

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-85623; File No. 4-631)

April 11, 2019

Joint Industry Plan; Order Approving the Eighteenth Amendment to the National Market System Plan to Address Extraordinary Market Volatility by Cboe BYX Exchange, Inc., Cboe BZX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX 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 American LLC, and NYSE Arca, Inc.

I. Introduction

On November 5, 2018, NYSE Group, Inc., on behalf of the other parties¹ to the National Market System Plan to Address Extraordinary Market Volatility (the “Plan”), filed with the Securities and Exchange Commission (“Commission”) pursuant to Section 11A of the Securities Exchange Act of 1934 (“Act”)² and Rule 608 thereunder,³ a proposal to amend the Plan⁴ to, among other things, amend Section VIII of the Plan to transition the Plan from operating on a pilot to a permanent basis. The proposal represents the eighteenth amendment to the Plan, and reflects proposed changes unanimously approved by the Participants (“Eighteenth Amendment”). A copy of the Plan is attached hereto as Exhibit A. The proposed Eighteenth Amendment was published for comment in the Federal Register on December 26, 2018.⁵ The Commission

¹ Cboe BZX Exchange, Inc., Cboe BYX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX Exchange, Inc., Chicago Stock Exchange, Inc., the Financial Industry Regulatory Authority, Inc. (“FINRA”), Investors Exchange LLC (“IEX”), NASDAQ BX, Inc., NASDAQ PHLX LLC, The NASDAQ Stock Market LLC (“Nasdaq”), New York Stock Exchange LLC (“NYSE”), NYSE Arca, Inc., NYSE National Inc., and NYSE American LLC (collectively, the “Participants”).

² 15 U.S.C. 78k-1.

³ 17 CFR 242.608.

⁴ See Letter from Elizabeth King, General Counsel and Corporate Secretary, NYSE, to Brent Fields, Secretary, Commission, dated November 2, 2018 (“Transmittal Letter”).

received three comment letters regarding the amendment.⁶ This order approves the Eighteenth Amendment to the Plan as proposed.

II. Background

On May 6, 2010, the U.S. equity markets experienced a severe disruption.⁷ Among other things, the prices of a large number of individual securities suddenly declined by significant

⁵ See Securities Exchange Act Release No. 84843 (December 18, 2018), 83 FR 66464 (“Notice”).

⁶ See Letter from Theodore R. Lazo, Managing Director and Associate General Counsel, The Securities Industry and Financial Markets Association (“SIFMA”) to Brent J. Fields, Secretary, Commission, dated January 16, 2019 (“SIFMA Letter”); Letter from Susan M. Olson General Counsel, Investment Company Institute; John Ramsay, Chief Market Policy Officer, IEX; T.R. Lazo, Managing Director and Associate General Counsel, SIFMA to Brent J. Fields, Secretary, Commission, dated January 16, 2019 (“ICI Letter”); Samara Cohen, Head of Global Markets, BlackRock; Timothy J. Coyne, Global Head of SPDR ETF Capital Markets, State Street Global Advisors; Stephen John Berger, Managing Director, Global Head of Government & Regulatory Policy, Citadel Securities; Tim Gately, Head of Americas Equities, Citigroup Global Markets Inc.; Chris Hempstead, Head ETF Sales, Deutsche Bank Securities Intl.; Luke Oliver, Head of US ETF Capital Markets, DWS Investment Management Americas Inc.; Bas Tammens, CFA, Head of Business Development, Flow Traders US LLC; Andrew Stevens, General Counsel, IMC; Eric M. Pollackov, Global Head of ETF Capital Markets, Invesco Ltd.; Michael Lewin, CEO, Istra LLC; Frank Liu, Chief Compliance Officer, Jane Street Capital, LLC; Michael Lieder, Head of US ETF Capital Markets, J.P. Morgan Asset Management; Christopher Berthe, Head of Global Cash Execution, Equities, J.P. Morgan Securities LLC; Sapna Patel, Head of Americas Market Structure and Liquidity Strategy, Morgan Stanley & Co. LLC; Sean Stanzak, RBC Capital Markets; Damon Walvoord, ETF Business Development, Susquehanna International Group; Jim Toes, President and CEO, Security Traders Association; Mehmet Kinak, Global Head of Systematic Trading and Market Structure, T. Rowe Price Associates, Inc.; Vlad Khandros, Global Head of Market Structure and Liquidity Strategy, UBS Securities LLC; Ryan Ludt, Global Head of ETF Capital Markets, Vanguard; John Dibacco, Global Head Equities Trading, Virtu Financial Inc.; Anita Rausch, Head of Capital Markets, WisdomTree Asset Management, Inc. to Brent J. Fields, Secretary, Commission, dated January 30, 2019 (“Market Participants Letter”).

⁷ The events of May 6 are described more fully in a joint report by the staffs of the Commodity Futures Trading Commission and the Commission. See Report of the Staffs of the CTFC and SEC to the Joint Advisory Committee on Emerging Regulatory Issues, “Findings Regarding the Market Events of May 6, 2010” (September 30, 2010), available at <http://www.sec.gov/news/studies/2010/marketevents-report.pdf>.

amounts in a very short time period, before suddenly reversing to prices consistent with their pre-decline levels. The Commission was concerned that events such as those that occurred on May 6, 2010 could seriously undermine the integrity of the U.S. markets. Accordingly, Commission staff worked with the exchanges and FINRA (“SROs”) to develop policy responses that would help prevent a recurrence of the May 6 market disruption. Initially, the SROs developed a single-stock circuit breakers pilot program, implemented through a series of rule filings, to pause trading during periods of extraordinary volatility in all NMS Stocks, except rights and warrants.

As a replacement to the single-stock circuit breaker pilot, the Participants filed the Plan with the Commission on April 5, 2011 to create a market-wide limit up-limit down (“LULD”) mechanism intended to address extraordinary market volatility in “NMS Stocks,” as defined in Rule 600(b)(47) of Regulation NMS under the Exchange Act.⁸ The Plan sets forth procedures that provide for market-wide limit up-limit down requirements to prevent trades in individual NMS Stocks from occurring outside of the specified Price Bands.⁹ These limit up-limit down requirements are coupled with Trading Pauses, as defined in Section I(Y) of the Plan, to accommodate more fundamental price moves (as opposed to erroneous trades or momentary gaps in liquidity). The limit up-limit down mechanism is intended to reduce the negative impacts of sudden, unanticipated price movements in NMS Stocks, such as those experienced on May 6, 2010, thereby protecting investors and promoting a fair and orderly market.

The Plan was approved in May 2012 on a pilot basis to “allow the Participants and the public to gain valuable practical experience with Plan operations during the pilot period” and to

⁸ 17 CFR 242.600(b)(47). See also Section I(H) of the Plan.

⁹ Unless otherwise specified, the terms used herein have the same meaning as set forth in the Plan or the revisions to the Plan proposed in the Eighteenth Amendment. See Notice, supra note 5, Exhibit A.

assess “whether further modifications of the Plan are necessary or appropriate prior to final approval.”¹⁰ After two amendments,¹¹ the initial date of Plan operations was April 8, 2013.¹²

Since that date, the Plan has been amended fourteen times¹³ and the pilot period has been

¹⁰ See Securities Exchange Act Release No. 67091, 77 FR 33498 (June 6, 2012) (File No. 4-631) (“Plan Approval Order”) (approving Plan as amended).

¹¹ See Securities Exchange Act Release Nos. 68953 (February 20, 2013), 78 FR 13113 (February 26, 2013) (noticing for immediate effectiveness the Second Amendment to the Plan); 69287 (April 3, 2013), 78 FR 21483 (April 10, 2013) (approving the Third Amendment to the Plan).

¹² See Securities Exchange Act Release No. 68953 (February 20, 2013), 78 FR 13113 (February 26, 2013).

¹³ On August 27, 2013, the Commission noticed for immediate effectiveness the Fourth Amendment to the Plan. See Securities Exchange Act Release No. 70273, 78 FR 54321 (September 3, 2013). On September 26, 2013, the Commission approved the Fifth Amendment to the Plan. See Securities Exchange Act Release No. 70530, 78 FR 60937 (October 2, 2013). On January 7, 2014, the Commission noticed for immediate effectiveness the Sixth Amendment to the Plan. See Securities Exchange Act Release No. 71247, 79 FR 2204 (January 13, 2014). On April 3, 2014, the Commission approved the Seventh Amendment to the Plan. See Securities Exchange Act Release No. 71851, 79 FR 19687 (April 9, 2014) (“Seventh Amendment Approval Order”). On February 19, 2015, the Commission approved the Eight Amendment to the Plan. See Securities Exchange Act Release No. 74323, 80 FR 10169 (February 25, 2015) (“Eighth Amendment Approval Order”). On October 22, 2015, the Commission approved the Ninth Amendment to the Plan. See Securities Exchange Act Release No. 76244, 80 FR 66099 (October 28, 2015) (“Ninth Amendment Approval Order”). On April 21, 2016, the Commission approved the Tenth Amendment to the Plan. See Securities Exchange Act Release No. 77679, 81 FR 24908 (April 27, 2016) (“Tenth Amendment Approval Order”). On August 26, 2016, the Commission noticed for immediate effectiveness the Eleventh Amendment to the Plan. See Securities Exchange Act Release No. 78703, 81 FR 60397 (September 1, 2016). On January 19, 2017, the Commission approved the Twelfth Amendment to the Plan. See Securities Exchange Act Release No. 79845, 82 FR 8551 (January 26, 2017) (“Twelfth Amendment Approval Order”). On April 13, 2017, the Commission approved the Thirteenth Amendment to the Plan (“Thirteenth Amendment Approval Order”). See Securities Exchange Act Release No. 80455, 82 FR 18519 (April 19, 2017). On April 28, 2017, the Commission noticed for immediate effectiveness the Fourteenth Amendment to the Plan. See Securities Exchange Act Release No. 80549, 82 FR 20928 (May 4, 2017). On September 26, 2017, the Commission noticed for immediate effectiveness the Fifteenth Amendment to Plan. See Securities Exchange Act Release No. 81720, 82 FR 45922 (October 2, 2017). On March 15, 2018, the Commission noticed for immediate effectiveness the Sixteenth Amendment

extended six times.¹⁴ The most recent substantive changes to the Plan were made through the Tenth,¹⁵ Twelfth,¹⁶ and Thirteenth¹⁷ Amendments. On May 28, 2015, the Participants submitted a Supplemental Joint Assessment, in which the Participants provided additional analysis required under Appendix B.¹⁸

III. Description of the Proposal

In the Eighteenth Amendment, the Participants propose to: (i) amend Section VIII of the Plan to transition the Plan from operating on a pilot to a permanent basis; (ii) adopt a mechanism for periodic review and assessment of the Plan; (iii) eliminate the doubling of the Percentage Parameters between 9:30 a.m. and 9:45 a.m.; and (iv) eliminate the doubling of the Percentage Parameters between 3:35 p.m. and 4:00 p.m., or in the case of an early scheduled close, during the last 25 minutes of trading before the early scheduled close, for Tier 2 NMS Stocks with a Reference Price above \$3.00.

IV. Summary of Comments Received

The Commission received three comment letters regarding the amendment.¹⁹ All three commenter letters support approval of the Eighteenth Amendment.²⁰ Two commenters

to the Plan. See Securities Exchange Act Release No. 82887, 83 FR 12414 (March 21, 2018) (File No. 4-631). On April 12, 2018, the Commission approved the Seventeenth Amendment to the Plan. See Securities Exchange Act Release No. 83044, 83 FR 17205 (April 18, 2018) (“Seventeenth Amendment Approval Order”).

¹⁴ See Seventh Amendment Approval Order; Eighth Amendment Approval Order; Ninth Amendment Approval Order; Tenth Amendment Approval Order; Thirteenth Amendment Approval Order; Seventeenth Amendment Approval Order, supra note 13.

¹⁵ See Tenth Amendment Approval Order, supra note 13.

¹⁶ See Twelfth Amendment Approval Order, supra note 13.

¹⁷ See Thirteenth Amendment Approval Order, supra note 13.

¹⁸ See Ninth Amendment Approval Order, supra note 13.

¹⁹ See supra note 6.

specifically support the proposal to transition the plan from a pilot to operating on a permanent basis, subject to periodic review and assessment.²¹ Two commenters support the proposal to eliminate the doubling of percentage parameters,²² with both commenters providing specific rationales for eliminating doubling of parameters between 9:30 a.m. and 9:45 a.m.,²³ and one commenter providing specific support for the elimination of double-wide Price Bands at the close for certain securities.²⁴

Beyond addressing the proposals in the Eighteenth Amendment, one commenter urges the Commission to add representatives of non-SRO experts, including advisers to registered

²⁰ See SIFMA Letter, supra note 6, at 1 (recommending the Commission adopt the proposal); ICI Letter, supra note 6, at 1 (urging Commission to approve the proposal); Market Participants Letter supra note 6, at 1 (stating collective support for the proposals in the Eighteenth Amendment).

²¹ See SIFMA Letter, supra note 6, at 2 (stating the plan has been effective in suspending trading before execution when a security experiences extraordinary price volatility and has been effective during particularly volatile market conditions like August 24, 2015 and February 2018); Market Participants Letter supra note 6, at 1 (stating that the Plan helps not only to ensure orderly markets in periods of extraordinary volatility, but also prevents potentially harmful price volatility during normal market conditions).

²² See SIFMA Letter, supra note 6, at 2-3 (stating that eliminating double-wide Price Bands should reduce volatility and not result in a significant increase in limit states and trading pauses during that time, and that market participants will adjust their quotes to be within the tighter Price Bands); Market Participants Letter supra note 6, at 2.

²³ See SIFMA Letter, supra note 6, at 3 (stating that narrowing of the Price Bands at 9:45 a.m. has led to some extraneous halts from quotations not being updated before the narrowing and citing the proposal's statement that over 21% of all limit states and trading pauses occur in the five minutes following the contraction of Price Bands); Market Participants Letter supra note 6, at 2 (stating that although elimination of double-wide Price Bands between 9:30 a.m. and 9:45 a.m. could increase the number of LULD trading pauses that occur during this time period, it will help reduce the number of extraneous halts that occur at or shortly after 9:45 a.m. and that on August 24th, 2015, the tightening of LULD parameters at 9:45 a.m. impeded price discovery as markets recovered following rapid declines at the start of regular trading hours).

²⁴ See Market Participants Letter supra note 6, at 1 (stating that doubling the LULD Percentage Parameters for these securities is unwarranted and leaves investors at risk of extreme price movements).

funds and broker-dealers, to the operating committee of the Limit Up-Limit Down Plan and other NMS plans.²⁵ Another commenter recommends that the Commission, after adopting the proposal, adopt the recommendation of the Equity Market Structure Advisory Committee (“EMSAC”)²⁶ to review clearly erroneous execution (“CEE”) rules to promote certainty of execution so that all trades executed within the Limit Up-Limit Down Plan bands stand.²⁷

V. Discussion and Commission Findings

The Commission finds that the Eighteenth Amendment, as proposed, is consistent with the requirements of the Act and the rules and regulations thereunder. Specifically, the Commission finds that the Eighteenth Amendment is consistent with Section 11A of the Act²⁸ and Rule 608 thereunder²⁹ in that, as discussed below, the proposal is appropriate in the public

²⁵ See ICI Letter supra note 6, at 1 (stating that the Plan governance framework fails to take account of the interests of non-SROs and the potential contributions non-SROs could make to NMS plan governance and that NMS plan operating committees would be far better informed-and less influenced by conflicts of interest if they included non-SRO representatives). While this is outside the scope of this proposed amendment, SEC staff will consider this comment to the extent it is relevant in connection with future regulatory recommendations.

²⁶ SEC Equity Market Structure Advisory Committee, Recommendations for Rulemaking on Issues of Market Quality (November 29, 2016), available at <https://www.sec.gov/spotlight/emsac/emsac-recommendations-rulemaking-market-quality.pdf>.

²⁷ See SIFMA Letter supra note 6, at 3 (stating that the inconsistencies between CEE levels and Plan stock tiers and Price Bands result in some executions within Plan Price Bands breaking pursuant to CEE rules with narrower percentage ranges). The Commission notes that the CEE rules are contained in the various SRO rulebooks and function independently of the Plan as previously operated or as will be operated pursuant to Amendment 18. See, e.g., NYSE Rule 128(a); CBOE BZX Rule 11.17; IEX Rule 11.270. The Commission would consider, pursuant to the Exchange Act, any proposed rule changes that would modify operation of the current CEE rules.

²⁸ 15 U.S.C. 78k-1.

²⁹ 17 CFR 242.608.

interest, for the protection of investors and the maintenance of fair and orderly markets, and that it removes impediments to, and perfects the mechanism of, a national market system.

Proposal for Plan to Operate on a Permanent Basis

The Plan was originally approved on a pilot basis to allow the public, the Participants, and the Commission to assess the operation of the Plan and whether the Plan should be modified prior to consideration of approval on a permanent basis.³⁰ The Plan has been operating on a pilot basis since its inception.³¹ The Participants are now proposing to make the Plan permanent, with procedures to help ensure regular monitoring of the LULD mechanism.³²

In support of their proposal for permanence, the Participants state that during the pilot period they collected and provided to the Commission and the public with a significant amount of data on the Plan's performance to aid in an assessment of its operations.³³ The Participants state that the data collected during the pilot period and studies conducted by the Participants and the Commission's Division of Economic and Risk Analysis ("DERA") show that the Plan has been beneficial to the markets by serving to dampen price volatility.³⁴ The Participants cite a DERA analysis that, depending on the methodology employed, found evidence that the LULD mechanism reduced extraordinary transitory volatility relative to the Single Stock Circuit Breaker ("SSCB") mechanism that was in place prior to the LULD mechanism.³⁵ The

³⁰ See Plan Approval Order, supra note 10, at 33508.

³¹ See Plan Approval Order, supra note 10.

³² See Notice, supra note 5, at 66466, 66471.

³³ See id. at 66466.

³⁴ See id.

³⁵ See id. (citing "Limit Up-Limit Down" Pilot Plan and Extraordinary Transitory Volatility", by Paul Hughes, John Ritter, and Hao Zhang, DERA (December 2017), available at <https://www.sec.gov/comments/4-631/4631-2830173-161647.pdf>.)

Participants also rely on the results of the Supplemental Joint Assessment by the Participants that found that the number of trades that were cancelled decreased under the Plan and that the Plan's parameters were successful in preventing trades from occurring outside of the Price Bands, thus avoiding the types of mispriced trades that resulted in the Flash Crash.³⁶

The Participants further state that recent amendments approved by the Commission have improved the operation of the Plan.³⁷ Amendment No. 10 changed the manner in which Reference Prices were determined in situations where a security opened for trading on a quote rather than a trade. Prior to implementation of Amendment No. 10, Participants state that Reference Prices in these situations triggered Limit States and Trading Pauses at inaccurate price levels.³⁸ After implementation of Amendment No. 10, data provided by the Participants in the Transmittal Letter showed the number of Trading Pauses dropped significantly.³⁹ A White Paper written by DERA confirmed these findings.⁴⁰

Additionally, the Participants note that the implementation of Amendment Nos. 12 and 13 in November 2017 modified the operation of the Plan to address issues that were uncovered by market events on August 24, 2015.⁴¹ These changes, which were made alongside coordinated changes by Primary Listing Exchanges to their reopening auction processes, were designed to

³⁶ See id. (citing National Market System Plan Assessment to Address Extraordinary Market Volatility (the "Supplemental Joint Assessment" or "Assessment"), available at <https://www.sec.gov/comments/4-631/4631-39.pdf>.)

³⁷ See id. at 66467.

³⁸ See id.

³⁹ See id. at 66468-9.

⁴⁰ See id. at 66469 (citing "The Effects of Amendment No. 10 of the 'Limit Up-Limit Down' Pilot Plan", by Paul Hughes, DERA (December 2017), available at <https://www.sec.gov/comments/4-631/4631-2830189-161648.pdf>.)

⁴¹ See id. at 66469-70.

avoid repeated Trading Pauses by improving the accuracy of reopening prices.⁴² To achieve this, the Plan was amended to prohibit trade resumption until a Primary Listing Exchange conducted a reopening auction, a feature that was designed to concentrate liquidity in the reopening auctions.⁴³ The Primary Listing Exchanges also harmonized aspects of their reopening auction processes that provided for gradual extension of auction time frames accompanied by a gradual widening of auction price ranges with each auction extension.⁴⁴ The Participants state that since these changes, although there has not been an event like August 24, 2015, there has been stable price continuity at the open and following reopenings after a Trading Pause, and the amended Plan has worked well during normal market conditions as well as the volatile market activity that occurred in February 2018.⁴⁵

The Commission notes that the analysis presented by the Participants, in addition to other analyses, demonstrates that the Plan has operated effectively in accomplishing its stated goal of addressing extraordinary market volatility.⁴⁶ For example, the analysis presented in the

⁴² See id.

⁴³ See Twelfth Amendment Approval Order; Thirteenth Amendment Approval Order, supra note 13.

⁴⁴ See Securities Exchange Act Release Nos. 79846 (January 19, 2017), 82 FR 8548 (January 26, 2017) (SR-NYSEArca-2016-130); 79884 (January 26, 2017), 82 FR 8968 (February 1, 2017) (SR-BatsBZX-2016-61); 79876 (January 25, 2017), 82 FR 8888 (January 31, 2017) (SR-Nasdaq-2016-131). The Primary Listing Exchanges implemented these changes to their automated reopenings on November 20, 2017.

⁴⁵ See Notice, supra note 5, at 66470. The Commission notes that while the Participants have not yet published a data analysis of the effects of Amendments 12 and 13, the effectiveness of these amendments will continue to be assessed as part of the proposed ongoing review of the Plan described in detail below.

⁴⁶ See also Market Participants Letter, supra note 6, at 1 (stating, “We support making LULD permanent, subject to periodic review and assessment, because we believe LULD is beneficial to the national market system. LULD not only helps to ensure orderly markets in periods of extraordinary volatility, but also prevents potentially harmful price volatility during normal market conditions, when transitory gaps in liquidity may occur

Supplemental Joint Assessment demonstrates that the Plan has been effective in reducing volatility by showing that the Plan has reduced the frequency of multiple cancellation events that occur compared to the period during which the SSCB mechanism was in effect, as well as the time period before the SSCB mechanism was in effect.⁴⁷ The Commission notes that this analysis is also consistent with other analyses. One of the DERA White Papers cited by the Participants also found that the Plan’s mechanism reduced extraordinary transitory volatility relative to the SSCB mechanism, as well as the time period before the SSCB mechanism was in effect.⁴⁸ Both the Supplemental Joint Assessment⁴⁹ and a DERA White Paper⁵⁰ demonstrate that over 90% of Limit States resolve themselves in less than five seconds. Alternatively, the Commission notes that other analysis has found that the LULD mechanism increased the number of trading pauses and cancelled trades in Tier 2 securities compared to the SSCB mechanism.⁵¹ However, since this study focused on the time period before the implementation of Amendment 10, the results could be driven by bad Reference Prices that resulted from opening auctions with

for non-fundamental reasons”); SIFMA Letter, supra note 6, at 2 (stating, “[T]he Limit Up-Limit Down Plan has been effective during particularly volatile market conditions. As evidenced by the market events on August 24, 2015, the Limit Up-Limit Down Plan bands work to limit runaway stocks and panic selling or buying. Additionally, in February 2018, the Limit Up-Limit Down Plan operated as intended to reduce volatility by keeping prices within the bands. As a result, the Limit Up-Limit Down Plan falls within the Commission’s mission to protect investors and promote fair, orderly, and efficient markets, and the plan should be made permanent”).

⁴⁷ See Supplemental Joint Assessment, supra note 36, at 34-35. For purposes of the Supplemental Joint Assessment, a multiple cancellation event is an event in which there were six or more cancelled trade reports for a single stock during the day.

⁴⁸ See supra note 35.

⁴⁹ See Supplemental Joint Assessment, supra note 36, at 19.

⁵⁰ See “‘Limit Up-Limit Down’ Pilot Plan and Associated Events”, by Claudia Moise and Paca Flaherty, DERA (March 2017), (available at <https://www.sec.gov/files/dera-luld-white-paper.pdf>) at 25.

⁵¹ See id., at 28-31.

no trades. Both a DERA White Paper⁵² and the Transmittal Letter from the Participants,⁵³ present analysis that demonstrates that Amendment 10 reduced the number of Trading Pauses that occurred during the trading day.

The Participants have worked together with the Plan Advisory Committee to identify instances where improvements to the Plan were necessary, and developed and implemented amendments to the Plan to modify the operation of the LULD mechanism to help ensure its continued effectiveness over time.⁵⁴ As a result of these efforts and based on analyses of the Plan's operation, the Commission believes that the LULD mechanism effectively addresses extraordinary market volatility, and therefore is approving the Plan on a permanent basis.

The Commission recognizes, however, that the market is dynamic and constantly evolving and that the Participants will continue to study the Plan. As a result, certain features or parameters used in the LULD mechanism may require modifications over time for the mechanism to remain effective. For example, the occurrence of CEE events and long-lasting Straddle States, i.e. Straddle States that last longer than five minutes,⁵⁵ demonstrate that the parameters for Price Bands set forth in the Plan need to continue to be monitored in order to

⁵² See supra note 40.

⁵³ See Charts A and B in the Notice, supra note 5, at 66468-9.

⁵⁴ See infra notes 15-17 and accompanying text for descriptions of Amendment Nos. 10, 12 and 13.

⁵⁵ DERA contracted with Cornerstone Research to analyze the occurrence of long-lasting Straddle States under the Plan. The analysis found over 140 long-lasting Straddle States occurred each day and that they were more likely to occur in securities with lower trading volume, higher volatility, and smaller market capitalizations and on days when no trade occurs during the opening. See "Memorandum from Division of Economic and Risk Analysis regarding Cornerstone Analysis of Long-Lasting Straddle State", dated December 2017, available at https://www.sec.gov/files/DERA_Memo_on_a_Cornerstone_Straddle_State_Analysis.pdf.

ensure their calibration is appropriate.⁵⁶ The Participants acknowledge the need for ongoing review of these and other types of potential issues, and have proposed a process that will include quarterly, annual, and ad hoc reports that will facilitate an ongoing assessment of the Plan's effectiveness.⁵⁷

Proposed Mechanism for Periodic Review and Assessment

The Participants state that the proposed ongoing review and assessment procedures are designed to ensure that the Plan will be monitored continually in a data-driven manner.⁵⁸

Pursuant to this periodic reporting and assessment mechanism, the Participants propose to provide the Commission, and make publicly available, three categories of reports concerning the Plan's ongoing operation: (1) an annual report produced in consultation with the Advisory Committee assessing the Plan's performance,⁵⁹ which would include an update on the Plan's operations,⁶⁰ an analysis of any amendments to the Plan implemented during the period covered by the report,⁶¹ and an analysis of potential material emerging issues that may directly impact the

⁵⁶ Under the amendments, data on the frequency of occurrence of Straddle States and Clearly Erroneous Executions (i.e. CEE events) will be contained in the Monitoring Report. See Notice, supra note 5, at 66472-3. Additionally, under the amendments, the Annual Report will examine the calibration of the parameters set forth in the Plan, including the impact of Straddle States. See Notice, supra note 5, at 66472.

⁵⁷ See Notice, supra note 5, at 66471.

⁵⁸ See id.

⁵⁹ Any analysis conducted by the Participants and included in the Annual Report will be based on aggregated data from all relevant exchanges and FINRA, depending on the issue that is being analyzed, and will be posted on the Plan website. See id. at 66472.

⁶⁰ This section of the Annual Report will examine the calibration of the parameters set forth in the Plan (e.g., Price Bands, duration of Limit States, impact of Straddle States, duration of Trading Pauses, and the performance of reopening procedures following a Trading Pause), consider stock characteristics and variations in market conditions over time, and include tests that differentiate results for different characteristics, both in isolation and in combination. See id. at 66472.

operation of the Plan;⁶² (2) quarterly reports providing basic statistics that could be used to identify trends in the performance and impact of the Plan on market activity;⁶³ and (3) upon Commission request, an ad hoc report on the effectiveness of LULD following a significant market event.⁶⁴

The Commission believes that a process for the ongoing evaluation of the Plan is critical for its permanent approval. Markets evolve, and the Commission believes that a process for assessing the effectiveness of the Plan over time will help ensure that the Plan continues to achieve its objective of reducing extraordinary volatility. In order to assess its effectiveness and identify appropriate modifications to the Plan, data and analysis of the ongoing functions of the LULD mechanism must be produced, reviewed and considered. In addition to the Participants, Advisory Committee members and the Commission having access to data and analyses regarding

⁶¹ The analysis will include a discussion of the amendment's operation and its impact on the overall operation of the Plan. See id.

⁶² This section of the Annual Report will vary from year-to-year and include a discussion and analysis of the Plan's operation during a significant market event that may have occurred during the covered period. It will also include any additional analyses performed during the covered period on issues that were raised in previous Annual Reports. The Participants intend to discuss the November 29, 2016 recommendations made by EMSAC's Market Quality Subcommittee in this section of the first Annual Report, which will be produced by March 31, 2020. See id.

⁶³ The Participants will provide the Commission and make publicly available a report including basic statistics regarding the Plan's operation 30 days following the end of each calendar quarter, during the preceding calendar quarter as well as aggregated data from the previous 12 quarters beginning with the calendar quarter covered by the first report. The data included will be collected and transmitted to the Commission in an agreed-upon format that would allow for the download and analysis by the Commission and the public. See id.

⁶⁴ Upon Commission request, the Plan Operating Committee will provide the Commission and make publicly available a report analyzing the Plan's operation during a significant market event that (1) materially impacted the trading of more than one security across multiple Trading Centers; (2) and is directly related to or implicating the performance of the Plan. See id.

the Plan's performance, making such information available to the public will promote a robust public dialogue regarding the Plan's effectiveness.

As proposed, the Participants will provide the Commission and make available publicly quarterly reports, including basic statistics that can be used to identify trends in the performance of the LULD mechanism and its impact on market activity. In addition, the Participants will provide the Commission, and make available publicly on the LULD website,⁶⁵ an Annual Report containing an analysis of the Plan's operation, including an examination of the parameters for Price Bands set forth in the Plan. The Annual Report will also include an analysis of the impact of any amendments to the Plan on the operation on the LULD mechanism. Finally, the Annual Report will discuss and analyze the LULD mechanism's performance during any significant market event that occurred during the period covered by the Annual Report, as well as any analyses performed on issues raised in the previous Annual Report. The Participants intend to submit the first Annual Report no later than March 31, 2020.⁶⁶ The Participants will also provide to the Commission upon request, and make publicly available, a report analyzing the Plan's operation during a significant market event to the extent it is not reported in the Annual Report. In addition to these reports, the Participants will provide the Commission upon request within 30

⁶⁵ The website can be found at <http://www.luldplan.com>. The Commission encourages the Participants to make Annual Reports freely available on a continuous basis and in a format that is easily accessible on the LULD website. Proposed Appendix B of the Plan provides that all data shall be collected and transmitted to the Commission in an agreed-upon format, and the Participants represent that this format would allow for the download and analysis by the Commission and the public. *See* Notice, *supra* note 5, at 66472, Exhibit A. The Commission encourages the Participants to make data and information available on the LULD website not subject to any restrictions, including restrictions on access, retrieval, distribution, and reuse.

⁶⁶ *See* Transmittal Letter, *supra* note 4.

days, data that is not otherwise publicly available and is substantially similar to the data they are required to provide under the current Plan.⁶⁷

The Commission believes the ongoing review and assessment requirements proposed by the Participants will both facilitate a robust, data-driven assessment of the Plan's effectiveness and provide the Commission and the public sufficient transparency of the effectiveness of the LULD mechanism necessary to help ensure the Plan remains designed to achieve its objective.

Proposal to Amend Calculation of Percentage Parameters

The Participants propose to (i) eliminate the doubling of the Percentage Parameters between 9:30 a.m. and 9:45 a.m.; and (ii) eliminate the doubling of the Percentage Parameters between 3:35 p.m. and 4:00 p.m., or in the case of an early scheduled close, during the last 25 minutes of trading before the early scheduled close, for Tier 2 NMS Stocks with a Reference Price above \$3.00.

A. Elimination of Double-Wide Percentage Parameters at the Open

Currently under the Plan, between 9:30 a.m. and 9:45 a.m. ("the Open"), the Price Bands are calculated by applying double the Percentage Parameters. The Percentage Parameters are doubled to accommodate higher volatility at the Open.⁶⁸ The Participants propose to eliminate the double-wide Percentage Parameters at the Open.⁶⁹ The Participants make two arguments for narrowing Price Bands at the Open.

⁶⁷ The Participants may submit this data with a request for confidential treatment pursuant to the Commission's rules and regulations under the Freedom of Information Act. See 17 CFR. 200.83.

⁶⁸ See Plan Section V.A.1.

⁶⁹ See Notice, supra note 5, at 66473.

First, the Participants argue that the current contraction of price bands at 9:45 causes unnecessary Limit States and Trading Pauses. In support of this argument, the Participants provide data that shows there is a disproportionate number of Limit States and Trading Pauses that occur at or shortly after 9:45 a.m., which is the only time during the trading day that the Price Bands contract.⁷⁰ Furthermore, the Participants present evidence that the contraction of Price Bands at 9:45 causes Limit States and Trading Pauses at 9:45 a.m. that are not due to market volatility.⁷¹ Second, the Participants argue that narrower Price Bands at the Open would prevent erroneous trades during this time period by pausing trading at the narrower Price Bands rather than allowing such trades to execute at erroneous prices.⁷² The Participants present evidence that there are a disproportionate number of erroneous trades at the Open when the Price Bands are double-wide.⁷³

While the Participants present evidence that narrowing the Price Bands at the Open could be beneficial to the market, the Participants also present data analyzing the potential negative impact of narrowing Price Bands at the Open. This data shows that if double-wide Percentage Parameters are eliminated at the Open, the number of Limit State and Trading Pauses could quadruple in NMS Stocks and could triple in ETPs.⁷⁴ The Participants argue that this projected increase in Limit States and Trading Pauses may not occur, however, because they and the

⁷⁰ See id.

⁷¹ See id. at 66473-4.

⁷² See id.

⁷³ See id. at 66475.

⁷⁴ See id. at 66475-76 (eliminating the doubling of Percentage Parameters between 9:30 a.m. and 9:45 a.m. would increase the number of NMS Stocks that experience a Limit State from 1.3 to 5.5 per day, and increase the number of ETP that experience a Limit States from 0.5 per day to 1.4 per day).

Advisory Committee anticipate that market participants will quickly adapt systems to quote within the new, narrower Price Bands.⁷⁵

As noted above, commenters support narrowing the Price Bands at the Open. One commenter argues that narrowing the Price Bands should reduce volatility and not result in a significant increase in Limit States and Trading Pauses as market participants will adjust their quotes to be within the narrower Price Bands.⁷⁶ Other commenters similarly argue that narrowing Price Bands at the Open would promote continuous trading by helping reduce the number of extraneous halts that occur shortly after 9:45 a.m., although these same commenters recognize that there could be an increase in the number of Trading Pauses between 9:30 a.m. and 9:45 a.m.⁷⁷ These commenters also argue that band contraction at 9:45 a.m. has been shown to harm price discovery.⁷⁸

Calibration of the Price Bands requires the balancing of dual objectives: preventing extraordinary volatility and facilitating price discovery. On one hand, if Price Bands are too wide, there is potential for extraordinary volatility resulting in trades at prices far away from a security's fundamental value, ultimately harming investors that are party to the trade. On the other hand, if Price Bands are too narrow, there is a potential for increased Trading Pauses that could impede price discovery for a security, also resulting in investor harm.⁷⁹

⁷⁵ See id.

⁷⁶ See SIFMA Letter, supra note 6, at 2-3.

⁷⁷ See Market Participants Letter supra note 6, at 2.

⁷⁸ See id.

⁷⁹ See Plan Approval Order, supra note 10, at 33503 (quoting commenter's statement that "trading halts interfere with the natural interaction of orders and the price discovery process"), 33504 (noting that Participants stated in their response letter that they believed that the proposed doubling of the Percentage Parameters around the opening and closing periods was appropriate in light of the increased volatility at those times).

By proposing to narrow the Price Bands at the Open, the Participants (and the market participants commenting in favor of the proposal) believe a better balance can be achieved in favor of preventing extraordinary volatility that could result in erroneous trades at the Open. As the Participants demonstrate, the wider Price Bands currently employed have resulted in a number of trades that qualify as clearly erroneous executions under current SRO rules. Preventing trades that qualify as clearly erroneous executions protects investors that may have traded at bad prices. Preventing these trades also promotes better liquidity provision, as liquidity providers would be certain that executed trades will stand and that their hedging trades will not need to be unwound at potential losses.

The trade-off, however, is that there could be more Limit States and Trading Pauses during this most volatile period of the trading day,⁸⁰ potentially impeding price discovery. Indeed, the Participants' historical analysis demonstrates that the number of Limit States could quadruple for NMS Stocks and triple for ETPs.⁸¹ The Participants believe, however, that the benefits of narrower Price Bands may be achieved without resulting in an increase in Limit States and Trading Pauses, arguing that their historical analysis is only theoretical and the number of Limit States and Trading Pauses overall will decrease at the Open because they expect that market participants will adjust their quoting behavior to narrower price bands.⁸²

In approving this proposal, the Commission recognizes the dual objectives served by the Price Bands. While the Commission acknowledges that narrowing the Price Bands during the

⁸⁰ The Participants data in Chart D demonstrates that the most volatile period of the trading day is between 9:30 a.m. and 9:45 a.m. See Notice, supra note 5, at 66474. See also Market Participants Letter supra note 6, at 2 (acknowledging the potential for more Trading Pauses at the Open as a result of narrower Price Bands).

⁸¹ See supra note 74.

⁸² See Notice, supra note 5, at 66476; see also SIFMA Letter, supra note 6, at 2-3

most volatile period of the trading day⁸³ could potentially harm the price discovery process, the Commission recognizes the benefits of preventing extraordinary volatility discussed above,⁸⁴ and believes that the amendment is an appropriate resolution regarding the balance of these dual objectives. The Commission also notes that no commenters opposed the proposed rebalancing of the dual objectives of preventing extraordinary volatility and facilitating price discovery.

In approving this proposal, the Commission notes that the Participants have committed to analyzing the performance of narrower Price Bands at the Open in a future Annual Report.⁸⁵ The Commission looks forward to reviewing that analysis. The Commission notes that an analysis of anticipated adjustments to quoting behavior prior to implementation of the proposed changes would not have been practical. As part of their future analysis, the Commission is particularly interested in whether the data demonstrate a change in quoting behavior by market participants, as argued by the Participants and commenters, and if there is no change in quoting behavior, the extent to which Trading Pauses and Limit states negatively impact price discovery and whether the Participants continue to believe that the narrower Price Bands at the Open remain warranted.

B. Elimination of Double-Wide Percentage Parameters at the Close

Similar to the Percentage Parameters in place at the Open, between 3:35 p.m. and 4:00 p.m., or in the case of an early scheduled close, during the last 25 minutes of trading before the early scheduled close (“the Close”), the Percentage Parameters are doubled to accommodate

⁸⁴ As noted above, preventing extraordinary volatility that could result in erroneous trades both protects investors and promotes liquidity provision.

⁸⁵ See Transmittal Letter, supra note 4, at 18.

increased volatility that may occur at the Close.⁸⁶ The Participants are proposing to eliminate double-wide Percentage Parameters at the Close for Tier 2 NMS Stocks 2 with a Reference Price above \$3.00.⁸⁷ This would result in narrowing the Price Bands from 20% to 10% at the Close for these securities.⁸⁸

In particular, the Participants state that this proposed change is intended to dampen extreme price movements that may occur inside of the current Price Bands near the Close, noting that the current double-wide Percentage Parameters would accommodate price swings of as much as 40% when trading from the Upper Price Band to the Lower Price Band.⁸⁹ The Participants state that the original concerns about volatility around the close were unfounded with respect to Tier 2 NMS Stocks.⁹⁰ The Participants present data showing that only a de minimis number of trades actually occur outside of the regular 10% Percentage Parameter, and that therefore the doubling of the Percentage Parameters for Tier 2 NMS Stocks at the close is unwarranted.⁹¹ Further, the Participants present data that shows that the average number of Trading Pauses at the Close is nearly ten times lower than the average number of Trading Pauses for any other 25 minute period across the trading day.⁹²

However, the Participants acknowledge that if the double-wide Percentage Parameters at the Close were eliminated, the number of Trading Pauses would approximately triple based on

⁸⁶ Plan Section V.A.1.

⁸⁷ See Notice, supra note 5, at 66476.

⁸⁸ See id.

⁸⁹ See id. at 66477.

⁹⁰ See id. at 66477-78

⁹¹ See id.

⁹² See id.

their historical analysis, though the average number of Trading Pauses at the Close would still be lower than the average for any other 25 minute period across the trading day.⁹³ Further, as with the proposal to eliminate double-wide Percentage Parameters at the Open, the Participants argue that this projected increase may not occur, because market participants may make behavioral changes to adjust to the new, narrower Price Bands, such that Trading Halts may not increase as projected.⁹⁴

The Participants state that there have been discussions around eliminating clearly erroneous rules when the Plan is in effect. They note that without the backstop of clearly erroneous rules, it is vital that the Price Bands are appropriately tailored to prevent trades that are so far from current market prices that they would be viewed as having been executed in error.⁹⁵ The Participants state that permitting trading to occur within Price Bands that are as much as 20% above or below the Reference Price without the protections of the clearly erroneous rules would be detrimental to investors and the public interest.⁹⁶

Similar to the considerations around Price Bands at the Open noted above, the calibration of the Price Bands at the Close requires balancing dual objectives: preventing extraordinary volatility and facilitating price discovery. With respect to trading at the Close in particular, excessive Trading Pauses could impact the closing processes for securities in a manner that could harm price discovery at an important time of the trading day.⁹⁷

⁹³ See id. at 66478

⁹⁴ See id. at 66479.

⁹⁵ See id. at 66480.

⁹⁶ See id.

⁹⁷ See Plan Approval Order, supra note 10, at 33504 (commenters described the close as a critical part of the trading day and argued that exchanges could have inconsistent closing times as a result of a trading pause).

By proposing to narrow the Price Bands at the Close for Tier 2 NMS Stocks with a Reference Price above \$3.00, the Participants (and the market participants commenting in favor of the proposal) believe a better balance can be achieved in favor of preventing extreme price movements and erroneous trades from occurring at the Close. Narrower bands, the Participants state, will prevent the potential for 40% price swings at the Close, which is consistent with the Plan's stated goal of preventing extraordinary volatility in NMS stocks.⁹⁸ While their historical analysis shows that Trading Pauses could have tripled if narrower Price Bands as proposed were in place,⁹⁹ the Participants argue that the number of Trading Pauses were de minimis and that the adjustment in market participant quoting behavior to the narrower price bands would result in even fewer Trading Pauses than the historical analysis demonstrated.¹⁰⁰

In approving this proposal to narrow the Price Bands at the Close for Tier 2 NMS Stocks with a Reference Price above \$3.00, the Commission recognizes the dual objectives served by the Price Bands and believes that the Participants' proposal for narrower bands represents a different balance than that achieved by the current Plan. The Commission also notes that no commenters opposed the proposed rebalancing of the dual objectives of preventing extraordinary volatility and facilitating price discovery.

In approving this proposal, the Commission notes that the Participants have committed to analyzing the performance of narrower Price Bands at the Close in a future Annual Report. The Commission looks forward to reviewing that analysis. The Commission notes that an analysis of anticipated adjustments to quoting behavior prior to implementation of the proposed changes

⁹⁸ See Notice, supra note 5, at 66477.

⁹⁹ See supra note 74.

¹⁰⁰ See Notice, supra note 5, at 66477.

would not have been practical. As with the future analysis of the proposal concerning the narrower Price Bands at the Open, the Commission is particularly interested in whether the data demonstrate a change in quoting behavior by market participants, as argued by the Participants and commenters, and if there is no change in quoting behavior, whether the Participants continue to believe that the narrower Price Bands at the Close remain warranted. Furthermore, with respect to the analysis relating to the Close, the Commission is interested in an assessment of whether any increased Trading Pauses and Limit States negatively impacted closing auctions in affected securities.

For the reasons noted above, the Commission finds that the Eighteenth Amendment to the Plan is consistent with Section 11A of the Act¹⁰¹ and Rule 608 thereunder.¹⁰²

¹⁰¹ 15 U.S.C. 78k-1.

¹⁰² 17 CFR 242.608.

IV. Conclusion

IT IS THEREFORE ORDERED, pursuant to Section 11A of the Act¹⁰³ and Rule 608 thereunder,¹⁰⁴ that the Eighteenth Amendment to the Plan (File No. 4-631) be, and it hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.¹⁰⁵

Eduardo A. Aleman
Deputy Secretary

¹⁰³ 15 U.S.C. 78k-1.

¹⁰⁴ 17 CFR 242.608.

¹⁰⁵ 17 CFR 200.30-3(a)(29).