jun 10	Jun 11	Jun 12	Jun 13	Jun 14
Jun 15	Jun 16	Jun 17	Jun 18	Jun 19 CBL Day 10 for July 9	Jun 20 CBL Day 9 for July 9	Jun 21
Jun 22	Jun 23 CBL Day 8 for July 9	Jun 24 CBL Day 7 for July 9	Jun 25 CBL Day 6 for July 9	Jun 26 CBL Day 5 for July 9	Jun 27 CBL Day 4 for July 9	Jun 28
Jun 29	Jun 30 Ineligible Day (Day Before)	Jul 1 DADRP Schedule	Jul 2 CBL Day 3 for July 9	Jul 3 CBL Day 2 for July 9	Jul 4 Holiday	Jul 5
Jul 6	Jul 7 CBL Day 1 for July 9	Jul 8 Ineligible Day (Day Before)	Jul 9 Event	Jul 10	Jul 11	Jul 12

Average Day CBL- Weekday

CBL Window Selection- Multiple Weekday Event Example										
Event date	Day 1	Day 2	Day3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
9-July	3-July	2-July	2-July	27-June	26-June	25-June	24-June	23-June	20-June	19-June

Average Day CBL-Weekday

New York ISO

2. Establish the CBL Basis:

CBL window	HB 12	HB 13	HB 14	HB 15	Total Event Period usage	Avg Event Period usage	Rank
CBL DAY 1	10	11	7	5	33	8.33	4
CBL DAY 2	8	6	9	6	29	7.25	7
CBL DAY 3	9	12	10	7	38	9.5	1
CBL DAY 4	7	8	6	6	27	6.75	8
CBL DAY 5	10	11	9	7	37	9.25	2
CBL DAY 6	12	8	9	7	36	9.00	3
CBL DAY 7	5	8	8	6	27	6.75	8
CBL DAY 8	7	8	8	7	30	7.50	6
CBL DAY 9	7	6	6	5	24	6.00	10
CBL DAY 10	8	10	9	6	33	8.25	5

Step 1: Rank the days from the CBL window according to the Average Daily Event period usage level

- The Reliability event on July 9 was from 12 noon to 4 pm (HB 12 to HB 15)

  The MWh consumption for those 4 hours for the days that form the CBL window are given above

Average Day CBL-Weekday

New York ISO

Step 2: Select the top 5 ranked days. These days will form the CBL basis

CBL window	HB 12	HB 13	HB 14	HB 15	Total Event Period usage	Avg Event Period usage	Rank
CBL DAY 1	10	11	7	5	33	8.33	4
CBL DAY 3	9	12	10	7	38	9.5	1
CBL DAY 5	10	11	9	7	37	9.25	2
CBL DAY 6	12	8	9	7	36	9.00	3
CBL DAY 10	8	10	9	6	33	8.25	5

Average Day CBL-Weekday

New York ISO

3. Calculate CBL for each hour:

Using the 5 highest ranked days selected (simple average for each hour)

CBL window	HB 12	HB 13	HB 14	HB 15
CBL DAY 1	10	11	7	5
CBL DAY 3	9	12	10	7
CBL DAY 5	10	11	9	7
CBL DAY 6	12	8	9	7
CBL DAY 10	8	10	9	6

Time	HB 12	HB 13	HB 14	HB 15
Avg day CBL	9.8	10.4	9	6.4

Weather Adjusted CBL- Weekday

New York ISO

- For weather adjusted CBL calculation, the CBL would be adjusted upward or downward based on the actual usage for 2 hours, starting 4 hours prior to start of event
  - CBL is adjusted using the Gross Adjustment Factor

$$\text{Gross Adjustment Factor} = \frac{\text{Adjustment Basis Average Usage}}{\text{Adjustment Basis Average CBL}}$$

Adjustment Basis Average Usage : Average of actual usage for 2 hours, starting 4 hours prior to start of Event
Adjustment Basis Average CBL: Average of CBL calculated for 2 hours, starting 4 hours prior to start of Event

Weather Adjusted CBL- Weekday

Hours used for Weather Adjustment

Event duration

CBL Basis Days

	HB 8	HB 9	HB 10	HB 11	HB 12	HB 13	HB 14	HB 15
CBL DAY 1	5	5	7	8	10	11	7	5
CBL DAY 2	4	5	6	8	9	12	9	7
CBL DAY 3	3	4	5	7	10	11	9	7
CBL DAY 4	6	2	5	8	12	8	9	7
CBL DAY 5	4	4	5	7	8	10	9	6

Weather Adjusted CBL- Weekday

New York ISO

Adjustment Basis Average CBL: Average of the MWh for HB8 and HB9 over the 5 days chosen for CBL calculation (CBL basis)

CBL Basis Days

	HB 8	HB 9	HB 10	HB 11	HB 12	HB 13	HB 14	HB 15
CBL DAY 1	5	5	7	8	10	11	7	5
CBL DAY 2	4	5	6	8	9	12	9	7
CBL DAY 3	3	4	5	7	10	11	9	7
CBL DAY 4	6	2	5	8	12	8	9	7
CBL DAY 5	4	4	5	7	8	10	9	6
Avg. Adjustment hours	4.4	4.0						

Adjustment Basis Average CBL = (4.4+4.0)/2
= 4.2

Weather Adjusted CBL- Weekday

Adjustment Basis Average Usage : Average of actual load MWh in HB8 and HB9 on the day of the event (2 hours prior to event notification)

	HB 8	HB 9
Event Day-Actual Load	4	5

Adjustment Basis Average Usage = (4+5)/2
= 4.5

Weather Adjusted CBL-Weekday

New York ISO

Gross Adjustment Factor	= 4.5/4.2 = 1.07

The CBL is weather adjusted upward by 7%

Time	HB 12	HB 13	HB 14	HB 15
Avg day CBL	9.8	10.4	8.6	6.5
Weather Adjusted CBL	10.5	11.1	9.2	7.0

Note: If the average of actual usage in the 2 specified hours is lower than the Adjustment Basis Average CBL, the ratio will be less than 1, and therefore CBL would be adjusted downward

* Up to ±20%

Average Day CBL- Weekends

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9	Jun 10	Jun 11	Jun 12	Jun 13	Jun 14
Jun 15	Jun 16	Jun 17	Jun 18	Jun 19	Jun 20	Jun 21
Jun 22	Jun 23	Jun 24	Jun 25	Jun 26	Jun 27	Jun 28
Jun 29	Jun 30	Jul 1	Jul 2	Jul 3	Jul 4	Jul 5 Event
Jul 6	Jul 7	Jul 8	Jul 9	Jul 10	Jul 11	Jul 12

Average Day CBL - Weekend

1. Establish CBL Window

Select 3 prior like weekend days immediately before the event (no exclusions)

2.Establish CBL Basis

Select the 2 highest ranked days, based on average daily event period usage, from the 3 day CBL window

3. Calculate CBL

For each hour of the event, calculate CBL as the average hourly usage for the 2 days in the CBL Basis

Average Day CBL- Weekends

SUN	MON	TUE	WED	THU	FRI	SAT
Jun 8	Jun 9	Jun 10	Jun 11	Jun 12	Jun 13	Jun 14 CBL Day 3 For July 5
Jun 15	Jun 16	Jun 17	Jun 18	Jun 19	Jun 20	Jun 21 CBL Day 2 For July 5
Jun 22	Jun 23	Jun 24	Jun 25	Jun 26	Jun 27	Jun 28 CBL Day 1 For July 5
Jun 29	Jun 30	Jul 1	Jul 2	Jul 3	Jul 4	Jul 5 Event
Jul 6 Day 3	Jul 7 Day 2	Jul 8	Jul 9	Jul 10	Jul 11	Jul 12

CBL Calculation Method - Local Generator Resources

New York ISO

1. Establish CBL Window

Similar to other Demand Response Resources

2. Establish CBL Basis

Select 5 lowest ranked days, based on total MWh generator output (sum of generator output for each hour in the event) for days in the CBL window

3. Calculate CBL

For each hour of the event, calculate CBL as the average generator output for the days in the CBL Basis

Reporting Test and Event Data

Reporting Data

- RIP will be responsible for submitting each SCR's metered data to validate load curtailment response to NYISO directive achieved during an event or test through an import file into DRIS
  - Submit data within 75 days of test/event (on or before 5:00 PM)
  - Submit responses by test/event for each individual resource
  - Resource kW responses reported for each test/event hour
- The DRIS Calendar Event allows for importing response data up to the deadline specified for each test/event
- Imported data will be used for both the determination of future performance calculations and for the processing of payment for the test/event

Additional Reporting

- Peak Monthly Demand kW Data
  - Requested by MMA and DRO each Capability Period
- SCR Gen During Peak
  - Requested by DRO once every year
    - Form on DER Web page
  - Any Local Generator operating during peak that fails to timely report the amount of generation it produced is ineligible for participation in the upcoming Capability Year
- Verification of Provisional and Incremental ACL

Report Data available in DRIS

- Once the MP has successfully imported resource responses to an event or test, the response data can be viewed at varying levels of detail
- MPs can monitor when a resource response that was reported for payment has been processed, billed, and invoiced
- DRIS provides for downloading event payment details for viewing payment data by a specific event or test

Data Verification

Verification - ACL

- ACL kW data for each Capability Period SCR Load Zone Peak Hour from the Prior Equivalent Capability Period
  - Required to support the use of a Provisional ACL
- ACL kW data for each SCR Monthly Load Zone Peak hour from the Prior Equivalent Capability Period
  - Required to verify an SCR enrollment with an Incremental ACL

Calculation of Committed Maximum Demand (CMD)

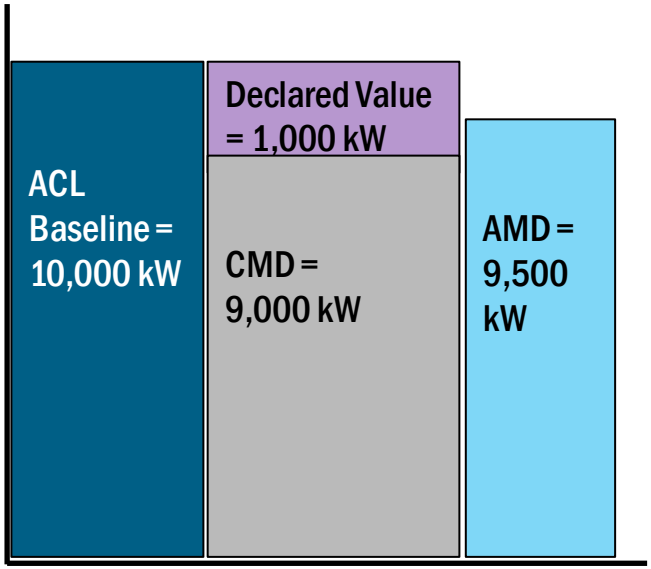
New York ISO

- Meter data verification involves calculating the Committed Maximum Demand (CMD) for each resource
- CMD is calculated by subtracting the Declared Value from the resource's baseline (ACL)
- CMD is compared to submitted meter data to calculate hourly Performance Factor
  - If Actual Meter Data (AMD) is greater than CMD value then, resource under performed
  - If Actual Meter Data (AMD) is less than CMD value, then resource over performed

Committed Maximum Demand (CMD) – Example 1

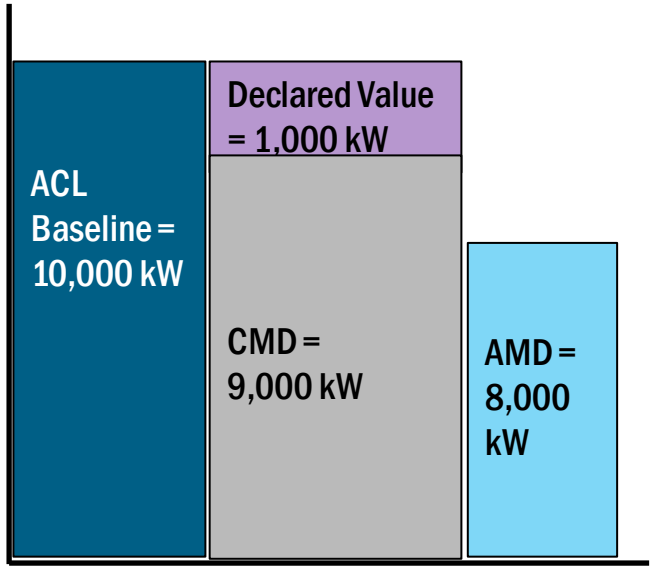
New York ISO

Average Coincident Load (ACL)	10,000 kW
Declared value	1,000 kW
Committed Maximum Demand = (ACL – Declared Value)	10,000 kW – 1,000 kW = 9,000 kW
Case 1: Actual Meter Demand (AMD) = 9,500 kW	AMD > CMD, Resource under performed



Committed Maximum Demand (CMD) – Example 2

Average Coincident Load (ACL)	10,000 kW
Declared value	1,000 kW
Committed Maximum Demand = (ACL – Declared Value)	10,000 kW – 1,000 kW = 9,000 kW
Case 2: Actual Meter Demand (AMD) = 8,000 kW	AMD < CMD, Resource over performed



Verification

- DRO Requested Documentation
  - Location, meter, etc.
- Utility or MSE Confirmation of Meter Data
  - Meter data in DRIS matches utility or MSE meter data
- Meter Data Changes and other Reporting Errors
  - Process to request updates to meter data per ICAP Manual 4.12.4.9

Performance Factors

Performance Factors

New York ISO

- Used to determine the amount of UCAP the SCR is qualified to offer in Capacity Market

- Types of Performance Factors
  - Raw Performance Factor and SCR Performance Factor (for Capability Period)
  - RIP [MP] Performance Factor (for Capability Period)
  - SCR Program Performance Factor (for Capability Period)
  - SCR Aggregation Performance Factor (for month within Capability Period)

Performance Factors

- NYISO calculates Performance Factors for each SCR based on the following values from the Prior Equivalent Capability Period and the Capability Period preceding the Prior Equivalent Capability Period
  - The best set of 4 consecutive hours in each mandatory event of 4 hours or more
  - All hours for mandatory events less than or equal to 4 hours
  - All required 1-hour performance test data

Performance Factors

New York ISO

- Raw Performance Factor
  - Resource Performance Factor before it is adjusted
  - Allows for over performance of the resource
  - Viewable on MP Performance Factor screen in DRIS beginning with the Summer 2012 Capability Period
  - Raw Performance Factors are used to determine the RIP [MP] Performance Factor and the SCR Program Performance Factor

Performance Factors

New York ISO

- SCR Performance Factor
  - The average of the SCR's adjusted hourly performance factors for each of the SCR's best four consecutive hours in all its mandatory events and required one-hour tests

Adjusted Hourly Performance Factor = **Minimum (Raw Performance Factor, 1)**

Performance Factors

New York ISO

SCR Performance Factor:

$$\text{Hourly Raw Performance Factor} = \frac{\text{Hourly Capacity SCR Reduction}}{\text{(Applicable ACL – CMD)}}$$

For SCR with Load Curtailment (Response Type B or C)

Hourly Capacity SCR Reduction = Applicable ACL – (Metered Load For Event/test hour)

For SCR with output from a Local Generator (Response Type G)

Hourly Capacity SCR Reduction = Metered Generator Output For Event/test hour

For an individual SCR, both Minimum Hourly Raw Performance Factor and Minimum Hourly Capacity Reduction is ZERO

Performance Factors

New York ISO

RIP [MP] Performance Factor for Current Capability Period

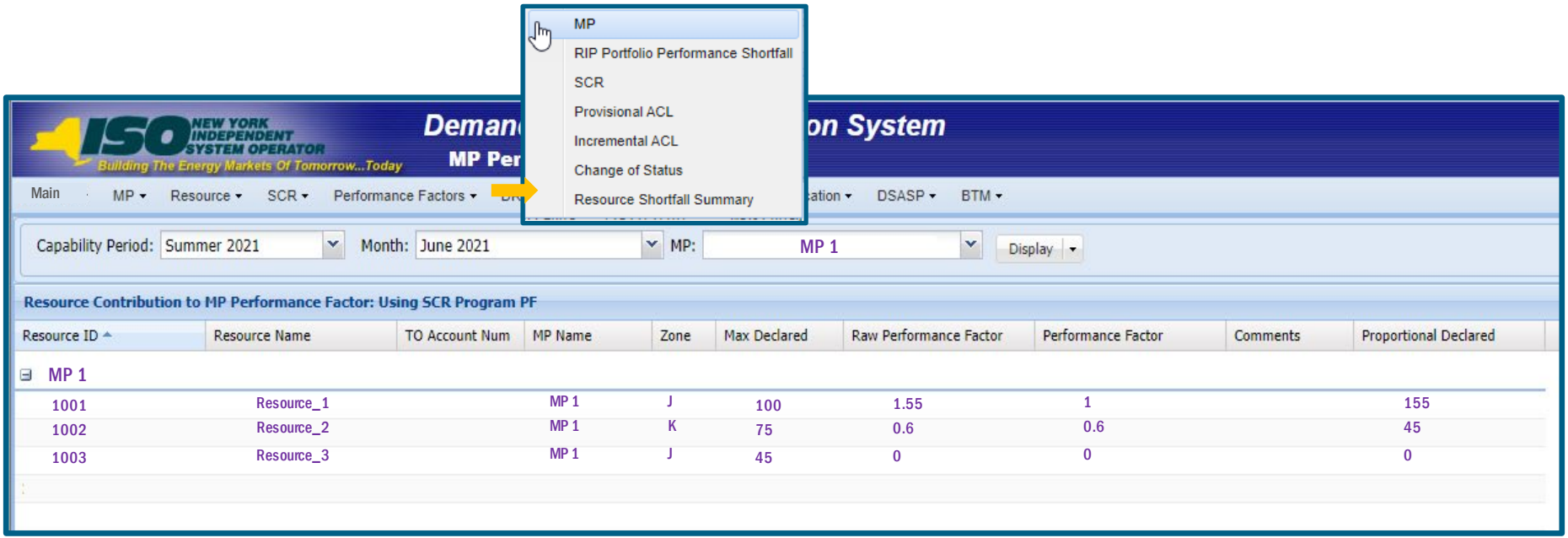
$$\text{RIP Performance Factor (for current Capability Period)} = \frac{\text{Sum (Proportional Declared Value of all SCRs enrolled by RIP in Prior Equivalent Capability Period)}}{\text{Sum (Maximum Declared Value from Prior Equivalent Capability Period)}}$$

Where:

$$\text{Proportional Declared Value} = \text{Max Declared Value from Prior Equiv Capability Period} \times \text{Raw Performance Factor for Current Capability Period}$$

RIP [MP] Performance Factor is used to determine the amount of UCAP a new SCR, without any history of performance, enrolling with an existing RIP is qualified to offer into the Installed Capacity market

Performance Factors - DRIS



Performance Factors

New York ISO

SCR Program Performance Factor for Current Capability Period

$$\text{SCR Program Performance Factor (for current Capability Period)} = \frac{\text{Sum (Proportional Declared Value of all SCRs enrolled in Prior Equivalent Capability Period)}}{\text{Sum (Maximum Declared Value from Prior Equivalent Capability Period)}}$$

Where:

$$\text{Proportional Declared Value} = \text{Max Declared Value from Prior Equiv Capability Period} \times \text{Raw Performance Factor for Current Capability Period}$$

SCR Program Performance Factor is used to determine the amount of UCAP a new SCR, without any history of performance, enrolling with a new RIP is qualified to offer into the Capacity market

Performance Factors

New York ISO

- SCR Aggregation Performance Factor
  - Recognizes over-performance by one SCR to compensate for under-performance by another SCR in the same SCR aggregation
  - Determined using enrollment and hourly event and required test response data from all SCRs assigned to the SCR Aggregation from the Prior Equivalent Capability Period and the Capability Period immediately preceding the Prior Equivalent Capability Period
  - SCR Aggregation Performance Factor is used to determine the amount of UCAP an existing SCR, with history of performance, is qualified to offer into the Capacity market

Performance Factors

New York ISO

SCR Aggregation Performance Factor for Current Capability Period and Auction month

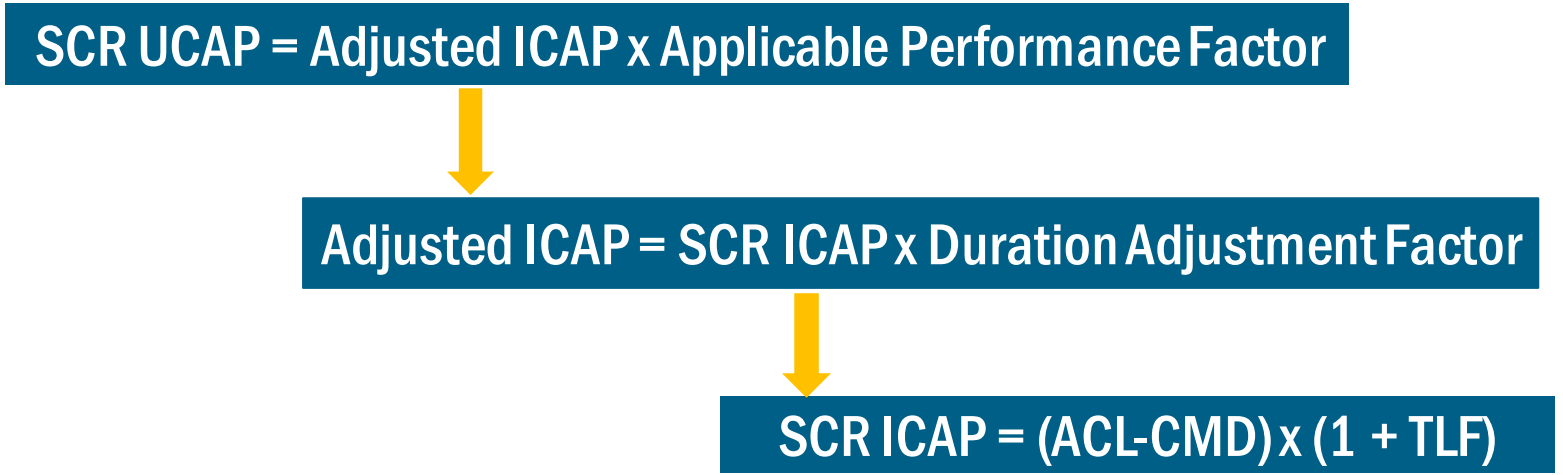
$$\text{SCR Aggregation Performance Factor for a month} = \text{Average}\left(\text{SCR Aggregation Adjusted Hourly Performance Factors during the best 4 consecutive hours in each Event and Performance Test}\right)$$

$$\text{SCR Aggregation Adjusted Hourly Performance Factor} = \text{Min}\left\{\left(\frac{\text{Sum (Hourly Capacity Reduction of every SCR in Aggregation)}}{\text{Sum(Applicable ACLs) – Sum (CMDs assigned to Aggregation)}}\right), 1\right\}$$

Determined using hourly event and Performance Test response data from all SCRs assigned to the SCR Aggregation from the Prior Equivalent Capability Period and the Capability Period immediately preceding the Prior Equivalent Capability Period

Calculating UCAP for SCRs

Calculating SCR UCAP



Where
ACL = Average Coincident Load
CMD = Committed maximum Demand
TLF = Transmission Loss Factors

Calculating SCR UCAP

	Incremental Penetration of Resources with EDLs	
	Less than 1000 MW	1000 MW and greater
Energy Duration Limitation (hours)	Duration Adjustment Factor (%)	Duration Adjustment Factor (%)
2	45	37.5
4	90	75
6	100	90
8	100	100

- Duration Adjustment Factor: The value of Installed Capacity, expressed as a percentage, for a Resource
  - Each Energy Duration Limitation has a corresponding Duration Adjustment Factor
  - The Duration Adjustment Factor is a component of Adjusted ICAP, UCAP, and therefore capacity payment for the resource
  - SCRs are 4-hour resources and will therefore use a 90% Duration Adjustment Factor

ICAP Manual, Section 4.1.1

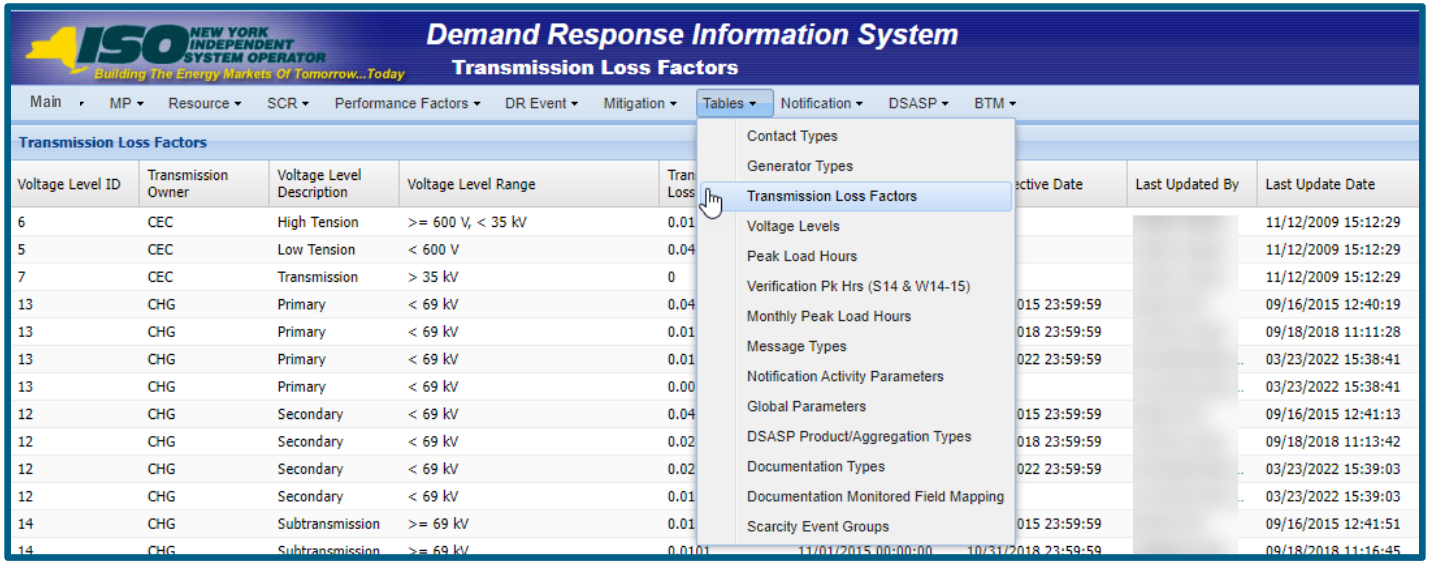
Calculating SCR UCAP

- Applicable Performance Factors of each individual SCR includes

RIP (MP) Performance Factor	New SCR, without any history of performance, enrolling with an existing RIP
SCR Program Performance Factor	New SCR, without any history of performance, enrolling with a new RIP
SCR Aggregation performance Factor	Existing SCR, with prior history of performance

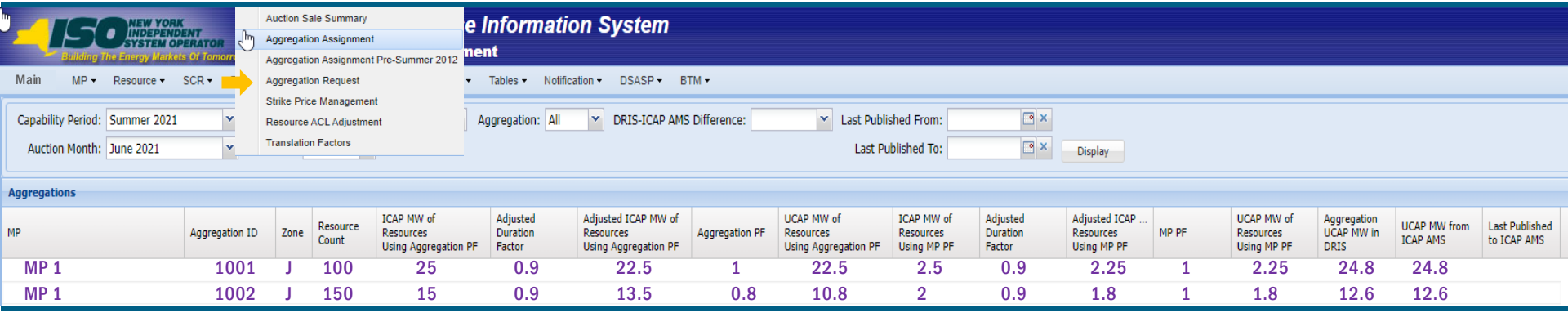
Calculating SCR UCAP

- Transmission Loss Factors (TLF) viewable in DRIS



SCR UCAP assignment within Aggregations

- Aggregation Assignment Screen – DRIS
  - Resources are moved between aggregations during the Aggregation Management period specified in the DRIS Event Calendar
  - Aggregation Performance Factors and UCAP Values are calculated and viewable in DRIS upon close of SCR Enrollment Period
    - Values recalculated monthly when
      - Resources are moved between aggregations during the Aggregation Management period or
      - There is a change in enrollment status or a pending request has been approved



MP	Aggregation ID	Zone	Resource Count	ICAP MW of Resources Using Aggregation PF	Adjusted Duration Factor	Adjusted ICAP MW of Resources Using Aggregation PF	Aggregation PF	UCAP MW of Resources Using Aggregation PF	ICAP MW of Resources Using MP PF	Adjusted Duration Factor	Adjusted ICAP ... Resources Using MP PF	MP PF	UCAP MW of Resources Using MP PF	Aggregation UCAP MW in DRIS	UCAP MW from ICAP AMS	Last Published to ICAP AMS
MP 1	1001	J	100	25	0.9	22.5	1	22.5	2.5	0.9	2.25	1	2.25	24.8	24.8	
MP 1	1002	J	150	15	0.9	13.5	0.8	10.8	2	0.9	1.8	1	1.8	12.6	12.6	

SCR- Selling Capacity as an ICAP Supplier

New York ISO

- Selling Capacity:
  - NYISO Administered Auctions
    - Capability Period or Strip Auctions, Monthly Auctions or Spot Market Auctions
  - Bilateral Capacity Transactions
    - Exception: New SCR in mitigated capacity zone
    - SCR UCAP cannot be claimed by an LSE to fulfil their own capacity obligations
      - Must be enrolled by a RIP and accepted by NYISO

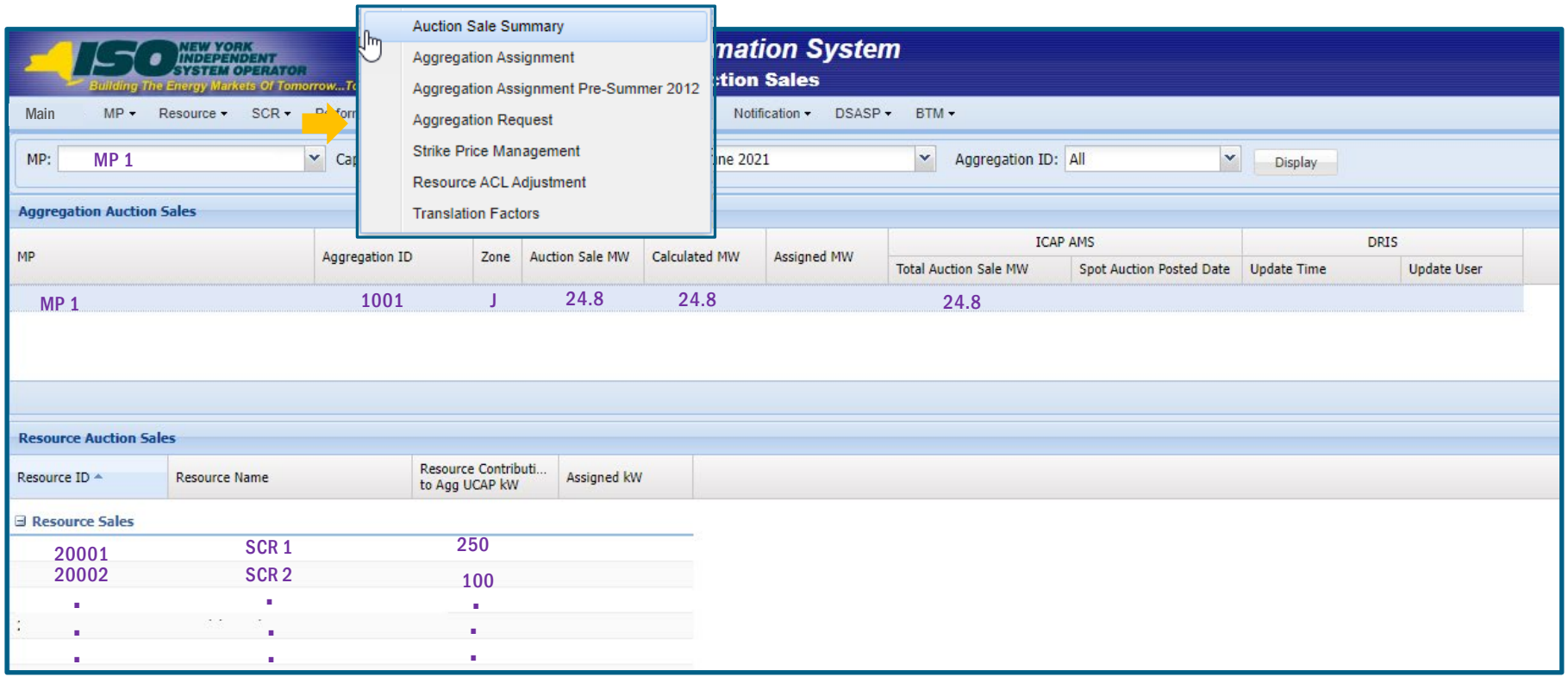
SCR- Selling Capacity as an ICAP Supplier

New York ISO

- Partial Sales
  - MPs have the opportunity to allocate sales to specific resources within an Aggregation when the Aggregation had sales greater than zero but less than the full UCAP amount.
  - Task may be performed
    - Directly through DRIS on the Summary of Aggregation Auction Sales page, or
    - Using the Resource Auction Sales import file

SCR- Selling Capacity as an ICAP Supplier

- Summary of Aggregation Auction Sale



UCAP Calculation- DRIS and ICAP AMS

- DRIS will automatically transfer the UCAP MW value of an SCR Aggregation to the ICAP AMS for use in the ICAP auction
  - All validations associated with entering the UCAP value for an SCR in the ICAP AMS will occur when the UCAP MW values are transferred from DRIS to ICAP AMS

SCR Capacity- Calculating ICE

- The Installed Capacity Equivalent (ICE) of the Unforced Capacity associated with an SCR which has been sold by a RIP in the Capacity Market during the current Capability Period is calculated as:

$$\text{SCR ICE for a given month} = \frac{\text{SCR UCAP calculated using SCR Aggregation PF}}{\text{Aggregation PF} \times \text{Duration Adjustment Factor}}$$

SCR Settlements

SCR Settlements

New York ISO

- Energy Payment
  - Energy Performance Payment
    - Based upon load reduction during event or test calculated using CBL data provided for SCR by RIP
  - Bid Production Cost Guarantee Payment
- Capacity Payment
  - UCAP Sold in Auction
    - Based upon a calculated ACL, Declared values and the applicable calculated performance factors

SCR Settlements

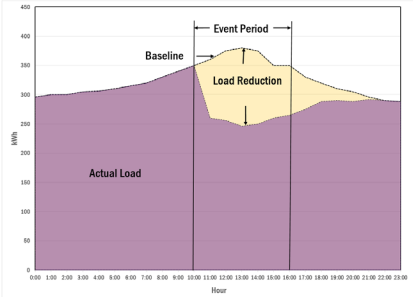
New York ISO

- Energy Performance Payments
  - Payment for responding to the SCR Event or Performance Test
  - Based on Load reduction less any MWs resource was scheduled in DAM for DSASP or DADRP

Verified Load Reduction (MWh) X RT Zonal LBMP($/MWh)

**When Scarcity Pricing is in effect the applicable Scarcity Price will be used in the settlement*

Performance Measurements for Energy Payments



Verified Load Reduction

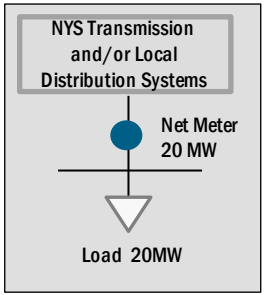
Resource Response Type	Performance Measurement for each hour
Response Type C (Curtailment only)	CBL – Actual Net Load $_{\text{using net meter}}$
Response Type G (Local Generator only)	Metered Generator Output – CBL_G
Response Type B (Both)	CBL – Actual Load $_{\text{using Net meter}}$ or [Metered Generator Output – CBL_G] + [CBL – Actual Load $_{\text{using load meter}}$]

Note: Average Day or Weather adjusted CBL based on resource enrollment
Weekday or weekend CBL calculation based on actual event day

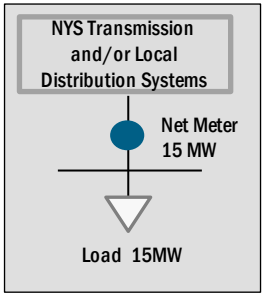
Performance Measurement - Examples

- Response Type C: (Curtailment Only)

* For 1 example hour



Normal Day
CBL =20 MW



During an Event

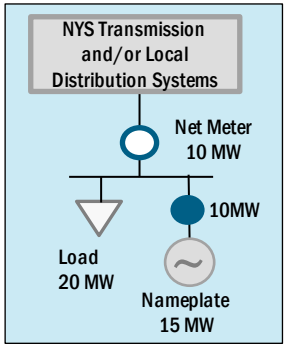
Meter(s) used to report meter data into DRIS for Load Reduction

Performance measurement (for this hour) = CBL – Actual Net Load
= 20 MW – 15 MW
= 5 MW

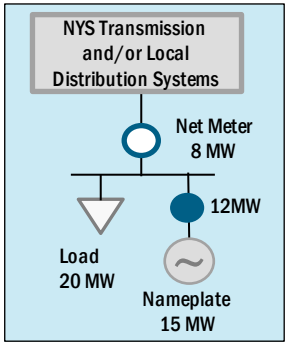
Performance Measurement Examples

- Response Type G (Local Generation only)

* For 1 example hour



Normal Day
CBL_G = 10 MW



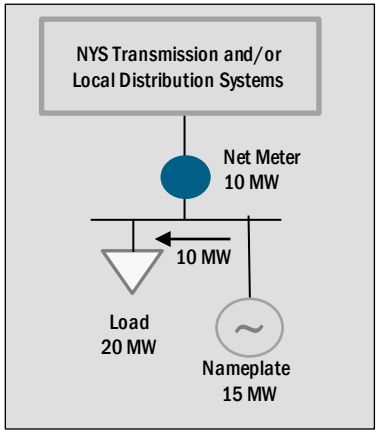
During an Event

Meter(s) used to report meter data into DRIS for Load Reduction

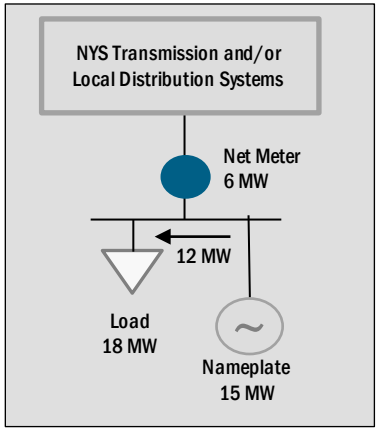
Performance measurement (for this hour) = Metered Generator Output – CBL_G
= 12 MW – 10 MW
= 2 MW

Performance Measurement - Examples

- Response Type B (Curtailment and Local Generator)



Normal Day
CBL = 10 MW



During an Event

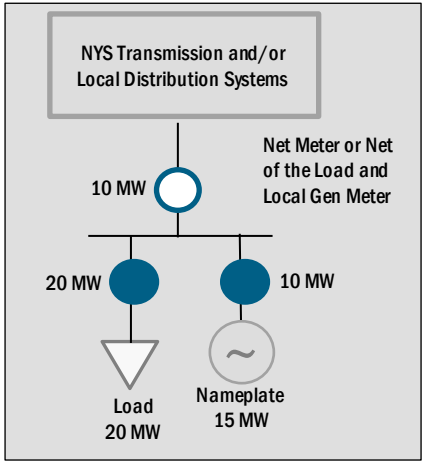
* For 1 example hour

Meter(s) used to report meter data into DRIS for Load Reduction

Performance measurement (for this hour) = CBL – Actual Net Load
= 10 MW –6 MW
= 4 MW

Performance Measurement - Examples

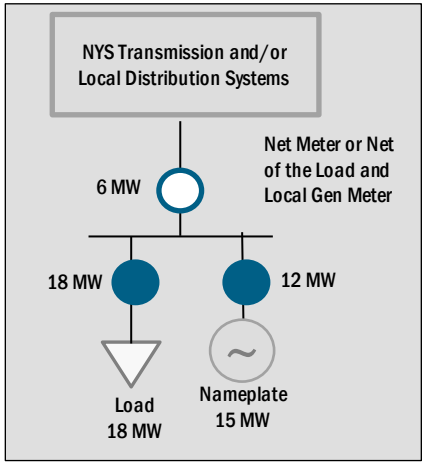
- Response Type B (Curtailment and Local Generator)



Normal Day

CBL = 20 MW

CBL_G = 10 MW



During an Event

Performance Measurement = [Metered Generator Output – CBL_G] + [CBL – Actual Load $_{\text{using load meter}}$]

= [12 MW – 10 MW] + [20 MW – 18 MW]

= 2 MW + 2MW

= 4MW

Minimum Payment Nomination / 'Strike Price'

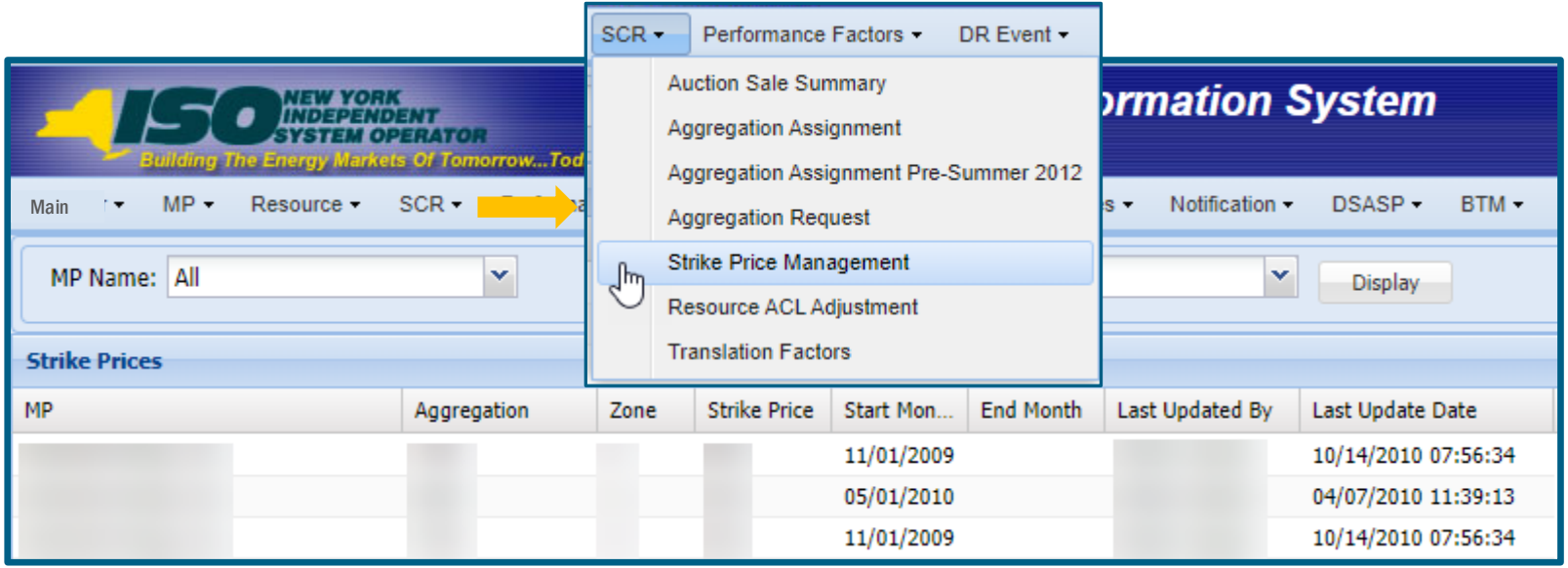
New York ISO

- Strike Price is by Aggregation
- Reflects the minimum guaranteed price ($/MWh) the SCR will be paid for Load reduction if called upon by the NYISO to reduce Load
  - Offer not to exceed $500/MWh
  - Offer entered in DRIS
  - Required for each month in which a SCR supplies UCAP to the NYCA
  - Is set for the entire month
- Submitted by a RIP
  - RIP may change the Minimum Payment Nomination for each auction month
  - Dates and times specified in the ICAP Event Calendar and DRIS Event Calendar for Strike Price Management

Minimum Payment Nomination / 'Strike Price'

New York ISO

- Strike Price Management in DRIS



SCR Settlements

New York ISO

- SCR Bid Production Cost Guarantee (BPCG)
  - Intended to recover SCR's Minimum Payment Nomination not recovered through Real Time LBMP Revenues
  - Eligibility
    - SCR committed by the ISO for an event in the Real-Time Market
    - Not eligible if performing a test
  - Based on all event hours in entire Dispatch Day
    - If net for day is positive, will receive BPCG payment

$$\text{Max}\left\{\text{Sum of all event hours}\left[\begin{array}{c}(\text{Strike Price} \times \text{Hourly SCR Reduction}) \\ - \\ (\text{RT LBMP} \times \text{Hourly SCR Reduction})\end{array}\right], 0\right\}$$

MST, Section 4.6.6.8 and MST Att C, Section 18.9.2

SCR Settlements

Basis: What they could have made ('*Needed*') vs. what they did make ('*Made*')
Assume a 4-hour event and 2 MW (2000 kW) reduction for each hour

Event hour	Load Reduction (kWh)	RT LBMP ($/MWh)	Energy Settlement 1 (made) ($)	Strike Price ($/MWh)	Energy Settlement 2 (needed)($)	BPCG for each hour ($)
HB 12	2000 kW	$400	$800	$500	$1000	$200
HB 13	2000 kW	$650	$1300	$500	$1000	-$300
HB14	2000 kW	$600	$1200	$500	$1000	-$200
HB 15	2000 kW	$250	$500	$500	$1000	$500

Total BPCG Payment for 4 hours of the event = $200
Payment

SCR Settlements – cont'd

New York ISO

- Monthly Capacity Payments for capacity sold through strip/monthly/spot auctions

UCAP Sold (MW) X Auction Clearing Price ($/kW-month) X 1000

- Monthly payment distributed through the Flexible Invoice Period (FIP)

(Monthly Capacity Payment $ / # days in the month) X # of Days in FIP

- Example: 10 MW * $2.67/kW-month * 1000 = $26,700 (monthly)

Note: Important to remember that SCRs are 4-hour resources and will get paid accordingly (i.e., Duration Adjustment Factor that corresponds to 4-hour resources"

Settlement Related Reports

- DRIS Data
  - DR Event Summary
  - Event Response Details
- ICAP AMS Data
  - Consolidated Billing Summary
- Customer Settlements Interface (CSI)
  - Consolidated Invoice Summary
  - Invoice Detail
- Decision Support System (DSS) Corporate Reports
  - Hourly and Daily Advisory files

Penalties and Sanctions

Penalties

New York ISO

- Shortfalls
  - SCR Invalid Enrollment
  - SCR Provisional or Incremental ACL Shortfall
  - SCR Reported / Unreported Change of Status Shortfall
  - RIP Portfolio Performance Shortfall
  - Any UCAP shortfall for the month subject to a deficiency charge

Deficiency Charge = 1.5 X Applicable Spot Market Clearing Price X Amount of Shortfall for each Month

**Refer to MST Sections 5.12.12 and 5.14.2*

RIP Portfolio Performance Shortfall

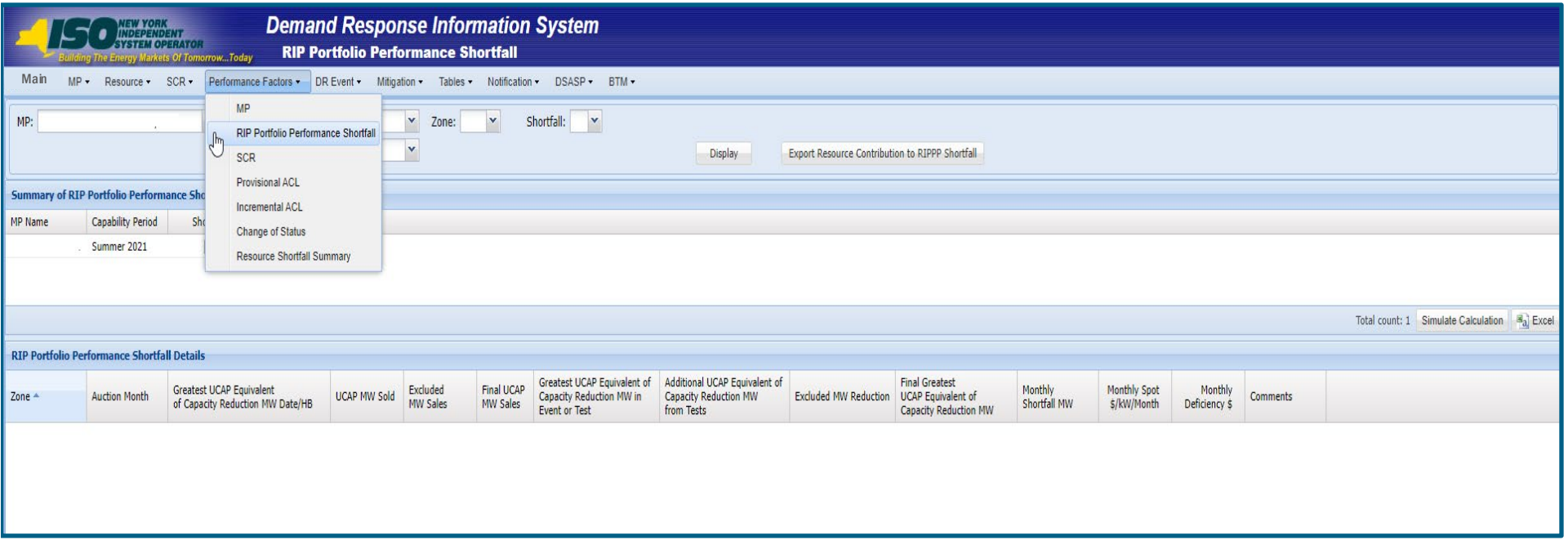
- A RIP's Portfolio of SCRs will have its performance evaluated to determine if the RIP was deficient in providing UCAP it had sold and thus obligated to provide during any month in the Capability Period
  - Evaluation based on ICE of greatest load reduction of the portfolio achieved by its SCR on Load Zone basis during a single hour in a test/event
  - ICE converted to UCAP equivalent of the greatest performance during a single hour in the Load Zone and compared to the UCAP sold for each month of the Capability Period

$$\text{Monthly Shortfall} = \text{Final UCAP MW Sales} - \text{The Final Greatest UCAP Equivalent of Capacity Reduction MW}$$

Refer to ICAP Manual Section 4.12.4.6 and DRIS User's Guide Section 5.2

SCR ICAP Info, DRIS and ICAP AMS

- RIP Portfolio Performance Shortfall



Penalties

- Sanctions
  - Failure to report data
    - Failure to Report Required SCR Metered Load Data for Second Performance Test – SCR Change of Status
    - Failure to Report Required SCR Metered Load Data for Second Performance Test – Incremental ACL
    - Failure to Report SCR Change of Status
    - Failure to Report SCR Incremental ACL Verification Data
    - Failure to Report SCR Provisional ACL Verification Data

Refer to MST Sections 5.12.12 and 5.14.2

SCR Module Objectives

New York ISO

- Define the purpose of the SCR Program
- Identify program eligibility requirements
- Summarize the process for enrollment
- Explain how baseline load values are calculated for capacity
- Identify the performance testing requirements and timeline
- Describe the method for measuring and reporting performance
- Identify the different performance factors and calculation methodology for each
- Explain the event notification process and customer response to an event
- Explain how baseline load values are calculated for energy
- Describe verification process after an event
- Describe how UCAP for SCRs are calculated
- Identify the various settlements associated with a SCR

Additional Resources

- DRIS User's Guide
- EDRP Manual (Metering Requirements)
- ICAP Manual
- Tariff