12/19/2006; recertified 12/21/10, revised 7/5/11,10/19/2011,06/18/2012, mm/dd/2014

Subject: NERC Electronic Tagging Under NYISO Operation

NERC E-Tags convey transaction details to Balancing Authorities in a standard format. All external transactions are required to have a NERC E-Tag. For New York Balancing Authority (NYISO) these are imports, exports, and wheels-through. NERC E-Tags are not required for transactions internal to the NYISO.

Details:

NERC E-Tag

An E-Tag contains important details concerning external energy transactions. An E-Tag must be created by a Market Participant (MP) for each external transaction, including all imports to the NYISO, exports from the NYISO, and wheels-through the NYISO. In this Technical Bulletin, the party who writes or submits E-Tags is referred to as the Purchasing Selling Entity (PSE). E-Tags are maintained in a centralized database and administered by a Tagging Authority. Balancing Authorities and Market Participants have electronic access to the E-Tags and the data they contain for their creation, update, and viewing through the Tagging Authority. The centralized database of E-Tags also automatically notifies relevant Balancing Authorities each time an E-Tag is created or modified. Balancing Authorities, including the NYISO, use this database to retrieve the information associated with E-Tags. In limited cases, a Balancing Authority may modify the information associated with an E-Tag. Balancing Authorities also approve or deny a proposed transaction based on the information contained in that transaction's E-Tag.

Each E-Tag is identified by a unique E-Tag Identifier. The E-Tag Identifier contains:

- Source ~~(Generation)~~ Balancing Authority Entity ~~-~~(SG~~-~~CA) Code - ~~-~~the Balancing Authority in which the ~~generation (~~source~~)~~ is located or energy is purchased from. For transactions originating in NY, the Source Balancing Authority Code is "NYIS".
- PSE Code (Tag Author PSE) - the Purchasing/Selling Entity who is writing and submitting the Tag to the Tag Authority
- Unique transaction identifier (e-Tag Code/Unique #) - 7 Character code used as part of the Tag ID to identify a transaction
- Sink (~~Load~~Receiving) Balancing Authority Entity (RL~~-~~CA) Code - the receiving Balancing Authority in which the load is located, or where the energy is imported into. For transactions delivered into NY, the Sink Balancing Authority Code is "NYIS".

NYISO Bid/Offer

For each proposed external transaction involving the NYISO, an hourly bid ~~-~~to purchase energy or offer to sell energy must exist in the Market Information System (MIS). In some cases the hourly bid/offer is created automatically; in other cases a Market Participant must create the bid/offer. Among the data required in the bid/offer is an E-Tag Identifier. The E-Tag Identifier provides a unique and unambiguous link between the bid/offer submitted to the NYISO and the E-Tag created by the PSE. Note that the SG~~-~~CA and RL~~-~~CA components of the E-Tag Identifier are not necessarily the same as the source and sink values of the bid/offer in the NYISO's MIS. Nevertheless, the MIS bid/offer and the E-Tag contain some common information. This common data must be separately provided to the bid/offer in the MIS and the E-Tag.

The associated E-Tag for a Real-Time external transaction must be submitted no later than seventy-five minutes prior to the scheduling hour in order to be evaluated for that scheduling hour in the Real-Time

Market. Each time an external transaction bid/offer is submitted or updated in the MIS, it will be checked for a valid corresponding E-Tag. All external transaction~~s~~ bid<u>s</u> in the MIS will have a current E-Tag status which designates the state of the last E-Tag check. The MIS E-Tag status on an MIS bid/offer will be one of the following:

- Pending – This indicates that a successful E-Tag check has not yet taken place between NYISO and the tagging authority
- Valid – This indicates that a successful E-Tag check has occurred and the E-Tag~~'s~~ Energy Profile MW <u>is equal to or greater than</u>~~matches~~ the MIS bid/offer Energy Profile MW for the upcoming dispatch hour
- Invalid – This indicates that a successful E-Tag check has occurred but the E-Tag does not match the MIS bid/offer

If, at the time of the hourly market close (i.e. seventy-five minutes in advance of the dispatch hour), a transaction bid/offer has an E-Tag status of "Invalid" or "Pending", then the transaction bid's bid status will be marked as "Validation Failed", the transaction bid/offer will not be evaluated in the Real-Time Market for that hour, the transaction bid/offer will not receive a schedule from the NYISO, and the transaction bid/offer will not flow. In the event the NYISO is unable to verify the existence of a NERC E-Tag due to technical issues, the NYISO bid validation rules will assume that the Market Participant has properly submitted the E-Tag and will allow the MIS transaction bid/offer to be economically evaluated by the scheduling software.

<u>Scheduling in NYISO</u>

The NYISO uses a two-step process, evaluation and checkout, to schedule external transactions. The evaluation step, performed during the Real Time Commitment (RTC) process, determines whether a proposed transaction meets economic criteria established by the Market Participant and honors all relevant capacity and ramp limitations. A transaction may pass the evaluation step whether or not information in the E-Tag is consistent with results of the evaluation. Upon passing the evaluation step, a transaction is given a MIS status of "advisory accepted."

After an MIS schedule is posted from the evaluation step, the E-Tag is updated to reflect that MIS schedule if that schedule differs from the E-Tag's Energy Profile. For hourly transaction schedules, this will typically occur approximately 30 – 45 minutes prior to the dispatch hour. <u>E-Tags corresponding to hourly transaction schedules will have the Energy Profile values updated to match the schedule from the RTC_{15} run that scheduled the hourly transaction.</u> For intra-hour transaction schedules at Variably Scheduled Proxy Generator Buses, this will typically occur approximately 20-30 minutes prior to the dispatch interval. <u>E-Tags corresponding to intra-hour (15 minute) transaction schedules will have its Energy Profile MW values updated if necessary for at least 3 RTC time steps 1-3 and at most 6 RTC timesteps 1-6. The number of RTC timesteps will depend on which RTC run is providing the data as illustrated in the tables below.</u>

<u>Intra-Hourly Schedules(15min)</u>

RTC Timestep		1	2	3	4	5	6	7	8	9	10	

RTC run time	RTC run	aa:30	aa:45	bb:00	bb:15	bb:30	bb:45	cc:00	cc:15	cc:30	cc:45	dd:00
aa:00 - aa:15	RTC15	X	X	X	X	X	X					
aa:15 - aa:30	RTC30		X	X	X	X	X					
aa:30 - aa:45	RTC45			X	X	X	X					
aa:45 - bb:00	RTC00				X	X	X					
bb:00 - bb:15	RTC15					X	X	X	X	X	X	
bb:15 - bb:30	RTC30						X	X	X	X	X	
bb:30 - bb:45	RTC45							X	X	X	X	
bb:45 - cc:00	RTC00								X	X	X	

Hourly Schedules

RTC Timestep		1	2	3	4	5	6	7	8	9	10	
RTC run time	RTC run	aa:30	aa:45	bb:00	bb:15	bb:30	bb:45	cc:00	cc:15	cc:30	cc:45	dd:00
aa:00 - aa:15	RTC15			X	X	X	X					
aa:15 - aa:30	RTC30											
aa:30 - aa:45	RTC45											
aa:45 - bb:00	RTC00											
bb:00 - bb:15	RTC15							X	X	X	X	
bb:15 - bb:30	RTC30											
bb:30 - bb:45	RTC45											
bb:45 - cc:00	RTC00											

"X" denotes timesteps that may be updated to match their MIS schedules

During the checkout step, which follows the evaluation step, the NYISO verifies that the transaction is acceptable to all relevant Balancing Authorities, and that the information in the transaction's E-Tag is consistent with the results of the evaluation step. Since Market Participants must enter redundant data in the bid/offer and in E-Tag, care must be taken to assure consistency prior to checkout. Upon passing the checkout step, the transaction is given a MIS status of "accepted" and the transaction will flow. If the NYISO checkout step results in changes to the requested transaction's MIS schedule, the NYISO automatically creates curtailment requests to ensure that the E-Tag reflects the MIS schedule. The mechanism used during the checkout step to update an E-Tag is also used to update an E-Tag when an in-hour curtailment is applied.

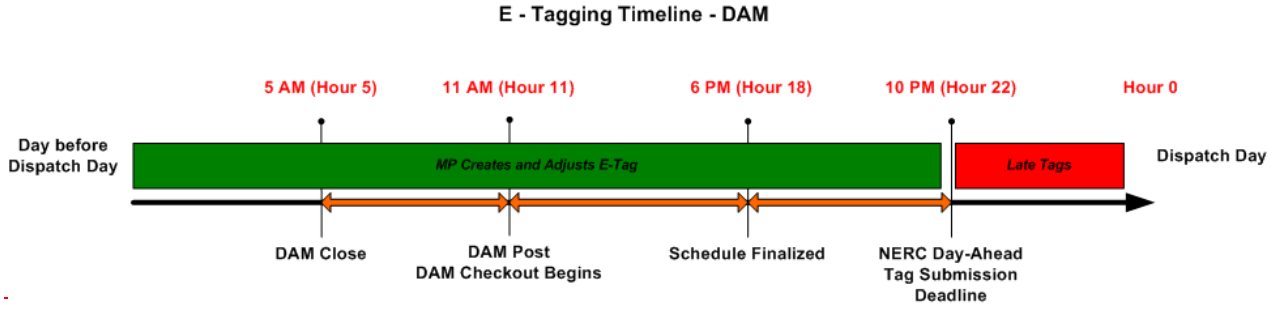
E-Tag Request

Each time an E-Tag is created or modified by a PSE, a notification is automatically sent to all relevant parties of the E-Tag (e.g., a Balancing Authority or a Market Participant). That notification is called an E-Tag Request. Balancing Authorities may respond to an E-Tag Request in one of three ways:

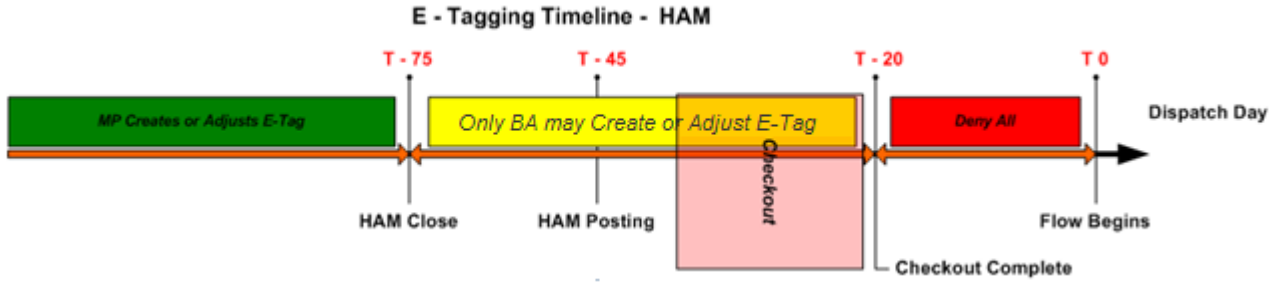
- APPROVE – The Balancing Authority has actively agreed to implement the request.
- STUDY – The Balancing Authority has actively decided to defer its decision to approve or deny until a later time within its approval window, but wishes to communicate its acknowledgement of the request.
- DENY – The Balancing Authority, either actively or passively, has decided not to implement the request.

Market Participants may respond to E-Tags in two ways – CREATE (including CORRECTIONs) or ADJUST. CREATE refers to the process by which PSEs submit E-Tags. ADJUST is the process by which PSEs may change values in the E-Tag. Any changes to the E-Tag Energy Profile MW (including new tags or withdrawal of an existing tag) that are initiated by the PSE after the hourly market close will be denied. Note that changes initiated by Balancing Authorities (BA) will not be automatically denied. The timelines for each of these actions are depicted below:

Figure 1



~~Figure 2~~



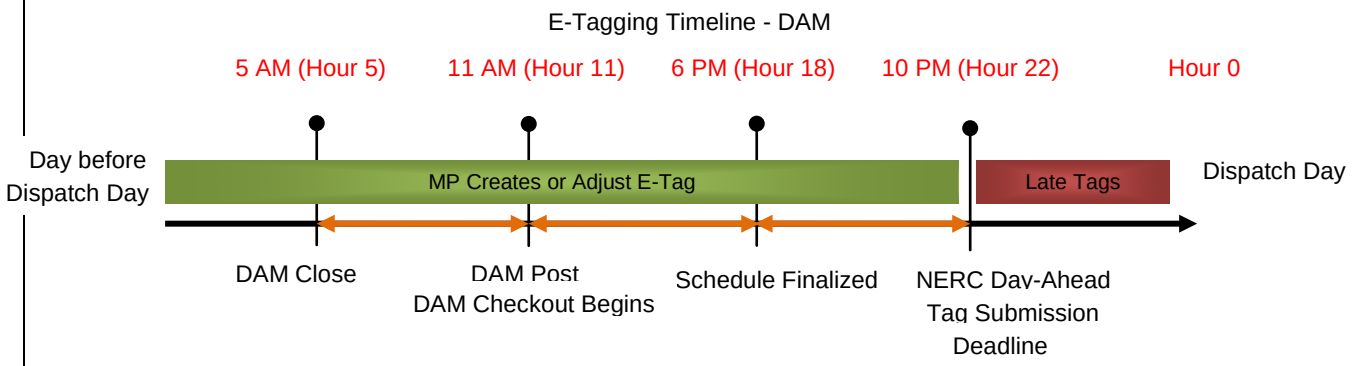


Figure 2

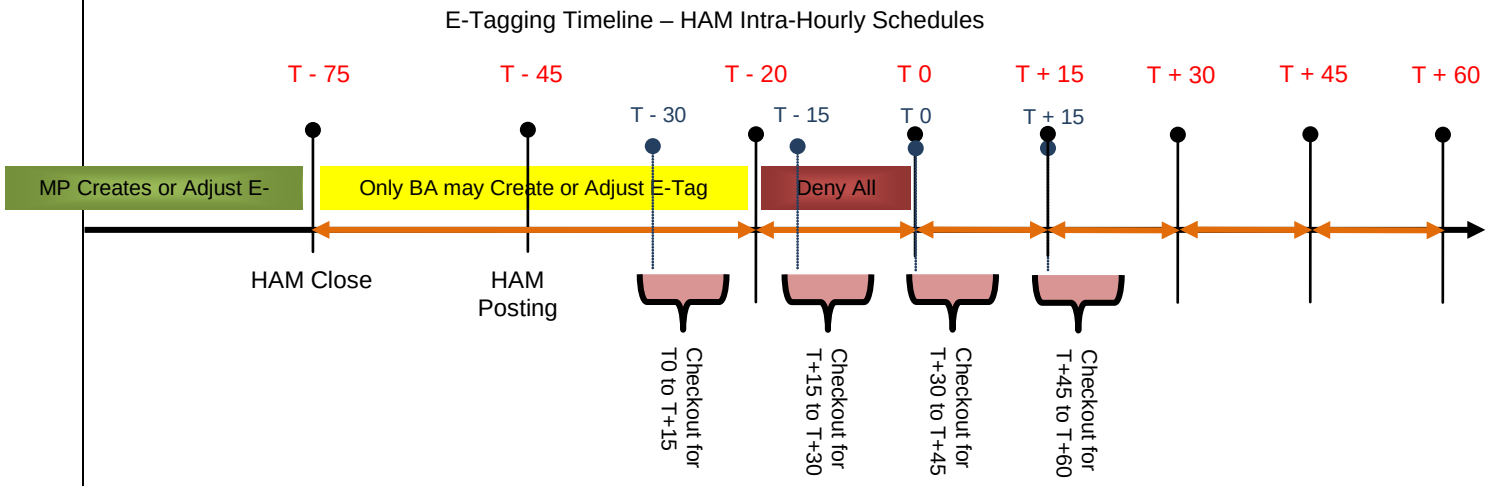
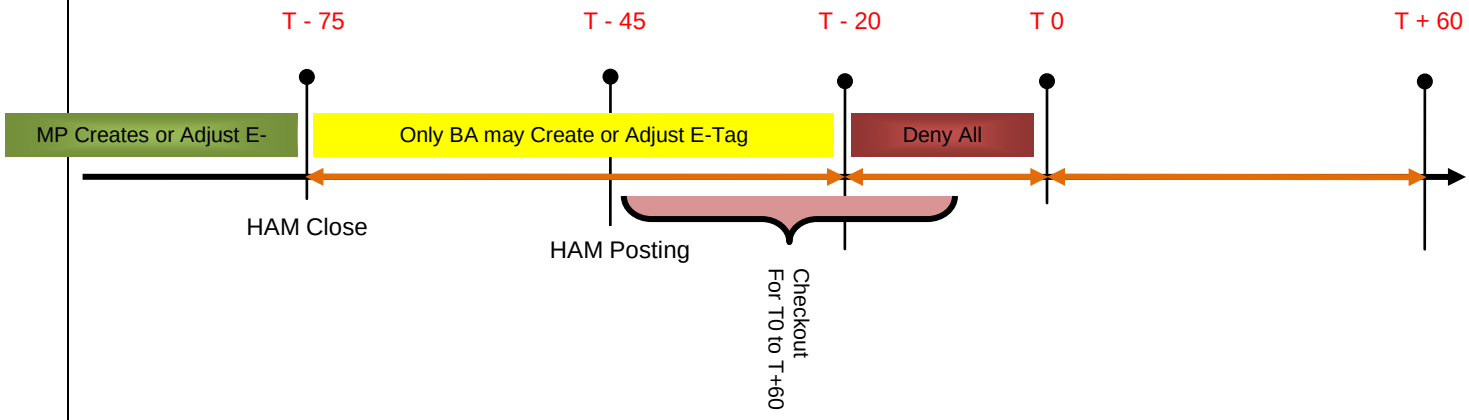


Figure 3



Please note that these timings do not reflect the NERC TLR timings for e-Tags.

All OATI E-Tags created by PSEs shall be no longer than 31 days due to an OATI limit on E-Tag updates. If a new E-Tag is submitted with a duration longer than 31 days it will be DENIED. If an existing E-Tag is adjusted, and the adjustment makes an E-Tag longer than 31 days, that adjustment shall be DENIED.

If an E-Tag has more than 2,995 updates (near the OATi limit of E-Tag updates of 3,000), the E-Tag Energy Profile MW will be curtailed 0MW for its remaining duration by the NYISO.

NYISO Response to an E-Tag Request

The NYISO's response to an E-Tag Request (APPROVE, STUDY, or DENY) depends on two criteria (i) the alignment of future hours of the E-Tag's energy profile with the NYISO real-time processes, and (ii) whether information in the associated E-Tag is consistent with information in the MIS bid/offer. The specific reason behind why the NYISO issues any of these responses (APPROVE, STUDY, or DENY) is provided to customers through the "Reason" field of the E-Tag. A single E-Tag can specify a transaction period of one hour to many days. Upon receipt of an E-Tag Request, the NYISO compares each upcoming hour of the E- Tag to the matching MIS bid/offer for consistency. Any upcoming hour of the transaction specified in an E-Tag may be:

- Prior to the close of the hourly real-time market, that is, more than 75 minutes before the transaction is to flow (prior to T-75).
- After close of the hourly real time market but before the checkout period begins. The checkout period nominally begins 40 minutes before the transaction is to flow (after T-75 but before approximately T-40).
- After the checkout period begins but before the checkout period ends. The checkout period ends 20 minutes before the transaction is to flow (after approximately T-40 but before T-20).
- After the checkout period ends (after T-20).

The consistency check compares the schedule and transaction type for upcoming hours of the E-Tag's proposed transaction with those hours of the bid/offer. The E-Tag is consistent with the bid/offer for a particular hour if the schedules match and the E-Tag transaction type matches the type allowed for intra-hour transaction scheduling. See below for a chart of allowable transaction types. If the schedules and/or transaction type differ for an hour, or if the bid/offer does not yet exist for that hour, the E-Tag is not consistent with the bid/offer for that hour.

	E-Tag Transaction Type	
Proxy Generator Bus	**Hourly Bid Type**	**Intra-hour Bid Type**
Hydro Quebec		
HQ_GEN_IMPORT	NORMAL	DYNAMIC
HQ_LOAD_EXPORT	NORMAL	DYNAMIC
HQ_GEN_CEDARS_PROXY	NORMAL	Not Currently Available
HQ_LOAD_CEDARS_PROXY	NORMAL	Not Currently Available
HQ_GEN_WHEEL	NORMAL	Not Currently Available
HQ_LOAD_WHEEL	NORMAL	Not Currently Available
PJM		
PJM_GEN_KEYSTONE	NORMAL	NORMAL[1]
PJM_LOAD_KEYSTONE	NORMAL	NORMAL[1]
PJM_GEN_NEPTUNE_PROXY	NORMAL	NORMAL~~Not Currently Available~~
PJM_LOAD_NEPTUNE_PROXY	NORMAL	NORMAL~~Not Currently Available~~
PJM_GEN_VFT_PROXY	NORMAL	NORMAL~~Not Currently Available~~
PJM_LOAD_VFT_PROXY	NORMAL	NORMAL~~Not Currently Available~~
ISO New England		
N.E._GEN_SANDY_POND	NORMAL	Not Currently Available

Proxy Generator Bus	E-Tag Transaction Type	
	Hourly Bid Type	Intra-hour Bid Type
NE_LOAD_SANDY_PD	NORMAL	Not Currently Available
NPX_GEN_CSC	NORMAL	Not Currently Available
NPX_LOAD_CSC	NORMAL	Not Currently Available
NPX_GEN_1385_PROXY	NORMAL	Not Currently Available
NPX_LOAD_1385_PROXY	NORMAL	Not Currently Available
Ontario		
O.H._GEN_BRUCE	NORMAL	Not Currently Available
OH_LOAD_BRUCE	NORMAL	Not Currently Available

[1] ~~Effective with activation of 15-Minute variable scheduling at PJM Keystone.~~

It is important to note that an E-Tag with a 0 MW energy profile for an hour(s) will be placed in study, since the MIS does not permit 0 MW transaction bids. In this case, the absence of a bid in the MIS that corresponds to an E-Tag with a 0 MW energy profile will result in the E-Tag being given a status of Study, and it will be passively denied within the OATI system if the E-Tag is not corrected within the applicable study window.

E-Tag Request Criteria

E-Tag schedule hour (T) An E-Tag Request for a new schedule or schedule change for hour T that is received:	**NYISO evaluation of the E-Tag schedule hour** The NYISO will respond to the E-Tag request for a new schedule or a change in schedule for hour T depending on results of the consistency check.
Before T-75 (including DAM)	Consistent: **APPROVE** Not consistent: **STUDY**
After T-75 and before T-20	Consistent: **DENY** Not consistent: **DENY** Any changes to the E-Tag that cause the state to be study and aren't corrected by T-75 will be DENIED. Any changes to the E-Tag Energy Profile MW (including new tags or withdrawal of an existing tag) that are initiated by the PSE after T-75 will be DENIED. In the event that RTC or the real-time transaction checkout process results in a transaction schedule less than the full amount requested, the NYISO will modify the bid/offer to reflect the amount scheduled; and will curtail the E-Tag schedule to match the schedule associated with the MIS bid/offer. The NYISO sets the bid/offer schedule for hour T to zero for any transaction that fails real-time checkout or fails to be bid scheduled in the real-time process. In the event the NYISO is unable to verify the existence of a NERC E-Tag due to technical issues, NYISO schedules may be

	approved by the NYISO scheduling process even when those schedules contain a NERC TagID that does not correspond to any E-Tag in OATI. If a matching E-Tag has not been implemented at least 20 minutes prior to flow, the NYISO's Operators will cut the transaction in MIS (and it will fail inter-Balancing Authority checkout), unless the Operators determine that (a) the transaction is likely to flow if scheduled, and (b) cutting the transaction would significantly impair reliability. A Market Participant that fails to get a matching E-Tag implemented at least 20 minutes prior to flow will be subject to Financial Impact Charges for transactions that do not flow. In special cases, when requested by a neighboring Balancing Authority, and when sufficient time permits, a transaction that failed checkout may be reinstated in an attempt to make the bid/offer consistent with the E-Tag.
After T-20	Consistent: **DENY** Not consistent: **DENY** NERC categorizes requests received less than 15 minutes prior to the start of the interchange ramp (typically 20 minutes prior to the start of the operating hour) as “late.” The NERC “late” categorization is irrelevant to the NYISO scheduling mechanisms.

E-Tag requests that span multiple hours will be given as an overall status the worst rating of each of its hours. For example, if some hours would have been assigned a status of APPROVED but other hours would have been assigned a status of STUDY or DENIED, then the entire E-Tag Request will be given the status STUDY or DENIED.

E-Tags in the Study state will default to “passively denied” within the OATI system (this is not a NYISO MIS function) if the discrepancies are not corrected by the MP within the applicable Study window. Transactions that are passively denied within the OATI system will not flow.

Examples

Each of the following examples describes transactions that involve the NYISO. Examples 1 through 3 describe transactions that occur prior to T -75. Examples 4 through 7 describe transactions that occur after T -75. These examples use MW values from the MIS that are the HAM bid MW values. Although Tagging Authorities are not explicitly mentioned in these examples, it is assumed that after a PSE creates the E-Tag the Tagging Authority sends the relevant E-Tag request to the NYISO.

E-Tag Schedule Hour	Scenario	Resolution
Before T -75 (including DAM)	1. In the DAM, a PSE creates an E-Tag prior to Hour 5 (DAM close) with a MW profile of 100MW.	The E-Tag request is approved and the PSE may ADJUST the MW profile after the DAM posts at 11AM, but not later than 10 PM.

E-Tag Schedule Hour	Scenario	Resolution
	2. In-Day, a PSE creates an E-Tag with an energy profile of 100 MW before T -75. A corresponding bid exists in the MIS.	The request is APPROVED by the NYISO because the bid matches the request.
	3. A PSE creates an E-Tag with an energy profile of 75 MW. A bid exists in the MIS for 100 MW.	The request is placed in STUDY by the NYISO because the energy profiles do not match. Provided that the E-Tag is corrected within the applicable study window, the transaction is scheduled at 100 MW. However, if the E-Tag is not corrected prior to T-75, the MIS bid will fail validation and will not be evaluated.
After T - 75 (HAM Close)	4. After HAM close, a PSE creates an E-Tag with an energy profile of 100 MW. A corresponding bid exists in the MIS for 100 MW.	All E-Tag requests submitted/updated by the PSE subsequent to T-75 are DENIED.
	5. A PSE creates an E-Tag with an energy profile of 75 MW. The corresponding MIS bid is for 100 MW.	All E-Tag requests submitted/updated by the PSE subsequent to T-75 are DENIED.
	6. After HAM close, a PSE updates an E-Tag with an energy profile MW that no longer matches the bid/offer that was in the MIS at the time of HAM close.	All E-Tag requests submitted/updated by the PSE subsequent to T-75 are DENIED.

NERC rules do not permit E-Tags to default to Passive Approval from Study in the OATI system. The default E-Tag state is Passive Denial. Market Participants must actively correct either their MIS Transaction bid or their NERC E-Tag, as appropriate, before NYISO's HAM Close, so that the NYISO and other Balancing Authorities may actively Approve the E-Tag request.

The NYISO anticipates that this Technical Bulletin will be incorporated into the Transmission Services Manual during its next available recertification period.