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References

1. Dispatch Using RTUC UDS Technical Manual
2. ISO New England Tariff Section III - Market Rule 1
3. CROP.10002 Implement Capacity Remedial Actions
4. CROP.25006 Dispatch using UDS during an RTUC failure
5. CROP.25007 Manual Dispatch
6. CROP.34006 CLOGGER Transmission Constraints
7. CROP.35002 Regulation
8. CROP.35003 Reserve Requirement Adjustment
9. CROP.36002 Redeclarations

Procedure Background

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 is expected 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

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.

Electronic Dispatch executes periodically every five minutes to issue the latest DDPs including the DDG's DNE limits. Although Electronic Dispatch executes every five minutes, it also checks periodically, every twenty seconds, for whether a new RTUDS/STUDS/CD SPD case has been approved with new DDPs including the DDG's' DNE limits have become available since the last five minute issuance. If DDPs, including DNE limits, are updated, the new DDPs will be issued; otherwise DDPs will NOT be reissued until the next five minute cycle.
Net Commitment Period Compensation (NCPC) also known as "uplift" is the payment to a market participant for its generator, dispatchable-asset-related demand (DARD), demand-response resource (DRR) or external transaction that did not recover its effective offer costs from the energy market during an operating day. The NCPC payment is intended to make a resource that follows the ISO's operating instructions "no worse off" financially than the best alternative generation schedule. Typically, a resource receiving NCPC was operated out of merit to protect the overall resource adequacy and transmission security of specific locations or of the entire balancing authority area.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:

- Throughout the dispatch process, the Loader Operator is expected to be continuously monitoring and aware of the system Reserve requirements and the resources being counted to meet these requirements. This should be done by frequently reviewing the EMS Reserve Monitor and any provided Situational Awareness displays. While performing this evaluation, System Operators should evaluate the current ACE and its impact on the status of reserves.
- 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 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 1st 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. 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.

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: HH:05, HH:20, HH:35, and HH:50.

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;
- ❑ Reserve requirements and system capacity.

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).

Step 1.2.3   Primary Responsibility: Loader Operator

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

Instructions

Performed from the Interval Overrides display by:
- ❑ Clicking the RT Commitment dropdown menu;
- ❑ Selecting Interval Overrides;
- ❑ Selecting or deselecting the amount of intervals desired.

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.
- The use of additional intervals should be evaluated to provide additional visibility to upcoming system conditions.

Step 1.2.4   Primary Responsibility: Loader Operator

Modify the Min Gen Emergency flag for an interval.

Instructions

Performed from the Interval Overrides display by:
- ❑ Clicking the RT Commitment dropdown menu;
- ❑ Selecting Interval Overrides;
- ❑ Modifying the Min Gen Emergency flag for the desired intervals.

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

Performed from the Interval Overrides display by:
- ❑ Clicking the RT Commitment dropdown menu;
- ❑ Selecting Interval Overrides;
- ❑ Modifying the applicable LAF well on the desired intervals.

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.

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.

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

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 is expected 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 or DARD Pump 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.

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.

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
- With RTUC still connected to UDS , 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 is expected to approve an appropriate:
  - UDS case at least 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 which needs to be modified.**

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

Step 3.1.1.1   Primary Responsibility: Loader Operator
Modify the UDS parameter.

Step 3.1.1.2   Primary Responsibility: Loader Operator
Log the UDS parameter modification.

Instructions
Use log entry: > GENERATION > UDS Parameter Modification

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:
  - ❑ System load and expected load change;
  - ❑ Interchange Schedules;
  - ❑ Active constraints;
  - ❑ 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"
- UDS solutions that appear "Red" with a "Successful" message, may be due to issues from the Pricing or Dispatch Runs.
- 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 DOUBLC software.
- For a change in magnitude of either the 1st or 2nd contingency; the new reserve requirement will not be accounted for in APF-MOI until the respective source is at its new MW value. This should be considered prior to approving a UDS case with an inaccurate reserve pricing.

Step 3.6   Primary Responsibility: Loader Operator

Condition(s) to perform this step:
- **Case solution is NOT successful; Or**
- **The desired results are not achieved.**

Determine the reason for the other than successful solution and re-execute UDS.

Instructions
- ❑ Possible actions to provide an acceptable or successful solution:
  - ❑ Adjust LAF value(s);
  - ❑ Change the Look Ahead Parameter;
  - ❑ Adjust the Bias for a Transmission Constraint, CROP.34006 Clogger Transmission Constraints and EMSOUT;
  - ❑ Adjust the System Wide Reserve Zone Bias or Reserve Zone Bias, refer to CROP.35003 Reserve Requirement Adjustment;
  - ❑ Remove violating generator from Regulation, CROP.35002 Regulation;
  - ❑ Redeclare the regulation parameter, CROP.36002 Redeclarations.
- ❑ If an acceptable solution is **NOT** obtained after taking action, notify the Senior System Operator and Operations Shift Supervisor.

Notes
- An unsuccessful UDS solution will appear "Red", however there may be other causes for a "Red" UDS case such as a reserve violation, or issues with the pricing or dispatch runs of UDS.
- 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:
- **The UDS case approval will initiate a Capacity Scarcity Condition (CSC).**

Notify the Operations Shift Supervisor and Senior System Operator of the case approval.

Step 3.7.1.1   Primary Responsibility: Operations Shift Supervisor

Condition(s) to perform this step:
- **A UDS case is approved that is violating on a System 10 Min. Total or 30 Min. Total RCPF.**

Declare OP-4 Actions 1 & 2 and perform Actions of CROP.10002 Implement Capacity Remedial Actions.

Step 3.7.2   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.

Instructions
Once the DARD Pump is off-line, ensure the parameters are appropriate for system conditions.

Step 3.7.3   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 3.7.4   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.**

Log the verbal cancellation of a UDS start up.

Instructions
Use log entry: > GENERATION > Fast-Start Start-up Cancelled [E]

Provide the following information:
- ❑ Resource Name;
- ❑ "Dispatch Issued via CD-SPD" identified in the check-box;
- ❑ Time of dispatch UDS Case Approval:
  - Enter the time from the "Time Stamp" on an "ApproveCase" line in Case Messages
- ❑ Time Start-up was cancelled:
  - Time call was made to DE
- ❑ Reason for cancelled start.

Notes
This log entry will send notifications to the following groups to ensure proper settlement and auditing:
- Control Room Management
- Settlements
- Claim 10/30 Auditing

Condition(s) to perform this section:

- **Based on Section 2**

Section 4 : Respond to a start up recommendation for a Fast Start or DARD pump resource that may result in a reliability risk that Clogger cannot mitigate

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Step 4.1   Primary Responsibility: Loader Operator

Notify the Security Operator and Senior System Operator of the recommended start up.

Step 4.2   Primary Responsibility: Security Operator

Perform a security assessment using Powerflow, ILC Powerflow, and STCA.

Notes

The following items should be considered when setting up the Powerflow case:
- System load
- Interchange schedules
- Resources available for dispatch

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 or unavailable due to transmission.

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;
- ❑ Remove the zero values in the RTHOL, Eco Max, Eco Min, Emerg Min and SDMW columns.

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]

Condition(s) to perform this section:
- **Based on Section 2**

Section 5 : Respond to a 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.

Note

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.

Notes
- FSR flags should only be considered **AFTER** it has been determined that the dispatch software is not providing a reasonable solution or there is difficulty achieving the desired solution.
- The use of FSR flags may create a deviation between the Dispatch Run and the Pricing run and the LMP ultimately used will be derived from the Pricing Run.

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.

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
  - Energy Price Pairs for the hour they are expected to be shutdown
  - The generators commitment decision (CD) **IS** or **IS NOT** a Self Schedule
    - For generators shutting down **WITHOUT** a Self Schedule as part of their CD:
      - If the Next Hour Energy Price Pair for the generator shutting down is **NOT** comparable to the real time system energy price, those units should be at Eco Min by HH:00 and released for shutdown to avoid added NCPC as system conditions allow.
    - For generators shutting down **WITH** a Self Schedule as part of their CD:
      - If the generators CD was caused by a Self-Schedule, those generators would not get NCPC since their previous hour was Self Scheduled. Therefore can be released at the Operators discretion.
- 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

Inform the Security Operator of the generator scheduled for shut down.

Step 6.4.1   Primary Responsibility: Security Operator

Perform a security assessment using Powerflow, ILC Powerflow, STCA and Double C.

Notes
The following items should be considered when setting up the Powerflow case:
- System load
- Interchange schedules
- Resources available for dispatch

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.

Step 6.5 Primary Responsibility: Loader Operator

Condition(s) to perform this step:
- **The generator is operating above its Eco Min.**

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.

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

Modify a ramp schedule in RTUC.

Instructions

- ❑ Access the Solution Summary display in RTUC:
  - ❑ Click "RT Commitment" from the menu;
  - ❑ Click on "Solution Summary";
- ❑ Ensure "All Resources" are selected in the Filter Selection field;
- ❑ Right click on the applicable resource in the Summary MW field;
- ❑ Select Unit or DRR Ramp Details fromt the pop out menu;
- ❑ 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.

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

Enter a transitional ramp schedule in RTUC.

Instructions
- ❑ Access the Solution Summary display in RTUC;
  - ❑ Click "RT Commitment" from the menu;
  - ❑ Click on "Solution Summary";
- ❑ Select the "Transitional Ramp Eligible" filter;
- ❑ Right click on the applicable generator in the Summary MW field;
- ❑ Select "Unit Ramp Details" from the pop out menu;
- ❑ Click the "Add Ramp" button;
- ❑ Enter the transition ramp times:
  - ❑ 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.

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
- FSR flags should only be considered **AFTER** it has been determined that the dispatch software is not providing a desireable solution or there is a concern in maintaining the reserve requirement.
- 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.
- The use of FSR flags may create a deviation between the Dispatch Run and the Pricing run and the LMP ultimately used will be derived from the Pricing Run.
- 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.

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

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 11.1.1   Primary Responsibility: Shift Supervisor

Condition(s) to perform this step:
- **RTUC failure cannot be immediately resolved; And**
- **IT has not yet been informed of the RTUC failure.**

Contact IT with the details of the RTUC failure.

Notes

RTUC relies on input from multiple applications to function as required. Occasionally the solution will resolve itself by 'refreshing" the data from those applications. IT will get subject matter experts involved when the issue is not promptly resolved.

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 on-line 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.

Step 11.3.3   Primary Responsibility: Loader Operator

Log the RTUC failure and actions taken.

Instructions

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

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   Primary Responsibility: Loader Operator

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

Revision History

Rev. No.	Date (MM/DD/YY)	Reason	Contact
--	04/29/19	For previous revision history, refer to Rev 20 available through Ask ISO	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
23	09/25/19	Corrected not in Step 1.2.7 Added step responsibilities in Section 11 and 12	Steven Gould
24	04/09/21	Modified Step 3.7.3 to document Fast-Start Cancellations	Steven Gould
25	12/07/21	Updated common procedure information and references. Added step 11.1.1	Steven Gould
26	05/11/22	Removed standards of completion contained in Common Procedure information, added instructions to Step 4.6, Added Notes to Step 6.2 for NCPC information; formatting changes throughout; Added Reserve Monitoring to Management Expectations Section. Step 1.1 added bullet point, Step 1.2.3 added Note, Section 3 Notes, Step 3.5 Instructions. Added new Step 3.7.1.	Jonathan Gravelin
27	08/20/22	Added Notes to Step 3.5; and Section 9, Converted Steps 3.1.2 & 3.1.2.1 Substeps of Step 3.1.1; Added Step 3.5.1 & 3.5.2, Consolidated Steps into Instructions for Sections 7&8, Moved Condition to enter from Step 6.4 to 6.5, modified Step 6.4	Jonathan Gravelin
28	10/24/22	Modified RTUC automatic execution times in section 1 on page 5	Jonathan Gravelin
29	02/02/23	Added information in Step 2.2 and Section 4; Added notes to Step 4.2 and 6.4.1	Jonathan Gravelin
30	01/15/25	Periodic review, updated Procedure Background, no substantive changes	Jonathan Gravelin