LIMIT UP – LIMIT DOWN PLAN

On May 31, 2012, the Securities and Exchange Commission (SEC) approved, on a pilot basis, a National Market System Plan to Address Extraordinary Market Volatility, known as the Limit Up - Limit Down ("LULD") Plan. The LULD Plan is currently operating as a pilot set to expire on April 16, 2018.

The LULD Plan is administered by the LULD Operating Committee, comprising a representative from each of the Participants. The current Participants are the Cboe BZX Exchange, Inc., Cboe BYX Exchange, Inc., Cboe EDGX Exchange, Inc., Cboe EDGA Exchange, Inc., Chicago Stock Exchange, Inc., Financial Industry Regulatory Authority, Inc., Investors Exchange LLC, NASDAQ BX, Inc., NASDAQ PHLX LLC, The Nasdaq Stock Market LLC, NYSE National, Inc., New York Stock Exchange LLC, NYSE Arca, Inc., and NYSE American LLC. The LULD Plan and any amendments to it are filed with and approved by the Securities and Exchange Commission in accordance with Rule 608 of Regulation NMS.

OVERVIEW

The LULD Plan is designed to prevent trades in NMS Stocks from occurring outside specified price bands, which are set at a percentage level above and below a specified reference for an NMS Stock. The percentage level is determined by a security's designation as a Tier 1 or Tier 2 security. Tier 1 comprises all securities in the S&P 500, the Russell 1000 and select Exchange Traded Products (ETPs). Tier 2 comprises all other NMS securities, except for rights and warrants, which are specifically excluded from coverage. The LULD Plan applies during regular trading hours of 9:30 am ET - 4:00 pm ET, excepting opening, reopening, and closing transactions on the primary listing exchanges.

CALCULATION OF PRICE BANDS

The price bands, consisting of a Lower and Upper Price Band for each NMS Stock, are calculated by the securities information processors (SIP) – CTA (for Tape A and Tape B NMS Stocks) and UTP Plan (for Tape C NMS Stocks). The SIPs calculate upper and lower price bands by applying a formula to a **Reference Price**, which is the arithmetic mean price of Eligible Reported Transactions over the prior five-minute period. The first Reference Price of the day is either the primary market's opening price or the primary market's previous day's closing price/last sale when opening on a quote. If no eligible trades have occurred in the prior five minutes, the

previous Reference Price remains in effect. The Reference Price is updated after 30 seconds only if a new Reference price would be least 1% away from the current Reference Price.

The **Price Bands** are calculated by multiplying the current Reference Price by the applicable Percentage Parameter and then adding or subtracting that value from the Reference Price and rounded to the nearest penny.

Price Band = (Reference Price)+/- ((Reference Price)x (Percentage Parameter))

Table 1:

Tier 1 Securities (9:45 am – 3:35 pm)	
Previous Closing Price	**Percentage Parameter**
Greater than $3.00	5%
$0.75 up to and including $3.00	20%
Less than $0.75	Lesser of $0.15 or 75%

Table 2:

Tier 2 Securities (9:45 am - 3:35 pm)	
Previous Closing Price	**Percentage Parameter**
Greater than $3.00	10%
$0.75 up to and including $3.00	20%
Less than $0.75	Lesser of $0.15 or 75%

Price Bands are doubled during the first 15 and last 25 minutes of the regular trading day for both Tier 1 and Tier 2 Securities.

Illustration: Assume that "XYZ" is a Tier 1 security and has a previous closing price of $25. As such, its percentage parameter would fall within the first bucket (Greater than $3.00) of Table 1 above. Security XYZ would therefore have upper and lower price bands that are 5% greater ($26.25) and lower ($23.75) than that of the previous closing price, respectively. The bands would be as follow:

Upper Band	$26.25
Closing Price	$25.00
Lower Band	$23.75

OPERATION OF PRICE BANDS

When the National Best Bid (Offer) is below (above) the Lower (Upper) Price Band, the SIPs disseminate the National Best Bid (Offer) with an indicator identifying it as unexecutable. Trading immediately enters a **Limit State** if the National Best Offer (Bid) *equals but does not cross* the Lower (Upper) Price Band. When a Limit State occurs, the SIPs indicate the National Best Bid (Offer) as a **Limit State Quotation**. Trading exits a Limit State if, within 15 seconds of entering the Limit State, all Limit State Quotations are executed or canceled in their entirety. If the market does not exit a Limit State within 15 seconds, the primary listing exchange declares a five-minute **Trading Pause,** which applies to all exchanges and off-exchange trading venues. The Trading Pause may be extended for another five minutes. Following a Trading Pause, the primary listing exchange will reopen the security through its prescribed reopening process. The reopening price resets the LULD reference price. Thereafter, once Price Bands are available, all markets may resume trading. If a security is in a Trading Pause 10 minutes before the end of regular trading hours, the primary listing exchange will not reopen trading and will attempt to execute a closing transaction using its established closing procedures.

A **Straddle State** occurs when the National Best Bid (Offer) is below (above) the Lower (Upper) Price Band and the NMS Stock is not in a Limit State. For example, assume the Lower Price Band for an NMS Stock is $9.50 and the Upper Price Band is $10.50, such NMS stock would be in a Straddle State if the National Best Bid were below $9.50, and therefore non-executable, and the National Best Offer were above $9.50 (including a National Best Offer that could be above $10.50). If an NMS Stock is in a Straddle State and trading in that stock deviates from normal trading characteristics, the primary listing exchange may declare a Trading Pause for that NMS Stock.

Please consult each Participant market's trading rules to learn how its order types are treated under the LULD Plan.