Special Case Resources (SCR)

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SCR Module Objectives

- 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 and energy
- Identify the performance testing requirements and timeline
- Describe method for measuring and reporting performance

SCR Module Objectives – cont'd

- Identify the different performance factors and calculation methodology for each
- Explain the event notification process and customer response to an event
- Describe verification process after an event
- Describe how a SCR participates in the Installed Capacity Market
- Identify the various settlements associated with a SCR

SCR Overview
Definition, Purpose, Types

SCR Overview

- Tariff Defined
  - Demand Side Resources whose Load is capable of being interrupted at the direction of the NYISO, and/or Demand Side Resources that have a Local Generator which is not visible to NYISO's MIS 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 and may capture Energy Market revenues when directed to perform load reductions by the NYISO
  - Special Case Resources are subject to special rules, set forth in Section 5.12.11.1 of the ISO Services Tariff and related ISO Procedures, in order to facilitate their participation in the Installed Capacity market as Installed Capacity Suppliers.

SCR Overview

- 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

- **Load reductions achieved through interruptible / curtailable loads or loads able to operate a qualified behind-the-meter Local Generator to remove load off the grid**

- **Participation Model Types**
  - Single resource
    - 100 kW Minimum Load reduction requirement
  - 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

- **Each SCR is enrolled by Responsible Interface Party (RIP)**
  - Serves as interface between the NYISO and the resource
  - An SCR may act as its own RIP

RIPs, SCRs and Capacity Market

- ## High Level Overview*

  - A RIP may participate in the Capacity Market with one or more qualified SCRs

  - Offer capacity into ICAP auctions, or may sell capacity in bilateral contracts

  - Receive capacity payment

Additional requirements to be discussed later in the module

SCRs, when qualified, have the potential of receiving both an energy payment and a capacity payment?

    a) True

    b) False

Program Eligibility Requirements
Resource Qualifications, Enrollment and Metering Requirements

Program Eligibility Requirements

- **Minimum of 100 kW reduction, in aggregate by PTID within the same Load Zone**
  - The SCR's load reduction capability must be sustainable for a minimum of 4 consecutive hours

- **Mandatory Performance**
  - 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

Program Eligibility Requirements
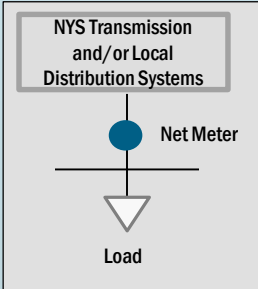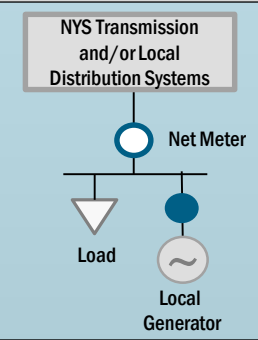
- A RIP must identify a "Response Type" for each SCR resource it enrolls in DRIS based on both
  - How the SCR resource reduces its load during an event
  - The meter configuration of the SCR's facility
- The identification of "Response Type" dictates how performance is measured and metering requirements

Program Eligibility 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

Refer to EDRP Module for additional details on Response Types
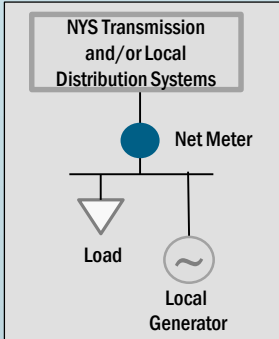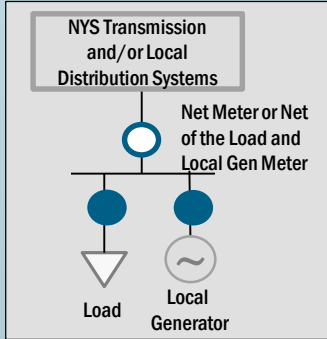
Metering Configuration Requirements

Response Type	Type of Load Reduction	Meter Configuration for Measurement of Load Reduction	
C - Curtailment	Curtailing the resource facility's load	Entire facility's net meter data	NYS Transmission and/or Local Distribution Systems — Net Meter — Load
G - Generator	Use of a Local Generator	Local Generator's meter data	NYS Transmission and/or Local Distribution Systems — Net Meter — Load — Local Generator

Meter(s) used to report meter data into DRIS as evidence of Load Reduction

Net Meter data is used to report meter data for the purpose of establishing SCR's Average Coincident Load baseline

Metering Configuration Requirements

Response Type	Type of Load Reduction	Meter Configuration for Measurement of Load Reduction	
B- Both	(i) Curtailment and use of a Local Generator	(a) Entire facility's Load meter data, or (b) Net of entire facility's Load meter data and Local Generator's meter data	NYS Transmission and/or Local Distribution Systems — Net Meter — Load — Local Generator
	(ii) Use of a Local generator	(a) Entire facility's net meter data, or (b) Net of entire facility's Load meter data and Local Generator's meter data	NYS Transmission and/or Local Distribution Systems — Net Meter or Net of the Load and Local Gen Meter — Load — Local Generator

● Meter(s) used to report meter data into DRIS as evidence of Load Reduction

Net Meter data is used to report meter data for the purpose of establishing SCR's Average Coincident Load baseline

Metering Configuration - Requirements

- **Interval billing meters are required to report event data and measure performance**
  - Hourly Revenue-grade, or
  - Non-revenue-grade meters that meet the ±2% accuracy threshold
- **Required of all SCRs unless the SCRs are part of a Small Customer Aggregation (SCA)**
  - SCA was covered in EDRP Module

Identify which statements are true about SCRs?

a) Response Type is determined based on how SCR reduces load and the metering configuration of the facility

b) The SCR's load reduction capability must be sustainable for a minimum of 4 consecutive hours

c) Interval billing meters are required to report event data and measure performance with the exception of Small customer Aggregations

d) Performance (Load reduction) is mandatory during reliability event when directed by NYISO even if the minimum notification criteria has not been met

SCR Enrollment Process

Pre-SCR Enrollment

- ## Become a RIP with the NYISO

  - Registered NYISO Customer

  - Qualified MIS status in DRIS

    - Designated Administrator Contacts and one (or more) Event Responder Contact(s) in DRIS

RIP Registration - NYISO Registration Documentation Requirements

Section A: Company Information

Section B: Role of Applicant

Section C: MIS Admin

Section D: Billing Admin

Section E: DSS Super Admin

Section F: Creditworthiness

Section G: Corporate Affiliations

Section H: Application Certification

Section I: Affidavit of Reciprocity

Section J: Bank Account Information

Section K-1: Federal Taxpayer Info.

Section K-2: State Taxpayer Info.

Section L: Additional Eligibility Requir.

Section M: Organizational Docs/Auth.

Section N: Service Agreements

Section II: ICAP Purchase/Sell Agreement

Section QQ: Special Case Resources

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

- 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

- ## 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. This data is 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

- Status categories – cont'd
  - 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 Enrollment Status

- SCR Enrollment in DRIS

SCR Enrollment

- ## Timeline for submitting enrollment data – example (2018)

	SCR Enrollment Period	Effective Auction Month
APRIL	MAY	JUNE

Opens April 18th

Certification Begins May 1st

Closes May 8th

Offer Period for Monthly Auction Opens May 9th

Offer Period for Monthly Auction Closes May 10th

June 1st
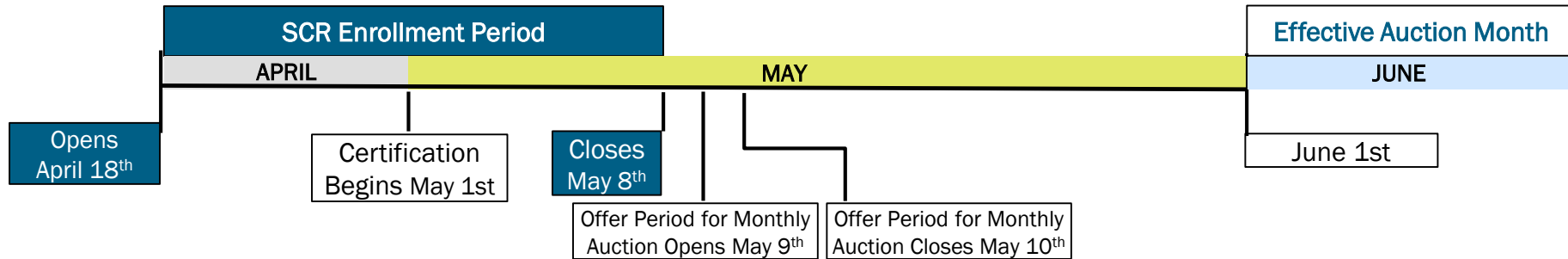
- • Refer to the DRIS and ICAP Event Calendars for specific dates

- ## 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

What must be submitted each Capability Period

    a)   NYISO Customer Registration

    b)   Resource Enrollment File

    c)   ICAP Purchase / Sell Agreement

    d)   Event Responder Contact Information

Baseline Load and Declared Values

Baseline Load Values

- Values to determine how much a SCR can reduce load during an event and a SCR can offer in the capacity market
  - Average Coincident Load (ACL)
    - Provisional
    - Changes to ACL – Incremental ACL, Decrease to ACL, Net Average Coincident Load (Net ACL)
  - Customer Baseline Load (CBL)
    - Declared Value

Average Coincident Load (ACL)

- Baseline Load used by the NYISO to calculate the SCR capacity that can be offered in the Capacity Auctions during a specific Capability Period
  - Uses Prior Equivalent Capability Period
  - Average of highest 20 resource loads that occurred during the Capability Period SCR Load Zone Peak Hours
  - TO Add-Backs are 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 may not be included in the SCR's metered Load values reported for the ACL

Average Coincident Load

- DRIS – Peak Load values

Average Coincident Load

- ## Provisional ACL

  - Used when the resource
    - Was not previously enrolled in the ICAP-SCR program with the same MP and
    - Did not have meter data from the Prior Equivalent Capability Period
  - Estimate provided by the RIP of the resource's average peak load
  - One value imported on the enrollment file
  - RIP and resource need to provide verification data to validate the provisional ACL

Average Coincident Load

- Provisional Summary

Average Coincident Load

- ## 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'

    - Based on SCR Load Change Reporting Threshold

      - Must be 500kW or greater

      - Change has to 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

- **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 > 500kW
    - For total Load increase > 20% and < 30% of the applicable ACL
      - Cannot change Declared Value
    - For >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 shall 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

- Incremental Summary

Average Coincident Load

- ## 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

- ## 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

- **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

Average Coincident Load

- Resource Change of Status - DRIS

Average Coincident Load

■ Change of Status – DRIS Calendar

Which value is used when a resource was not previously enrolled in the ICAP-SCR program with the same MP and did not have meter data from the Prior Equivalent Capability Period

a) Provisional ACL

b) Incremental ACL

c) Net ACL

A 'Change of Load' or 'Change of Status' is represented in which value

a) Provisional ACL

b) Incremental ACL

c) Decrease to ACL

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

Same methodology as EDRP - Refer to EDRP module in this course

Declared Value

- Identified upon initial enrollment

- Represents the amount of capacity the SCR could make available

- Combination of Subscribed Load and Subscribed Generation (see next slide)

Declared Value – cont'd

- **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**

Refer to DRIS User's Guide Table 7-4

Average Coincident Load (ACL)

- Example

Net ACL = 12,000 kW

Incremental ACL = 2,000 kW

Declared Value = 1,000 kW

Subscribed Load = 500 kW + Subscribed Gen = 500 kW

ACL Baseline = 10,000 kW

Declared Value

What value represents the expected curtailment value?

    a)   Customer Baseline Load

    b)   Subscribed Generation

    c)   Subscribed Load

    d)   Declared Value

Performance Test Requirements

SCR Performance Test Requirements

- **Must demonstrate its maximum enrolled Declared Value once in every Capability Period**

- **1st Performance Test (within a Capability Period)**
  - Summer Capability Period test window: Aug 15 – Sept 7
  - Winter Capability Period test window: Feb 15 - March 7

- **2nd Performance Test (date/time determined by NYISO)**
  - Late Sept or Oct (for Summer Capability)
  - Late March/April (for Winter Capability)

SCR Performance Test Requirements

- **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

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 and Event Notification

SCR Test/Event Notification

- Notification types may include:
  - Day-Ahead Advisory*
  - In-day advisory
  - Activation (2-hour Notice)*
    - *Both required in order for response to be mandatory
  - 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 notifications for SCR Events and Performance Tests 1 and 2 are similar to EDRP and TDRP events.

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

- **After receiving the SCR Notification, the RIP shall take the following steps:**
  - Assess whether or not 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**

Which two of the following notifications are both required in order for an SCR response to be mandatory

a) Day-Ahead Advisory

b) In-day advisory

c) Activation (2-hour Notice)

d) Immediate activation

e) Extension of Event or

f) Early termination of Event

Reporting Test and Event Data

Reporting Data
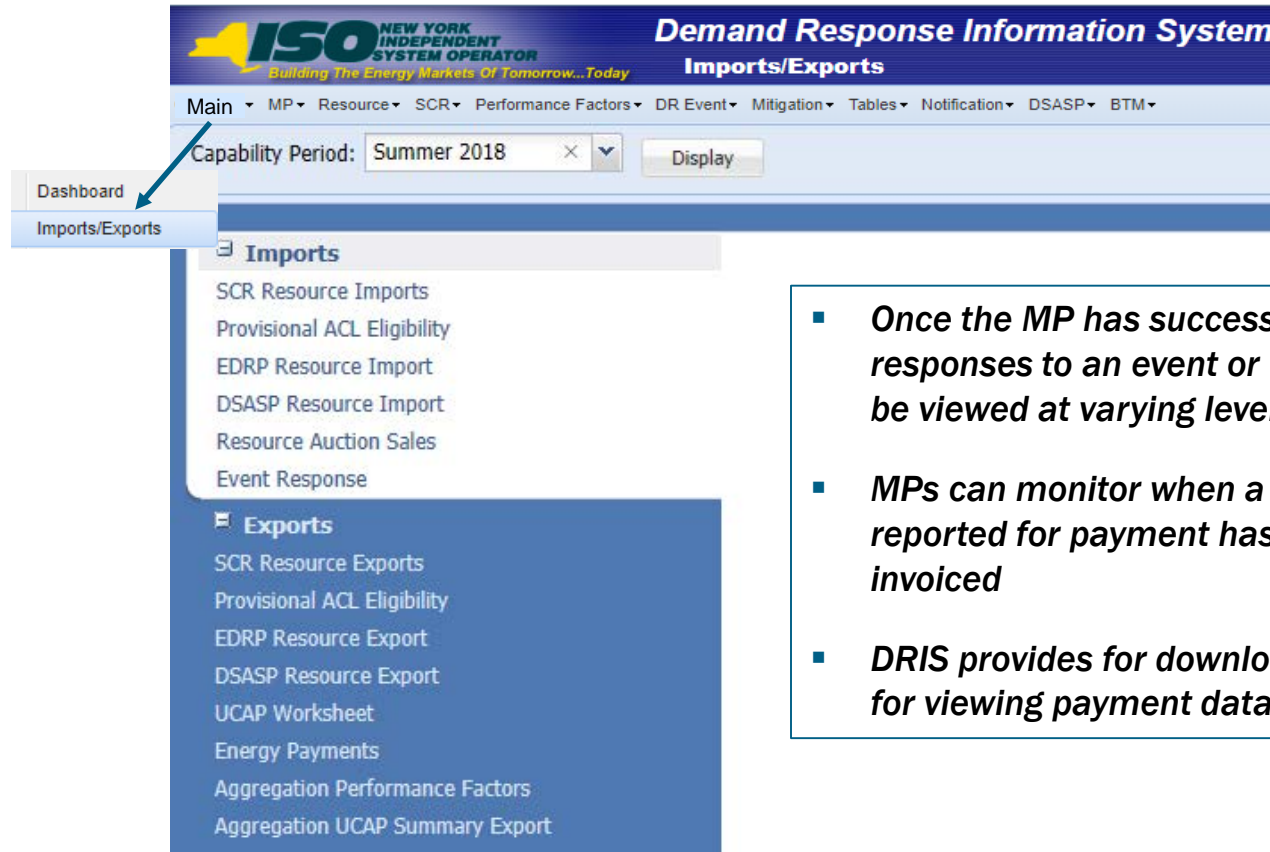
- RIP will be responsible for submitting each SCR's metered data to validate load curtailment response to NYISO directive achieved during an event or test through an import file into DRIS
  - Submit data within 75 days of test/event (on or before 5:00 PM)
  - Submit responses by test/event for each individual 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 Cap. Per.
- **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*

FOR TRAINING PURPOSES ONLY

Let's Review

In order to validate load curtailment response when must SCR metered data be submitted by

    a)   Within 15 days of event/test

    b)   Within 30 days of event/test

    c)   Within 60 days of event/test

    d)   Within 75 days of event/test

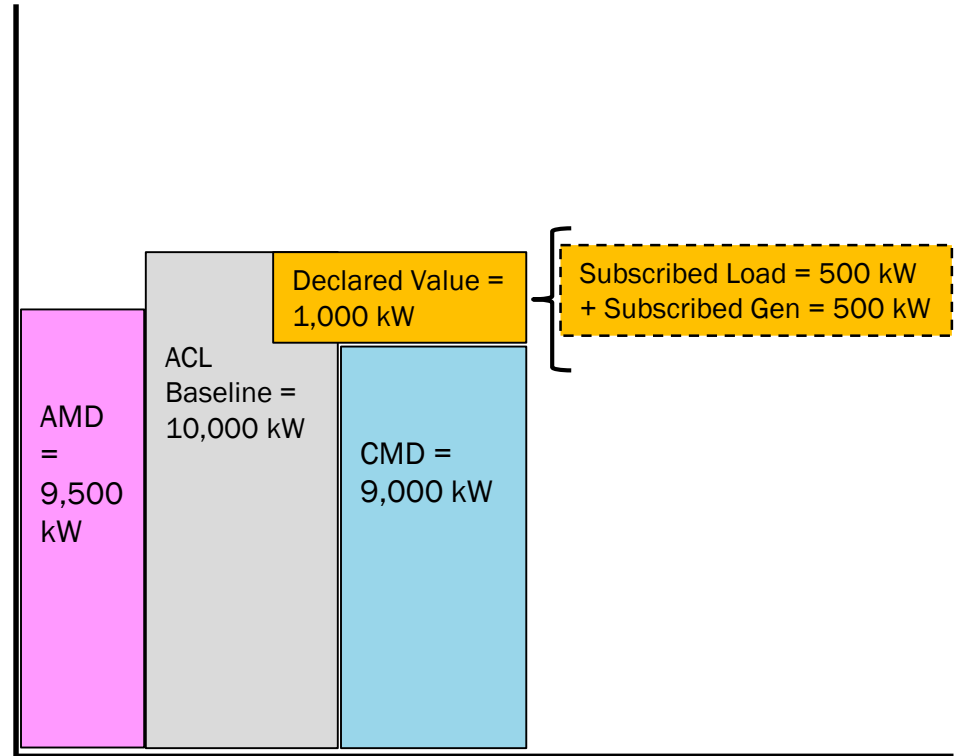# Data Verification

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)

- Meter data verification involves calculating the Committed Maximum Demand (CMD)

- 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 meter data is greater than CMD value then, resource under performed
  - If meter data is less than CMD value then resource over performed
  - Examples to follow

Example - Committed Maximum Demand (CMD)

- ACL = 10,000 kW
- Declared Value = 1,000 kW
- Committed Maximum Demand = 10,000 – 1,000 = 9,000 kW
  - If actual meter data (AMD) is greater than 9,000 kW then resource under-performed
  - If actual meter data is less than 9,000 kW then resource over-performed

AMD = 9,500 kW

ACL Baseline = 10,000 kW

Declared Value = 1,000 kW

CMD = 9,000 kW

Subscribed Load = 500 kW + Subscribed Gen = 500 kW

Verification

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

Which of the following are true about Committed Maximum Demand (CMD)?

a) CMD is calculated by subtracting the Declared Value from the resource's baseline (ACL)

b) CMD is compared to submitted meter data to calculate hourly Performance Factor

c) If meter data is greater than CMD value then, resource under performed

Performance Factors

Performance Factors

- 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 Cap Per)
  - RIP [MP] Performance Factor (for Cap Per)
  - SCR Program Performance Factor (for Cap Per)
  - SCR Aggregation Performance Factor (for month within Cap Per)

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

- ## 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

- ## SCR Performance Factor

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

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

Performance Factors

- SCR Performance Factor – cont'd

Hourly Raw Performance Factor = Hourly Capacity SCR Reduction / (Applicable ACL – CMD)

Where Hourly Capacity SCR Reduction:

- For SCR with Load Curtailment (<u>Response Type B or C</u>)

And:

- For SCR with output from a Local Generator (<u>Response Type G</u>)

Hourly Capacity SCR Reduction = Applicable ACL – Metered Load for Event or Test Hour

Hourly Capacity SCR Reduction = Metered Generator Output for Event or Test Hour

- **Both Minimum Hourly Raw Performance Factor and Minimum Hourly Capacity Reduction for an individual SCR shall be zero**

Performance Factors

- RIP [MP] Performance Factor for Current Capability Period

RIP Performance Factor for Current Cap Period = Sum of Proportional Declared Value of all SCRs enrolled by RIP in Prior Equiv Cap Per / Sum of Maximum DV from Prior Equiv Cap Per

Where:

Proportional Declared Value = Maximum DV from Prior Equiv Cap Per X Raw Performance Factor for Current Cap Per

- *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 Capacity market*

Performance Factors - DRIS

Demand Response Information System
MP Performance Factor

Main   MP   Resource   SCR   Performance Factors   DR Event   Mitigation   Tables   Notification   DSASP   BTM

Capability Period: Summer 2018   Month: MP: Org Name_1   Display

Resource Contribution to MP Perfromance Factor

Resource ID	Resource Name	TO Account Number	Zone	Max Declared	Raw Performance Factor	Performance Factor	Comments	Proportional Declared
Example123455	Resource _A	TOXXX1	J	501	0.4792	0.4792		240.0792
Example123456	Resource_B	TOXXX2	J	158	0.9326	0.9028		147.3508
Example123457	Resource_C	TOXXX3	B	763	1.0033	1		765.5179
Example123458	Resource_D	TOXXX4	B	403	0.9866	0.9866		397.5998

Performance Factors

■ **SCR Program Performance Factor**

> *SCR Program Performance Factor = Sum of Proportional Declared Value of all SCRs in Prior Equiv Cap Per / Sum of Maximum DV from Prior Equiv Cap Per*

Where:

> *Proportional Declared Value = Maximum DV from Prior Equiv Cap Per X Raw Performance Factor for Current Cap Per*

- *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

- ## SCR Aggregation Performance Factor

  - Recognizes <u>over-performance by one SCR to compensate for under-performance by another SCR</u> 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

SCR Aggregation Performance Factor = Average of SCR Aggregation Hourly Performance Factors during the best 4 consecutive hours in Events and Tests

Where:

SCR Aggregation Hourly Performance Factor = Max [Sum of Hourly Capacity SCR Reduction in Aggregation / (Sum Applicable ACLs – Sum of CMDs assigned to Aggregation, 1.0]

Which performance factor recognizes over- or under-performance by another SCR in the same aggregation?

    a)   Raw Performance Factor

    b)   SCR Performance Factor

    c)   RIP [MP] Performance Factor

    d)   SCR Aggregation Performance Factor

What is the significance of calculating performance factors?

SCRs in the Capacity Market

Capacity Market Overview

- **Review Key Points**
  - IRM
  - NYCA Forecasted Peak Load
  - Minimum Capacity Requirement
  - Capacity Suppliers

RIPs, SCR and Capacity Market Participation

- **SCR Capacity**
  - 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

RIPs, SCR and Capacity Market Participation

- **ICAP Market Participant**
  - A RIP may offer a minimum of 100 kW of Unforced Capacity (UCAP) from an SCR or an SCR Aggregation in the Installed Capacity Market
  - RIPs may offer into Capacity auctions, or may sell capacity in bilateral contracts
  - RIPs receive capacity payment and may in addition receive energy payments for load reductions during events and tests when CBL data is submitted
  - SCRs must demonstrate maximum Installed Capacity Equivalent of UCAP sold in each Capability Period
  - SCRs must be able to sustain 4 consecutive hours of Load reduction for the Installed Capacity Equivalent of UCAP sold

RIPs, SCR and Capacity Market Participation

- ## SCR UCAP Calculation

  SCR UCAP = SCR ICAP x Applicable Performance Factor

  Where:

  SCR ICAP = Declared Value x (1 + Transmission Loss Factor)

- ## Applicable performance factors of each individual SCR includes

  - RIP [MP] Performance Factor for a <u>new SCR</u>, without any history of performance, enrolling with an <u>existing RIP</u>
  - SCR Program Performance Factor for a <u>new SCR</u>, without any history of performance, enrolling with a <u>new RIP</u>
  - SCR Aggregation Performance Factor for an <u>existing SCR</u>, with prior history of performance

SCR and Capacity Market Participation
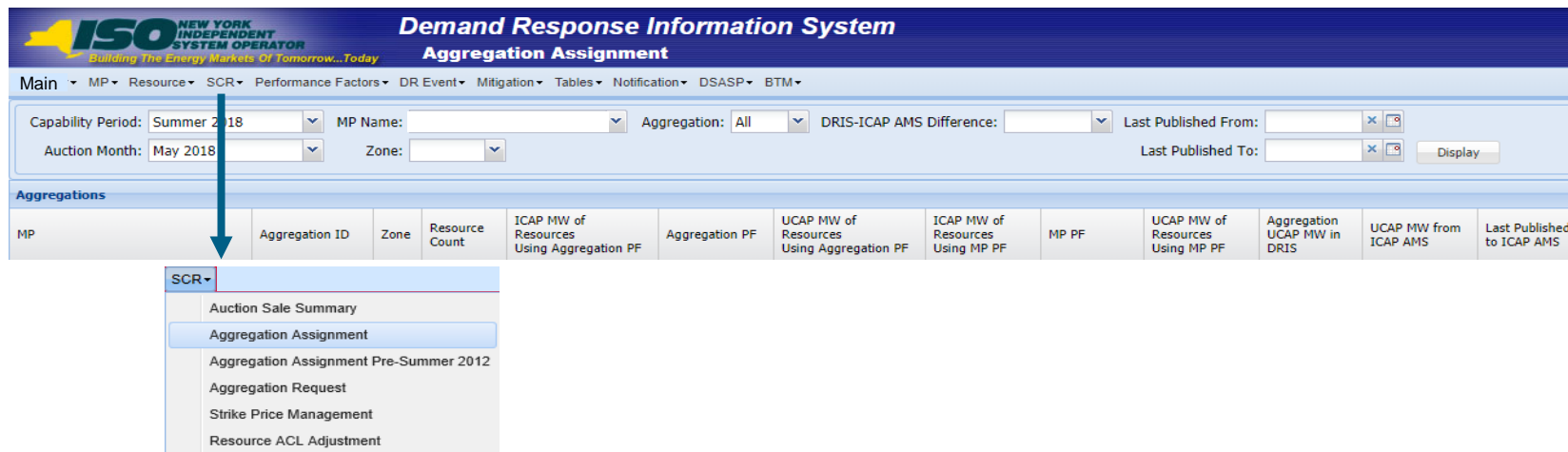
- Transmission Loss Factors (TLF) viewable in DRIS

SCR ICAP Info, DRIS and ICAP AMS

- ## 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 <u>or</u>
      - There is a change in enrollment status or a pending request has been approved

SCR ICAP Info, DRIS and ICAP AMS

- **ICAP AMS – UCAP values**
  - View Market Position
  - Maintain Offers to Sell
  - View Seller Awards
  - Spot Offer Summary
  - Auction Offer Results
  - View PTIDs

*Refer to DRIS User's Guide for details

SCR ICAP Info, DRIS and ICAP AMS

- Summary of Aggregation Auction Sale

SCR ICAP Info, DRIS and ICAP AMS

- ## 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 ICAP Info, DRIS and ICAP AMS

- ## DRIS

  - 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

Market Training

What are the 3 key components in calculating UCAP for an SCR?

FOR TRAINING PURPOSES ONLY

SCR Settlements

SCR Settlements

- ## 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

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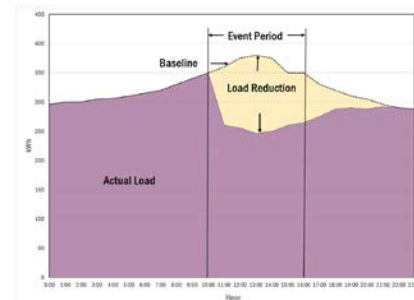
Resource Response Type	Performance Measurement for each hour
Response Type C (Curtailment only)	CBL– Actual Net Load $_{using\ net\ meter}$
Response Type G (Local Generator only)	Metered Generator Output – CBL_G
Response Type B (Both)	CBL – Actual Load $_{using\ Net\ meter}$ or [Metered Generator Output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

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

Section in EDRP manual

Minimum Payment Nomination / 'Strike Price'

- **Strike Price is by Aggregation**
- **Reflects the minimum guarantee 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
  - It is set for the entire month
- **Submitted by a RIP**
  - RIP may change the Minimum Payment Nomination for each auction month during the dates and times specified in the ICAP Event Calendar and DRIS Event Calendar for Strike Price Management

Minimum Payment Nomination / 'Strike Price'

- ## Strike Price Management in DRIS

SCR Settlements

- ## 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 all event hours in entire Dispatch Day
    - If net for day is positive, will receive BPCG payment

Max [{ Sum for all hours of dispatch day (Min Payment Nomination ($/MWh) * Hourly SCR Reduction MWh)– (RT LBMP * Hourly SCR Reduction MWh) }, 0]

SCR Settlements

▪ SCR BPCG - Example

Basis: What they could have made ('*Needed*') vs. what they actually did make ('*Made*')

- Assume a 4 hour event and 20 MW reduction
    - Hour 12
        - Min Pay Nomination = $500 and LBMP = $100
        - (500*20) – (100*20)
           Needed   Made
        - (10,000) – (2,000) = $8,000
    - Hour 13
        - Min Pay Nomination = $500 and LBMP = $600
        - (500*20) – (600*20)
           Needed   Made
        - (10,000) – (12,000) = $ -2,000
    - Hour 14… $1,000
    - Hour 15… $ -1,000
    - $8,000 + ($ -2,000) + ($1,000) + ($ -1,000) = $6,000

Total BPCG Payment for the Day $6,000

SCR Settlements – cont'd

- ## 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)
  - » (26,700/30 days) * 3 days = $2,670 (FIP)

FOR TRAINING PURPOSES ONLY

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

What is the significance of the Minimum Payment Nomination?

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Penalties

Penalties

- ## 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

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 ICAP Info, DRIS and ICAP AMS

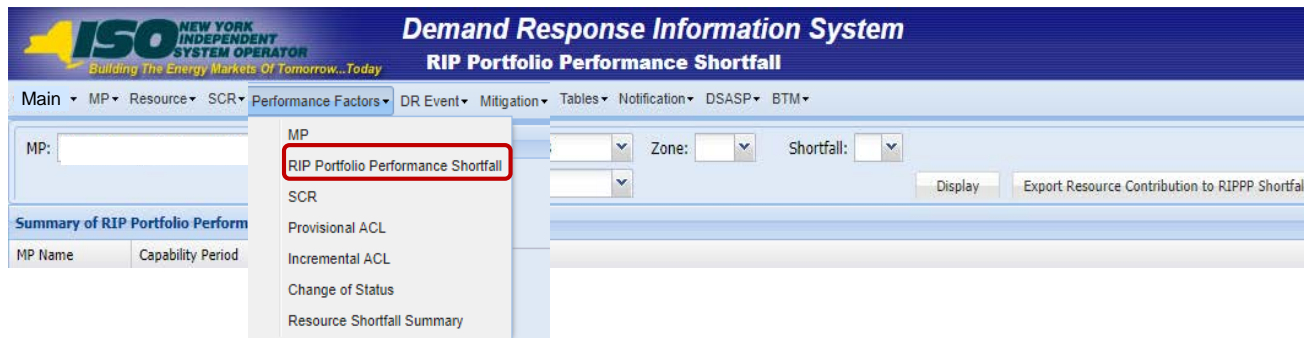- ## RIP Portfolio Performance Shortfall

  - 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

Monthly Shortfall = Final UCAP MW Sales - the Final Greatest UCAP Equivalent of Capacity Reduction MW

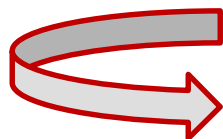**Refer to ICAP Manual Section 4.12.4.6 and DRIS User's Guide Section 5.2*

SCR ICAP Info, DRIS and ICAP AMS

■ RIP Portfolio Performance Shortfall

SCR Specific Tasks in DRIS

DRIS - Available SCR Tasks for Data Management

- Managing aggregations and strike prices

- Viewing Transmission Owner Add-Back values

- Viewing system-calculated aggregation performance factor and aggregation UCAP

- Viewing the results of the automatic transfer of system-calculated aggregation UCAP values to ICAP AMS

- Downloading system-calculated UCAP values

* Refer to Section 9 of the DRIS User's Guide

DRIS - Available SCR Tasks – cont'd

- Allocating sales to resources when an aggregation has partial sales

- Importing resource Incremental ACL and Provisional ACL Verification data and viewing resource Change of Status, Incremental ACL and Provisional ACL Shortfall(s)

- Reporting and viewing resource Change of Status Shutdown kW values after the close of enrollment

* Refer to Section 9 of the DRIS User's Guide

SCR Module Objectives

- 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 and energy
- Identify the performance testing requirements and timeline
- Describe 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
- Describe verification process after an event
- Describe how a SCR participates in the Installed Capacity Market
- Identify the various settlements associated with a SCR

Additional Resources

- DRIS User's Guide

- EDRP Manual (Metering Requirements)

- ICAP Manual

- Tariff