

ISO new england	CROP.36005 Energy Storage Devices	
© 2024	Approved By: Director, Operations	Effective Date: 01/29/2024
Rev #2	Procedure Owner: Manager, Control Room Operations	Valid Through: 01/29/2026

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## References

ISO-New England Manual for Market Operations, Manual M-11

## Procedure Background

Energy Storage Devices (ESDs) consist of a Generator, a DARD, and an ATRR. ESDs must have a self-schedule flag set whenever they are online (i.e. any UCM other than UCM 1). The term ESD, as used in this CROP, refers to Continuous Storage Facilities (CSFs) which, as defined in the ISO Tariff, are a sub-type of Electric Storage Facilities (ESFs). Processes related to Binary Storage Facilities (or pumped-storage hydro resources) are not included as part of this CROP.

A System Operator shall only accept a Redeclaration from the DE. Control Room Staff accepting a Redeclaration shall request and verify the Asset ID for the applicable Generator or DARD to ensure the Redeclaration is made for the correct ESD.

A Redeclaration shall stay in effect until the DE submits a subsequent Redeclaration restoring the previous Supply Offer parameter or modifying the Redeclared parameter value.


ESDs have parameters which are auto-redeclared: the energy dispatch limit (EDL), the Eco Max limit, and the Max Con limit. These limits are automatically-redeclared every 5 minutes or whenever an input to these limits is changed. Based on an ESD's telemetered available energy, the auto-redeclaration process ensures that the Eco Max limit normally reflects an energy output which is sustainable for one hour.

The ESD auto-redeclaration parameters can only be modified by the Operation Shift Supervisor. Adjustments of these parameters are not intended to be determined by System Operators in real time. The Operations Shift Supervisor should only change these parameters as directed by Control Room management, or the IT department.

The ESD automatic redeclaration parameter, Max Future Hours (default = 5) is set such that it is long enough that RTUC has visibility into the whole interval but short enough that it does not impact RAA, SCRA, and forecast capacity analysis.

Per M-11, Section 2.2.3.1(15)(iii), ESDs have the ability to opt-out of providing reserve, by modifying the process by which the generator’s Eco Max is redeclared, when they have less than 1 hour of available energy at RTHOL by use of a Participant Reserve Down Flag. The DE may only modify the value of this flag twice per day and must do so by verbal redeclaration. The effective Reserve Down Flag will be calculated every 4 seconds, the final value set based upon the Participant Reserve Down Flag, the 1-hour available energy telemetry, the effective RTHOL, and the ISO Operator Override and ISO Reserve Down Flag (which becomes viewable when the ISO Operator Override flag is checked).

The term “Energy Storage Device” and its corresponding abbreviation “ESD” is used in EMS tools and Control Room Operating Procedures. However, this term is not used in the ISO New England Tariff. Instead, the terms Electric Storage Facility (ESF) and Continuous Storage Facility (CSF) are used. Functionally all of these terms are intended to refer to those facilities labeled as ESDs in EMS.

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## Common Procedure Information

- A. Any ISO-NE qualified Control Room Operator has the authority to take actions required to comply with NERC Reliability Standards. A qualified ISO-NE Control Room Operator has met the following requirements:
  1. Have and maintain a NERC certification at the RC level (per R.1 of PER-003-2).
  2. Applicable Requirements of PER-005-2.
  3. Approved to cover a Control Room Operator shift position by the Manager, Control Room Operations.
  4. Is proficient at the current qualified level.
- B. Real time operation is defined as the current hour and the current hour plus one.
- C. Future hours are those beyond real time operation.
- D. All verbal communications with Local Control Centers (LCC), neighboring Reliability Coordinators/Balancing Authorities (RC/BA), Designated Entities (DE), Demand Designated Entities (DDE) and/or SCADA centers shall be made on recorded phone lines unless otherwise noted.
- E. For all communications
  1. Use the Basic Protocol for All Operational Communications as prescribed in M/LCC 13
  2. Use 'ISO New England' or 'New England'. Refrain from using 'ISO'.
  3. Use Asset ID's when communicating with DE/DDEs.
  4. Use three-part communication in all situations where its use will enhance communications.
- F. Primary responsibilities are stated for each step within the procedure, but any ISO Control Room Operator qualified at that position or higher can perform the step. The Primary Responsibility may be delegated to an Operator in a lower qualified position, but the responsibility for its completion remains with the identified individual.
- G. The use of “ensure” within this document means that a verification has been performed and if the item is not correct, corrective actions will be performed.

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## Procedure

### Condition(s) to perform this section:

- An ESD is going out-of-service; Or
- An ESD is being placed back in-service.

### Section 1: Modify the available status of an ESD

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**Step 1.1** Primary Responsibility: Generation Operator  
**Change the UCM.**

#### Notes

See CROP.36002 Redclarations, Attachment 1 - Unit Control Modes for a list of all of the UCMs and when each should be utilized.

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**Step 1.2** Primary Responsibility: Generation Operator

#### Condition(s) to perform this step:

- A resource that was out-of-service is now available.

**Restore the resource's operating limits and set the self-schedule flag.**

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#### **Condition(s) to perform this section:**

- Respond to a request to self-dispatch an ESD.

## **Section 2: Respond to a request to self-dispatch an ESD**

### **Step 2.1** Primary Responsibility: Generation Operator

#### **Determine if the self-dispatch request can be accepted.**

##### **Notes**

- Self-dispatch requests can only be accepted for an hour for which the intraday reoffer window has closed. The intraday reoffer window closes at 30 minutes prior to the operating hour.
- Example: At a time of 09:30 a self-dispatch request can only be made for HE10 (window closed at 08:30) and HE11 (window closed at 09:30).
- If an ESD's ATRR is NOT on regulation, the self-dispatch is acceptable if the requested SDMW value is between RTHOL and Bid Max Con.
- If an ESD's ATRR is on regulation, the self-dispatch is acceptable if the SDMW value does not interfere with the regulation limits.
- Bid Max Cons represents the max inverter capability for the DARD side of an ESD and is to be treated similar to RTHOL.
  - Example:

	<u>Valid</u>	<u>Invalid</u>
RTHOL	10 MW	10 MW
Regulation High	6 MW	6 MW
ESD GEN SDMW	3 MW	7 MW
Bid Max Cons	8 MW	8 MW
Regulation Low	5 MW	4 MW
ESD DARD SDMW	3 MW	5 MW

- GEN SDMW can be greater than the auto-redec Eco Max but it must not exceed the RTHOL.
  - SDMW+Regulation High must be  $\leq$  RTHOL
- DARD SDMW can be greater than Auto redec Max Cons but must not exceed Bid Max Cons.
  - SDMW + Regulation Low must be  $\leq$  Bid Max Cons

### **Step 2.2** Primary Responsibility: Generation Operator

#### **Review system conditions to determine the actions required.**

##### **Instructions**

- ☐ If no reliability concerns exist either for a local area or system-wide. Go to [Step 2.3](#) and perform the actions.
- ☐ If a reliability concern exists for a local area or system-wide. Go to [Step 2.4](#) and perform the actions

### **Step 2.3** Primary Responsibility: Generation Operator


#### **Condition(s) to perform this step:**

- No transmission reliability concerns exist either for a local area or system-wide.

#### **Determine if the self-dispatch request will be approved or denied.**

### **Step 2.3.1** Primary Responsibility: Generation Operator

#### **Inform the Loader Operator of the decision.**

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**Step 2.3.2** Primary Responsibility: Generation Operator  
**Notify the DE of the approval or denial of the self-dispatch request.**

**Instructions**

- ☐ If approved:
  - ☐ Confirm the request with the DE;
- ☐ If denied:
  - ☐ Provide a reason to the DE.

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**Step 2.3.3** Primary Responsibility: Generation Operator  
**Enter a self-dispatch MW amount.**

**Notes**

Self-dispatch requests can only be accepted for hours in which the intraday reoffer window has closed.

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**Step 2.3.4** Primary Responsibility: Generation Operator

**Condition(s) to perform this step:**

- The self-dispatch request was denied.

**Log the denial.**

**Instructions**

For a denied self-dispatch request use log entry: > GENERATION > SELF SCHEDULE / SELF DISPATCH > Self Dispatch Denied

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**Step 2.4** Primary Responsibility: Generation Operator

**Condition(s) to perform this step:**

- A transmission reliability concern exists for a local area or system wide.

**Notify the Security Operator of the request.**

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**Step 2.4.1** Primary Responsibility: Security Operator  
**Perform a security assessment using Powerflow, ILC Powerflow and STCA.**

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**Step 2.4.1.1** Primary Responsibility: Security Operator  
**Notify the Senior System Operator and Operations Shift Supervisor of the security assessment results identifying any issues.**

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**Step 2.4.2** Primary Responsibility: Operations Shift Supervisor  
**Determine if the self-dispatch request will be approved or denied.**

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**Step 2.4.2.1** Primary Responsibility: Operations Shift Supervisor  
**Inform the control room operators of the decision.**

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**Step 2.4.3** Primary Responsibility: Generation Operator  
**Notify the DE of the approval or denial of the self-dispatch request.**

**Instructions**

- ☐ If approved:
  - ☐ Confirm the request with the DE;
- ☐ If denied:
  - ☐ Provide a reason to the DE.

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**Step 2.4.4** Primary Responsibility: Generation Operator

**Enter a self-dispatch MW amount.**

**Notes**

Self-dispatch requests can only be accepted for hours in which the intraday reoffer window has closed.

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**Step 2.4.5** Primary Responsibility: Generation Operator

**Condition(s) to perform this step:**

- The self-dispatch request was denied.

**Log the denial.**

**Instructions**

For a denied self-dispatch request use log entry: > GENERATION > SELF SCHEDULE / SELF DISPATCH > Self Dispatch Denied

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**Condition(s) to perform this section:**

- The DE has notified the Control Room that the ESD has less than 1 hour of available energy at RTHOL and requests to modify its ability to provide reserve by changing its automatic Eco Max redeclaration method.

**Section 3: Respond to a DE request to modify an ESD's ability to provide reserve by changing its automatic Eco Max redeclaration method**

**Notes**

- An ESD reasonably expected to have less than one hour of available energy at RTHOL may, at the discretion of the DE, request that the auto-redeclarations of its Eco Max limit reflect an energy output that can be sustained for 15 minutes
- The DE may only make one request to initiate and one request to cancel providing reserves per day by modifying the Participants Reserve Down Flag. The counter on the display will increase for setting or removal of the flag.
- If the Participant Reserve Down "counter" is less than two, changing the status of the Participant Reserve flag is allowed.
- If the Participant Reserve Down "counter" is greater than or equal to two, changing the status of the Participant Reserve flag is not allowed, however the software will not prevent changing the status in the event a change is needed.

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**Step 3.1** Primary Responsibility: Any Control Room Operator  
**Access the Limits display for the applicable ESD.**

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**Step 3.2** Primary Responsibility: Any Control Room Operator

**Condition(s) to perform this step:**

- The Participant Reserve Down "counter" is less than two.

**Toggle the Participant Reserve Down flag.**

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**Step 3.3** Primary Responsibility: Any Control Room Operator

**Condition(s) to perform this step:**

- The Participant Reserve Down "counter" is two.

**Inform the DE that the request to change the automatic Eco Max redeclaration method has been denied.**

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**Step 3.3.1** Primary Responsibility: Any Control Room Operator  
**Log the denial.**

**Instructions**

If denied, use log entry: > GENERATION > RESERVES / RESERVE MONITOR DOWN > ESD Reserve Down Request Denied



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Revision History

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0	04/28/20	Initial issue	Steven Gould
1	02/03/22	Periodic review by procedure owner. Added background information and reformatted Table of Contents. Updated Common Procedure information.	Steven Gould
2	01/26/24	Periodic review by procedure owner. Removed Standard for completion throughout document as it is identified in the Common Procedure Information. Modified Step 1.2	Jonathan Gravelin