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#### A Proposal for an Automatic Trigger for Off-Cycle SCED Runs

Version 1.0

Operations Planning

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Revision History

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| --- | --- | --- | --- |
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| 0.0 | Initial Version | 6/5/2018 | Operations Planning |
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# Issue Description

ERCOT currently relies on manually initiated off-cycle SCED runs in response to frequency being beyond a +/-0.05Hz deadband for 5-minutes, or when a frequency excursion exceeds +/-0.10Hz, or there is a sudden loss of generation/load greater than 450MW.

ERCOT is proposing a change to the SCED process such that it will automatically trigger SCED run during times of excessive Regulation deployment. Any time Regulation is deployed beyond a configurable percentage and/or amount 2-minutes a configurable time after a scheduled SCED run (every 5-minutes), an off-cycle SCED run will automatically be triggered. This will allow SCED to redispatch the system to account for Regulation deployment that is caused by real-time imbalance, which is typically caused by a multitude of things such as expected generation deviation, short-term load forecast (STLF) error, DC Tie ramping, and Intermittent Renewable Resource (IRR) ramping.

This approach will reduce the amount of manual intervention by ERCOT Operators, the amount of Regulation Service deployed, the frequency recovery duration following events, as well as the amount of time in which Regulation is exhausted for extended periods of time and will improve the dispatch of the ERCOT system in response to sustained Regulation deployment caused by real-time imbalance.

# Proposal

Following modifications are being proposed:

1. Add a configurable Regulation deployment percentage or amount threshold in the Energy Management System (EMS). This factor should be able to consider both Regulation Deployed Percentage and/or amount of Regulation Remaining.
2. The trigger should work as follows:

If it is a configurable time, *T*, after a scheduled SCED run (i.e. 0:02:30) then:

If Regulation Remaining < *X* MW or Regulation Deployed Percentage > *Y* % then:

 Trigger automatic off-cycle SCED run.

End if

 End if

 Where

If Regulation Up is Deployed then:

$$Regulation Remaining=Regulation Up Obligation-Regulation Up Deployed$$

$$Regulation Deployed Percentage=\frac{Regulation Up Deployed}{Regulation Up Obligation}$$

Else:

$$Regulation Remaining=Regulation Down Obligation-Regulation Down Deployed$$

$$Regulation Deployed Percentage=\frac{Regulation Down Deployed}{Regulation Down Obligation}$$

End If

And *X* and *Y* are a Regulation deployed amount and Regulation deployed percentage, respectively. *T* is a configurable parameter of the time after a scheduled SCED run when an off-cycle SCED run may be triggered in response to Regulation deployment.

With the above changes ERCOT software systems will automatically trigger an off-cycle SCED run in response to Regulation deployments caused by real-time imbalance, reducing the need for manual intervention. This improvement will increase the amount of off-cycle SCED runs while also increasing the efficiency at which the system is redispatched in response to these system imbalances. Once ERCOT has the ability to automatically trigger off-cycle SCED runs with a configurable Regulation deployment percentage and/or amount, it will actively monitor the amount of off-cycle SCED runs and tune the programmable factor(s) accordingly.