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**RE: LIMIT UP/LIMIT DOWN FAQs**

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**What is Limit Up/Limit Down?**

On May 31, 2012, the Securities and Exchange Commission (“SEC”) approved, on a pilot basis, a National Market System Plan, known as the Limit Up/Limit Down Plan (“LULD”) to address extraordinary market volatility. This plan is meant to replace Single Stock Circuit Breakers (“SSCBs”) as it is phased in. Under LULD, trades in NMS Stocks will be required to execute within Price Bands that are based on a Reference Price for that security. The Price Bands will be set at a percentage level above and below the continually updated average Reference Price of a security over the preceding five-minute period and will be disseminated market-wide by the consolidated feeds (“SIPs”).<sup>1</sup> For more details please refer to [SEC Release 34-67091](#)

During Phase 1, LULD will only be in effect from 9:45 a.m. ET to 3:30 p.m. ET for select securities.

The following implementation schedule proposed by the SROs has been revised and is pending SEC approval

Date	Description
Monday, April 8, 2013	LULD Phase 1 Rollout Begins
Friday, May 31, 2013	LULD Phase 1 Rollout Complete
Thursday, August 1, 2013	LULD Phase 2 Rollout Begins
Monday, September 30, 2013	LULD Phase 2 Rollout Complete

**Which securities are included in Phase 1?**

Included in Phase 1 are all securities in the S&P 500, the Russell 1000 and select Exchange Traded Products (“ETPs”), collectively called Tier 1 NMS Stocks. The SROs propose starting up with a small number of Tier 1 NMS Stocks on April 8, 2013, with all Tier 1 NMS Stocks rolled out by May 31, 2013.

**Which securities are included in Phase 2?**

Included in Phase 2 are all NMS Stocks except for rights and warrants. NMS Stocks will be divided into two Tiers with different Percentage Parameters applied to each Tier. Tier 2 NMS Stocks include all NMS Stocks (except rights and warrants) that are not in Tier 1.

**How will Phase 2 differ from Phase 1 other than the securities included?**

In Phase 1, LULD will be effective from 9:45 a.m. ET to 3:30 p.m. ET. The first Reference Price will be based on trade prices between 9:40 a.m. and 9:45 a.m. ET.

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<sup>1</sup> For very low priced stocks, if the lower price band would calculate to a price less than zero, the lower price band is set to zero.

In Phase 2, LULD will be effective from 9:30 a.m. ET to 4:00 p.m. ET. From 9:30 to 9:45 a.m. ET and from 3:35 to 4:00 p.m. ET for issues trading over \$0.75 per share, the price bands will be calculated using a larger Percentage Parameter which will result in a wider Price Band. The first Reference Price will be either the opening price or the midpoint of the opening quote.

#### **How is the Reference Price calculated?**

The SIPs are responsible for calculating the Reference Price as well as calculating and disseminating the Price Band. The Reference Price will be the arithmetic mean price of Eligible Reported Transactions over the consecutive five minute periods. Transactions that do not update the Last Sale are not included in calculating the Reference Price. If no eligible trades have occurred in the previous five minute period, the previous Reference Price shall remain in effect. The Reference Price is updated only if the new Reference Price is at least 1% away in either direction from the current Reference Price.

#### **How are the Upper and Lower Price Bands calculated?**

The Upper and Lower Price Bands are calculated by multiplying the current Reference Price by the appropriate Percentage Parameter and then adding and subtracting that value from the Reference Price. The resulting values are then rounded to the nearest penny.

The Percentage Parameters for all Phase 1 (Tier 1) securities are:

<b>Previous Closing Price</b>	<b>Percentage Parameter</b>
Greater than \$3.00	5%
\$0.75 up to and including \$3.00	20%
Less than \$0.75	Lesser of \$0.15 or 75%

The Percentage Parameters for all Phase 2 (Tier 2) securities are:

<b>Previous Closing Price</b>	<b>Percentage Parameter</b>
Greater than \$3.00	10%
\$0.75 up to and including \$3.00	20%
Less than \$0.75	Lesser of \$0.15 or 75%

The Price Bands are typically calculated as follows:

$$\text{Price Band} = (\text{Reference Price}) \pm ((\text{Reference Price}) \times (\text{Percentage Parameter}))$$

However, when the Reference Price is close to zero, the Lower Band Price may be adjusted to zero if it would otherwise be less than zero.

#### **What is a Limit State?**

A security will enter a Limit State when the National Best Offer (NBO) equals the Lower Price Band but does not cross the National Best Bid (NBB) or the NBB equals the Upper Price Band but does not cross the NBO. The relevant quotation will be denoted as a Limit State Quotation in market data published by the SIPs. Trading will exit a Limit State if, within 15 consecutive seconds after entering a Limit State, all Limit State Quotations are executed or canceled in their entirety. If the market does not exit a Limit State within 15 consecutive seconds, the primary listing exchange will declare a Trading Pause. A Trading Pause will last at least five minutes. After a Trading Pause of at least five minutes in the security, the primary listing exchange may reopen trading in that security using that exchange's established reopening procedures. After a Trading Pause of at least ten minutes in the security, if the primary listing exchange has not reopened that security, any national securities exchange that trades that security may trade it. Since the NBO or NBB must

equal a Price Band for a Limit State to exist, a single odd lot bid or offer cannot cause a security to enter a Limit State because the total shares in the limit state must equal or exceed one round lot.

**What is a Straddle State?**

A Straddle State occurs when the NBB is below the Lower Price Band or when the NBO is above the Upper Price Band. The primary listing exchange may declare a Trading Pause for a security in a Straddle State if trading in that security deviates from normal trading characteristics.

**Will the LULD Trading Pause be similar to the current Single Stock Circuit Breaker (“SSCB”)?**

Yes, the same minimum five minute halt period and reopening procedures will be used.

**How will quoting on CHX be impacted by LULD?**

CHX will not display any buy orders in NMS Stocks at prices that are above the Upper Price Band or display any sell orders in NMS Stocks at prices below the Lower Price Band.

**How will order execution on CHX be impacted by LULD?**

CHX will not execute any orders that would affect the Last Sale Price in NMS Stocks at prices that are outside of the Price Bands, including Intermarket Sweep Orders (“ISO”). CHX will not execute any orders in NMS Stocks when a Trading Pause is in effect in that security.

**How will Immediate-or-Cancel (“IOC”) or Market orders aggressively priced through a Price Band be handled?**

CHX will accept IOC orders in NMS Stocks priced through an Upper or Lower Price Band; however, the order will only execute against liquidity resting at or within the Price Bands. Accordingly, Market IOC orders in NMS Stocks will only be allowed to execute within the Price Bands. Any unexecuted quantity on an IOC or Market order will be cancelled back to the Participant.

**How will non-IOC orders aggressively priced through a Price Band be handled?**

CHX will handle any inbound or resting, aggressive, non-IOC buy (sell) order in NMS Stock which is priced through the through the Upper (Lower) Band Price as follows:

- If the order is fully displayable, CHX will re-price the order to the Upper (Lower) Band Price.
- If the order is a reserve size order and cannot be matched against a contra side order within the Price Bands, CHX will cancel the order.
- If the order is a non-displayable order and cannot be matched against a contra side order within the Price Bands, CHX will cancel the order.

**Can one specify cancel vs. price sliding action?**

No. All inbound or resting, aggressive, fully displayable, non-IOC buy (sell) orders in NMS Stocks which are priced through the Upper (Lower) Band Price will be price slid.

**Will a Participant know when an order has been price slid on entry?**

If an order in and NMS Stock is price slid due to LULD at the time it is received, the order sender is informed. However, CHX will not notify order senders when a resting order in an NMS Stock is price slid due to LULD.

**What will happen if a Price Band moves such that a previously booked order is now aggressively priced through the Price Band?**

As described above, price sliding or cancellation will take place regardless of whether the order is a new inbound order or already resting on the CHX book.

**How will CHX handle orders passively priced outside of Price Bands?**

Buy (sell) orders in NMS Stocks priced below (above) the Lower (Upper) Price Band will be accepted and are eligible for inclusion in the NBBO. However, since these orders are outside of the Price Bands they are not executable. If the Price Band moves in such a way that an order that was previously outside of the Price Band is now at or within the Price Bands, then the order will become executable.

**When will Participants have an opportunity to test LULD behavior?**

In coordination with the other exchanges and market participants, CHX will be participating in industry-wide testing for LULD and market-wide circuit breaker functionality beginning Saturday January 26, 2013.

Date	Test Objective
Saturday, January 26, 2013	Industry-Wide LULD and MWCB Test – Scripted w/ Limited Symbols
Saturday, February 2, 2013	Final Industry-Wide LULD Test Before Introduction of Test Symbol Support for LULD – Partially Scripted w/ Limited Symbols
Saturday, March 2, 2013	Industry-Wide LULD and MWCB Test – Scripted w/ Limited Symbols
Saturday, April 6, 2013	Final Industry-Wide LULD Test Before Phase 1 Rollout – Partially Scripted w/ Limited Symbols

**Where can I find more information?**

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Refer to [SEC Release 34-67091](#)

Refer to the official [SEC Press Release](#)