	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021


## Table of Contents

<a href="#">Section 1: Set up an RTUC case for execution .....</a>	<a href="#">4</a>
<a href="#">Section 2: Review an RTUC case and approve an RTUC Scenario .....</a>	<a href="#">7</a>
<a href="#">Section 3: Perform Normal Dispatch using UDS .....</a>	<a href="#">9</a>
<a href="#">Section 4: Respond to a UDS start up recommendation for a Fast Start resource that may result in a reliability risk that Clogger cannot mitigate .....</a>	<a href="#">13</a>
<a href="#">Section 5: Respond to a UDS shut down recommendation for a Fast Start resource. ....</a>	<a href="#">14</a>
<a href="#">Section 6: Implement shut down of non-Fast Start generator(s) .....</a>	<a href="#">15</a>
<a href="#">Section 7: Modify a ramp schedule in RTUC .....</a>	<a href="#">17</a>
<a href="#">Section 8: Enter a transitional ramp schedule in RTUC .....</a>	<a href="#">18</a>
<a href="#">Section 9: Modify the Fast Start Reliability (FSR) flag .....</a>	<a href="#">19</a>
<a href="#">Section 10: Respond to Unit Dispatch System (UDS) Failure .....</a>	<a href="#">20</a>
<a href="#">Section 11: Respond to an RTUC Failure .....</a>	<a href="#">21</a>
<a href="#">Section 12: Implement shut down of non-Fast Start DRRs .....</a>	<a href="#">22</a>

## References

1. Dispatch Using RTUC UDS Technical Manual
2. ISO New England Tariff Section III - Market Rule 1

## Procedure Background

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

NERC Reliability Standard BAL-001 R2 states the clock-minute average of the ACE does **NOT** exceed its clock-minute Balancing Authority ACE Limit (BAAL) for more than 30 consecutive minutes. It is acceptable to cross into the exceedance area of the BAAL display but actions must be taken to exit the exceedance area within 30 minutes. An audible alarm will alert the Loader when in the exceedance area for 10 minutes and a second alarm at 20 minutes.

CD SPD ability to commit and dispatch Fast Start resources is **NOT** affected by the implementation of RTUC.

The UDS solution must be “Approved” to send out new DDPs to resources unless a manual DDP is used or the “Unit Parameter Testing”, “Demand Parameter Testing”, of “DRR Auditing” software is used. The DDPs will refresh every 5 minutes with the last case approved.

The Loader Operator will attempt to approve an appropriate:

- RTUC case every 15 minutes;
- UDS case every 10 minutes;
- UDS case between 50 and 59 minutes past the hour to ensure the most efficient dispatch of resources

Fast Start generators and DARD Pumps are placed directly into a UCM 4 when they come on line.

Non-Fast Start generators are placed in a UCM 3 when they come on line for start up and will be placed in a UCM 4 when the DE contacts the ISO to release the generator for dispatch.

If a resource receives a UDS or CD-SPD start up instruction, the resource is expected to start unless the ISO instructs the DE or DDE **NOT** to start the resource due to reliability.

When Fast Start manual dispatch is required, for any reason, it is important to use the “Fast Start Manual Dispatch” display so that each start up can be captured electronically and evaluated. ISO uses this data to audit Fast Start performance to maintain accurate capabilities of Fast Start resources.

If the “Fast Start Manual Dispatch” display is used to recover from a Reportable Event, the Loader should consider only the Claim 10 values when determining the desired MW amount.

UDS and CD SPD contain a Real-Time Auto Mitigation process that evaluates Generator supply offer parameters and may replace these parameters with values derived by ISO Internal Market Monitoring.

Clicking on the “RT Mitigation” button will display a list of Generators that have been identified for Real-Time Mitigation in the current UDS case.

If “RT Mitigation” is being identified in the current case:

- The “RT Mitigation” button will illuminate in RED
- After the UDS case has been approved the “RT Mitigation” button will turn BLACK
- The number of case messages will increase to 29 when the process is complete

Generator supply offer parameters will **NOT** be mitigated until the UDS or CD SPD case is approved. Once approved, mitigated Generators will remain mitigated for, at a minimum, the remainder of the hour in which the mitigation became effective.


#### Capacity Scarcity Condition (CSC)

A Capacity Scarcity Condition will be triggered by the approval of any ONE UDS or CDSPD case that is violating any one or more of the reserve constraints identified below for (1) five minute interval.

- System Ten-Minute Non-Spinning Reserve (TMNSR) – RCPF of \$1,500/MWh
- System Thirty-Minute Operating Reserve (TMOR) – RCPF of \$1,000/MWh
- Local Reserve Zone TMOR – RCPF of \$250/MWh. Local Reserve Zones are:
  - NEMA-Boston
  - CT
  - SWCT

Management Expectation:

- Upon indication of a UDS (or CDSPD) case that is violating the System TMNSR, System TMOR, or Local Reserve Zone TMOR requirement management expectation is that the Loader Operator communicates the condition to the Shift Supervisor and Senior System Operator for further discussion prior to approval. If the

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

conditions forecasted by UDS (or CDSPD) are as expected and approval of the UDS (or CDSPD) case is required, then the case may be approved. If the conditions forecasted by UDS (or CDSPD) are not as expected, or if approval of the UDS (or CDSPD) case is not required, then adjustments should be made to the case and it should be re-executed as necessary.


- Upon indication that a Local Reserve Zone is approaching a Capacity Scarcity Condition, the Local Reserve constraint should be allowed to bind allowing any resources to be dispatched to a point where they are 30 minutes away from the EcoMax or Max Reduction. The Local Reserve Zone transfer limit should be re-evaluated using STE limits. When a deficiency occurs using the new transfer limit and while ensuring the resources dispatched remain at 30 minutes from the EcoMax or Max Reduction it is acceptable to allow violation of the Local Reserve Zone constraint provided that post 1<sup>st</sup> contingency load shed is required. If load shed is NOT required post 1st contingency, then violation of the Local Reserve Zone constraint should NOT be allowed.

#### UDS Solution Messages

- **Deficit Gen:** UDS solves with deficit generation. The MW is the total bus deficit generation MW
- **Excess Gen:** Excess generation case. It shows the total bus excess generation MW
- **Generic Constraint Violated:** UDS solves with a possible generic constraint violation
- **Branch Limit Violated:** UDS solves with branch limit violation.
- **Ramp Rate Violation:** Generator ramp rate violation. The MW value is the sum of the Generator ramp rate violation (MW per period).
- **Capacity Violation:** Generator capacity violation. It includes energy capacity violation (upper/lower bound) or reserve capacity violation. The MW value is the sum of the Generator level capacity violation.
- **Unit Regulation Capacity Violation:** It shows that Generator regulation assignment cannot be fulfilled. The MW value shows the sum of the Generator regulation capacity deficit.
- **Reserve Zone TMOR Reserve Deficit:** Not able to meet Reserve Zone TMOR Reserve (followed by the MW amount of deficit)
- **Area TMOR Reserve Deficit:** Not able to meet Area TMOR Reserve (followed by the MW amount of deficit)
- **Area TMSR Deficit:** Not able to meet Area TMSR (followed by the MW amount of deficit)
- **Area TMNSR Deficit:** Not able to meet Area TMNSR (followed by the MW amount of deficit)
- **Successful:** Solution solves without any deficits or excesses or violations as described above)

## 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. Use the Basic Protocol for All Operational Communications as defined in M/LCC 13
  1. Use 'ISO New England' or 'New England'. Refrain from using 'ISO'.
  2. Use Asset ID's when communicating with DE/DDEs.
- 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.
- 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.

	CROP.35005 Dispatch using RTUC and UDS	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

## Procedure

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

- One or more parameters need to be modified prior to an automatic or manual execution of an RTUC case.

### Section 1 Set up an RTUC case for execution

#### Notes

RTUC is setup to automatically execute at the following times: XX03, XX18, XX33, and XX48.

---

**Step 1.1** Primary Responsibility: Loader Operator

#### Review Upcoming Events and system conditions that will affect dispatch.

##### Instructions

Items to review are:

- Expected Breaker closure times
- Expected Release for dispatch times
- Expected Release for Shut Down (RSD) times
- Expected Breaker Open times
- Active transmission constraints
- Expected interchange schedule on Interval Overrides display
- Excluded resources

---

**Step 1.2** Primary Responsibility: Loader Operator

#### Determine the modifications required.

---

**Step 1.2.1** Primary Responsibility: Loader Operator

#### Modify the number of Scenarios to run for an execution.

##### Notes

- Scenario 1 is always run and **cannot** be disabled. Scenarios 2 and 3 can be enabled/disabled by the Control Room Operator as needed.
- Modifying the number of Scenarios that will be executed does **NOT** change the time for execution.

---

**Step 1.2.2** Primary Responsibility: Loader Operator

#### Modify the Scenario LAF

##### Notes

- This Scenario LAF will be applied to all intervals in the RTUC look ahead period. Scenario LAFs in an approved RTUC case are carried forward and are used by the next CTSPE case.
- Use of non-zero Scenario LAFs should be limited to times when it is deemed necessary to correct for an actual or anticipated error in one of the RTUC/CTSPE inputs (e.g. load forecast) that can't be corrected by modifying that specific input (e.g. manual overrides of STLF).

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 1.2.3** Primary Responsibility: Loader Operator

### Modify the number of intervals to be solved for a Scenario

#### Instructions

This is done on the Interval Overrides display. Navigate there by:

- Clicking the RT Commitment dropdown menu;
- Selecting Interval Overrides

#### Notes

- The intervals for any Scenario 1, 2, or 3 can be ignored
- Normally a scenario is run with a minimum of 6 intervals. A minimum of 4 intervals is required in order to enable the creation of new CTSPE cases. If an RTUC case is approved with less than 4 intervals, **no** CTSPE cases will be created until an RTUC case with 4 intervals is approved.
- If an interval is ignored, all intervals beyond the ignored interval will also be ignored.

**Step 1.2.4** Primary Responsibility: Loader Operator

### Modify the Min Gen Emergency flag for an interval.

#### Instructions

This is done on the Interval Overrides display. Navigate there by:

- Clicking the RT Commitment dropdown menu;
- Selecting Interval Overrides

#### Notes

MGE flags can be set to Continue for all future intervals as new RTUC cases are executed by selecting the “Continued” button for the desired Scenario on the Interval Overrides display.

**Step 1.2.5** Primary Responsibility: Loader Operator

### Modify an Interval LAF, Fixed Interval LAF, or Wind LAF for an interval.


#### Instructions

This is done on the Interval Overrides display. Navigate there by:

- Clicking the RT Commitment dropdown menu;
- Selecting Interval Overrides

#### Notes

- This LAF will only be used in the specific interval for which it is entered. Interval LAFs, Fixed Interval LAFs, and Wind LAFs perform the same function, but only for a specific interval.
- Interval and Wind LAFs can be set to Continue for all future intervals as new RTUC cases are executed by selecting the “Continued” button for the desired Scenario on the Interval Overrides display.
- Fixed Interval LAFs do not travel in time with the interval for which they are entered.
- Interval, Fixed Interval, and Wind LAFs in an approved RTUC case are carried forward and used by the next CTPSE case. Due to the timing of the CTS scheduling process, the Interval, Fixed Interval, and Wind LAFs used in the first 2 intervals of RTUC are used by the next CTSPE case but they have no impact on the scheduling of the NYN interface in those intervals.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 1.2.6** Primary Responsibility: Loader Operator

**Modify an External Interface schedule for an interval.**

**Instructions**

This is done on the Interval Overrides display. Navigate there by:

- Clicking the RT Commitment dropdown menu;
- Selecting Interval Overrides

**Notes**

- The value entered is applied to the selected intervals for the selected scenario. The value entered will replace the expected interchange schedule value that comes from either EMS or the Interchange Scheduling software Future Hour Interchange Predictor (depends on the interval being modified). The expected interchange schedule is shown only under Scenario 1, but applies equally to all Scenarios, unless overridden by the Operator.
- External Interface Overrides can be set to Continue for all future intervals as new RTUC cases are executed by selecting the “Continued” button for the desired Scenario on the Interval Overrides display.
- External Interface Overrides in an approved RTUC case are carried forward and used by the next CTSPE case.

**Step 1.2.7** Primary Responsibility: Loader Operator

**Modify an Exclude flag for a resource.**

to be at the resource level, **NOT** a case or scenario, and stay in effect until the operator changes them.

**Notes**

- The flag is modified via the Scenario Overview Display for Fast Start resources being recommended for commitment or de-commitment. It can also be modified via the Gen Schedule, DRR Schedule or DARD Schedule displays in APF-MOI.
- “Exclude” means to exclude the resource from RTUC processing. For Fast Starts that are marked as excluded, RTUC will **NOT** commit or de-commit those resources in any interval of its solution. For non-Fast Start generators that are marked excluded, RTUC will **NOT** consider those generators for enveloping. The exclude flags are considered
- Once set an Exclude flag will remain until it is removed.

**Step 1.2.7.1** Primary Responsibility: Loader Operator

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

- **The Excluded flag is modified for a resource.**

**Log the modification of an Excluded flag for a resource.**

**Instructions**

Use log entry: > GENERATION > Excluded Unit

**Step 1.3** Primary Responsibility: Loader Operator


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

- **Modifications were made and a manual execution is required.**

**Execute RTUC.**

**Notes**

- If a case is being executed, the execution bar will be active and a number will be displayed to the right indicating the number of cases being executed.
- If a case is currently being executed, stop the current execution prior to executing a new case.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- An RTUC case execution has completed.

**Section 2      Review an RTUC case and approve an RTUC Scenario**

**Notes**

RTUC will automatically execute and can be manually executed. Regardless of execution type an RTUC solution is required to be approved for the purpose of Fast Start resource commitment / de-commitment.  
The Loader Operator will attempt to approve an appropriate RTUC case every 15 minutes.

**Step 2.1**      Primary Responsibility: Loader Operator

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

- None of the executed RTUC scenarios solved for the attempted executions.

**Notify the IT On Call Technician of the RTUC failure.**

**Instructions**

Proceed to [Section 11](#) of this CROP.

**Step 2.2**      Primary Responsibility: Loader Operator

**Review the results of the RTUC execution.**

**Instructions**

Review the following for all intervals, especially the first 6 intervals:

- Fast Start resource or DARD Pump start up and shut down recommendation; ensure they are consistent with expected system conditions
  - For a Fast Start resource that may result in a reliability risk use [Section 4](#) of this CROP
  - For shut down recommendation for a Fast Start resource use [Section 5](#) of this CROP
- Identify generator envelope recommendation, determine if any recommendation requires operator action
- Determine if scenario has adequate resource targets to meet load and expected load change
- Max and Min LMPs
- Binding or violating transmission constraints
- Binding or violating reserves constraints
- Expected resource dispatch in intervals

**Notes**

- Scenario results can be reviewed individually or all at once using the "Compare Scenarios" button.
- Operator Overrides, including any LAFs and Interchange Schedule Overrides, used in an approved RTUC scenario are inputs to the next CTSPE case execution. Approval of an RTUC scenario indicates that the solution results; such as Fast Start resource/DARD commitments, LMPs, and binding or violating transmission/reserve constraints, are consistent with Operator expectations for system conditions in future intervals.


**Step 2.2.1**      Primary Responsibility: Loader Operator

**Determine if modifications are required based on the scenario solution results.**

**Instructions**

Possible modifications:

- Adjust an RTUC parameter using Step 1.2 of this CROP
- Adjust the Bias for a Transmission Constraint, CROP.34006 Clogger Transmission Constraints and EMSOUT

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 2.3** Primary Responsibility: Loader Operator

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

- An RTUC scenario solved, was reviewed, and can be approved as is.

**Approve the applicable scenario.**

**Instructions**


To approve a scenario:

- Click the "Show Scenario" radio button for the scenario to be approved;
- Click the " Approve Scenario" button
- Click "Ok" on the pop up window.

**Notes**

The Fast Start start up and shut down recommendations in the approved RTUC scenario will be passed to UDS for implementation in the appropriate dispatch time interval.



	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- Dispatch is required to be performed to maintain ISO-NE ACE.

**Section 3 Perform Normal Dispatch using UDS**

**Notes**

- UDS **cannot** develop start up or shut downs for Fast Start resources or DARD pumps. It will only use what has been recommended by RTUC.
- The Loader Operator will attempt to approve an appropriate:
  - UDS case every 10 minutes;
  - UDS case between 50 and 59 minutes past the hour to ensure the most efficient dispatch of resources

**Step 3.1** Primary Responsibility: Loader Operator

**Verify the UDS parameters.**

**Instructions**

Normal UDS parameters are as follows:

- "Look Ahead" is set at 15 minutes;
- "Min Run Time" is set at 60 minutes;
- "Startup Time" is set at 30 minutes;
- "Startup Offset Time" is set at 10 minutes;
- "Shutdown Offset Time" is set at 10 minutes;
- "Auto Execute" is **NOT** checked;
- "Transmit DDP's" is checked;
- "Use RTUC recommendations" is checked.

**Step 3.1.1** Primary Responsibility: Loader Operator

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

- Identified a parameter needs to be modified.

**Inform the remaining Control Room Operators of the parameter that will be modified.**

**Step 3.1.2** Primary Responsibility: Loader Operator

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

- Identified a parameter needs to be modified.


**Modify the UDS parameter.**

**Step 3.1.2.1** Primary Responsibility: Loader Operator

**Log the UDS parameter modification.**

**Instructions**

Use log entry: > GENERATION > UDS Parameter Modification

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 3.2** Primary Responsibility: Loader Operator

**Review the FS SUSD display.**

**Instructions**

Review the following on the FS SUSD display:

- Recommended start ups and shut downs that can be sent within the current dispatch time interval;
- Resources with an Ignore flag set.

**Notes**

The FS SUSD display will update when an RTUC case is approved. When updated the FS SUSD text will turn red.

**Step 3.2.1** Primary Responsibility: Loader Operator

**Modify an Ignore flag for a resource.**

**Notes**

An Ignore flag will stay until a new RTUC case is approved.

**Step 3.3** Primary Responsibility: Loader Operator

**Modify the load adjustment factor for each case as needed.**

**Notes**

- The load adjustment factor is a MW value deviation, positive or negative, from the Case 0 delta MW.
- Modifying the load adjustment factor MW value will **NOT** result in a modification to the recommended start ups or shut downs in UDS.

**Step 3.4** Primary Responsibility: Loader Operator

**Execute UDS.**

**Step 3.5** Primary Responsibility: Loader Operator

**Review the following information in the UDS case solutions.**


**Instructions**

Determine the following:

- Was the case successful;
- Adequate resource targets to meet the load and expected load change, active constraints, or reserve requirements;
- Dispatch Zone LMPs are consistent with system conditions; Energy offer floor price is \$ -150.00 / MWh.
- Start ups or shut downs are consistent with RTUC recommendations

**Notes**

- In the RTUDS solution:
  - DDPs come from "Dispatch Run Only"
  - LMPs come from "Pricing Run Only"
- If CT, SWCT, or Boston LMPs are greater than the remaining dispatch zone LMPs without a binding constraint it may be due to the LRR in the DOUBLIC software.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 3.6** Primary Responsibility: Loader Operator

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

- Case solution is NOT successful.

**Determine the reason for the other than Successful solution.**

**Instructions**

Possible actions to provide an acceptable solution:

- Adjust LAF value(s) and re-execute UDS
- Change the Look Ahead Parameter
- Adjust the Bias for a Transmission Constraint, CROP.34006 Clogger Transmission Constraints and EMSOUT
- Adjust a Reserve Zone Requirement Bias, Section 2 of CROP.35003 Reserve Requirement Adjustment
- Adjust a System Wide Reserve Zone Bias, Section 3 of CROP.35003 Reserve Requirement Adjustment
- Remove violating generator from Regulation, CROP.35002 Regulation
- Redeclare the regulation parameter, CROP.36002 Redeclarations

**Notes**

- UDS solutions will appear “Red” if the solution has other than a “Successful” message, but may only be due to a Reserve violation.
- If an acceptable solution is NOT obtained after taking action to get an acceptable solution, notify the Senior System Operator and Operations Shift Supervisor.
- Adjusting the reserve bias is the preferred method for optimizing Eco Surplus. If adjusting the reserve bias does NOT obtain an acceptable UDS solution, the Loader Operator is expected to use manual DDPs using CROP.25007 Manual Dispatch.

**Step 3.7** Primary Responsibility: Loader Operator

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

- There is an acceptable UDS case solution.

**Approve the appropriate UDS case.**

**Notes**

- UDS case approval should be within 5 minutes of UDS case execution. A delay in case approval may cause LMP Calculator to fail and require LMP corrections.
- Case approval can only be done with RTUDS selected.

**Step 3.7.1** Primary Responsibility: Loader Operator

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

- A DARD Pump was sent a start up; Or
- A DARD Pump was sent a shut down.

**Notify the DE that a DARD Pump is being sent a start up or shut down signal.**

Standard(s) for completion:

- Asset ID is used.

**Instructions**

Once the DARD Pump is offline, ensure the parameters are appropriate for system conditions.

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

---

**Step 3.7.2** Primary Responsibility: Loader Operator

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

- A Fast Start resource is sent a start up and then called and instructed to delay the start up.

**Log the start up delay**

**Instructions**

Use log entry: > GENERATION > Fast-Start Dispatch Delay [E]

**Notes**

This log entry will be used to prevent the resource from incurring any penalties.


---

**Step 3.7.3** Primary Responsibility: Loader Operator

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

- A UDS start up was sent to a resource and subsequently verbally cancelled prior to the resource starting up within the allotted start up time.

**Notify the Forecaster of a verbal cancellation of a UDS start up.**

	CROP.35005 Dispatch using RTUC and UDS	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- [Based on Section 2](#)

**Section 4 Respond to a UDS start up recommendation for a Fast Start resource that may result in a reliability risk that Clogger cannot mitigate**

---

**Step 4.1** Primary Responsibility: Loader Operator  
**Notify the Security Operator of the recommended start up.**

---

**Step 4.2** Primary Responsibility: Security Operator  
**Perform a security assessment using Powerflow, ILC Powerflow, and STCA.**

---

**Step 4.3** Primary Responsibility: Security Operator  
**Notify the Loader Operator of the results of the security assessment.**

---

**Step 4.4** Primary Responsibility: Loader Operator

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

- Starting the Fast Start creates a reliability problem.

**Notify the Senior System Operator and Operations Shift Supervisor of the reliability issue and the resource being placed out of service or unavailable.**

---

**Step 4.5** Primary Responsibility: Loader Operator  
**Notify the DE/DDE the resource is being placed out of service due or unavailable to transmission**

Standard(s) for completion:

- The Asset ID is used.

---

**Step 4.6** Primary Responsibility: Loader Operator  
**Place the resource out of service or unavailable.**

**Instructions**

To place the generator out of service ISO imposed, perform the following:

- Place in a UCM 1;
- Set the OOS flag;
- Enter zero for the ISO Imposed Eco Max and Eco Min;
- Select TC as the reason code.

To make a DRR unavailable: perform the following:


- Access the DRR Limits
- Set the "Disabled" flag

---

**Step 4.7** Primary Responsibility: Loader Operator  
**Log the resource being placed out of service or unavailable due to transmission.**

**Instructions**

Use log entry: > GENERATION > OOS > Due to Transmission [E]

	CROP.35005 Dispatch using RTUC and UDS	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- [Based on Section 2](#)

**Section 5 Respond to a UDS shut down recommendation for a Fast Start resource.**

**Step 5.1** Primary Responsibility: Loader Operator

**Determine the number of start ups available for the remainder of the day.**

**Notes**

The “Fast Start Manual Dispatch” display will highlight resources in **red** which have one or fewer starts remaining for the day in accordance with their offer data. RTUC and UDS do not honor the maximum number of starts per day offer parameter.

**Step 5.1.1** Primary Responsibility: Loader Operator

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

- There is NOT at least one start up remaining for a resource.

**Notify the Operations Shift Supervisor that there are NO available start ups remaining.**

**Step 5.1.2** Primary Responsibility: Operations Shift Supervisor

**Determine if a Fast Start Reliability (FSR) flag is required to be set.**

**Instructions**

An FSR flag will prevent the Fast Start Generator from being shut down.

**Step 5.1.3** Primary Responsibility: Operations Shift Supervisor

**Notify the Loader Operator of the determination.**

**Instructions**

If it was determined an FSR flag is required, the flag is set using [Section 9](#) of this CROP.

**Step 5.2** Primary Responsibility: Loader Operator

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

- It was determined that shut down of a Fast Start resource could create a reserve problem.

**Notify the Senior System Operator and the Operations Shift Supervisor.**

**Step 5.2.1** Primary Responsibility: Senior System Operator

**Determine if the shut down would create or worsen a reserve problem.**

**Step 5.2.2** Primary Responsibility: Senior System Operator


**Coordinate with the Operations Shift Supervisor to determine if an FSR flag is required.**

**Step 5.2.3** Primary Responsibility: Senior System Operator

**Notify the Loader Operator of the determination.**

**Instructions**

If it was determined an FSR flag is required, the flag is set using [Section 9](#) of this CROP.

	CROP.35005 Dispatch using RTUC and UDS	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- A non-Fast Start generator is scheduled to shut down.

**Section 6 Implement shut down of non-Fast Start generator(s)**

---

**Step 6.1** Primary Responsibility: Loader Operator

**Review the SCRA for upcoming generator shut downs and determine when a generator will meet its DA commitment and minimum run time.**

---

**Step 6.2** Primary Responsibility: Loader Operator

**Determine when the generator needs to be dispatched to Eco Min in preparation for shut down.**

**Notes**

- Consider the following when making this determination:
  - Time the generator will take to reach Eco Min using the MRR
  - Capacity and Reserve requirements
- The goal is to have the generator at their Eco Min when it is scheduled to be shut down.

The Minimum Down time does **NOT** start until the generator is released for shut down at the Eco Min or lower.

---

**Step 6.3** Primary Responsibility: Loader Operator

**Notify the applicable LCC of the impending generator shut down.**

---

**Step 6.4** Primary Responsibility: Loader Operator

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

- The generator is operating above its Eco Min.

**Inform the Security Operator of the generator to be dispatched to Eco Min for shut down.**

---

**Step 6.4.1** Primary Responsibility: Security Operator

**Perform a security assessment.**

---

**Step 6.4.2** Primary Responsibility: Security Operator

**Review the Outage requests to determine if the generator is must run.**

---

**Step 6.4.3** Primary Responsibility: Security Operator

**Determine if the shut down can be allowed based on reliability.**

---

**Step 6.4.4** Primary Responsibility: Security Operator

**Notify the Loader Operator of the determination.**

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 6.5** Primary Responsibility: Loader Operator

**Dispatch the generator to Eco Min in preparation for shut down.**

**Instructions**

Perform the following to dispatch the generator to Eco Min:

- Contact and provide the DE a verbal dispatch instruction to Eco Min in preparation for shut down;
- Request the DE notify ISO-NE when at Eco Min;
- Place the generator in UCM 3.

If a reliability concern exists or at the discretion of the Operations Shift Supervisor:

- Dispatch the generator to Eco Min using a Manual DDP.

**Step 6.6** Primary Responsibility: Loader Operator

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

- **Generator is at Eco Min for shut down.**

**Release the generator for shut down by using the Release for Shut Down (RSD) button.**


**Step 6.6.1** Primary Responsibility: Loader Operator

**Notify the DE that the generator can be shut down.**

Standard(s) for completion:

- The Asset ID is used.



	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- The ramp in RTUC is NOT accurate.

**Section 7      Modify a ramp schedule in RTUC**

**Notes**

Once the operating plan has been updated for the commitment or de-commitment of a resource, the ramp profile in RTUC can be updated if it is inaccurate for the current conditions.

---

**Step 7.1**      Primary Responsibility: Any Control Room Operator

**Access the Solution Summary display in RTUC.**

**Instructions**

- Click the RT Commitment Menu
- Click on Solution Summary

---

**Step 7.2**      Primary Responsibility: Any Control Room Operator

**Locate the generator or DRR and right click on it.**

---

**Step 7.3**      Primary Responsibility: Any Control Room Operator

**Select Unit or DRR Ramp Details from the pop out menu.**


---

**Step 7.4**      Primary Responsibility: Any Control Room Operator

**Modify the applicable override box for the applicable ramp type.**

**Notes**

- The ability to modify the start up and shut down ramps will be provided.
- The modifications must be saved for RTUC to accept the change.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- A combined cycle generator is starting up or shutting down a single component.

**Section 8      Enter a transitional ramp schedule in RTUC**

---

**Step 8.1**      Primary Responsibility: Any Control Room Operator  
**Access the Solution Summary display in RTUC.**

**Instructions**

- Click the RT Commitment Menu
- Click on Solution Summary

---

**Step 8.2**      Primary Responsibility: Any Control Room Operator  
**Select the Transitional Ramp Eligible filter.**

---

**Step 8.3**      Primary Responsibility: Any Control Room Operator  
**Locate the generator and right click on it.**

---

**Step 8.4**      Primary Responsibility: Any Control Room Operator  
**Select Unit Ramp Details from the pop out menu.**

---


**Step 8.5**      Primary Responsibility: Any Control Room Operator  
**Click the Add Ramp button.**

---

**Step 8.6**      Primary Responsibility: Any Control Room Operator  
**Enter the transition ramp times**

**Instructions**

- Enter the time the generator will become non-dispatchable in the Override Start field.
- Enter the time the generator stated it will be dispatchable in the Override End field.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- A Fast Start Reliability (FSR) flag is required to be applied for system conditions; Or
- A Fast Start Reliability (FSR) flag is no longer required and needs to be removed.

**Section 9      Modify the Fast Start Reliability (FSR) flag**

**Notes**

- If it is desirable to keep a Fast-Start Generator on line due to reliability, the FSR flag should be used to prevent the Fast-Start Generator from receiving a shut down recommendation.
- There are no FSR flags for DRRs.
- If the FSR flag will be set on the generator of a pump storage DARD, it can cause RTUC to fail if the associated DARD Pump has an SS within the RTUC Intervals. If this situation arises there are two options that can be taken to prevent an RTUC failure:
  - Modify the DARD Pump pumping SS; or
  - Ignore the applicable intervals in RTUC

---

**Step 9.1**      Primary Responsibility:    Loader Operator

**Access the Running FS tab on the Fast Start Manual Dispatch display.**

---

**Step 9.2**      Primary Responsibility:    Loader Operator

**Modify the FSR flag for the applicable generator(s).**

---

**Step 9.3**      Primary Responsibility:    Loader Operator


**Log the modification to the FSR flag.**

**Instructions**

- If the FSR flag was set, use log entry: > GENERATION > FSR FLAG > Start using FSR Flag
- If the FSR flag was removed, use log entry: > GENERATION > FSR FLAG > End using FSR Flag
- Identify the generators and the reason in the log entry.

**Notes**

If more than 5 generators have FSR flags applied, it is acceptable to use one log entry for all generators. This is applicable to both setting and removing the flags.

	<b>CROP.35005 Dispatch using RTUC and UDS</b>	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- **Determined that UDS has failed; Or**
- **Determined that UDS is NOT operating properly.**

**Section 10 Respond to Unit Dispatch System (UDS) Failure**

Standard(s) for completion:

- Dispatch to meet the NERC Control Performance Standard and Disturbance Control Standards under normal and emergency conditions to maintain the reliable operation of the ISO-NE RC/BA.

---

**Step 10.1** Primary Responsibility: Operations Shift Supervisor  
**Notify the Control Room Operators that UDS has failed/malfunctioned and manual dispatch is required.**

---

**Step 10.2** Primary Responsibility: Loader Operator  
**Notify IT On Call Technician of the UDS failure/malfunction.**

---


**Step 10.3** Primary Responsibility: Loader Operator  
**Perform manual dispatch using CROP.25007 Manual Dispatch.**

---

**Step 10.4** Primary Responsibility: Loader Operator  
**Log the UDS failure/malfunction and the actions taken.**

**Instructions**

Use log entry: > EQUIPMENT FAILURES > UDS failure/malfunction

	CROP.35005 Dispatch using RTUC and UDS	
© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

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

- Determined that RTUC has failed; Or
- Determined that RTUC is NOT operating properly.

**Section 11 Respond to an RTUC Failure**

**Step 11.1** Primary Responsibility: Loader Operator

**Coordinate with the Operations Shift Supervisor and the Senior System Operator to determine how to proceed.**

**Step 11.2** Primary Responsibility: Loader Operator

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

- Notified the RTUC failure can be corrected in a short duration and system conditions do NOT warrant disconnecting RTUC.

**Actions for a short duration failure of RTUC**

**Step 11.2.1** Primary Responsibility: Loader Operator

**Dispatch online resources using UDS.**

**Step 11.2.2** Primary Responsibility: Loader Operator

**Determine the merit order dispatch for Fast Starts.**

**Instructions**

The following items can be used to determine merit order dispatch:

- Energy Supply Time Curve OIS Log
- Destacker to EcoMin OIS Log
- Destacker to Emergency Min OIS Log
- SCRA/COP
- FS Manual Dispatch display

**Notes**

With RTUC still connected to UDS, UDS **cannot** develop start up or shut downs for Fast Start resources.

**Step 11.3** Primary Responsibility: Loader Operator

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

- Notified the RTUC failure cannot be corrected in a short duration; Or
- System conditions do warrant disconnecting RTUC.

**Actions for a long duration failure of RTUC**

**Step 11.3.1** Primary Responsibility: Loader Operator

**Remove "Use RTUC recommendations" flag and save the change in UDS.**

**Notes**

Removing the "Use RTUC recommendations" flag allows UDS to create Fast Start resource start up and shut down recommendations.

**Step 11.3.2** Primary Responsibility: Loader Operator

**Perform dispatch using CROP.25006 Dispatch using UDS during an RTUC Failure.**

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

**Step 11.3.3**

**Log the RTUC failure and actions taken**

**Instructions**

Use log entry: > EQUIPMENT FAILURES > RTUC Failure/Malfunction



## CROP.35005 Dispatch using RTUC and UDS

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

---

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

A non-Fast Start DRR is scheduled to shut down.

### **Section 12 Implement shut down of non-Fast Start DRRs**

---

#### **Step 12.1**

**Release the DRR for shut down by using the Release for Shut Down (RSD) button.**

© 2019	Approved By: Director, Operations	Effective Date: 09/18/2019
Rev # 22	Procedure Owner: Manager, Control Room Operations	Valid Through: 09/18/2021

## Revision History

<b>Rev. No.</b>	<b>Date (MM/DD/YY)</b>	<b>Reason</b>	<b>Contact</b>
0	11/18/14	Initial revision of this Procedure	Steven Gould
1	02/03/15	Update language for Implementing Shut down of a non-Fast Start	Steven Gould
2	06/17/15	Update language for using the Fast Start Manual Dispatch display Update who is responsible for running the Transmission Constraint report in APF-MOI and determining the applicable dispatch	Steven Gould
3	07/10/15	Add a Step to Section 7 to notify applicable LCC	Steven Gould
4	09/16/15	Added steps for setting and removing manual dispatch flag for a DR RTU	Steven Gould
5	11/05/15	Addition of sections and modification of sections for implementation of GCA project.	Steven Gould
6	01/22/16	Added information to procedure background for BAL-001-2.	Steven Gould
7	03/07/16	Addition of guidance and instruction.	Steven Gould
8	04/29/16	Addition of two new Sections (new 7 and 8) that were transferred from CROP.36003 Commitment De-commitment Self-Scheduling and Self-Dispatch.	Steven Gould
9	09/06/16	Updated language in the background Updated notes and instructions in Sections 1 and 2	Steven Gould
10	02/27/17	Approved on 02/27/17 but will not be effective until 03/01/17 to coincide with software migration into production. Update to steps in Section 3 for implementation of FSP project	Steven Gould
11	06/06/17	Added further guidance to the Section 9 Note for FSR flag and pumping SS conflict Corrected numbers in Step 1.2.3	Steven Gould
12	07/06/17	Review and addition of an expectation for UDS case execution to procedure background and Section 3	Steven Gould
13	08/23/17	Administrative change to add expectations about UDS approval timing	Steven Gould
14	10/19/17	Change to Step 11.3.1 based on software change	Steven Gould
15	04/25/18	Addition of settings to verify in Step 3.1	Steven Gould
16	05/18/18	Changes made for PRD project	Steven Gould
17	06/26/18	Editorial Changes and change to Step 1.2.3 for the number of intervals normally run during a scenario.	Steven Gould
18	07/18/18	Addition of a Fixed Interval LAF	Steven Gould
19	03/13/19	Added management's expectations for counting of load shed and allowing RCPF to violate in the Local Reserve Zone in background.	Steven Gould
20	04/29/19	Moved Attachment 1 to CROP.50007 Control Room Alarms	Steven Gould
21	06/05/19	SWCT Local Reserve Zone TMOR – RCPF is in effect	Steven Gould
22	09/18/19	Added step 11.3.3 for logging RTUC failure Reviewed Instructions and Notes	Steven Gould